

Textile Reuse and Upcycling in Kenya: The Role of Waste Pickers

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Photo by Pietro Luppi



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Summary

This study examines the role of waste pickers and other micro-players in the textile and second-hand clothing (mitumba) supply chain in Kenya, with a particular focus on the market of Gikomba, Nairobi's principal second-hand clothing hub. Kenya's waste governance combines a modern legislative framework — anchored in the Environmental Management and Co-ordination Act (1999), the Sustainable Waste Management Act (2022), and the 2024 Extended Producer Responsibility Regulations — with a persistently large informal recovery economy and limited enforcement capacity. The quantity of textile waste generated in the country remains unknown: existing estimates are polarised between importer-commissioned studies suggesting a 1-5% waste share in imported bales and civil society sources suggesting 20-50%. This study does not resolve that gap through a single figure but proposes a methodological framework (expressed as a formula) for identifying where the unknown quantities lie along the value chain. To shed light on the functioning and features of the downstream system of the supply chain, two original surveys were conducted (a general sample of 52 waste pickers, 31 of whom handle textiles regularly, and a specialised sample of 20 waste pickers active at Gikomba) complemented by ten in-depth qualitative interviews with waste pickers and upcycling artisans. The findings document precarious livelihood conditions — often at or below Kenya's absolute poverty line — alongside a functionally indispensable role in collection, sorting, and recovery. The study concludes by identifying hidden costs currently absorbed by the weakest links of the international second-hand clothing chain, and by proposing a value proposition and two alternative pathways for the structured, better-remunerated inclusion of waste pickers within an evolving, EPR-driven system.

Keywords: Waste pickers; second-hand clothing (mitumba); textile waste; Extended Producer Responsibility (EPR); informal recycling economy; Nairobi, Kenya.

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Introduction

The global trade in second-hand clothing, known as *mitumba* in East African countries, sustains millions of livelihoods across this region. At the same time, it generates a textile waste stream whose true scale remains contested and largely unmeasured. This waste stream contributes significantly to plastic pollution; considering that globally almost 60% of the produced fibers is polyester (Textile Exchange, 2024) and that textiles generate around 35% of microplastics discharged into the oceans (Niinimäki et al., 2020). Unlike cotton second-hand clothing, polyester clothes are more difficult to recover as wiping rags. Kenya, and Nairobi's Gikomba market in particular, sits at the centre of the debate over the impact of second-hand clothing. A legislative and regulatory apparatus increasingly aligned with circular-economy principles coexists with open dumpsites, contaminated waterways, and an informal recovery economy on which the entire downstream chain structurally depends. Within this economy, waste pickers occupy a position that is at once indispensable and largely unrecognised. They collect, sort, and recover value from second-hand clothing that would otherwise be abandoned, burned, or dumped, while working under conditions that frequently border on absolute poverty.

This study examines the systemic role of waste pickers in Kenya along the whole textile waste supply chain, moving beyond the binary framing of “blessing or curse” that has characterised much of the existing literature on the *mitumba* trade. It asks three interconnected questions: how much textile waste is actually generated, and why does the existing literature disagree so sharply on this point; what role do waste pickers, street sellers and upcycling artisans play in managing this waste, and under what conditions; and, looking forward, how might an emerging international architecture of Extended Producer Responsibility (EPR) redistribute the costs and responsibilities currently borne disproportionately by the weakest links of the chain. The study combines legislative analysis, a critical reconciliation of contradictory quantitative literature, two original surveys, and in-depth qualitative interviews. Its aim is to ground policy recommendations in direct evidence from the field, rather than basing them on inference alone.

Methodology

This study adopts a mixed-methods design, combining legislative and documentary analysis with original quantitative and qualitative fieldwork conducted in Kenya between April 2025 and July 2026.

The legislative analysis reviews Kenya's waste management framework: the Environmental Management and Co-ordination Act 1999 (EMCA), the Sustainable Waste Management Act (2022), and the 2024 EPR Regulations. It also draws on the existing body of academic, institutional, and grey literature on the *mitumba* trade, with particular attention to reconciling contradictory quantitative claims about the scale of textile waste generation.

Two original surveys were conducted. Survey A was administered online in November-December 2025 to 52 waste pickers across multiple Kenyan counties, of whom 31 (55%) reported regularly handling textile waste alongside other fractions; this subgroup is analysed in depth. Survey B was administered face-to-face in June-July 2026 to 20 waste pickers specialised in collecting unsold second-hand clothing at Gikomba market, Nairobi. Both surveys collected demographic, economic, and operational data, with Survey B further disaggregating income by source (direct sales, tips, and upcycling).

These surveys were complemented by ten semi-structured qualitative interviews — five with Gikomba waste pickers and five with women upcycling artisans operating in the same market — exploring operational challenges and proposed improvements. Direct field observation was also carried out at Gikomba, Dandora, Likoni, and Kiambu County dumpsites, and along the Nairobi River.

Two methodological limitations are explicitly acknowledged. First, the absence of any census of the waste picker population in Kenya precludes an assessment of sample representativeness. Second, Survey A's online administration likely introduced a self-selection bias favouring digitally literate respondents. These limitations are discussed in the relevant sections and are treated as a constraint rather than as a reason to discard the surveys' qualitative value.

Waste Management Framework

Legislative Framework

Kenya's waste governance rests on a two-tier architecture. The umbrella statute is the **Environmental Management and Co-ordination Act**, No. 8 of 1999 (Cap. 387, EMCA), that established, among other entities:

- (a) the National Environment Management Authority (NEMA) (section 7), which, following the 2015 amendment to the Act, also absorbed the functions of the former National Environment Action Plan Committee (section 37)
- (b) the National Environment Tribunal (section 125)
- (c) the Public Complaints Committee (section 31)

This Act also set general standards, definition and obligations on waste management, including the prohibition of discharging and disposing waste “in such manner as to cause pollution to the environment or ill health to any person” (section 87-1) and the obligation to transport, treat and dispose waste, or generate hazardous waste, under a licence issued by NEMA (sections 87-88) (Republic of Kenya, 1999).

The National solid waste management strategy (NEMA, 2015) is a milestone that orientates the sectorial legislation that followed. This document offers an overview of the waste management in the country, aims to meet the Kenya Vision 2030 flagship project, and indicates the general goals for solid waste management (see table 1). It recognises the importance of the informal sector in segregating and recovering waste in the country, emphasising the need for public-private partnerships (PPP) and for organising and formalising waste collectors and groups. The strategy indicates the need to “upscale the activities of the informal sector to link up with the existing formal recycling industries”. Among the main goals to be achieved in solid waste management, the strategy indicates the protection of public health and environment, reduction of waste management costs, and reduction of poverty. Quantitatively, the goals are to achieve approximately 80% waste recovery (recycling, composting and waste to energy) and 20% landfilling in a sanitary landfill (inert material) by 2030.

The sector-specific cornerstone is the **Sustainable Waste Management Act, No. 31 of 2022** (SWMA, Cap. 387C) (Republic of Kenya, 2022). This Act takes the EMCA as a primary reference, adding to its general framework more detailed prescriptions and definitions. EMCA remains the reference law for hazardous waste.

The SWMA distributes roles as follows. At national level, the Cabinet Secretary makes policies in consultation with county governments, and regulations in consultation with NEMA and county governments (section 5). A Waste Management Council, composed of national government, county governments, NEMA, experts, and representatives of civil society, the private sector and manufacturers, coordinates intergovernmental action and recommends national recycling and recovery targets (sections 6–7). NEMA develops standards, enforces the legislation, issues licences (except where counties have jurisdiction), and runs the national waste information system (section 8). County governments implement waste management as a devolved function: they must build segregation and collection infrastructure, set up materials recovery facilities, register all waste service providers in their territory, and make local plans and legislation (sections 9, 14, 17). Private actors appear as producers, bound by extended producer responsibility to be fulfilled individually or collectively (section 13), and as “waste service providers”, defined to include collectors, transporters, processors, materials recovery operators, recyclers and landfill operators (section 2). Waste pickers are never mentioned in the Act.

However, they are directly affected, among other prescriptions, through the mandate of the Cabinet Secretary to: a) regulate the formation of waste collection, materials recovery and recycling Savings and Credit Co-operative Organisations (SACCOs), a specific type of cooperative regulated by Kenyan legislation; b) regulate labour and health standards for waste handlers; and c) close open dumpsites and create operational standards for regular dumpsites (section 10).

The Act’s environmental objectives include realising the constitutional right to a clean and healthy environment, reducing air, land, freshwater and marine pollution, creating green jobs, and promoting circular economy practices (section 3), under general principles that include the polluter-pays and zero-waste principles (section 4). Structurally, the system is built on mandatory segregation at source (section 12), county materials recovery facilities (section 14), and EPR compliance schemes (section 13) (Republic of Kenya, 2022).

The **Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024** (Legal Notice 176 of 2024, amended in 2025) adopt detailed and operational prescriptions related to financial, operational and physical responsibilities of producers, including importers (Republic of Kenya, 2024).

In essence, every producer — a term which, under the parent Act, includes importers (Republic of Kenya, 2022, s. 2) — must register with NEMA and either set up an individual compliance scheme or join a collective one through a Producer Responsibility Organisation (PRO); producers’ obligations apply even in absence of a scheme (regs. 5(1)(b)–(c), 8(1)– (3)). Physically and operationally, producers must: establish take-back schemes, which may include deposit-refund systems [reg. 5(1)(a)]; design products and packaging that minimise waste and facilitate reuse, recycling and the use of secondary raw materials [reg. 5(1)(f)]; handle, through the scheme, a volume equivalent to one hundred per cent of the products they declare [reg. 16(1)(b)]; inform consumers on the management of post-consumer products [reg. 5(1)(h)]; and report annually to NEMA by 31 January [regs. 5(1)(e), 19(3)]. Financially, producers bear the costs of management, treatment, disposal and end-of-life treatment of their post-consumer products [reg. 5(1)(g)]; importers additionally pay, at the point of importation, Kenyan shilling (KES) 150 per item listed in the First Schedule, against issuance of an EPR import certificate that forms part of mandatory customs clearance documentation (reg. 6(1)–(2), (7)). Within collective schemes, membership fees are modulated according, among other things, to quantities placed on the market, recyclability and recoverability (reg. 18(1)), and five per cent of the fees collected is remitted to NEMA’s Restoration Fund (reg. 18(3)–(4)). (Republic of Kenya, 2024).

Quantitative Data

A range of official sources offer data on waste generation and management that are not perfectly consistent. Even so, they give a rough sense of the magnitude of the phenomenon.

Generation. According to NEMA, in Kenya the per capita generation of waste is about half a kilogram daily, which translates into 22,000 metric tonnes of waste generated per day, or 8 million tonnes annually. This figure, however, appears outdated: the Kenya National Bureau of Statistics reported that Kenya's inhabitants reached 51.5 million in 2023, that generating half a kilogram daily would produce more than 25,000 tonnes daily and more than 9 million tonnes yearly (KNBS, 2024). In Nairobi, according to NEMA, an estimated 2,400 tonnes of solid waste is generated every day (NEMA, 2024). The Ministry of Environment and Forestry reported that, due to the growing trend of urban waste generation, the country's waste volumes will triple in 2030 relative to 2009 levels (MOEF, 2021).

Composition. In 2019, the Ministry of Environment and Forestry reported that the Kenyan waste is composed of organic (60-70%), plastic (20%), paper (10%), metal (2%) and others (such as textile and leather) (8%) (MOEF, 2019). Two years later, the same institution reported 60% to 70% of waste generated is organic, 20% is plastic, 10% paper, 1% medical waste and 2% metal (MOEF, 2021).

Collection. In 2024, NEMA stated that 70% of Kenyan solid waste was collected and dumped (NEMA, 2024). However, in the same document, referring specifically to Nairobi, NEMA states that the city "produces around 2,400 tonnes of waste every day, of which only 38 percent is collected" (NEMA 2024). This figure for Nairobi is reported in the same words in a 2016 study by the United Nations Development Programme (UNDP) and the Ministry of Environment and Natural Resources, which in turn cites a 2010 study by the Japan International Cooperation Agency (JICA) (UNDP/Ministry of Environment and Natural Resources of Kenya, 2016). According to Kenya's National Bureau of Statistics, the percentage of solid waste collected in Nairobi, Mombasa and Kisumu counties was 76.7%, 56.5% and 30% respectively (KNBS 2022).

Recovery and disposal. According to NEMA, more than 60% of the Kenyan waste is recyclable (NEMA, 2025b). Kenya's Ministry of Environment and Forestry reported in 2021 that "more than 22,000 tons/day of garbage is currently generated and only 10% is recycled". Referring specifically to Nairobi, NEMA stated in 2024 that "less than 10 percent of the waste is recycled [...]. The remaining part of collected waste is landfilled, and 62 per cent that is not collected is disposed of at the dumpsites, illegally dumped on roadsides and waterways, or burned and this releases toxic air emissions and particulate matter" (NEMA 2024).

Informal sector. The role of the informal sector in the system, including waste pickers, is recognised in The National Solid Waste Management Strategy, which, in the section dedicated to waste segregation, states that "recovery of recyclable items like plastics, papers, glass and metals is done by an increasing number of informal groups". However, no national data is provided about the informal sector's contribution. Specifically regarding the case of Nakuru town, NEMA reported that "out of the total wastes collected daily, 18.3% is recovered by the informal sector" (NEMA, 2015).

The Aspen Network of Development Entrepreneurs (ANDE) states that "the informal sector, composed of waste collectors, pickers, itinerant traders, dump service providers and recyclers who operate without registration from local environmental authorities, represents a significant share of the waste management industry". According to ANDE, in the case of metal waste and e-waste, "collection primarily occurs through collection points and door-to-door pickups facilitated by the informal sector". ANDE doesn't provide an estimate about the share of participation of the informal sectors in other waste fractions (ANDE, 2024).

Qualitative Aspects

In Kenya, a modern legislative framework coexists with persistent open dumpsites (such as Dandora), few licensed materials recovery facilities, and a large informal recovery economy (ANDE, 2024). In its section 2.1, NEMA's National Solid Waste Management Strategy summarises the situation, stating that rising urbanisation, compounded by growing industrialisation, "has led to increased waste generation and complexity of the waste streams", and that "most local authorities did not prioritise the establishment of proper waste management systems". Further, "the councils lacked technical and institutional capacities to manage waste". According to

NEMA, “this has led to the current poor state of waste management *which includes indiscriminate dumping, uncollected waste and lack of waste segregation across the country*”. (NEMA, 2015)

Direct observation of the current situation, together with the related literature, shows that the waste management sector has not changed significantly, in qualitative terms, since 2015 NEMA’s description.

Main Challenges for Waste Picker Involvement in the Formal System

A review of the waste management regulations, with respect to the role and welfare of the waste pickers, revealed the following hotspots:

- (a) **Waste pickers mainly operate in informality:** this exposes them to vulnerability, lack of recognition and lack of rights, including arbitrary harassment.
- (b) **The role of the waste pickers in the upcoming scenario is unclear:** it depends largely on whether the PROs choose to engage them.
- (c) **No guidelines on compensation or pricing:** the rules require producers and PROs to take financial responsibility but do not set minimum compensation standards. This could lead to the exploitation of waste pickers.
- (d) **Capacity and compliance:** registration, audits and reporting requirements are designed for formally registered companies, which waste pickers may lack the capacity to meet unless supported.
- (e) **Social and gender issues:** the regulations don’t address inclusivity and workers’ welfare.

Textile Waste and Second-Hand Clothes

Legislative aspects

The pivotal instrument for textile waste recovery is the Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024 (Republic of Kenya, 2024). Textiles fall within the mandatory EPR regime because they are listed in the First Schedule, item 5, among “non-packaging items”, together with leather, artificial hair, nappies and sanitary pads, and others (First Schedule). As a consequence, every producer, including second-hand importers (Republic of Kenya, 2022, section 2), must register with NEMA, set up or join an EPR compliance scheme, take financial, organisational and physical responsibility for its post-consumer products, and design products that facilitate reuse and recycling (reg. 5(1)(b)–(g)). Every importer of finished products listed in the First Schedule must obtain an EPR import certificate and pay a fee per item at the point of importation (reg. 6(1)–(2) and First Schedule). EPR fees in collective schemes must be set according, among other things, to recyclability and recoverability (reg. 18(1)(c)). Both the level of EPR fees and the taxes applied to imported containers of second-hand clothing are, as of August 2026, a live debate between stakeholders and decision-makers (Kenyans.co.ke, 2026; Radio47, 2026; Wanjiru, 2026; Hissen Global, 2026).

Kenya adopted the East African standard EAS 356-2024 on the inspection and acceptance of used textile products (EASC, 2024). Furthermore, within the framework of the Basel Convention, Kenya is promoting stricter criteria and internationally standardised procedures to prevent the improper export of textile waste within second-hand clothing containers, a demand also being made by Ghana, Nigeria, and a group of European countries led by France (Oltreilgreen 24, 2025).

However, the adoption of standardised, internationally recognised procedures to distinguish second-hand clothing from textile waste appears useful only for reducing the share of unwearable items caused by fraud and inaccuracy, provided strict controls are in place. It cannot, on its own, prevent the presence within bales of wearable items that do not match the specific needs of a given market channel, a problem solvable only through quality-cycle procedures, nor can it prevent the normal, structural unsold share inherent to any commercial activity, including second-hand clothing, which cannot be prevented but only properly managed, by improving recovery and disposal standards.

Quantitative Data (Existing Literature)

The quantity of textile waste generated in Kenya remains unknown; not even a reliable order of magnitude exists. The existing estimates are polarised and partial, and both opposing versions focus on estimating what share of imported second-hand clothing becomes waste before being sold. The lack of consensus on this figure is a serious problem, given that producers' EPR obligations will be measured against it.

On one hand, there are inferences based on second-hand clothes street-sellers' statements about a large share of unwearable items they buy from wholesalers and importers. This share is estimated at between 20% and 50% by the Changing Markets Foundation (2023), and between 30% and 50% by Greenpeace (2022). Applying this share to the total national second-hand clothing imports, which exceeded 230,000 tonnes in 2024 (IEA, 2025), gives a range of between 46,000 tonnes (20%) and 115,000 tonnes (50%). The perceived reliability of this version was strengthened by numerous journalistic reports and environmental campaigns showing large volumes of textiles dumped in Kenyan landfills or rivers (for example, EIA, 2026; Lopes, 2020). This approach tends not to consider that unsold items from street-sellers could be diverted to other reuse or recovery channels before being destroyed or abandoned.

On the other hand, a study commissioned by the Mitumba Consortium Association of Kenya (MCAK, representing importers and wholesalers) states that the waste contained in imported bales of second-hand clothing is between 1% and 2%, based on a study by the Nairobi-based Information Research Solutions. This 1–2% estimate relies on a sample of 120 qualitative interviews with importers, wholesale suppliers and retailers of second-hand clothing, and relevant organisations; however, these interviews are not presented in a disaggregated way, so it is unknown what weight was given to each category of stakeholder. It is also striking that the 1–2% estimate is radically far from the street-sellers' statements collected by journalists, environmentalists and independent researchers. The study also states that 0.39% of all domestic waste generated by Kenyan households is textile waste, based exclusively on a survey submitted to East Nairobi end-consumers, who are assumed to be a sufficiently representative sample for the whole country (Information Research Solutions, 2023). MCAK subsequently stated that less than 5% of imported second-hand clothing becomes waste, accepting the possibility that textile waste generated by *mitumba* could be significantly higher than estimated in the Information Research Solutions study (Just Style, 2025).

The arithmetic consequence of this school of thought's estimates and statements is that between 2,300 tonnes and 11,500 tonnes are generated yearly by unsuitable *mitumba* content, and around 24,500 tonnes are generated yearly by households, assuming, arbitrarily, that domestic waste accounts for 70% of urban waste, which in Kenya is around 9 million tonnes a year. The total for Kenyan textile waste would therefore be between 26,800 tonnes (assuming 1% *mitumba* discard) and 36,000 tonnes (assuming 5%). However, the consistency of these results appears weak, given that in 2010 JICA reported that 1.89% of waste entering the Dandora landfill in Nairobi was textile waste, a share that the MCAK-commissioned study transfers to the current volumes handled at this landfill, concluding that the current daily stream of textile waste received is 85 tonnes (amounting to 31,000 tonnes a year). If the Dandora landfill alone, which serves only a portion of Nairobi, receives 31,000 tonnes, it is hard to imagine that the whole country generates a maximum of 36,000 tonnes. Furthermore, the 31,000-tonne figure for Dandora is probably an underestimate, because:

- (a) due to the fast-fashion exploit, per-capita textile waste is growing exponentially worldwide and faster than the general growth of waste (Wagaw & Babu, 2023). In the absence of specific data showing otherwise, it would be hard to assume Kenyan households behave completely differently.
- (b) the volume of imported second-hand clothing in Kenya has more than doubled in the last 15 years (EfD Initiative, 2025). It is logical to suppose that the related portion of unsold waste destined to landfill has also grown.
- (c) the unsold share of imported second-hand clothing in Kenya has supposedly growth more than proportionally to the growth in imports, due to fast-fashion exploit and and increase in low-quality Chinese bales (Business Daily Africa, 2024b) (Ogunmefun, 2024); so, the quantity of unsold waste destined to landfill has probably grown more than proportionally relative to the increase in imports.

In conclusion, it is highly probable that the textile waste volume currently received at Dandora is significantly higher than what was inferred starting from the 1.89% share provided by JICA in 2010, and that, in general, the country produces far more textile waste than can be inferred from partial data provided 16 years ago.

Taken together with the probable undervaluation, in the street-sellers' account, of the share of unsold items in imported bales (1–2% according to MCAK, against 20%–50% detected by other authors), it seems clear that the MCAK-commissioned study presents a substantial gap with reality.

A Methodologic Approach to Obtain Reliable Quantitative Data

Taking note of this contradictory body of literature, which on one hand tends to consider the unsold items automatically as disposed discards and, on the other, does not appear to provide solid data or arguments, a priority of the present research has been to examine in depth the qualitative aspects of unsold-item management in the *mitumba* markets, in order to identify the grounds on which actual waste generation can be measured.

A preliminary field analysis was conducted in April 2025 in the Gikomba, Muturuwa and Toi markets in Nairobi, where a casual sample of 15 street-sellers reported being unable to sell, on average, between 10% and 50% of the content of their second-hand clothes bales:

- (a) Seven of them stated 30%-40%; of these, three were selling generic garments, two were selling blankets and two were selling underwear¹.
- (b) Four of them stated 50%; out of them, two were selling blankets, one was selling socks and one was selling generic garments.
- (c) Four of them stated 10%-20%; all of them were selling T-shirts.

The 2025 preliminary sample is too small, on its own, to contribute to the debate on the quantity of unsold items, but it confirms the perception raised by ecologists, journalists and independent researchers that between 20% and 50% of the bale content does not meet the quality expected by street-sellers, their final buyers. However, unsold does not automatically mean “waste”.

Thirteen of the street-sellers interviewed in the Nairobi *mitumba* markets stated they deliver their unsold items to waste pickers active in their markets, paying a tip for the service work or paying nothing when the quality of the bulk was considered sufficiently high. One stated that they donate all unsold items to poor people in the neighborhood, and another stated that they carried the bulk directly to the market's collection point.

¹ In fact, the mitumba are full of used underwear, even though the law prohibits its importation (under the Kenya Standard KS EAS 356:2019: Used Textiles – Requirements for Inspection and Acceptance of Used Textile Products)

Part of the unsold items collected by waste pickers, in the street-sellers' account, was resold to other street-sellers, sold for use as wiping rags, or sold or delivered to upcycling artisans or to other artisans who use them to fill sofas and pillows. Extensive observation of the Gikomba market made it possible to document both the existence of many repair activities, mainly carried out by the same street-sellers who open the bales, and wide sectors of upcycling artisans and other artisans adding value to the unsold items provided by the street-sellers through the waste pickers, while producing a significant volume of textile discard (pictures 1, 2).



Picture 1 / Photo by Alfred Ayoro



Picture 2 / Photo by Pietro Luppi

It was also observed:



Picture 3 / Photo by Alfred Ayoro



Picture 4 / Photo by Alfred Ayoro

(a) the presence of different waste accumulation points at the markets, periodically collected by the public service and transported to the landfill (see picture 3).

(b) the significant presence of textile waste in the Nairobi River and on its banks, immediately beside the Gikomba market (see pictures 4).

A further preliminary visit, in the same period, was carried out to the Dandora and Likoni dumpsites in Nairobi and the Kiambu County dumpsite. In all cases, it was possible to observe a significant presence of textile waste among the unsorted discards (see pictures 5. 6), and waste pickers collecting, and in some cases washing, textiles that were still recoverable (see pictures 7).



Picture 5 / Photo by Alfred Ayoro



Picture 6 / Photo by Pietro Luppi



Picture 7 / Photo by Pietro Luppi

With a deeper understanding of the qualitative aspects, the picture becomes more complex and full of unknowns, as represented in the figure 1. This complexity was examined in greater depth in the further surveys and field visits carried out as a part of the present study, presented in the following sections.

Even so, this preliminary qualitative analysis was, on its own, sufficient to support the argument that the correct way to calculate the textile waste generated by the market is as follows:

- WM = textile waste generated in the *mitumba* market, defined as clothing that is destroyed, abandoned, or otherwise not recovered in any form;

- U = unsold second-hand clothing items;
- R_1 = the share of U diverted to recovery in other forms by waste pickers operating at the market;
- L_1 = the waste generated, in turn, by the recovery destinations receiving R_1 ;
- R_2 = the share diverted to recovery in other forms by waste pickers operating at the landfill, who receive market-derived textile waste both from market waste pickers and from the formal collection service;
- L_2 = the waste generated, in turn, by the recovery destinations receiving R_2 ;
- A = the share of unsold items abandoned in the immediate vicinity of the market by market waste pickers;
- B = the share of textile waste that ends up buried or incinerated at the landfill.

Formula

$$WM = U - R_1 - R_2 + L_1 + L_2 = A + B$$

The unknown factors in this formula can be established through different methods, but all of them require a deeper analysis of the activity of waste pickers, who are, in practice, the workers handling waste at each ring of this karst-like stream.

Players Interaction and Waste Sources in Downstream Supply Chain

The downstream of the imported second-hand clothes supply chain, after the first links composed of importers and bigger wholesalers, appears to be dominated entirely by the informal sector. This includes: a) minor wholesalers who, where they are involved, sell a reduced number of bales or open them to auction individual pieces; b) street-sellers and small shops; c) waste pickers active in the markets and i at the dumpsites; d) upcycling artisans, other artisans, and small vehicle repair workshops, who absorb unsold items directly from waste pickers at the market or at the dumpsites.

Figure 1 - Player interaction and waste generation in the downstream second-hand clothing supply chain

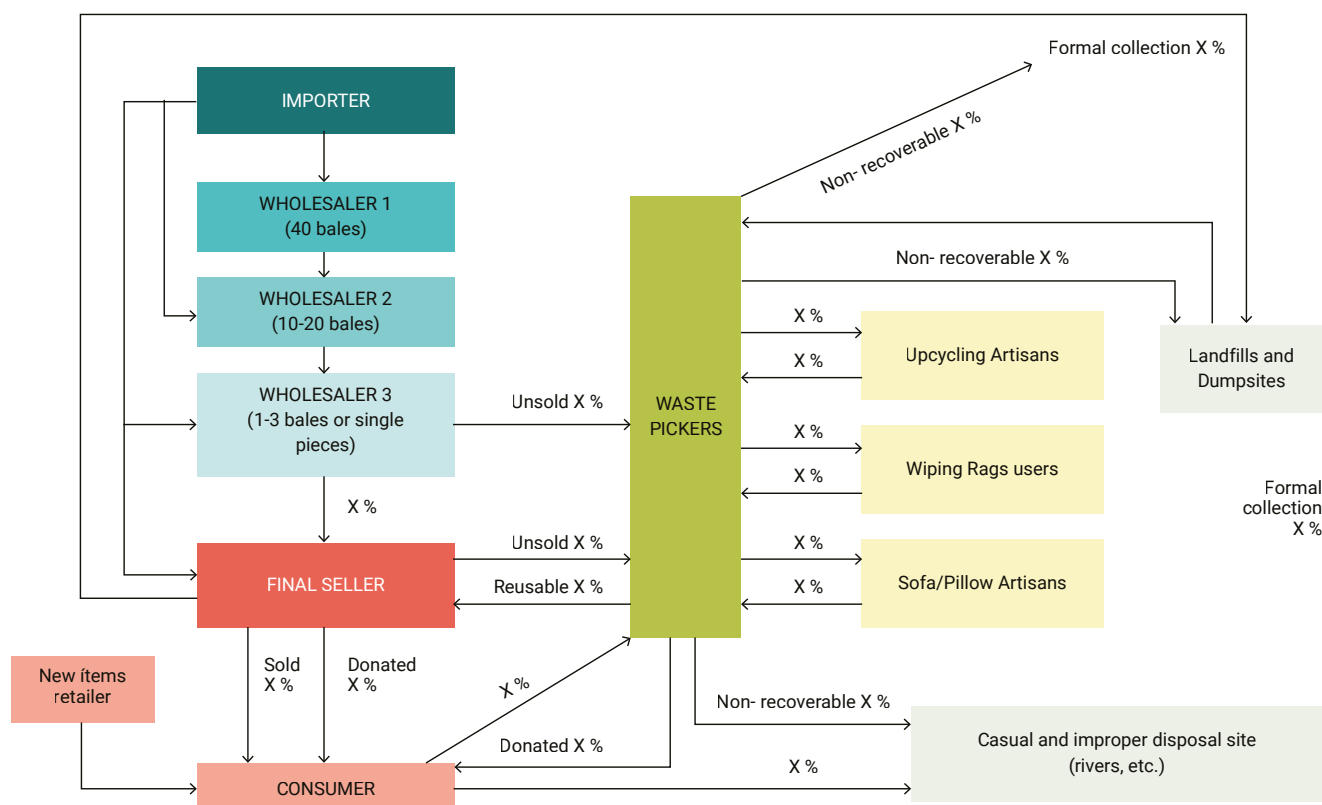


Figure 1 presents the downstream supply chain, describing the interaction between players and the destination of their recoverable and non-recoverable outputs, and highlighting that the waste volume they produce is unknown. To simplify the process flow, waste pickers are shown as a single block, but they in fact belong to distinct groups operating in different spaces: there are specific groups of waste pickers in the *mitumba* markets, others in the street and general markets, and others directly at landfills and dumpsites. Waste pickers collect the waste from street-sellers, or from landfills, dumpsites, and streets, and sell the reusable portions to street-sellers who can resell it at the appropriate quality. Artisans and wiping-rag users absorb part of the material collected and return the discards of their own activity to waste pickers; in some cases, as with upcycling artisans, these discards represent a significant share of the processed volume.

Causes of Textile Waste in Second-hand Clothes Supply Chain

The unsold items phenomenon has three distinct roots, which can be observed separately along the second-hand clothing supply chain:

- (a) Fraudulent presence of textile waste in the sorted bales: according to court cases and related press coverage, this practice is increasing due to the higher cost of textile waste incineration or disposal in exporting countries; placing waste in the bales is a way of avoiding the cost of managing it properly (Luppi, 2026). The main solution here relies on stricter customs controls in both exporting and importing countries, by police forces and by audit systems within the EPR frame.
- (b) Human error and imperfections in the sorting process: according to the study commissioned by MCAK, this is a physiologic problem (Information Research Solutions, 2023). However, its impact could be reduced by introducing effective quality cycle procedures, involving directly the informal street sellers who open the bales and the waste pickers who concretely handle the textile waste (Luppi, 2026).
- (c) Structural unsold: due to the normal dynamics of commercial rotation, similar to new-item supply chains (Luppi, 2026). In this case, the only viable solution is to track the downstream chain, regularising and improving its environmental and social standards.

The main victims of sorters frauds or mistakes are currently the street-sellers who open the bales, one of the weaker links in the chain. When the quality of the bales they purchase is lower than expected, they absorb the full cost of this non-conformity, risking not earning enough from sales to buy new bales, thus losing their source of livelihood and their families' means of survival (Luppi, 2015).

Improper disposal

The absence of proper environmental and social standards in the Kenyan landfills and dumpsites was widely reported and commented by studies and journalistic investigations, especially in the case of Dandora, that is the bigger Kenyan landfill (Changing Markets Foundation, 2023; Environmental Investigation Agency, 2026)

In the preliminary visit that was carried out in April 2025, in the dumpsites of Dandora, Likoni and Kiambu County, the existence of significant shares of textile waste was very evident, as witnessed by the [pictures 5, 6 and 7](#).

However, in the case of well identified and/or authorised sites the problem appears easier to settle because the perimeter on which focusing the improvement efforts is well known. The problem of improper disposal is harder to solve when the waste is burnt or abandoned in the vicinity of the places where it is generated. In the 2025 preliminary visit the existence of a big volume of discarded textiles in the Nairobi River, just beside the Gikomba market, was observed and documented ([see the pictures 4](#)).

A second visit carried out to the same site in June 2026, allowed to document that, after one year, the situation was not changed despite the introduction of controllers; it was verified that the personnel employed in controls was active only in the daytime, giving to the people who throw the waste the opportunity to do it in the night-time ([see the pictures 4](#))

Waste Pickers and Textiles

The role and condition of waste pickers involved in textile waste handling in Kenya were largely overlooked until recent years, when media scandals about improper disposal in Kenya and other African countries (especially Ghana) received global attention. Studies carried out by non-governmental organisations (NGOs), major stakeholders, environmental movements and international institutions, as well as journalistic reports, with different focuses and objectives, are increasing in number². For example, Changing Markets Foundation, in 2023, found that huge quantities of non-recoverable textile waste are burnt in dumpsites, causing breathing problems and asthma in waste pickers (Changing Markets, 2023).

One of the more extended and recent studies was carried out in Dandora by the Danish Environmental Protection Agency, in order to plan international cooperation interventions (Munkholm, 2025). This study analyses social and economic aspects of Dandora waste pickers' activity, finding that 66% collect textiles, including clothes, aprons, shoes, dolls, linens, pillows and carry bags. The amount collected ranges between two and three pieces and 30–90 kg sacks/bags of textiles each day. The prices vary. For instance, waste pickers mention to get KES 10–15 per piece of clothing or KES 300 for a 90 kg sack/bag of clothing; KES 150 per pair of shoes; KES 20 for a small doll and KES 50–100 for a big doll; KES 50 for a 90 kg sack/bag of linen; KES 20–30 per pillow (fibre filled); and KES 2–5 per kg of carry bags. Many waste pickers (27%) do not sell the textiles they collect, but wash and exchange these for household items or basins and buckets, or wash and wear these themselves, for example as for personal protective clothing.

Alongside documenting the difficult livelihood conditions and environmental importance of waste pickers, this study highlights the need to support them through targeted training, capacity building, and skills development. It also concludes that “there is a need for ensuring the representation and inclusion of waste pickers in policy development and decision-making that directly affects them to take into account their needs and concerns” (Munkholm, 2025).

The present study aims to bring an original and incremental contribution, focusing on the systemic role of waste pickers along the whole textile waste supply chain and examining more in depth their technical point of view.

To strengthen the analytical base, **two separate surveys were conducted**, reflecting the existence of different groups of waste pickers positioned along different links of the second-hand clothes supply chain.

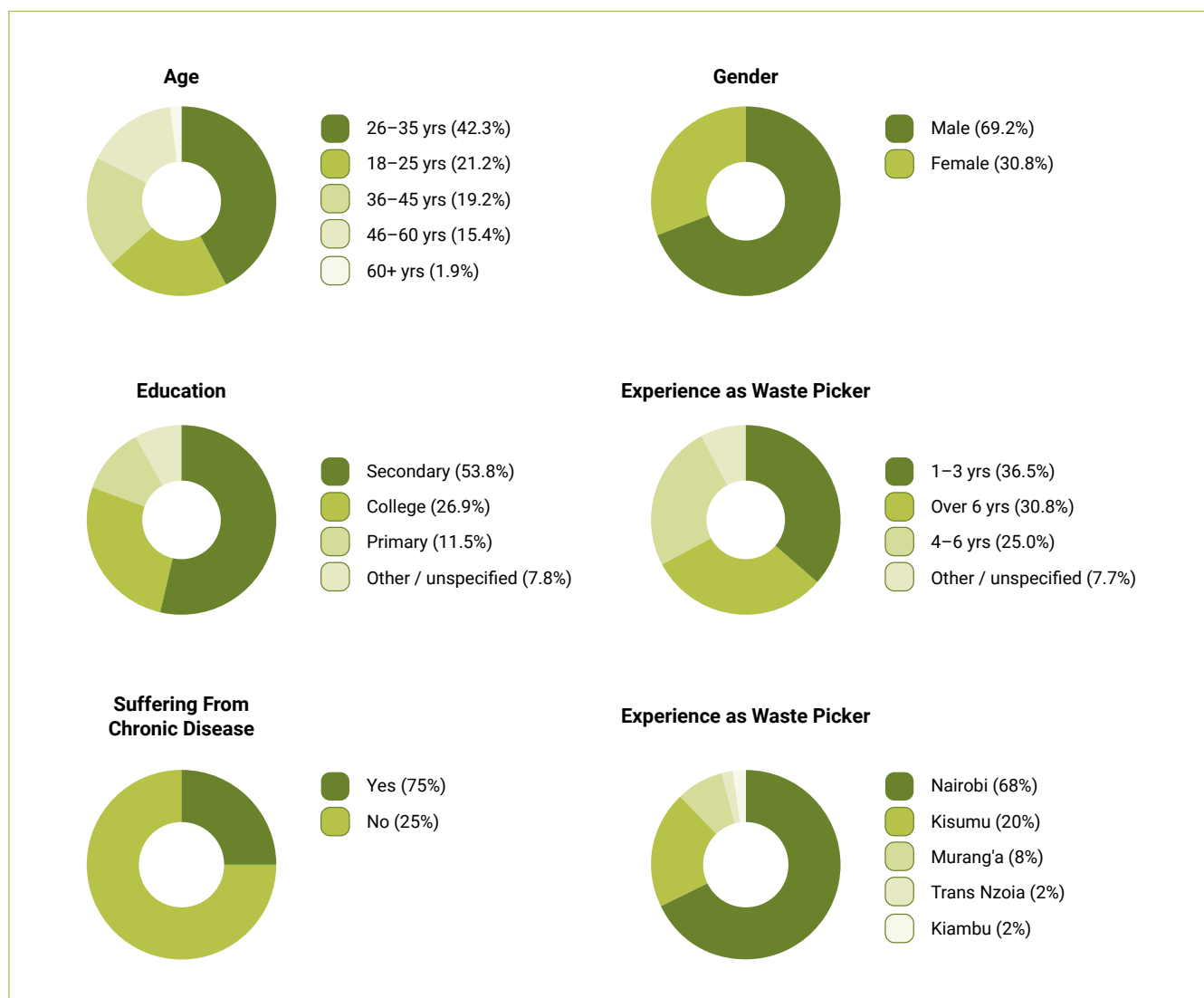
The first survey, hereafter “Survey A – not specialised”, was administered online in November and December 2025 to 52 waste pickers across a range of counties. These respondents are considered not specialised because they collect multi-fraction discards in dumpsites, households, general markets, schools, roadsides and streets, shops and factories. The second survey, hereafter “Survey B - specialised”, was administered face-to-face in June and July 2026 to 20 waste pickers who specifically work in collecting unsold second-hand clothing at the Gikomba *mitumba* market. This group is thought to handle the largest share of unsold imported second-hand clothing. In addition to the questionnaire, five waste pickers were interviewed in greater depth using a qualitative approach.

² The volume of studies became so high that, during the most recent field visits to Gikomba carried out as part of the present study, many waste pickers complained of being burdened by researchers, saying it made them “lose their time” without any concrete benefit resulting from their participation in such research activities. Dandora waste pickers, as the leader Solomon Njoroge reported, turned this situation into an immediate benefit, opening a small shop on site to sell upcycling creations to the growing number of “tourists coming from western countries” (notably researchers and NGO staff).

Survey A – not specialised

Of the 52 online respondents, 31 stated that they regularly pick textile waste. The results reported here (as shown in Figure 2) focus on this subgroup, 55% of respondents.

Survey A - demographic profile of respondents (n=52)



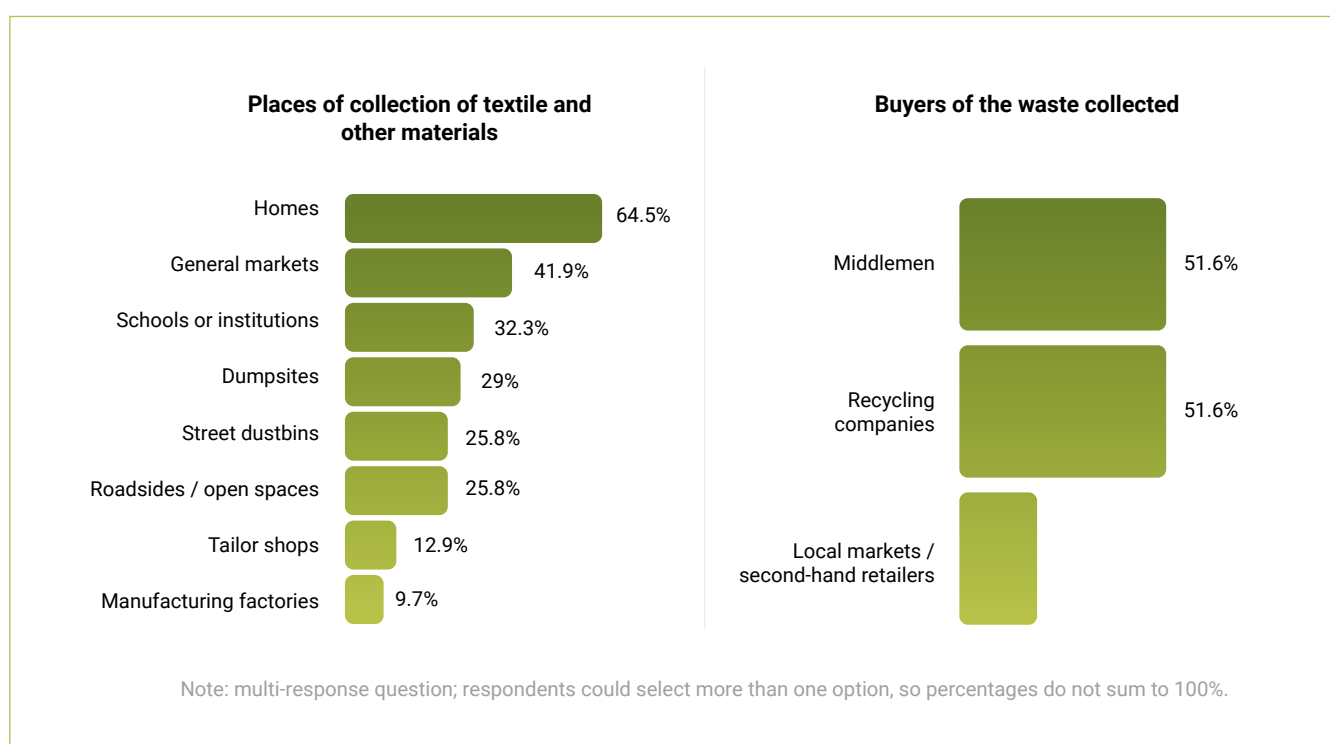
Operational and economic aspects:

- **Incomes:** Most earn KES 2,000–5,000 per month from selling waste materials (42%), followed by KES 5,001–10,000 (26%), less than KES 2,000 (23%), and more than KES 10,000 (10%). Average: approximately KES 4,790/month³, to which, in the case of collection in households, shops or factories, a tip is typically added.

³ Average values were calculated by assigning the midpoint of each response bracket to all respondents within that bracket (e.g., KES 2,000–5,000 → KES 3,500), multiplying by the number of respondents in each bracket, summing across brackets, and dividing by the total sample size. For the open-ended lower bracket ("less than KES 2,000"), a midpoint of KES 1,000 was assumed; for the open-ended upper bracket ("more than KES 10,000"), a conservative midpoint of KES 12,000 was assumed. As these are estimates based on categorical survey data rather than exact figures, the resulting averages should be treated as approximate.

- *Places or points of collection of textile and other materials (multi-response)*: homes (64.5%), general markets (41.9%), schools or institutions (32.3%), dumpsites (29.0%), street dustbins (25.8%), roadsides/ open spaces (25.8%), tailor shops (12.9%), manufacturing factories (9.7%).
- *Textile waste share out of the total waste collected (kg)*: less than 10%: 32.3%; 10–25%: 22.6%; 25–50%: 35.5%; 50–75%: 0%; 75% or more: 9.7%. The other fractions collected typically alongside textiles are plastic, glass, paper and metals.
- *Weekly quantity of textile waste collected*: less than 2 kg: 22.6%; 2–5 kg: 22.6%; 5–10 kg: 22.6%; 11–20 kg: 12.9%; over 20 kg: 19.4%
- *Able to sell collected textile waste*: only some types: 45.2%; not at all or not significantly: 35.5%; yes, most of it: 16.1%; not reported: 3.2%
- *Buyers of the waste collected (multi-response, general, not textile-specific)*: middlemen (51.6%); recycling companies (51.6%); local markets/second-hand retailers (19.4%)
- *Monthly income from textile selling*: 0 KES: 25.8%; less than KES 2,000: 38.7%; KES 2,000–5,000: 16.1%; KES 5,001–10,000: 6.5%; more than KES 10,000: 12.9%
- *What is done with textile waste that cannot be sold*: donated to other people: 58.1%; dumped: 29.0%; burnt: 16.1%; other: 3.2%
- *Upcycling activities*: 74% of respondents stated that they practice textile upcycling. This is probably, in most cases, a small-scale activity mainly for personal and family use.

Survey A – collection points and buyers (multi-response, textile-collecting subgroup, n = 31)



Survey A – income, sales and waste outcomes (textile-collecting subgroup, n = 31)



Survey A – headline figures (textile-collecting subgroup, n = 31)

KES 4,790

Average monthly income
from waste selling

Excludes tips, which were not recorded

74%

Practise textile upcycling

Mainly small-scale, for personal or family use

The picture emerging from this survey is of waste pickers collecting a range of waste fractions, including textiles, as part of an integrated activity. The identified split of textile-waste-share shows most respondents handle textiles as a minority stream, with over two-thirds collecting textiles at under 50% of their total volume. When collected directly from households, shops or manufacturing factories, the material picked is not necessarily recoverable. Income from selling reusable and recoverable materials, typically to middlemen, but in the case of second-hand clothing also to street-sellers or directly to end consumers through street hawking, is supplemented by other income or benefits covering the collection of unsellable waste, typically tips from the waste generator. In summary, waste pickers are paid to provide a collection service, and earn additional income from selling the reusable and recoverable materials they collect.

Regarding their earning, the average of approximately KES 4,790/month sits below the urban absolute poverty line (KES 8,006) and only slightly above the rural line (KES 4,358) (KNBS, 2022). This figure excludes tip income, which was not recorded.

This means waste pickers in this segment struggle with basic individual survival, and that their earnings are not enough to sustain a family. The extreme poverty found in this survey is consistent with the livelihood condition reported in the 2025 study by the Danish Environmental Protection Agency, which found that waste pickers with children active at the Dandora dumpsite often have to choose between food or sanitary expenses, or between food and school fees (Munkholm, 2025).

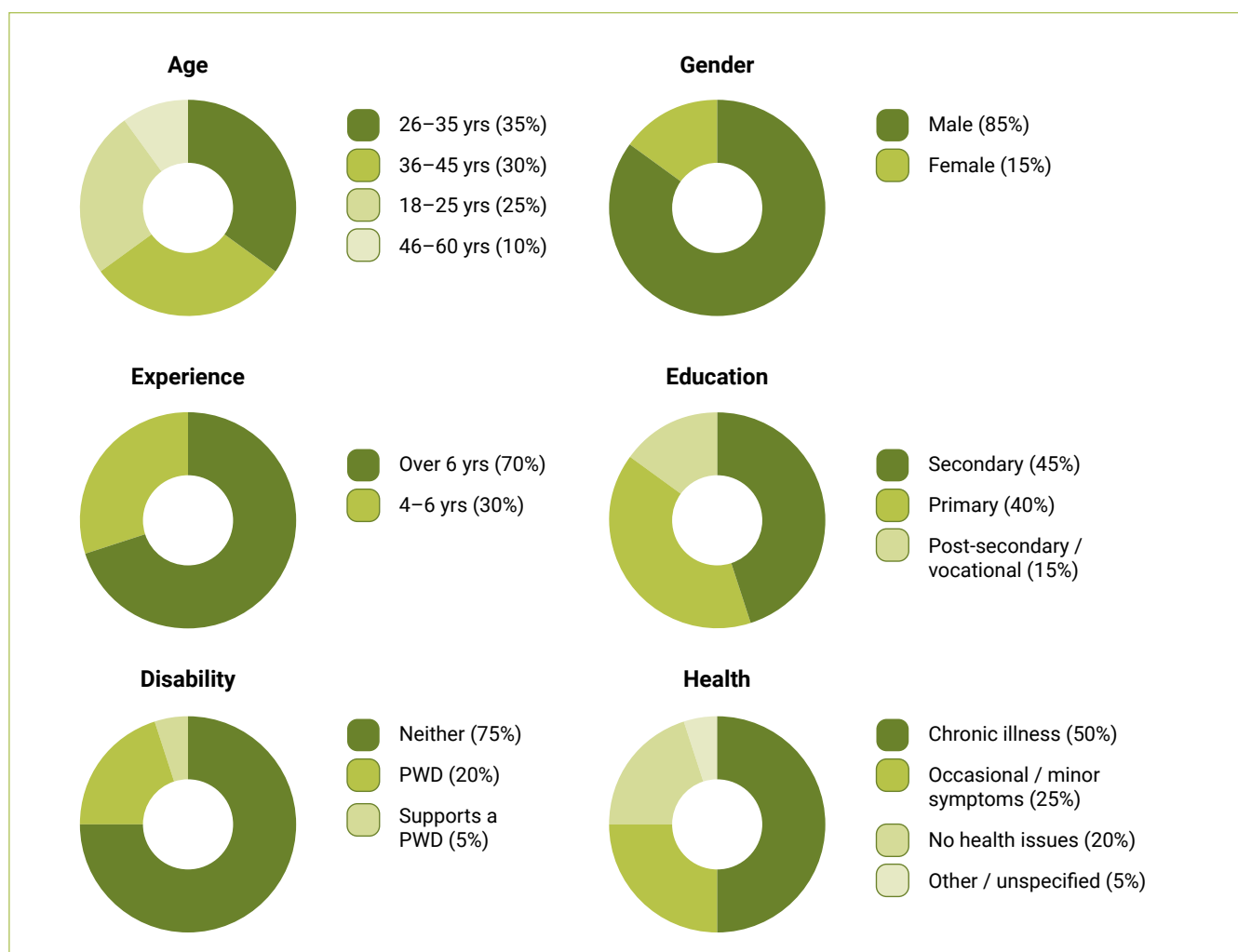
To give a concrete sense of what this income level means in practice: the upper end of the range observed in this survey, a monthly income of KES 20,000, is sufficient to cover, at most, a shared informal-settlement dwelling (a one-room unit or “shack” renting for as little as KES 2,500, or a one-bedroom flat at around KES 8,500, according to the 2023-24 KNBS Kenya Housing Survey), basic utilities, and food, but with little to no margin for healthcare emergencies, school fees or savings. This is consistent with documented household budget patterns among Nairobi’s low-income and informal-settlement residents (Eastleigh Voice, 2026). This is for a single individual; with two or three dependants, even this upper end of the segment would struggle with basic daily survival.

The health data further suggest that this precarity is compounded by occupational risk, as 13% of respondents reported having contracted a chronic illness specifically after entering waste picking, pointing to hazard exposure inherent to the activity itself.

Survey B - specialised

100% of the 20 respondents work in the Gikomba market, collecting unsold second-hand clothes.

Survey B – demographic profile of respondents (n = 20)

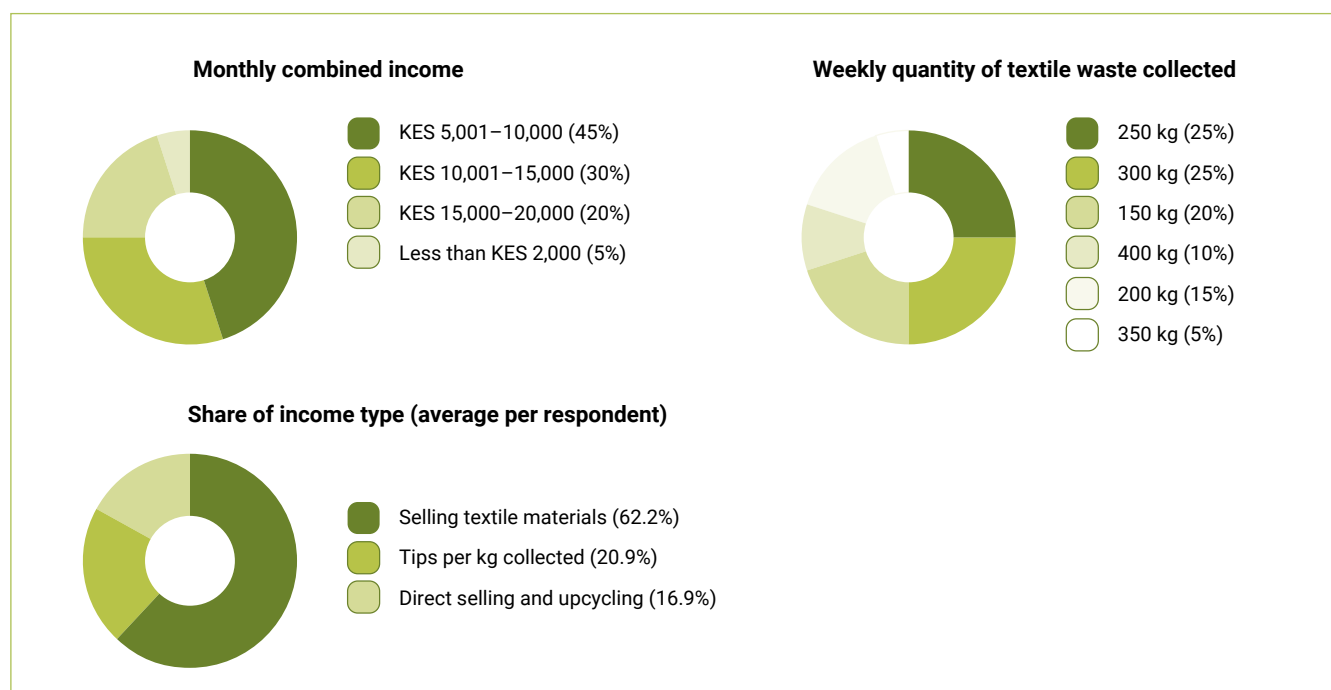


- **Age:** Most are aged 26–35 (35%) and 36–45 (30%), followed by 18–25 (25%) and 46–60 (10%); no respondents over 60.
- **Gender:** Predominantly male (85%), women (15%).
- **Experience:** Large majority have over 6 years of experience (70%), the remainder 4–6 years (30%); no respondents with less than 4 years.
- **Education:** Majority have secondary education (45%), followed by primary education (40%), and post-secondary/vocational education – diploma or certificate (15%). Three respondents (15%, across all education levels) reported having dropped out before completing their level.
- **Disability:** 20% are people with disabilities (PWD); a further 5% (1 respondent), while not a PWD themselves, lives with or supports one.
- **Health:** 50% explicitly report suffering from a chronic sickness or condition; a further 25% describe occasional or minor symptoms (such as chest cough and eye problems) without a clear yes/no answer; 20% report no health issues.
- **Incomes:** Combining income from textile selling, tips received per kg of waste collected, and additional income from direct selling and upcycling, most respondents earn KES 5,001–10,000 per month (45%), followed by KES 10,001–15,000 (30%), KES 15,000–20,000 (20%), and less than KES 2,000 (5% – a single outlier respondent with very low reported textile-selling income). Average combined income:

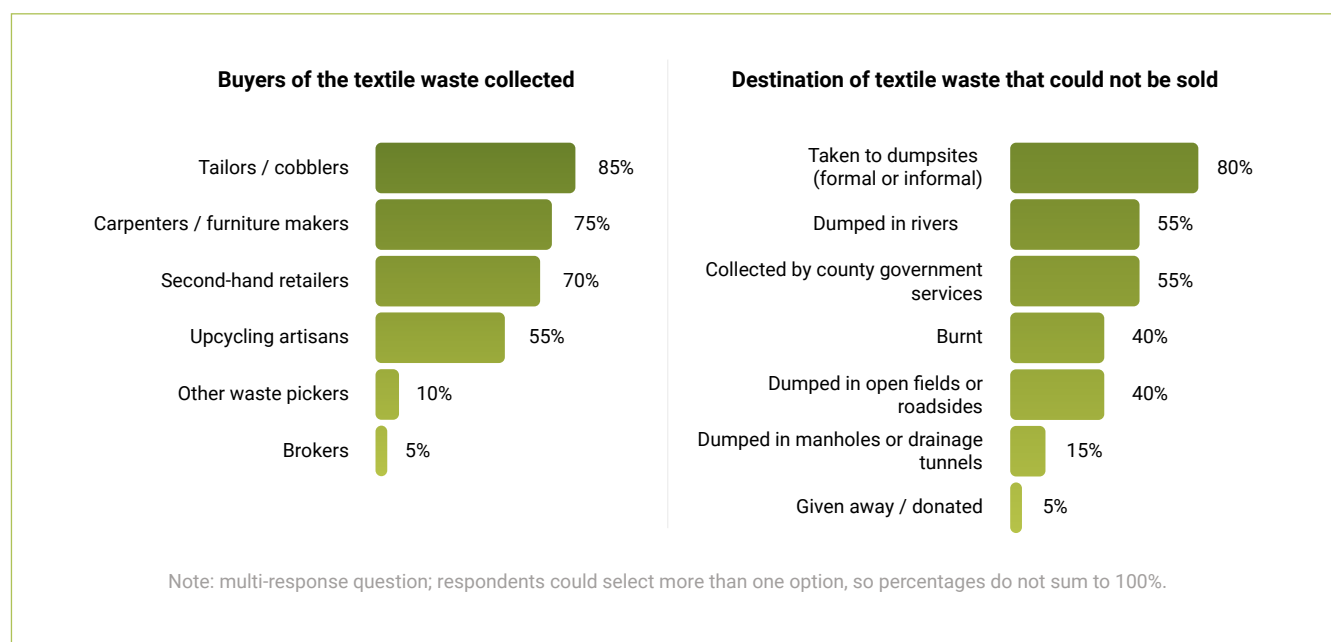
~KES 10,980/month (of which ~KES 6,580 from textile selling, ~KES 1,800 from tips, and ~KES 2,600 from additional direct selling/upcycling, on average)⁴.

*Operational and economic aspects:

Survey B – income and waste volume (n = 20)



Survey B – buyers and disposal of unsold textile waste (multi-response, n = 20)



⁴ The average value was calculated by summing the combined monthly income (textile selling income, tip income, and additional upcycling/direct-selling income) declared by each respondent, and dividing this sum by the total number of respondents.

Survey B – headline figures (n = 20)



- *Weekly quantity of textile waste collected:* 150 kg (20%), 200 kg (15%), 250 kg (25%), 300 kg (25%), 350 kg (5%), 400 kg (10%). Average: 255 kg/week.
- *Buyers of the textile waste collected (multi-response):* tailors/cobblers (85%); carpenters/furniture makers (75%); second-hand retailers (70%), upcycling artisans (55%), other waste pickers (10%), brokers (5%).
- *Share of income type (average % of total combined income per respondent):* selling textile materials to other players (62.2%); tips received per kg collected (20.9%); direct selling and upcycling (16.9%).
- *What is done with textile waste that was not possible to sell (multi-response):* taken to dumpsites, formal or informal (80%); dumped in rivers (55%); collected by county government services through bins, trucks, or allocated sites (55%); burned (40%); dumped in open fields or roadsides (40%); dumped in manholes or drainage tunnels (15%); given away/donated (5%).

However, 35% of this segment lives below the adult equivalent absolute poverty line in urban areas for adult equivalent, and most of the remainder lives slightly above it. The 20% top-earning segment reports monthly incomes between KES 15,000 and 20,000 monthly.

The key issues facing the specialised group reached by Survey B were explored in greater depth through five qualitative interviews. To protect respondents' anonymity, participants are referred to here as V, W, X, Y and Z. The results of these interviews are summarised in Tables 2 and 3.

Table 2 – Problems/Challenges posed by Gikomba Waste Pickers

Theme	Frequency	Summary
Lack of capital/access to credit	5/5	All respondents report being unable to expand their business or purchase higher-quality material due to lack of capital; some explicitly cite the absence of collateral-free loans
Low prices/market competition	5/5	Competition from new clothing and cheap imported products (particularly Chinese); an oversaturated mitumba market; low payments/selling prices.

Theme	Frequency	Summary
Low-quality/low-value waste	2/5	V and X report that collected material is often dirty, torn, or of low value. This point is directly related to the problem marked in the previous point (low prices).
Health problems/poor working environment	5/5	Recurring illness, bad smells, and inadequate or poor working environments
Discrimination	4/5	All but V report experiencing discrimination in the course of their work
Harassment/confrontations with county authorities	2/5 explicit (+1 implicit)	W and Z report this explicitly as a problem; for Major it can only be inferred from the proposed solution ("stop harassment"), not stated among the challenges
Lack of skills/industry knowledge	1/5	Only Z mentions this explicitly
No designated working space	1/5	Only Z

Table 3 – Possible Solutions/Improvements proposed by Gikomba Waste Pickers

Theme	Frequency	Summary
Training/capacity building	4/5	Unanimous request for training about solid/textile waste management and upcycling
Access to collateral-free credit	2/5	V and X explicitly request financial services or loans without upfront collateral
Financial literacy	2/5	W and Y request financial literacy programs (distinct from loan provision itself)
Affordable healthcare services	2/5	W and Y request affordable medical services
Recognition of their economic role	2/5	W and Y ask for recognition/appreciation of their economic contribution to the system
End to harassment by authorities	1/5	Only V states this explicitly as a proposed solution
Restrictions on imports of low-cost products	1/5	Only X proposes banning cheap Chinese goods and low-quality second-hand imports from Europe/China

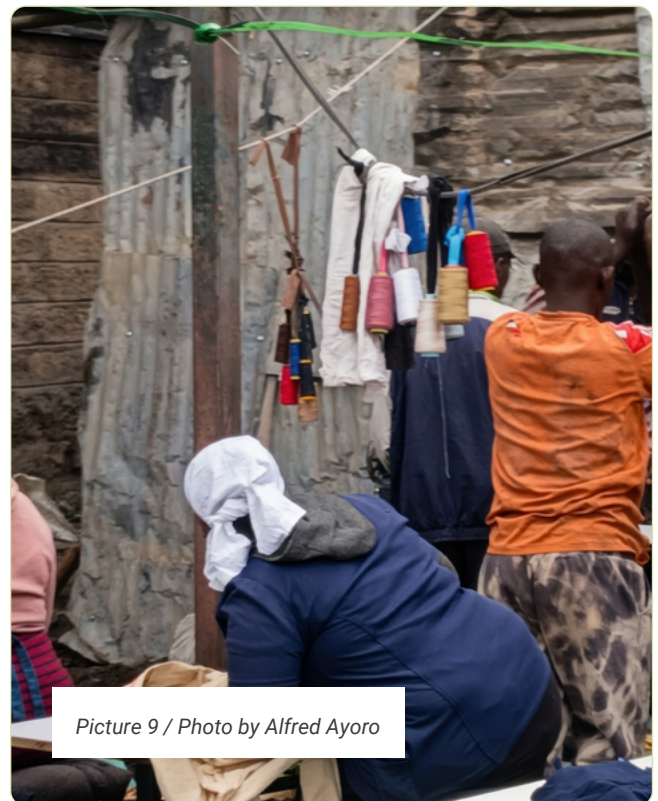
Upcyclers and Waste Pickers

Textile upcycling in Kenya has, in recent years, gained increasing visibility through a handful of formally structured enterprises that create high-end prices items, mainly for foreign markets. Africa Collect Textiles, founded in 2013 and fully operational since 2020, has built a collection network of over 40 donation bins across Nairobi, including within Gikomba market, and works directly with Gikomba vendors, purchasing their unsellable stock and transforming it into bags, rugs, and corporate merchandise for both local and international markets (Daily Nation, 2025; Africa Collect Textiles, consulted 25/07/2025). Rummage Studio, also operating since 2013, sources 95% of its core materials from Gikomba to produce handcrafted bags and accessories focusing on the export of its creations (Global Resilience Partnership, 2023; Rummage Studio, consulted 25/07/2025). Ramissa Beauty from Waste, similarly, sources used textiles and factory offcuts from the market to produce home décor items such as tote bags, duvets, tablecloths, and rugs (Threading Change, 2024).

However, these enterprises represent only the most visible tip of an incomparably much larger and undocumented informal upcycling economy, mainly active in second-hand clothes markets. Field visits conducted as part of the present study identified extensive sections of the Gikomba market hosting workshops and sales points entirely dedicated to upcycling, likely involving several hundred individual upcycling artisans, most of them women (see pictures 8, 9 10). Unlike the formal enterprises described above, these micro-operators work individually or in small informal groups, largely outside any registered business structure, and appear to have developed advanced design and tailoring skills through practice and peer learning rather than through formal training.



Picture 8 / Photo by Alfred Ayoro



Picture 9 / Photo by Alfred Ayoro



vendors, meaning they are technically both waste pickers and upcycling artisans. As observed in the field visits, the upcycling sector of Gikomba market mitigate the environmental impact of unsold second-hand clothing, but it also generates a significant volume of fabric waste, clearly visible in the aisles of the market where these artisans operate (see picture 2), and which end-up both in the Nairobi River (see picture 4) and at dumpsites (see picture 7).

Luppi and Patania highlighted that in Africa, professional upcycling is a massive and popular phenomenon, because production costs can be kept low for vendors to sell their products in a low price range. In the Global North, by contrast, professional upcycling reaches only insignificant volumes, with products mostly positioned at the elite end of the price range. Adopting popular prices would be difficult, or impossible, due to the high cost of artisanal work and the frequent need of having a stylist in the production line to evaluate single-piece solutions, since textile discards, especially post-consumer discards, are never homogeneous (Luppi & Patania, 2013).

As early as 2000, Hansen observed that upcycling in Africa is often a response to the “cultural colonialism” related to the use of second-hand clothes previously chosen by “white men” and designed thinking on “white men” tastes; with their original ideas, upcycling artisans adapt clothes, changing their design according to local culture, tastes and trends (Hansen, 2000).

The key issues of Upcycling Artisans operating in Gikomba market were deepened in 5 qualitative interviews. As before, to keep respondents anonymous, their names are replaced with letters: P, Q, R, S and T. The results of these interviews are summarised in Tables 4 and 5.

Table 4 – Problems/Challenges posed by Gikomba Upcyclers

Theme	Frequency	Summary
Low prices	4/5	P, Q, R and S all report low prices for products/materials
Poor-quality waste received	2/5	R and T report receiving low-quality material
Lack of market for products	2/5	Q and T report a lack of market for their products, partly due to competition (as reported in the point below)
Competition	2/5	P (competition from other upcyclers and new ready-made products) and T (market eroded by competition)
Lack of storage and dedicated working spaces	3/5	Complaining about the reduced space of their stalls, in an activity where they have to integrate storage of raw material, tailoring space and selling space
Poor working conditions	2/5	Q (“poor working condition/environment”) and R (“poor working conditions”)
Discrimination	2/5	T and S
Labour-intensive work	2/5	P and Q, implicitly suggesting that there is a disproportion between hours worked and economic earnings
Difficulty accessing loans/credit	1/5	Only T
Poor hygiene and sanitation	1/5	Only R
Harassment by county officials/landlords	1/5	Only S
Lack of recognition despite prior research / documentation	1/5	Only T (“lots of research done, pictures taken but no change”)
Exclusion from decision-making	1/5	Only T

Table 5 – Possible Solutions/Improvements proposed by Gikomba Upcyclers

Theme	Frequency	Summary
Ban/restriction on imports of locally-replaceable products	3/5	P (stop importation), R (“burn cheap Chinese imports”), T (import ban). Their statements are related both to imported fast-fashion, that compete with the prices of their creations, and the second-hand clothes imported by China, which quality is often too low to make upcycling interventions.
Improved working conditions	3/5	P, R and S
Recognition of upcyclers’ economic/social role	2/5	Q (recognition in the “blue economy”) and R (“market recognition”)
Government support/incentives	2/5	T and S
Training on relevant skills	1/5	Only Q
End to harassment	1/5	Only Q, who reported “constant harassments by county officials on working spaces”
Allocation of dedicated working spaces	1/5	Only T
Access to loans and credit	1/5	Only S

Solomon **Njoroge**, one of the waste pickers leaders of Dandora dumpsite, and member of the Advocacy Subcommittee of International Alliance of Waste Pickers, reported that thanks to **Danish international cooperation**, a group of waste pickers operating in Dandora received several kinds of training, including training to upcycle textile and other type of waste. A rising activity of upcycling among the waste pickers allowed them to open a small shop in the dumpsite, having as commercial target the growing number of “western countries tourists who visit the site” (referring to researchers, NGO people, etc.).

The Unequal Distribution of Costs In the System

It is evident that consumers in African countries, and in the other countries that import second-hand clothing, finance, through their purchases, the costs and profits generated within the international supply chain for textile waste and second-hand clothing. The money spent by these consumers flows back along the supply chain, financing, among other things, the profit shares of wholesalers, transporters, sorters, and collectors, both in exporting and destination countries. This money is often also used to pay profit shares allocated to solidarity projects and financial contributions to the municipalities that authorise textile waste collection within their territories. The money spent by end consumers also covers the cost of the increasingly stringent environmental standards imposed by institutions in exporting countries on upstream players operating within the waste management chain.

The costs paid by African second-hand consumers also include the disposal costs born by sorting plants, and the collection, transport and sorting of post-consumer recyclable material, whose market value is not sufficient to cover such operations. In some cases, sorting plants, in order to avoid disposal costs, deliberately put waste into the bales exported for reuse, shifting this environmental cost into importing countries and the final retailers who open the bales (Luppi, 2026).

Recently, market saturation, rising costs of collection and sorting, as well as the increasing share of non-reusable fast-fashion items, have led to an international crisis in the prices of second-hand clothes. This has obliged many municipalities to give up the fees they charged collectors, and, in some cases, to pay collectors a share of their operational costs (Luppi, 2026).

In general, the cost of fraud, mistakes and inaccuracy made in the sorting plants is shifted onto the final retailer (Luppi, 2015), but this is not the only hidden cost borne by the weaker players in the chain within importing countries.

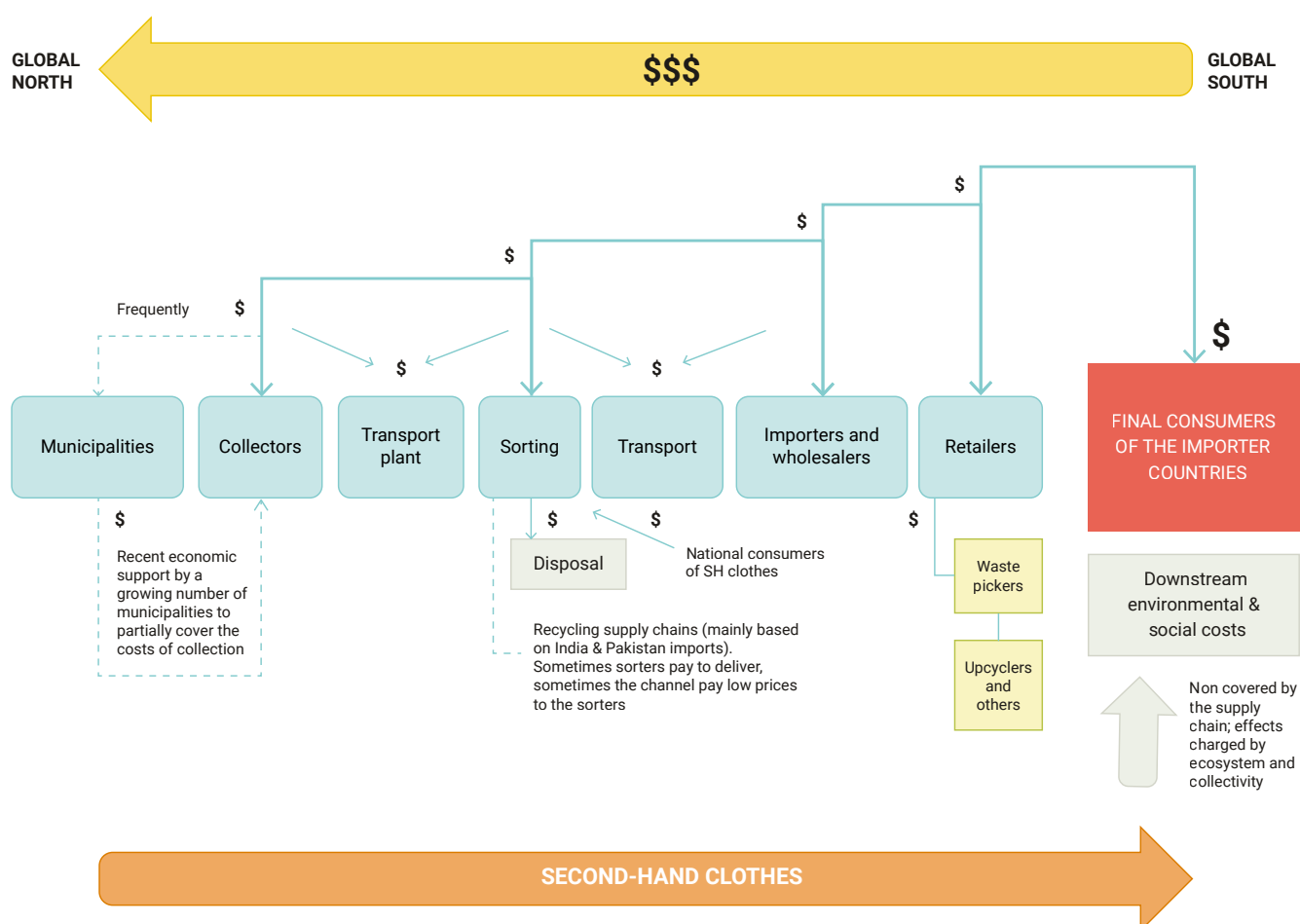
In general, these hidden costs can be grouped into three broad categories:

- (a) **Commercial losses due to non-conformity products.** Legislation normally imposes product warranty schemes under which the supplier bears responsibility for non-conforming goods, and the buyer is entitled to repair, replacement or a refund. In Kenya, the Consumer Protection Act imposes the suppliers to warranty “reasonably merchantable quality” (Consumer Protection Act, Cap. 501, s. 5) (Republic of Kenya, 2012). However, in the case of mitumba bales, this protection is not enforced. Bales are sold sealed, with buyers unable to inspect their content before purchase, and the quality grading applied is self-declared by suppliers in a context where heterogeneity of the items makes claims open to interpretation and difficult to verify. The supply chain further spans multiple international intermediaries, from sorting plants abroad to local wholesalers, with no direct contractual link, or written agreement of any kind, connecting the original packer to the final retailer. As a result, the cost of non-conformity is absorbed entirely by the last and weakest player in the chain: the street-level retailer.
- (b) **Waste pickers work conditions.** The earnings of most waste pickers, despite their hard daily work, sit around or below the absolute poverty line. In other words, they are effectively subsidising, through underpaid and unsafe work, the handling of unsold items and the collection and transport of the resulting textile waste. Under these conditions, they cannot be expected to also absorb the cost of a correct disposal of what is not recoverable, or the costs of formalisation, record-keeping, traceability, and so on.

- (c) **Environmental and sanitary costs charged by collectivity.** The cost of management of textile waste generated downstream by the last link of the supply chain is paid by Kenyan taxpayers, and when this management is inadequate, the impacts affect both ecosystem and public health, especially at local level, though with effects on the global ecosystem and public health as well. The contingent costs of remediating the contamination, for example restoring the Nairobi River, are likewise borne by Kenyan taxpayers, or, in part, through voluntary *una tantum* contributions from international donors.

Figure 2 summarises the flow of the money along the international supply chain, highlighting that all costs are covered, backwards, by the money spent by the final consumer of second-hand clothing, who are mainly African and Global South consumers, including the costs of the public service of separate collection and management of textile waste in the cities of exporting countries, which are mainly Global North countries.

Figure 2 - The money flow in the international supply chain of second-hand clothing



Who Pays for the System's Losses?

The question that is now at the center of the sectoral debate is this: in a scenario that implements acceptable standards along the whole supply chain, and not only in exporting countries, who should bear the gap between the real costs and the price the final customers are currently willing to pay for second-hand clothing?

This question can be unpacked in three steps: first, identifying who could in principle pay; second, showing that these options largely collapse into two underlying sources; and third, examining the practical constraints on mobilising either source.

To cover the system's losses, there are, in principle, five possible financial sources: municipal waste management tariffs in exporting countries; municipal waste management tariffs in importing countries; EPR schemes in exporting countries; EPR schemes in importing countries; and supply chain players themselves, where these are made responsible for absorbing the costs of higher standards in an enforced control regime.

It is worth noting, however, that these five options are not as distinct as they may first appear:

- (a) Municipal tariffs are, by definition, borne by citizens.
- (b) EPR, which translates into an environmental contribution added to the final price of a product, is likewise borne by citizens (who are also consumers), in the form of an indirect consumption tax.
- (c) Supply chain operators will, in turn, tend to recover any increased costs by raising the price of second-hand clothing, with the final impact again falling on the consumer.
- (d) Both EPR-obliged producers and supply chain operators, insofar as they are unable to raise prices in line with the market, will have to cut into their profit margins instead.

In practice, these five options reduce to two underlying sources: the consumer (via tariffs, EPR fees or price increases) and the profit margins of producers and supply chain operators.

Figure 3 - Who pays for the losses of textile waste and second-hand clothes supply chain



The resolution of this puzzle therefore operates on two distinct levels: the strength of stakeholders in decision-making negotiations and the quality of the arguments they can put forward; and the systemic resilience and availability of the financing sources involved.

Regarding the latter, three key tensions can be identified:

- (a) EPR financing faces two conflicting pressures: how sensitive the final product's price is to changes (price elasticity), and how willing and able firms are to cut their profit margins to keep the final price acceptable to consumers. Reuse and recycling operators face a similar problem (giving up profit margins) when they must meet environmental and social standards not covered by any EPR scheme or municipal tariff.
- (b) The enforceability of tariffs or other environmental levies imposed on citizens.
- (c) The Global North–Global South tension: to what extent exporting countries, as opposed to importing countries, should bear the overall cost of implementing high standards across the supply chain.

These general tensions play out concretely in Kenya's case as follows:

- (a) Kenya has a national EPR scheme that includes textiles, imposing financial and operational obligations on those placing textile products on the market – including, among the obligated parties, importers of second-hand clothing (Republic of Kenya, 2024). Market conditions permitting, these importers will seek to renegotiate purchase prices with sorting plants in exporting countries, potentially reducing the revenues of the upstream supply chain and increasing that chain's need to draw on its own EPR funding and/or municipal tariff funding.
- (b) In the European Union, by June 2027 all its member States will be required to introduce textile EPR schemes, within a context of growing legislative and media attention to the downstream environmental impacts of exported goods (European Union, 2025). This potentially opens-up a synergistic and negotiated scenario between European exporting countries' EPR schemes and Kenya's own EPR scheme.
- (c) Australia, the United States, and the United Kingdom are all moving toward textile EPR (Australia already has a voluntary scheme; the US is beginning in some states; the UK is preparing one). China, through its new environmental code, adopted EPR as a general principle, and could, in the medium term, adopt its own textile EPR scheme. The EPR dynamic between Europe and Kenya could therefore serve as a pilot for a system that will sooner or later become generalised.

A nascent debate is emerging in Europe around Ultimate Producer Responsibility (UPR), which asserts the principle of extending producer responsibility to the downstream post-consumer waste chains, regardless of the country or region of the world in which they are located. However, Europe's own EPR legislation limits the costs that can be financed by the scheme to specific operations that do not include downstream second-hand distribution chains (European Union, 2025). One concrete, currently hypothetical mechanism for bridging this gap was outlined by the PRO created by Confindustria Moda – an industry association representing 37,000 made-in-Italy companies. The downstream contribution could occur indirectly: that is, the European PRO requires the sorting plants within its own managed supply chain to export exclusively to African supply chains that the PRO itself audits and verifies. Since these African chains will incur higher costs, in order to meet the imposed standard, sorting plants would have to apply proportionally lower sale prices to them, later recovering any resulting losses from the PRO. To prevent costs from escalating beyond reasonable limits, the PRO will seek to bring as many African supply chains as possible up to standard, so as to foster healthy competition among them, including with respect to the prices granted to sorting plants (Chezzi & Luppi, 2026).

A New Value Proposition From Waste Pickers' Sector

The evidence gathered throughout this study, together with the systemic role of waste pickers already documented above, support a re-framing of their position within the textile waste supply chain. This reframing runs from the recognition of their basic rights to the concrete organisational pathways through which their contribution can be structured and valued in the new circular scenario.

- 1. WASTE PICKERS AS RIGHTSHOLDERS.** Waste pickers are, first and foremost, rightsholders. Their inclusion in any reformed system is not a matter of discretionary policy choice, but a requirement of a “just transition”: a principle now formally recognised at the highest level of international environmental governance. In recent years, this principle was repeatedly adopted in UN resolutions and position papers (UNEA, 2022; UNEP, 2023).
- 2. WASTE PICKERS AS STAKEHOLDERS.** Once this foundational premise — their status as rightsholders — is firmly established, it must not be forgotten that waste pickers are also stakeholders: active players in the collection, reuse, and recovery chain, in which they occupy a key structural position. Without them, the system as it currently stands would simply not function, and no concrete plan or evidence supports the hypothesis of “replacing” them with radically different, large-scale-only systems. Their inclusion, therefore, should not be understood merely as a welfare measure. This concept had already been operationalised by the OECD, whose 2016 guidance on EPR explicitly frames the integration of the informal sector as a component of efficient EPR design, not merely a social add-on, noting that in emerging countries, excluding waste pickers from EPR planning makes the system less efficient (OECD, 2016). More recently, the OECD’s 2026 due diligence guidance on the recycling processes in the garment and footwear sector has extended this logic specifically to textile recycling, (OECD, 2026). To claim a rightful and active role in the new scenario, rather than a merely tolerated one, waste pickers must make explicit the advantages their inclusion brings to the system’s own objectives, in terms of both efficiency and effectiveness. In other words, they must develop their own specific and technically detailed **value propositions**.
- 3. RECOGNISING MICRO-SCALE FUNCTIONALITY.** In recognising the role of waste pickers, the role of the other informal micro-actors who share the same ecosystem must equally be recognised — street-sellers, upcycling artisans, and the many small craftspeople who recover textile material. It is necessary to overcome an implicit but influential assumption: that maximised environmental outcomes and high standards can only be guaranteed by systems dominated by large-scale actors. This is a flawed premise, unsupported by any evidence. An unbiased observation of the textile waste and the second-hand clothing sector shows clearly that the efficiency of the system rests on the synergy between microscale and large-scale operations.
- 4. OVERCOMING FRAGMENTATION THROUGH ORGANISATION.** Reconfigurations of specific sectors driven by public policy sometimes exclude micro-actors from the new scenario, simply because their fragmented scale does not favour concertation. Dealing and negotiating with thousands of micro-players requires a big effort and accurate social work, needs that are radically reduced when the players operate on a larger scale. This risk, however, does not apply when micro-players are well organised in trade associations and can speak with one voice, or with a moderate number of voices. Significant advancement in the livelihoods and positioning of waste pickers are achieved when their organisation also involves economic and operational aspects.

Kenyan waste pickers are more organised than waste pickers in most emerging economies. The promulgation of the 2010 Constitution paved the way for waste pickers and youth groups to organise themselves into groups, commonly referred to as Community Based organisations (CBOs), typically made up of 20-30 waste pickers. CBOs pay an annual subscription to the county government and are licensed to collect waste within a given geographical area. In other towns, such as Mombasa, Nakuru, Kisumu, Kitale and Nyeri, there are groups that cover the whole town. In larger counties like Nairobi and Mombasa, organisers bring together several CBOs. At national level, waste pickers' organisations include;

- Kenya National Waste Pickers Welfare Association (KeNaWPWA) launched in 2021: includes waste pickers in Nairobi, Mombasa, Kisumu, Nakuru, Kiambu, and other counties. It currently has 46,000 members, of whom 20,000 are women.
- Kenya Association of Waste Recyclers (KAWR), launched in 2017: consists of MSMEs, private sector recyclers, waste pickers in the informal economy, and promotes repair, refurbishment, composting and energy recovery.
- National Alliance for Circular Economy in Africa (NACEA): an umbrella initiative bringing together waste picker CBOs, recyclers and circular economy actors in Kenya.

This existing organisational density represents a structural asset largely absent in other national contexts.

5. TRACEABILITY AS A COMPETITIVE ADVANTAGE. Among the factors that typically drive micro-actors out of new scenarios there is the setting of standards achievable only through instruments applicable at large scale. Yet standards can equally, and probably more effectively, be achieved through instruments designed for microscale operation, for example, apps downloaded on basic devices to interact with Digital Product Passport. By virtue of their position within the supply chain, **waste pickers can become the sentinels par excellence of the waste's journey**, the true completion of traceability: the decisive factor that extends traceability to its finest, most granular level, shedding light on zones that even in the highly formalised Global North system have traditionally remained grey.

6. TWO POSSIBLE PATHWAYS TO PARTICIPATION. In practice, waste pickers' participation in the new scenario can follow two broad pathways, which may be applied alternately or, potentially, in combination, depending on local conditions and the organisational capacity of local waste pickers.

Path I consists of maintaining the current position within the supply chain, but with better pay and improved working conditions, funded by additional systemic resources (EPR, municipal tariffs, or other), that can be received directly by waste pickers and others informal actors, or land to them through other links of the supply chain. In this scheme the key tool to guarantee the benefits granted to waste pickers is traceability, if it is designed to identify and quantify their contribution (as well as the contribution of other micro-scale actors as the street sellers, the upcycling artisans and the other artisans who recover the textile unsold items).

This is the most immediately applicable option, with the most immediate benefits, where waste pickers lack the organisational capacity to structurally change their position in the chain.

Path II consists of a vertical expansion of waste pickers' role through their network structures – associative, consortium-based, or cooperative – which, together with other micro-operators (first and foremost street sellers), aim at moving up the value chain, offering exporters a “turnkey” value proposition that provides full assurance over the correct functioning of the downstream chain, while remaining competitive thanks to the capturing of new margins granted by the elimination of intermediary profit. In concrete terms, this could mean a consortium of waste pickers, street sellers, and upcycling artisans/small craftspeople directly importing containers of second-hand clothing, storing them in their own warehouses, adding value when it is possible, and creating tracked and recorded reverse logistics. An industrial plan of this scale naturally requires the involvement of professional managers, continuous training for all actors involved, capital and facilities and financing or credit. International cooperation could contribute through funding or other forms of support aligned with this vision of industrial development. This possible development could be easily integrated with the handling of other waste fractions, such as plastic, glass, paper, metals, etc.

Conclusions and Recommendations

This study set out to examine the systemic role of waste pickers in Kenya's textile waste and second-hand clothing supply chain, and to place their situation within a coherent account of how the sector's costs and benefits are currently distributed. Three findings stand out.

First, the scale of textile waste generated in Kenya remains genuinely unknown, and the polarisation between importer-commissioned estimates (1-5%) and civil society estimates (20-50%) is not a matter of measurement error, but of structurally different – and largely unverifiable – methodologies. Resolving this gap should be treated as a research and policy priority, since forthcoming EPR obligations will be calibrated against it. A general formula to make the correct calculation was proposed, and it involves the quantification of waste streams managed by the players that operate downstream handling the unsold items of street-sellers.

Second, waste pickers, together with street sellers and upcycling artisans, already perform, *de facto*, the core functions that an EPR-compliant recovery system is meant to finance, under conditions of precarity that in many cases fall at or below Kenya's absolute poverty line. Their inclusion in the formal system should therefore be understood not as a welfare concession, but as the recognition and fair remuneration of work already being performed.

Third, the international architecture currently taking shape – Kenya's own EPR regime, forthcoming EU textile EPR obligations, and parallel developments in Australia, the US, the UK, and China – creates both risk and opportunity. Absent deliberate design, rising standards and tools not implementable by waste pickers and other micro-scale players, could favour large-scale operators without increasing the efficiency and effectiveness of the system. On the other hand, building the new scenario taking into account the Kenya's existing tradition of CBO-based organisation and developing traceability tools suited to micro-scale operation, could potentially guarantee the full accomplishment of environmental standards and objectives in a more efficient way, improving at the same time the socio-economical aspects, especially the waste pickers' livelihood.

On this basis, the study recommends:

- (i) prioritising methodologically transparent research to establish reliable data for Kenya's textile waste stream, with a focus on what happens downstream to unsold items;
- (ii) explicit recognition of waste pickers within EPR regulations, including minimum compensation and health and safety standards;
- (iii) support for micro-scale traceability instruments that allow waste pickers to function as the chain's most granular monitoring layer; and
- (iv) exploration, where local organisational capacity allows, of consortia with street-sellers and other micro-players to move up in the supply chain, with technical and financial support from international cooperation.

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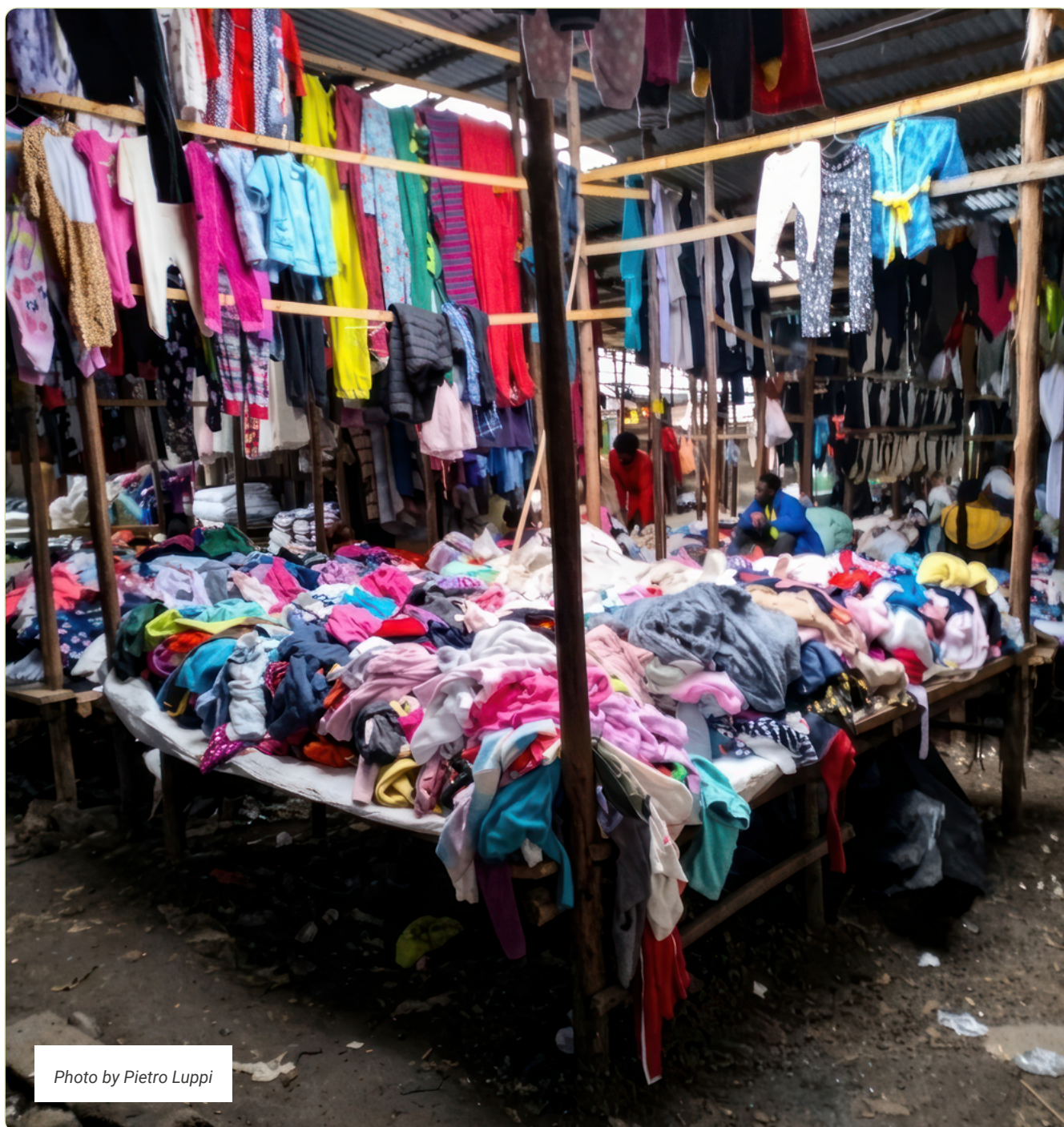


Photo by Pietro Luppi

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About the International Alliance of Waste Pickers (IAWP)

The IAWP is a democratic international union of member-based organisations of waste pickers spread across Africa, Asia Pacific, Europe, Latin America & Caribbean and North America, committed to advancing the rights and strengthening the organising of waste pickers. Learn more <https://wastepickersinternational.com/>





Photo by Pietro Luppi



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