STYLE HOUSE FILES

# PROJECT IRAPADA.

Mapping Textile Waste in Lagos —- Volumes, Flows, and Circular Pathways

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# Executive Summary

This study presents the first systematic mapping of textile waste flows in Lagos, Nigeria. It combines field surveys, waste audits, and stakeholder interviews to estimate the **volume, distribution, and management of textile waste** across markets, garment factories, and households. The findings provide a baseline for policymakers, industry leaders, and civil society to design interventions that reduce waste and capture value through circular economy approaches.

## Key Findings

### Scale of the Problem:

Lagos generates an estimated **21,684 tonnes of textile waste every month** (≈ **260,000 tonnes annually**).

- Markets contribute ≈ **38 tonnes per month**.
- Garment factories and workshops contribute ≈ **106 tonnes per month**.
- Households and consumers dominate, generating ≈ **21,540 tonnes per month**.

### Hotspots:

Textile waste is geographically concentrated in:

- Very **high hotspots** – major markets (Balogun, Katangua, Oshodi) and tailoring clusters.
- High **hotspots** – mid-sized garment clusters and landfills (especially Olusosun).
- Moderate **hotspots** – residential estates with high clothing consumption.

### Waste Flows:

Textile waste in Lagos follows a **linear trajectory**: from production and consumption directly to landfill. Informal reuse and resale practices exist but remain fragmented and unsupported.

- **Management Practices:**

- **Reuse & Upcycling:** Present but small-scale, often led by designers or communities.
- **Recycling:** Almost non-existent due to lack of infrastructure.
- **Landfilling:** The dominant disposal method, mixing textiles with general waste.

- **Challenges:** The textile waste system is constrained by:

- Lack of infrastructure and collection systems.
- Weak economic incentives for recycling or recovery.
- Limited regulatory frameworks (no producer/importer responsibility).
- Low public awareness of textile waste impacts.

## Strategic Opportunities

The findings highlight **entry points for small, scalable interventions** that empower local actors while laying the foundation for system-wide change:

- **Fashion Houses & Designers:** Support circular design, offcuts reuse, and digital exchange of surplus fabrics.
- **Garment Factories & Workshops:** Create collection hubs for offcuts, pilot low-cost recycling technologies, and establish voluntary codes of conduct.
- **Consumers & Households:** Raise awareness, normalise reuse/donation, and enable clothing swaps through digital and community platforms.
- **System-Wide:** Establish a central hub for textile transformation, incentivise recycling investment, pilot extended producer/importer responsibility, and adopt a shared industry code of conduct.

## Why It Matters

Textile waste is no longer a hidden issue in Lagos, it is a visible, growing challenge with environmental, economic, and social dimensions. Landfills like Olusosun are under strain, neighbourhoods contend with clogged drains and unsightly dumps, and valuable resources are being discarded rather than reused. The sheer volume, **nearly 260,000 tonnes per year** underscores the urgency of addressing this problem.

At the same time, textile waste represents an untapped **economic opportunity**. Pre-consumer waste streams from markets and factories are relatively clean and homogeneous, making them easier to recover and repurpose. Post-consumer flows, though more complex, reflect the scale of consumption and the cultural potential for reuse, repair, and upcycling. Globally, circular textile economies are generating billions of dollars in value , Lagos has the creative talent, entrepreneurial energy, and youthful population to carve out its place in this emerging sector.

Addressing textile waste is also a matter of **equity and local leadership**. Imported garments and fast-changing fashion cycles leave Lagos with disproportionate disposal burdens. Yet local designers, traders, communities, and informal actors already possess knowledge and practices that can form the basis of scalable solutions. Supporting these actors ensures that interventions are **context-appropriate, community-driven, and sustainable**.

In short, Lagos stands at a crossroads. Continuing on the current path will deepen environmental pressures and waste valuable resources. By contrast, investing in circular textile practices can **create jobs, reduce pollution, and reposition Lagos as a pioneer of sustainable fashion in Africa**.

This study provides the evidence base needed to make informed choices. It sets out the scale of the challenge, identifies waste hotspots and flows, and highlights practical entry points for action. The following report expands on these findings and explores in detail the pathways toward a more circular and resilient textile economy for Lagos.

# Introduction

The global fashion and textile industry is one of the largest generators of waste, with an estimated **92 million tonnes of textile waste** produced annually worldwide. Much of this material ends up in landfills, incineration, or the informal economy, creating significant environmental and social challenges. While regions such as the European Union have begun to map and regulate textile flows, data on African megacities remains extremely limited.

Lagos, Nigeria, home to over **17 million residents** and a thriving fashion and textile economy, represents both a challenge and an opportunity. Rapid urbanisation, population growth, and the prominence of open-air markets, garment workshops, and informal recycling networks make Lagos a critical site for understanding how textiles circulate, are consumed, and eventually discarded. Yet despite its scale, no comprehensive study has mapped the volume and flow of textile waste in Lagos.

This research is the first of its kind to provide a **systematic mapping of textile waste flows in Lagos**, drawing on data from markets, garment factories and workshops, and households. By combining quantitative measurements with qualitative insights, the study generates an evidence base that can guide policymakers, industry actors, NGOs, and international partners in designing interventions for a more circular textile economy.

The objectives of the study are to:

1. Estimate the total volume of textile waste generated in Lagos.
2. Map the flows of textile waste across key sources and disposal pathways.
3. Identify geographic hotspots and systemic bottlenecks in collection, reuse, recycling, and disposal.
4. Provide strategic recommendations for policymakers, private sector actors, NGOs, and the fashion industry to reduce waste and unlock circular opportunities.

By offering robust data and actionable insights, this study contributes to filling a critical knowledge gap and positions Lagos at the forefront of Africa's transition towards circular fashion systems.

# Methodology

This study adopts a **mixed-method, field-driven, and stakeholder-centered approach** to map the generation, flow, and management of textile waste in Lagos State. It integrates quantitative surveys, on-site audits, qualitative interviews, and geospatial analysis to produce the first systematic evidence base on textile waste in Lagos.

Field data collection was conducted between 28 July and 14 October 2025, covering major textile markets, garment factories, and household waste sites across Lagos. This period captures a stable production and trading window, offering a representative snapshot of textile waste patterns ahead of the peak festive season.

## Project Objectives

The methodology was designed to achieve five objectives:

1. Map textile waste generation by volume in major markets across Lagos.
2. Conduct factory and workshop audits to quantify pre-consumer waste streams.
3. Identify and profile both formal and informal actors engaged in textile waste handling.
4. Engage stakeholders across the value chain to understand practices, needs, and opportunities.
5. Provide actionable recommendations and identify leverage points for circular interventions.

## Key Evaluation Questions

The study seeks to answer the following:

1. What is the volume and type of textile waste generated across Lagos State?
2. Who are the key actors in the textile waste chain, and what are their roles?
3. What infrastructure and practices currently exist, and where are the systemic gaps?

4. Where are the geographic hotspots for textile waste generation and disposal?

5. Which actors, markets, or zones hold the greatest potential for circular economy interventions?

## Scope

The research focuses on major textile hotspots in Lagos State, including markets (Aswani, Katangua, Oshodi, Balogun, Idumota, Yaba) and garment production clusters (Surulere, Obalende, Ikeja). Data was also collected from Olusosun landfill through collaboration with the Lagos Waste Management Authority (LAWMA).

## Data Collection Methods

Data was collected through four complementary approaches:

1. **Market Mapping and Field Observations** – on-site assessments of textile flows, waste hotspots, and informal actor participation.

2. **Factory and Workshop Audits** – structured assessments of pre-consumer waste, including offcuts, sample rejects, and unsold garments.

3. **Interviews and Focus Groups** – key informant interviews with designers, traders, tailors, and waste pickers, alongside multi-stakeholder roundtables.

4. **Surveys** – structured questionnaires with tailors, traders, factory operators, and households to quantify waste volumes and disposal habits.

## Sampling Strategy

- **Purposive Sampling**: applied to expert stakeholders such as designers, factory owners, and industry leaders.

- **Random Sampling**: used for market actors, stratified by location and product type.

- **Snowball Sampling**: employed to reach informal collectors and actors without formal listings.

A total of **920 respondents** were engaged across multiple sites: 665 market surveys, 10 factory/workshop audits, 231 consumer surveys, and 14 stakeholder roundtable participants. **Table 1** presents the market respondent distribution by location, while **Table 2** summarises participation by category.

## Table 1

*Market Respondents by Location*

| Location | Number of Respondents |
|---|---|
| Agege | 20 |
| Aswani | 30 |
| Balogun | 77 |
| Bariga | 20 |
| Idumota | 53 |
| Ikeja | 24 |
| Ipaja | 35 |
| Katangua | 40 |
| LAWMA (Olusosun Landfill) | 4 |
| Obalende | 58 |
| Surulere | 93 |
| Yaba | 120 |
| Oshodi | 91 |
| **Total** | **665** |

**Table 2**

*Respondents by Category*

| Category | Number of Respondents |
|---|---|
| Market Survey | 665 |
| Factory Houses & Workshop Audits | 10 |
| Consumer Survey | 231 |
| Stakeholder Roundtable | 14 |
| **Total** | **920** |

## Data Analysis Plan

- **Quantitative Analysis**: descriptive statistics on waste volumes, frequencies, and types; extrapolation techniques to estimate total volumes at city scale.
- **Qualitative Analysis**: thematic coding of interviews and roundtable discussions, supplemented with narrative summaries and stakeholder quotations.
- **Spatial Analysis**: GIS mapping to identify geographic hotspots, highlight flows, and produce waste distribution maps for policy use.
- **Comparative Analysis**: contrasts between pre- and post-consumer waste streams, and between formal and informal handling systems.

## Aggregation and Extrapolation

Citywide textile waste estimates were developed by integrating three data streams: **households**, **markets**, and **garment factories/workshops**, each requiring a different method of extrapolation.

**Household waste** was estimated using the 2021 **LAWMA–UN Habitat Municipal Waste Composition Study**, which identifies textiles and shoes as **8%** of total household waste. With Lagos generating **7,944 tonnes/day** of household waste in 2021, this corresponds to **≈636 tonnes/day of textile waste**. To project to 2025, a **3% annual growth rate**—consistent with Lagos' population and waste-generation trends—was applied, resulting in a **13% increase** and a 2025 estimate of **≈718 tonnes/day**, or **≈21,540 tonnes per month**.

**Market-level waste** was estimated through field observations and key informant interviews with 665 traders across major textile markets. Waste volumes per trader were scaled using a conservative factor that reflects the size and density of Lagos' major market clusters. This produced a citywide estimate of **≈38 tonnes/month** of market-related textile waste.

**Garment factories and workshops** were assessed through audits of cutting waste, offcuts, and rejected production across ten mapped workshops. These samples were scaled using a multiplier reflecting the approximate concentration of small and medium garment-production hubs across Lagos, yielding an estimate of **≈106 tonnes/month**.

Together, these provide a comprehensive estimate of textile waste generation in Lagos for 2025. This balanced approach ensures that **household, market, and industrial textile flows** are all accounted for using transparent, source-appropriate scaling methods grounded in the best available data.

## Ethical Considerations

- Informed consent was obtained from all participants.
- Anonymity and confidentiality of responses were maintained.
- Data is stored securely and used strictly for research purposes.
- Culturally sensitive communication was ensured, including language support where needed.

## Risk Mitigation

- **Non-cooperation by informal actors:** addressed through trusted community intermediaries.
- **Inconsistent data reporting:** mitigated by triangulating findings across multiple sources.
- **Time constraints**: managed through parallel field teams and tight scheduling.

# Textile Waste from Markets

## Methodology

This section draws on data collected from **665 market respondents** across nine key markets in Lagos, complemented by insights from **14 stakeholders** who participated in roundtable sessions. Cross-sectional surveys were administered to traders, fashion houses, designers, waste collectors, and market associations. In-depth interviews were also conducted with selected respondents using a purposive sampling approach.

A significant share (82%) of market respondents selected "Not Applicable" when asked to estimate weekly textile waste volumes. This reflects the **high level of commercial reuse and recovery** within Lagos markets. Unsold fabrics and garments are routinely resold, repurposed, or reabsorbed into informal value chains, meaning most traders do not retain textile waste at all. The limited waste that does arise originates mainly from **fashion houses and small designers operating within market clusters**, who generate cutting waste and offcuts during production. Data from this subgroup formed the basis for the market waste extrapolation used in this study.

## Production Volumes and Waste Shares

Survey results indicate that the majority of market actors generate **little to no textile waste**, as most material, including unsold stock, and packaging, is fully commercialised through resale, clearance, or down-grading. The limited waste that does arise originates primarily from **fashion houses and designers located within markets**.

The majority of respondents produce less than 10 kg of garments or fabrics per week, and for most, less than 10% of that production is discarded as waste.

## Table 3a

*Weekly Production Volumes Reported by Market Respondents*

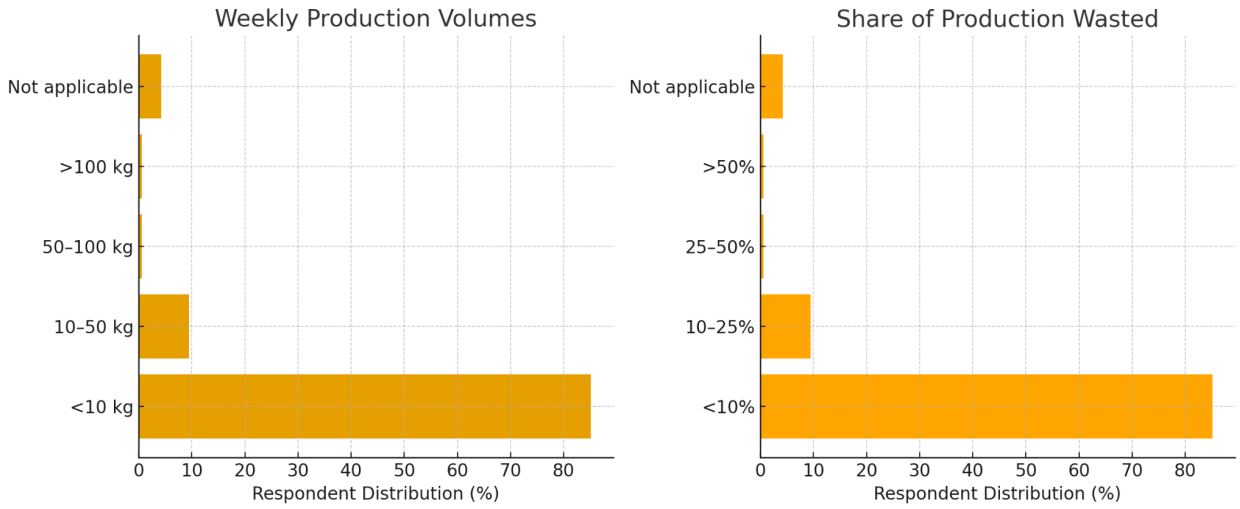
| Weekly Production Volume (kg) | Respondent Distribution (%) |
|---|---|
| < 10 | 85.1 |
| 10–50 | 9.5 |
| 50–100 | 0.6 |
| >100 | 0.6 |
| Not applicable | 4.2 |

## Table 3b

*Share of Production Reported as Textile Waste*

| Share of Production Volume Wasted | Respondent Distribution (%) |
|---|---|
| < 10% | 85.1 |
| 10–25% | 9.5 |
| 25–50% | 0.6 |
| > 50% | 0.6 |
| Not applicable | 4.2 |

***Figure 1.*** *Weekly production volumes and share of production wasted by market respondents.*




*Interpretation:*

- The vast majority of respondents produce **less than 10 kg/week**, and of this, **less than 10% is wasted**.
- Only a very small minority reported higher waste shares (>25%).
- This indicates that **markets themselves generate very little textile waste**, with exceptions mainly among embedded fashion houses and designers.

## Estimated Waste Volumes

- Using reported production volumes and waste shares, the analysis indicates that the **665 surveyed respondents generated approximately 944 kg of textile waste per week**.
- This is equivalent to **~3.8 tonnes per month** or **~49 tonnes per year** from the sample alone.
- While this quantity is relatively modest compared to other waste streams in Lagos, it provides a concrete baseline for understanding textile waste generation in markets.

## How Textile Waste is Generated

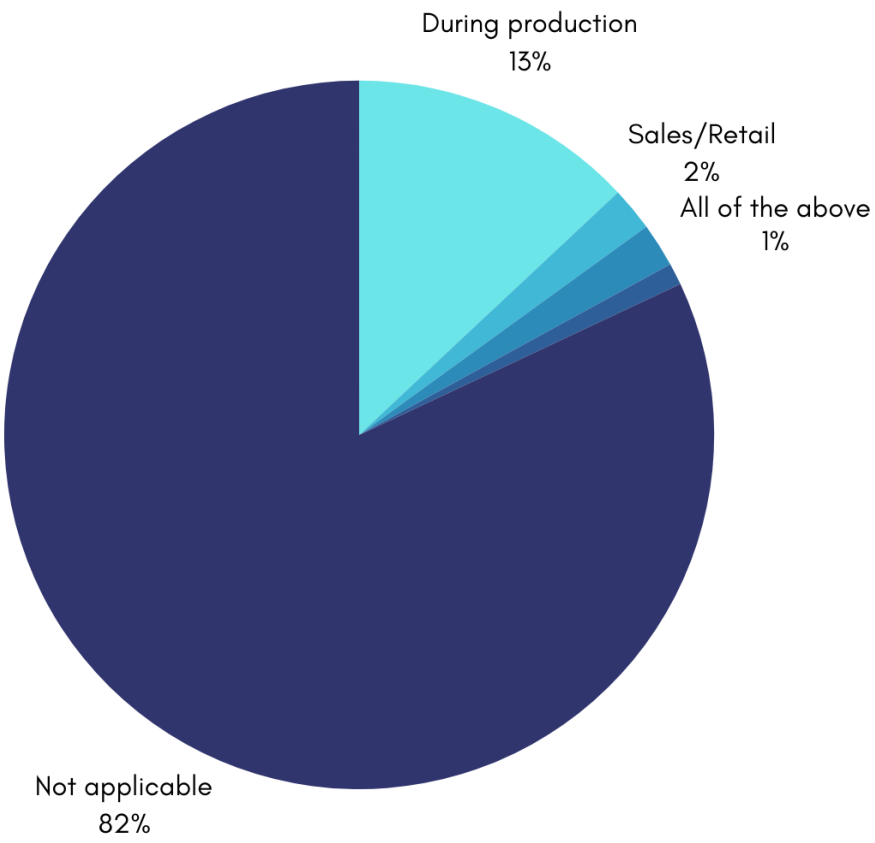
Across the sampled markets, most respondents reported that textile waste is generated **during garment production processes** carried out by fashion houses and designers within market spaces. By contrast, retail traders, second-hand clothing dealers, and fabric sellers reported little or no waste.

### Table 4

*Reported Sources of Textile Waste Generation by Activity Type (Aggregated Across All Markets)*

| Activity Type | Respondent Distribution (%) |
|---|---|
| During production | 13 |
| Sales/Retail | 2 |
| Unsold/Unused stock | 2 |
| All of the above | 1 |
| Not applicable | 82 |

***Figure 2.*** *Sources of textile waste in markets by activity type.*




*Interpretation:*

- **Production dominates**: 13% of respondents reported generating textile waste during garment production activities.
- **Retail and unsold stock are minimal**: Only 2% of respondents associated waste with sales activities, and another 2% with unsold or unused stock.
- **Mixed sources are rare**: Just 1% of respondents said waste arises across all activities.
- **Majority unaffected**: Over 80% reported "not applicable," showing that most traders and sellers do not generate textile waste.
- **Key takeaway**: Waste in markets is largely confined to **fashion houses and design workshops**, not to retail or resale actors.

## Tracking of Textile Waste

Most market-based fashion houses and designers reported that they **only occasionally track their textile waste volumes**. For second-hand clothing traders, fabric sellers, and waste collectors, this question was largely inapplicable, underscoring the informality of waste accounting in markets.

## Challenges in Managing Textile Waste

Fashion houses and designers cited the following as their main challenges:

1. Lack of access to recycling facilities.
2. Lack of information on waste management options.
3. Absence of a market for textile waste.
4. Cost implications of collection/disposal.
5. Lack of storage space.

## Awareness of Recycling Options

The majority of market respondents reported **no awareness of textile recycling options or facilities** available in Lagos. This knowledge gap further reinforces the limited capacity of market actors to divert waste away from disposal streams.

## Summary

- Textile waste in Lagos markets is minimal overall because **all fabric and clothing pieces – even down to clearance stock – are fully commercialised**.
- **Estimated waste** from the 665 sampled respondents is **~944 kg per week (~3.8 tonnes per month).**
- Significant **waste arises only from fashion houses and designers** operating inside market spaces.
- These findings suggest that interventions in markets should focus less on traders and second-hand dealers, and more on **supporting embedded fashion houses and designers** with recycling access, awareness, and infrastructure.

# Textile Waste from Garment Factories

## Methodology

This section draws on data from **waste audits and surveys conducted in 10 garment factories and workshops**, complemented by stakeholder interviews and focus group discussions. Audits provided direct measurements of waste streams, while surveys and interviews captured management practices, challenges, and levels of awareness.

## Volume of Textile Waste Generated

Across the sampled factories, production volumes totalled approximately **60,500 kg per month**, of which **10,571 kg (17.5%)** was discarded as textile waste. Waste streams consisted primarily of cutting scraps, defective materials, and unsold stock.

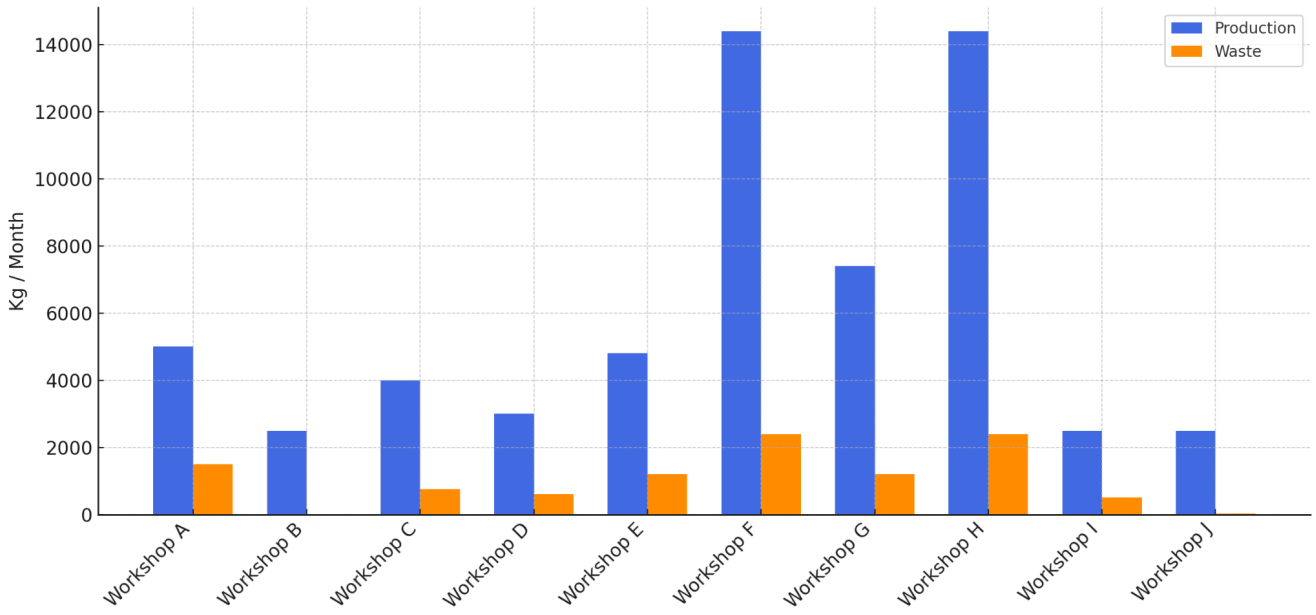
### Table 5

*Production Volumes and Textile Waste from Sampled Factories*

| Factory/Workshop | Production Volume (kg/month) | Waste Generated (kg/month) |
|---|---|---|
| Workshop A | 5,000 | 1,500 |
| Workshop B | 2,500 | 0.83 |
| Workshop C | 4,000 | 750 |
| Workshop D | 3,000 | 600 |
| Workshop E | 4,800 | 1,200 |
| Workshop F | 14,400 | 2,400 |
| Workshop G | 7,400 | 1,200 |
| Workshop H | 14,400 | 2,400 |
| Workshop I | 2,500 | 500 |

| | | |
|---|---|---|
| Workshop J | 2,500 | 20 |
| **Total** | **60,500** | **10,571** |

***Figure 3.*** *Monthly production volumes and textile waste across sampled garment workshops.*




*Interpretation:*

- Factories/workshops generated on average **17.5% of production as waste**.
- Larger workshops (E and G) accounted for the highest absolute waste volumes.
- Waste is **concentrated in fewer, larger facilities**, making these prime candidates for targeted recycling or recovery initiatives.

## Sources of Textile Waste

Waste originated mainly from **production activities**, particularly cutting and defective output.

### Table 6

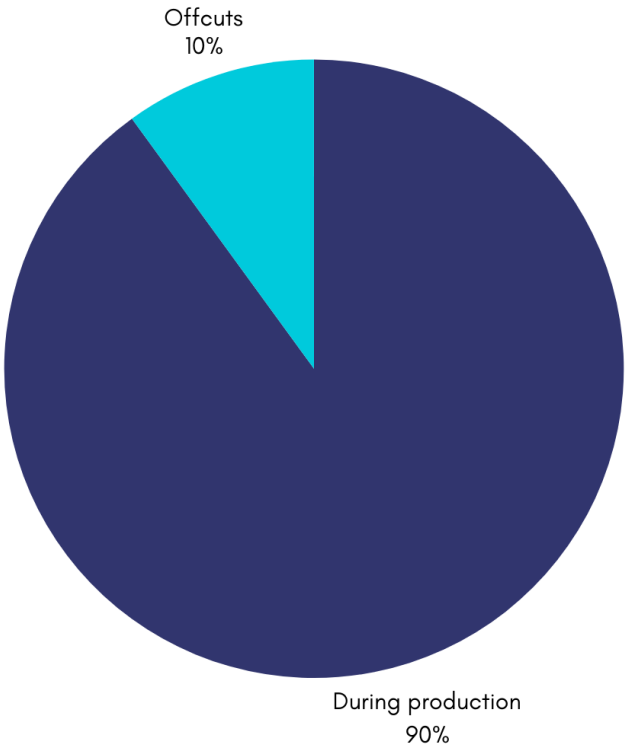
*Sources of Waste Generation (Selected Factories)*

| Factory/Workshop | Offcuts | Production Waste |
|---|---|---|
| Workshop A | — | Yes |
| Adire World Workshop | Yes | — |
| Workshop B | — | Yes |
| Workshop E | — | Yes |
| OSC Fashion Workshop | — | Yes |

***Figure 4.*** *Sources of textile waste generation in garment factories and workshops.*

*Interpretation:*

- **Production processes dominate** as the main source of textile waste.
- **Offcuts are relevant** in specialised facilities (e.g., Adire World).




- **No other significant sources** were reported (e.g., retail or storage losses).

## Awareness of Recycling Options

All surveyed factories and workshops reported **no awareness of existing textile recycling facilities or options in Lagos**. This underscores the **absence of communication channels, infrastructure, and support systems** linking production sites to recycling pathways.

## Qualitative Insights

Respondents emphasised the **scale and nature of factory waste:**

- A fashion entrepreneur and waste recycler noted:

  *"Fabric offcuts, defective materials, and discarded clothing are the most significant textile wastes from our industry… we cannot even upcycle some of them, so they end up as waste."*

- A sustainable brand founder highlighted the scale from T-shirt production:
  *"From T-shirt production alone, waste is massive. For us, in a week, we generate 50–70 kg just in ready-to-wear; orders of 1,000 T-shirts create even larger volumes."*

- A recycler working with multinational companies explained downstream uses:
  *"We break down waste fabrics into fibres for throw pillows, mattresses, furniture, and even automotive applications. However, current systems have not scratched the surface of potential."*

## Summary

- **Factories and workshops generate significant textile waste**, averaging **10,571 kg per month (~127 tonnes per year) across the sample.**

- This represents approximately **17.5% of production volumes**.

- **Waste streams are cleaner and more homogeneous** than market or household waste, making them highly suitable for recycling or industrial repurposing.

- **Awareness of recycling options is absent**, leading to informal or bulk disposal.

- A small number of innovative factories demonstrate potential pathways (lean production, reuse, recycler partnerships).

- Formalising factory–recycler linkages could unlock a **predictable, high-value feedstock** for Lagos' circular textile economy.

# Textile Waste from Households and Consumers

## Methodology

The household textile-waste estimate in this study is based on the **UN-Habitat × LAWMA Municipal Waste Factsheet (2021)**, which provides Lagos' most recent and reliable citywide assessment of household waste composition. According to the factsheet, Lagos generates 7,944 tonnes of household waste per day, of which textiles and shoes account for 8%. To reflect current conditions in 2025, this baseline was adjusted upward by 13% to account for Lagos' population growth and rising consumption patterns.

To complement this quantitative estimate, insights from **consumer surveys (231 respondents), focus group discussions, and community observations** were used to understand awareness levels, disposal behaviour, and the barriers that shape textile-waste generation across Lagos households. Together, these sources provide both the scale of household textile waste and the behavioural dynamics behind it.

## Textile-Waste Volumes (2025 Estimate)

Household waste in Lagos is diverse and reflects the city's high consumption patterns across food, packaging, and everyday consumer goods. Based on the 2021 municipal waste characterisation study supported by LAWMA and the United Nations, **textiles and shoes constitute 8%** of all household waste disposed at formal waste-disposal sites. Using the official 2021 baseline of **7,944 tonnes of household waste generated per day**, this translates into **635.52 tonnes of textile waste per day** at that time.

To align with 2025 reporting, this study applies a conservative **13% growth adjustment**, reflecting Lagos' documented annual increase in population and municipal waste generation. This produces the following updated textile-waste estimates for households in 2025:

- **≈ 718 tonnes of textile waste per day**
- **≈ 21,540 tonnes per month**
- **≈ 258,000 tonnes per year**

These figures demonstrate that textile waste generated by households and consumers in Lagos is substantial — representing one of the largest material streams in the city's waste system. Textiles form a core component of Lagos' waste challenge, driven by fast fashion inflow, high clothing turnover, and limited reuse or recycling pathways.

## Household Waste Composition at Disposal Sites

Household waste disposed at Lagos' formal disposal sites shows a diverse material mix, with textiles and shoes forming a significant share of the waste stream. Based on the 2021 LAWMA–UN Habitat municipal waste characterisation study, textile waste is consistently present and measurable within household solid waste.

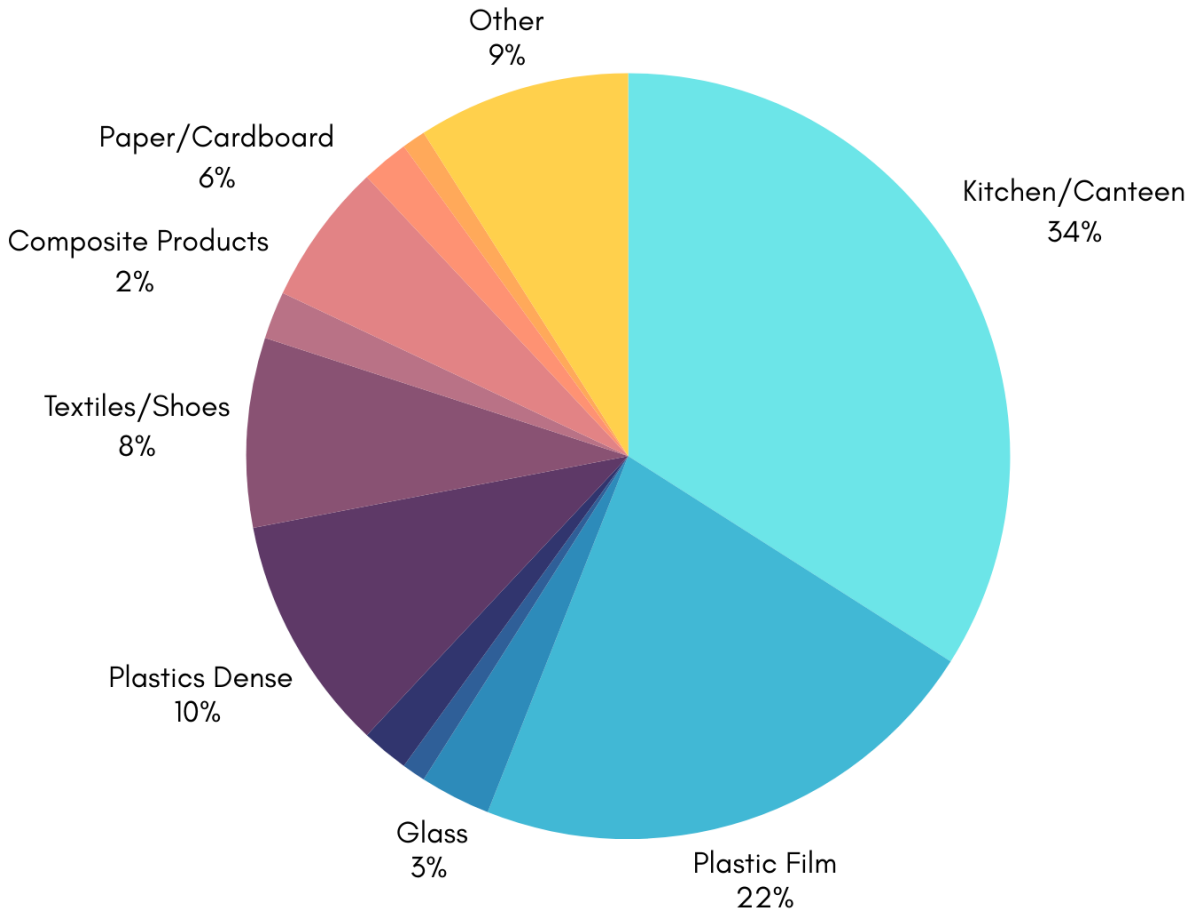
### Table 7

*Household Waste Type Distribution at Disposal Sites (Lagos, 2021)*

| Waste Type | Waste Distribution (%) |
|---|---|
| Kitchen/Canteen | 34 |
| Plastic Film | 22 |
| Glass | 3 |
| Special Wastes | 1 |
| Garden/Park | 2 |
| Plastics Dense | 10 |
| Textiles/Shoes | 8 |
| Composite Products | 2 |
| Paper/Cardboard | 6 |
| Metals | 2 |
| Wood (Processed) | 1 |
| Other | 9 |

| | |
|---|---|
| **Total** | **100** |

***Figure 5.*** *Waste type distribution at Disposal Sites (Lagos, 2021).*



*Interpretation:*

- **Textiles and shoes make up 8% of all household waste**—a steady and non-biodegradable stream within Lagos' waste system.
- The composition reflects **high clothing turnover**, driven by fast fashion, imported second-hand garments, and short usage cycles.
- With **limited repair, reuse or donation options**, most items move quickly into disposal, highlighting a clear opportunity for circular intervention.

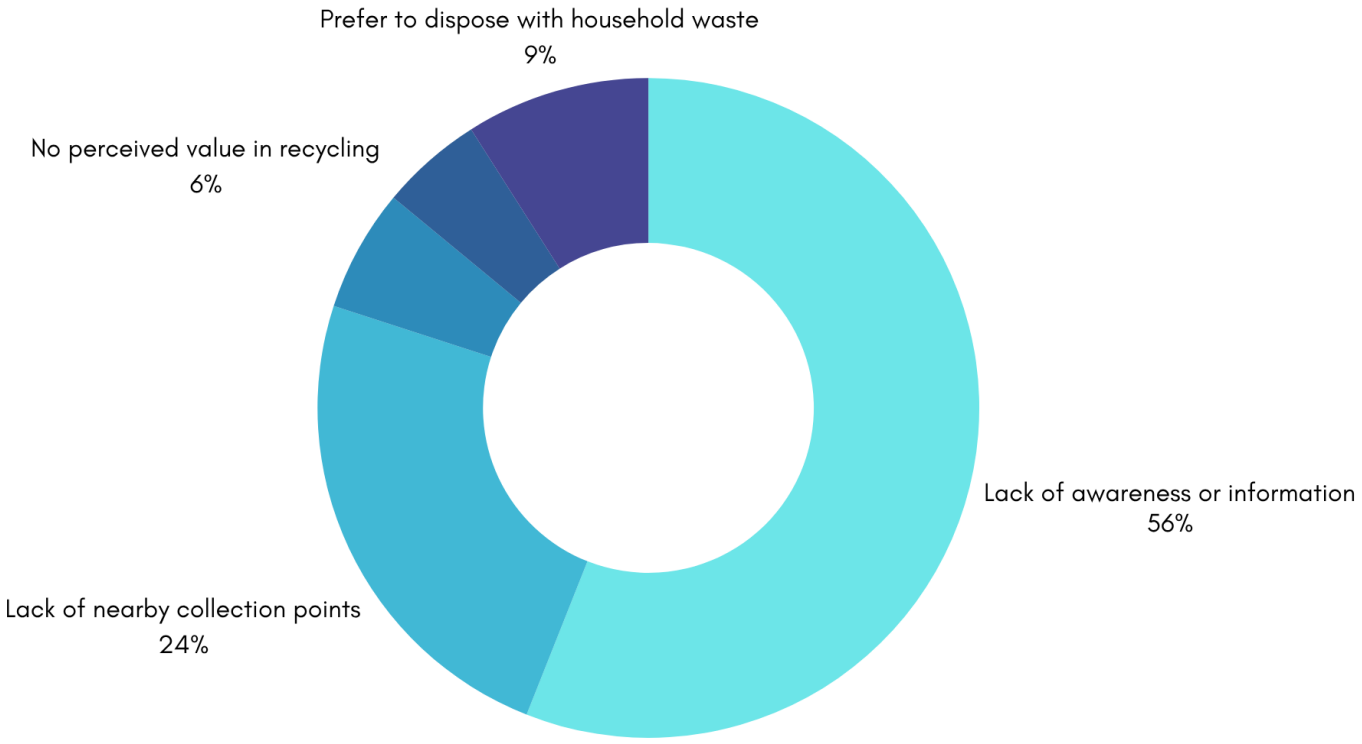
## Barriers to Recycling

### Table 8

*Reported Barriers to Textile Waste Recycling (Household Respondents)*

| Barrier Identified | Share of Respondents (%) |
|---|---|
| Lack of awareness or information | 56 |
| Lack of nearby collection points | 24 |
| No perceived value in recycling | 6 |
| Cost or inconvenience | 5 |
| Prefer to dispose with household waste | 9 |

***Figure 6.*** *Reported barriers to textile waste recycling among households.*




*Interpretation:*

- **Lack of awareness or information** (56%) remains the **dominant barrier** to textile recycling among households in Lagos.
- **Limited access to collection points** (24%) underscores **structural gaps** in the city's recycling infrastructure.
- **Behavioural and perceptual challenges persist**, with 9% still disposing textiles with household waste and 6% seeing no value in recycling.
- Cost or inconvenience (5%) plays a minimal role, confirming that **accessibility and education are the key levers for change**.

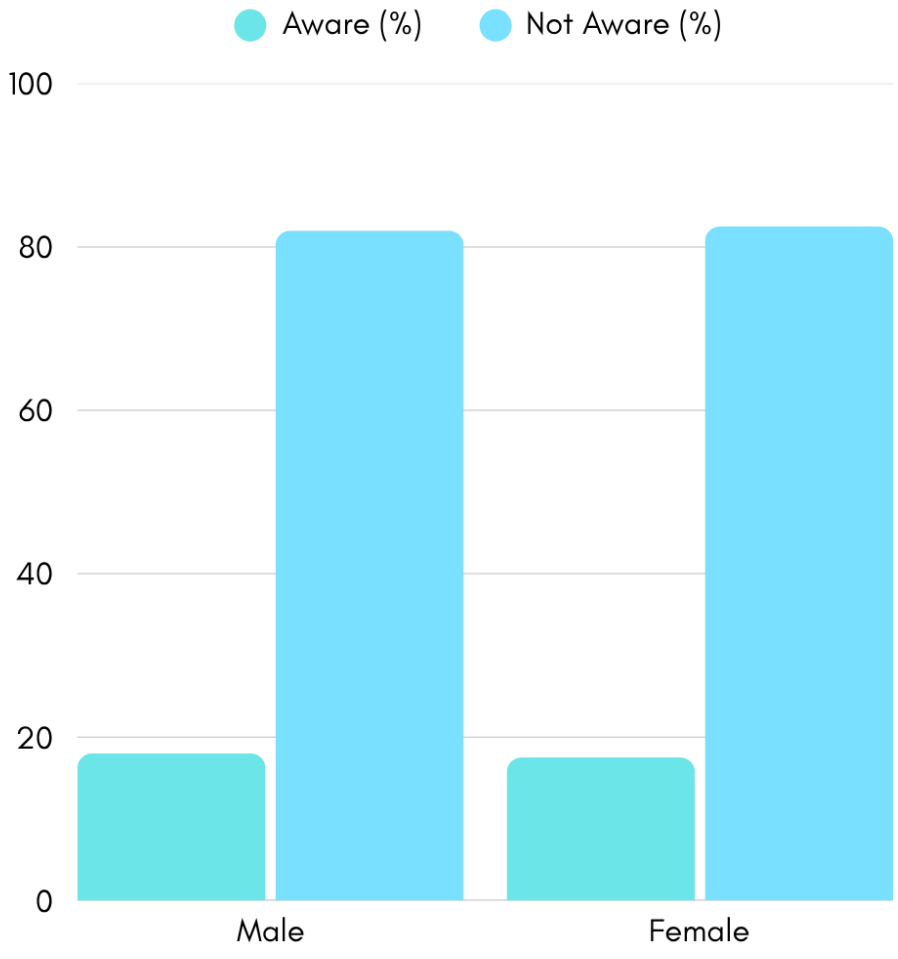
## Awareness of Recycling Options

Table 9a

*Awareness of Textile Recycling Options by Gender (N = 87)*

| Gender | Aware (%) | Not Aware (%) |
|---|---|---|
| Male | 18.00 | 82.00 |
| Female | 17.50 | 82.50 |

***Figure 7a.*** *Awareness of textile recycling options among households by gender.*



*Interpretation:*

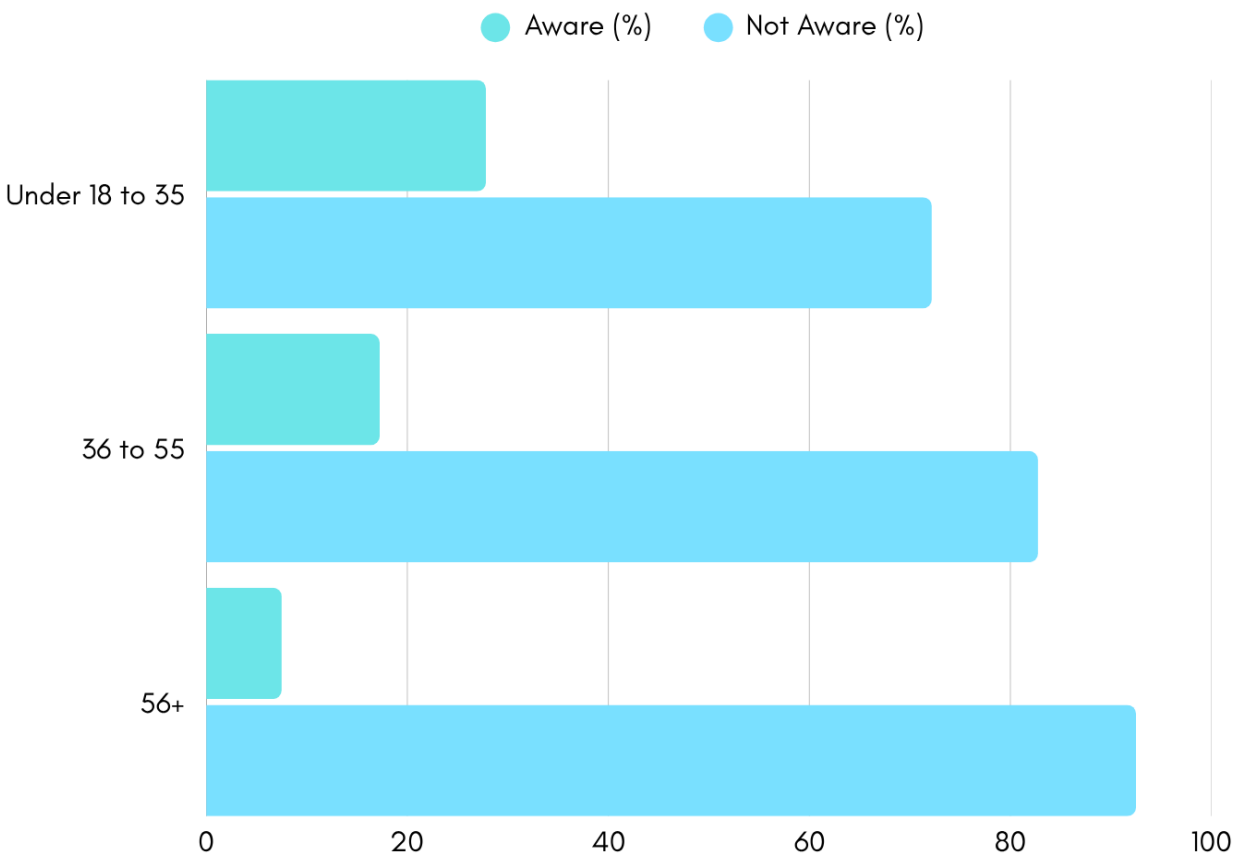
- Awareness of textile recycling options remains **extremely low across both genders**, with 82–83% of respondents indicating no awareness.
- Male (18%) and female (17.5%) respondents show **near-identical awareness levels**, suggesting that information gaps cut across demographic lines.
- The data highlights a **universal need for broad-based public education and outreach**, rather than gender-targeted interventions.

## Table 9b

*Awareness of Textile Recycling Options by Age Group (N = 87)*

| Age Group | Aware (%) | Not Aware (%) |
|---|---|---|
| Under 18 to 35 | 27.82 | 72.18 |
| 36 to 55 | 17.25 | 82.75 |
| 56+ | 7.50 | 92.50 |

***Figure 7b.*** *Awareness of textile recycling options among households by age group.*




*Interpretation:*

- Awareness of textile recycling is highest among younger respondents (under 18–35) at 28%, and declines steadily with age.
- Only 17% of those aged 36–55 and 8% of respondents aged 56+ report any awareness of recycling options.
- These results indicate that **younger demographics are more informed and potentially more receptive** to circular fashion initiatives, while **older groups require more targeted outreach**.

# Perceptions of Responsibility

## Table 10

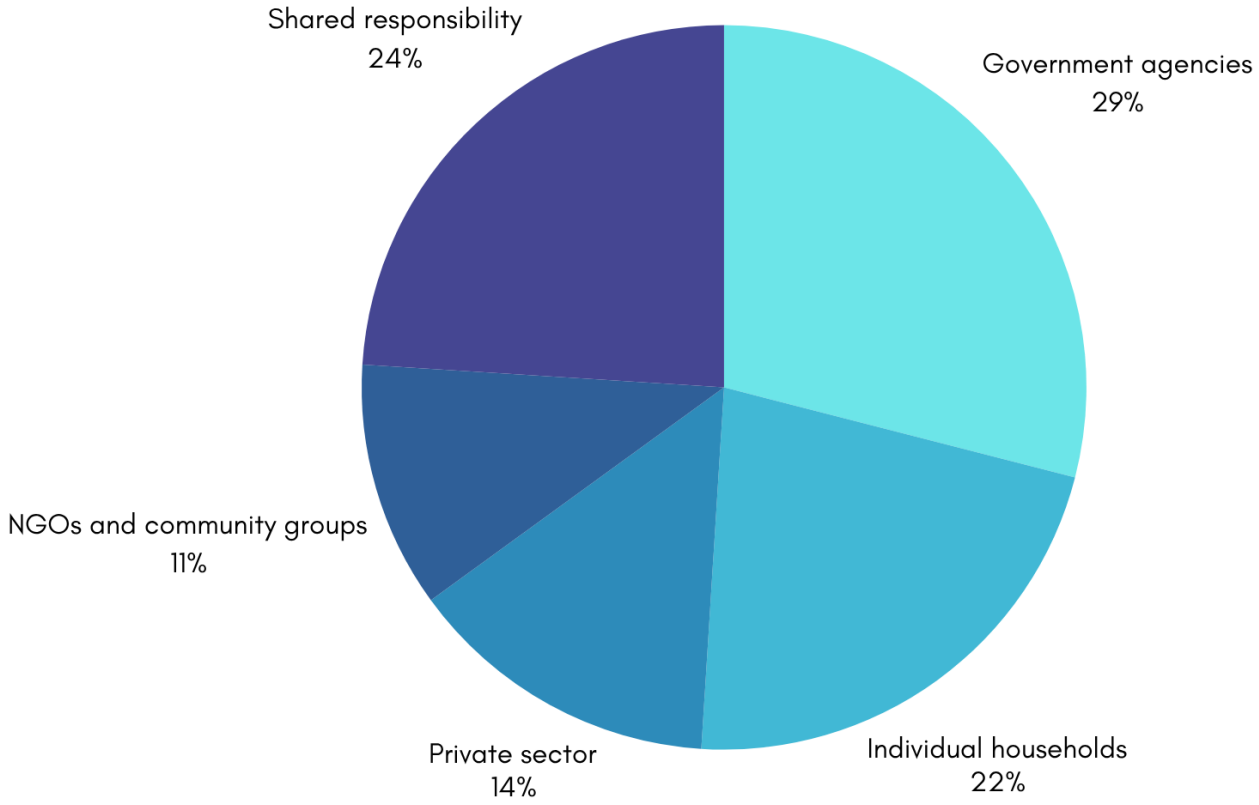
*Who Should Be Responsible for Textile Waste Management? (Household Respondents)*

| Stakeholder Identified | Share of Respondents (%) |
|---|---|
| Government agencies | 29 |
| Individual households | 22 |
| Private sector (e.g., fashion) | 14 |
| NGOs and community groups | 11 |
| Shared responsibility | 24 |

***Figure 8.*** *Household perceptions of responsibility for textile waste management.*

*Interpretation:*

- **Government agencies are viewed as the main actors responsible** for textile waste management (29%).
- A significant share (24%) believe it should be a **shared responsibility**, reflecting growing awareness of the collective nature of the challenge.
- 22% assign responsibility to **individual households**, indicating some recognition of personal accountability.




- The **private sector** (14%) and **NGOs** (11%) are seen as supporting contributors rather than primary drivers.

## Qualitative Insights

- Focus groups revealed **widespread lack of knowledge** about textile waste as a category, with many respondents lumping it under "general waste."
- Households expressed **interest in recycling if convenient and affordable systems were available**.
- A recurring theme was that **"fabric is never truly waste"** – many households reuse, repurpose, or donate until items are no longer serviceable.

## Summary

- Household waste in Lagos contains **8% textiles and shoes**, equivalent to **approximately 718 tonnes of textile waste generated per day in 2025** (≈ 21,540 tonnes monthly; ≈ 263,000 tonnes annually).

- **Household awareness of textile recycling options remains extremely low** (≈18% overall), with awareness declining sharply among older demographics.

- **Lack of awareness (56%)** and **limited collection infrastructure (24%)** are the dominant barriers to recycling, far outweighing cost or convenience factors.

- **Government agencies (29%)** are seen as primarily responsible for waste management, though **24% advocate shared responsibility**, signalling an emerging sense of collective accountability.

- Many households already engage in **informal circular practices** such as reuse, repurposing, and donation — a behavioural foundation that could be formalised into structured systems for collection, repair, and recycling.

# Overall Summary of Textile Waste in Lagos

## Total Volume of Textile Waste in Lagos

Drawing on sample-based estimates from markets and garment factories, combined with official waste composition data from the 2021 LAWMA–UN factsheet (adjusted to 2025), Lagos is estimated to generate **approximately 22,000 tonnes of textile waste per month in 2025**. This total reflects contributions from both **pre-consumer** and **post-consumer** sources, with household consumption forming the overwhelming majority.

- **Markets:** ≈ **38 t/month** (pre-consumer losses from traders and embedded fashion houses).
- **Garment factories & workshops:** ≈ **106 t/month** (cutting waste, offcuts, defective production).
- **Households & consumers:** ≈ **21,540 t/month** (post-consumer textile flows, made up of both locally produced and imported items discarded after use).

Households and consumers are the dominant source of textile waste in Lagos, driven by fast fashion consumption, the influx of imported clothing, and limited reuse or repair infrastructure. In contrast, pre-consumer streams from markets and factories, though significantly smaller, are more homogeneous and therefore more feasible targets for early recycling and material recovery interventions.

## Textile Waste Hotspots

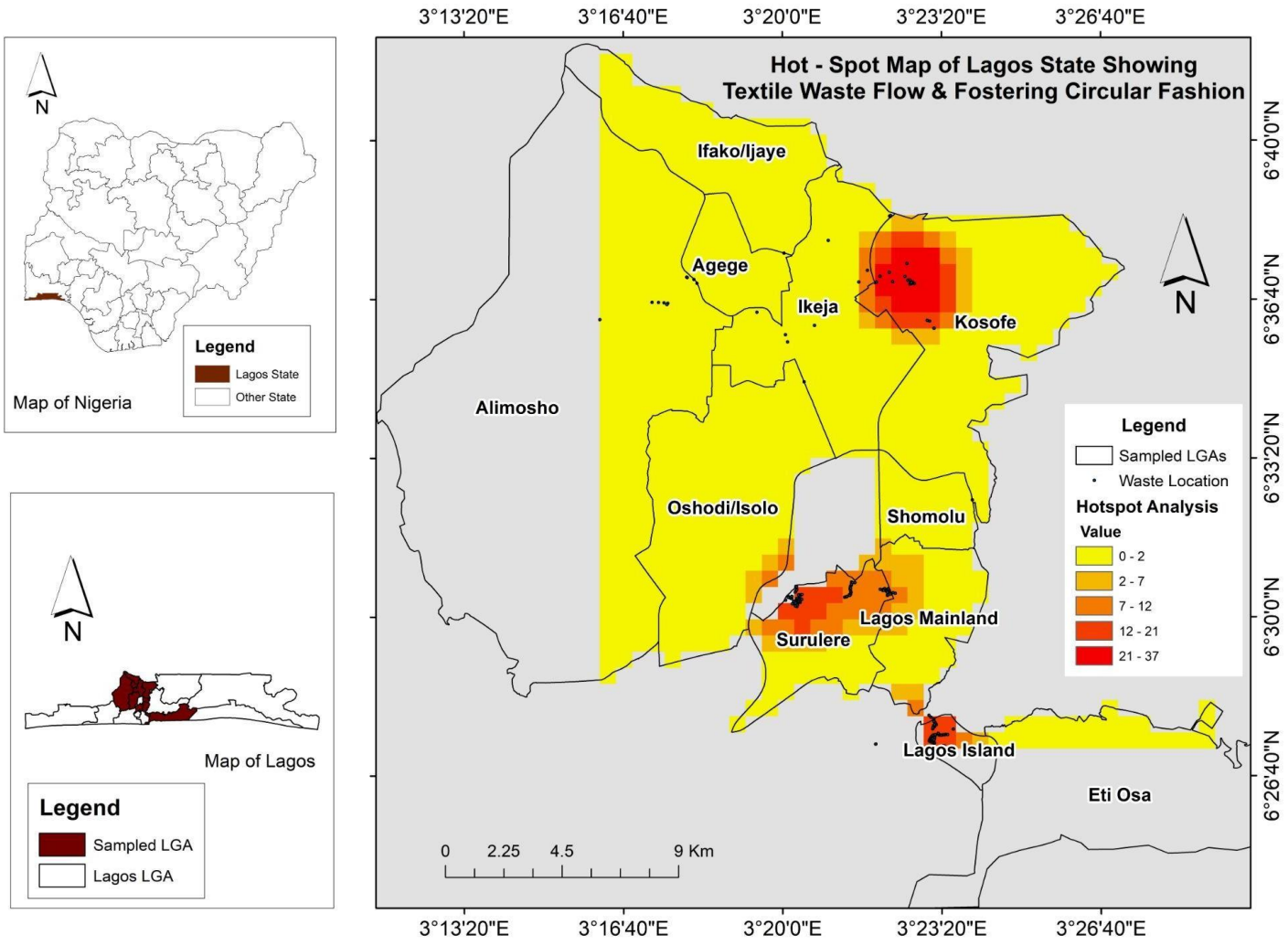
Analysis of waste flows identifies **concentrations of textile waste across Lagos**, with the following zones standing out:

1. **Very High Hotspots:** Major open-air markets (Balogun, Katangua, Oshodi) and large tailoring clusters.
2. **High Hotspots:** Mid-sized garment factories, neighbourhood tailoring hubs, peri-urban landfills (e.g., Olusosun).
3. **Moderate Hotspots:** Residential estates with high clothing consumption.

4. **Low Hotspots:** Smaller community dumps and less dense suburban areas.

Mapping these hotspots provides a **spatial guide for targeted interventions**. Prioritising markets and factory clusters allows for high-volume waste capture at source, while engagement in residential areas can strengthen collection and awareness systems for post-consumer flows.

***Figure 9.*** *GIS Hotspot Map of Textile Waste in Lagos*.



## Textile Waste Flow

The study traces textile waste flows across Lagos, showing how textiles move from production and consumption into different disposal pathways.

1. **Markets:** Traders and fashion houses generate cutting waste, unsold items, and damaged stock. A portion is resold or reused, but significant volumes are discarded into municipal systems.

2. **Garment factories & workshops:** Offcuts and defective items are often discarded in bulk. While some are repurposed informally, most are mixed with general solid waste.

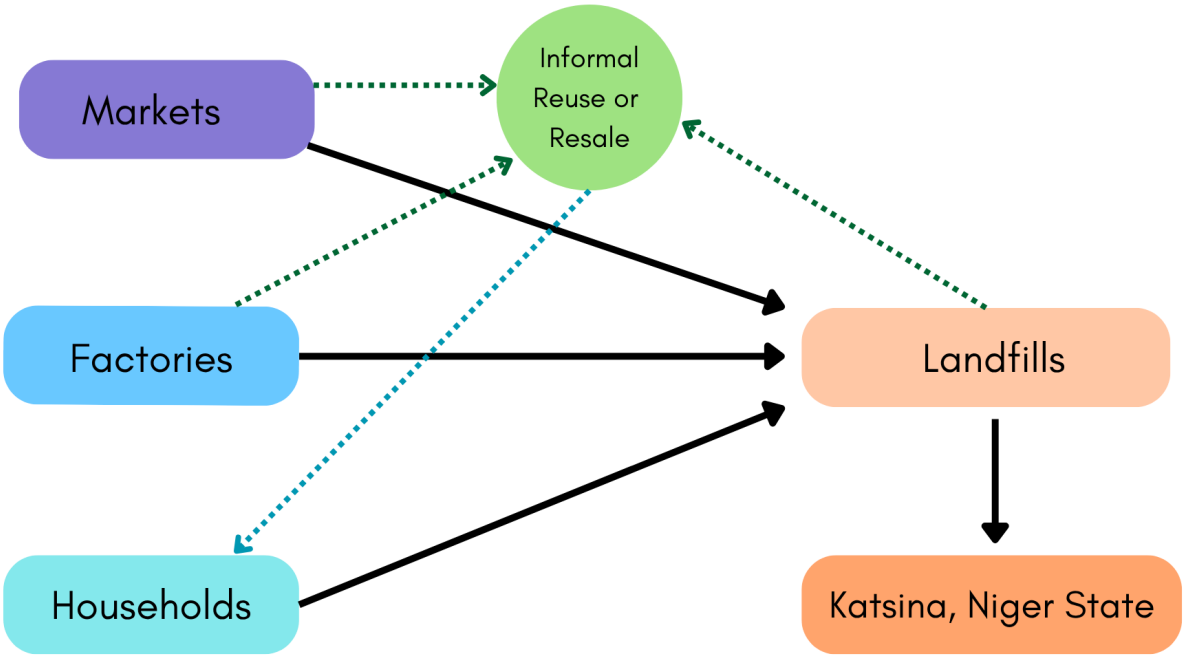
3. **Households:** The dominant source of textile waste. Worn-out clothing and discarded household textiles are typically mixed with municipal waste and transported to landfills.

4. **Landfills (e.g., Olusosun):** The final aggregation point for textile waste, where both pre-consumer and post-consumer flows converge.

5. **Secondary flows:** Informal collectors and scavengers divert a fraction of waste textiles for resale, reuse, or downcycling, but this remains limited and uncoordinated.

Textile waste in Lagos follows a largely **linear trajectory**, with minimal diversion from disposal. This highlights the absence of structured recycling or extended producer/importer responsibility systems, and the heavy reliance on landfills as the default end-of-life option.

***Figure 10.*** *Conceptual Flow Diagram of Textile Waste*.




## Waste Management Practices

Field observations and respondent feedback indicate that Lagos currently relies on a **patchwork of informal and formal waste practices:**

1. **Reuse:** Damaged or unsold clothing is often resold cheaply in local markets or redirected to family m embers. Tailoring offcuts may be used for patchwork or small accessories.

2. **Upcycling:** Small-scale innovations exist, particularly among fashion designers who repurpose offcuts into new garments or accessories. These practices remain niche and lack formal support.

3. **Recycling:** Industrial-scale textile recycling facilities are absent. Scavengers and informal collectors recover small volumes, but without separation or treatment infrastructure, most textiles are not recycled.

4. **Landfilling:** The dominant end-of-life pathway. Textiles are typically mixed with general solid waste, losing value and complicating any future recovery.

While reuse and upcycling practices exist in pockets of the industry, Lagos' textile waste management remains overwhelmingly **linear and disposal-oriented**. Without structured collection, sorting, and recycling systems, the city misses opportunities to capture value, create jobs, and reduce environmental pressure.

## Challenges in Textile Waste Management

The study identifies **systemic barriers** that limit Lagos' ability to manage textile waste effectively. These challenges fall into four interlinked categories:

1. **Infrastructure:** Absence of dedicated textile collection systems; lack of separation and treatment facilities; reliance on landfills as the default endpoint.

2. **Economic:** Limited investment in recycling technologies; weak financial incentives for recovery; informal actors operate with minimal support or integration.

3. **Policy & Regulation:** No extended producer/importer responsibility framework; weak enforcement of waste regulations; imports of low-quality textiles contribute to high disposal volumes.

4. **Awareness & Behaviour:** Low consumer awareness about textile waste impacts; disposal in mixed waste streams remains the norm; sustainable alternatives (reuse/upcycling) are not mainstreamed.

These challenges reinforce the **linear nature of Lagos' textile economy**, where textiles flow quickly from production and consumption to landfill. Addressing them requires coordinated action across infrastructure, economic instruments, regulatory frameworks, and public awareness campaigns.

## Final Summary

Key findings include:

1. **Volume and scale:** Lagos generates an estimated **22,000 tonnes of textile waste per month** in 2025, with **households (≈ 21,540 t/month)** as the dominant source. **Markets (≈ 38 t/month)** and **garment factories (≈ 106 t/month)** contribute smaller, more uniform pre-consumer streams. This distribution underscores the need for large-scale consumer-focused solutions alongside targeted recovery of cleaner industrial offcuts..

2. **Geographic concentration:** Textile waste is not evenly distributed. **Very high hotspots** occur around major markets (Balogun, Katangua, Oshodi) and tailoring clusters, with **landfills like Olusosun** serving as critical aggregation points.

3. **Linear flows:** Textiles follow a largely **linear trajectory** from production and use to disposal, with minimal diversion through reuse, resale, or upcycling.

4. **Fragmented practices:** Small-scale reuse and upcycling exist, but recycling is almost non-existent. Informal actors play a role in diversion but lack structure and support.

5. **Systemic barriers:** Infrastructure gaps, weak economic incentives, regulatory shortcomings, and low consumer awareness collectively block a transition toward circularity.

Without targeted interventions, Lagos' textile system will remain **disposal-driven**, with landfills bearing the weight of both domestic and imported consumption. However, the concentration of waste in identifiable hotspots, the existence of informal recovery practices, and the visibility of pre-consumer streams all present **entry points for a circular economy transition**.

# Discussion

This study provides the first structured attempt to quantify and map textile waste flows in Lagos. The findings carry important implications for environmental management, economic opportunity, and policy design.

## Lagos in a Global Context

Globally, textile waste has become a defining challenge of the fashion and apparel industry. Cities across the Global North face rising disposal costs and have developed infrastructure for collection, sorting, and recycling. In contrast, many African cities, including Lagos, receive large inflows of imported textiles and second-hand clothing but lack corresponding end-of-life systems. The result is a **linear, disposal-driven textile economy** where imported and domestically produced garments alike accumulate in landfills.

## The Scale of the Challenge

The study's central estimate, **21,684 tonnes of textile waste per month,** highlights the magnitude of the issue. This sheer scale reflects the city's fast-growing population, high turnover of clothing, and limited reuse or recovery pathways. While household textiles dominate, and are highly mixed, low-value, and difficult to process—pre-consumer waste from markets and garment factories remains smaller but far cleaner and easier to recover. This dual pattern creates both urgency and opportunity: the volume of post-consumer waste presents a major environmental and operational challenge, while the concentration of clean pre-consumer waste offers a viable entry point for early recycling, sorting, and circular-economy interventions..

## The Role of Informality

The research underscores the importance of informal actors, scavengers, traders, and small-scale upcyclers, who divert some textile waste from disposal. However, these flows remain **fragmented, uncoordinated, and poorly supported**. Formalising or supporting these practices could provide jobs, extend textile lifespans, and reduce pressure on landfills.

## Imports and Consumption Patterns

Imports play a critical role in shaping Lagos' textile system. While not imported as "waste," vast quantities of foreign textiles enter the city each year, circulate through markets and households, and eventually contribute to landfill volumes. This underscores Lagos' place in global textile flows and the need for solutions that consider both **local production and international trade dynamics**.

## Missed Economic Value

The linearity of Lagos' textile waste system represents a **missed economic opportunity**. Globally, textile recycling and circular business models are valued at billions of dollars. Lagos' concentration of pre-consumer waste streams, vibrant creative industries, and large consumer base position it to benefit if infrastructure, policy, and investment align.

## Study Limitations

As the first comprehensive mapping of textile waste in Lagos, this study inevitably carries certain limitations. Market and garment-factory estimates are based on primary field sampling and scaled using **×10 multipliers**, reflecting the approximate number of similar units across major clusters. While this approach is practical for fragmented sectors where full enumeration is not possible, it introduces uncertainty because real cluster sizes and production patterns may vary across locations and seasons.

Household estimates rely on the 2021 LAWMA–UN waste composition study, adjusted to 2025 conditions. Although this provides the most authoritative baseline available, it still depends on assumptions about waste-generation growth and may not fully capture intra-city variation or recent consumption and import trends.

Lagos' textile waste patterns are also shaped by seasonal cycles—festive shopping peaks, garment-production surges, and fluctuating second-hand imports. The July–October data provide a representative snapshot of textile waste patterns across an extended production period; however, annual volumes may fluctuate by approximately **±10–15%** due to seasonality and economic conditions.

Finally, data gaps remain. Lagos lacks disaggregated figures on textile imports (formal and informal), detailed compositional data for garment-factory waste, and multi-site landfill audits. Future studies should expand

sampling across multiple seasons, include direct weighing at more disposal sites, quantify factory waste types, and integrate trade/import datasets to strengthen the accuracy and granularity of textile-waste measurements across the state.

## Implications

Despite these limitations, the evidence is clear: Lagos' textile waste problem is **real, large, and growing**. The dominance of landfilled textiles, the clustering of hotspots, and the presence of informal diversion all point to **concrete entry points** for intervention. Addressing this challenge will require coordinated action across infrastructure, policy, markets, and cultural behaviour.

# Strategic Recommendations

The evidence from this study highlights the need for Lagos to transition from a disposal-driven textile economy toward a more circular model. Achieving this will require interventions that are **small, context-sensitive, and scalable**, while empowering local actors who best understand the challenges and opportunities on the ground. The following recommendations are organised around key actors in the textile waste ecosystem, alongside system-wide solutions.

## Fashion Houses & Designers

Fashion houses and independent designers are both sources of pre-consumer waste and potential leaders of circular innovation. Their core challenge lies in **offcuts, unsold stock, and inefficient design processes** that create significant material loss.

A **Fashion Hub for Circular Innovation** could serve as the **physical anchor** for change – a shared space where designers access tools for fabric recovery, small-batch upcycling, and sustainable material experimentation. The hub would also host **training sessions, community workshops, and co-design labs**, helping translate circular principles into daily practice and connecting designers with recyclers, artisans, and material innovators.

Complementing this, a **Circular Fashion App** would act as the **digital infrastructure** for Lagos' emerging circular fashion system. The app would host a verified marketplace where designers, factories, and suppliers exchange surplus materials and offcuts; share repair, alteration, and design resources; and access a circular design library. It would also support **data collection**, tracking volumes of textile reuse and recycling across the network to build transparency and measurable impact.

Finally, **micro-grants and mentorship programs** would ensure that emerging designers – especially young and women-led enterprises – can fully participate in and benefit from these circular systems. These initiatives would empower local leaders to prototype waste-minimising collections, fostering innovation and creative enterprise in sustainable fashion.

## Garment Factories & Workshops

Garment factories and workshops generate large volumes of **cutting waste, fabric remnants, and defective items**, much of which is currently discarded. Their core challenge lies in the **absence of structured collection systems and affordable recovery options**.

A practical first step is the establishment of **Cluster-Level Collection Hubs** within garment production zones. These hubs would act as **aggregation points** where textile waste is sorted, stored, and periodically collected for recycling or upcycling. By reducing fragmentation and pooling waste at scale, factories can improve material efficiency and enable partnerships with recyclers and social enterprises.

Collaboration with **universities and local engineers** could accelerate the development of **low-cost textile-to-fiber recovery technologies** tailored to Lagos' context. Pilot initiatives could test small mechanical shredding, fiber-blending, or insulation-production processes using recovered factory waste.

Finally, introducing a **Voluntary Code of Conduct for Factory Clusters** would help standardise waste management practices and build shared accountability. The code could cover basic handling protocols, safe storage, and reporting standards, with recognition incentives for compliant factories.

## Consumers & Households

Households are the **largest generators of textile waste in Lagos**, driven by high clothing turnover, fast fashion consumption, and limited reuse systems. The city's markets are saturated with imported garments, many of them low-cost, short-lived fast fashion items, which quickly enter the waste stream after minimal use. Combined with the lack of dedicated textile collection systems, this has normalised a throwaway culture where unwanted clothing is routinely mixed with municipal waste.

Addressing this challenge requires a **shift in both awareness and infrastructure**. Large-scale **public education campaigns**, co-led by youth influencers, schools, and community groups, could reshape attitudes towards clothing longevity and promote repair, reuse, and donation.

At the community level, **periodic textile collection drives,** coordinated through neighbourhood associations, local councils, or religious institutions—would provide practical alternatives to landfill disposal. These initiatives could be supported by the **Circular Fashion App**, which enables consumers to **list unwanted garments for resale, donation, or swapping**, creating a trusted digital–physical loop that extends garment lifecycles and reduces household waste volumes.

Together, these interventions tackle the behavioural and systemic roots of household textile waste: **overconsumption, fast fashion dependency, and inadequate disposal infrastructure**. By empowering citizens to view textiles as valuable resources rather than disposable goods, Lagos can build a culture of circular fashion from the ground up.

## System-Wide Interventions

The broader textile system in Lagos faces **weak stakeholder alignment, limited recovery infrastructure, and insufficient policy incentives**.

Establishing a **Central Hub for Textile Waste Transformation** would provide a focal point for sorting, upcycling, and recycling, a pilot facility that demonstrates how industrial, community, and informal actors can collaborate. This hub could serve as an innovation testbed for scaling sustainable materials, recovery technologies, and investment models.

Policymakers can drive participation through **tax incentives, recycling subsidies, and pilot producer/importer responsibility frameworks** that ensure accountability across the supply chain, particularly for imported fast fashion items that dominate the city's consumption patterns.

Technology can be the connective backbone of this emerging system. A **Circular Fashion App**, built on trust and community, could serve as a **social-commerce platform** that connects designers, households, and small produce rs to exchange, buy, or donate textiles and clothing. By fostering connection, visibility, and collaboration across diverse users, the app strengthens the cultural and behavioural infrastructure that physical systems alone cannot achieve – inspiring a sense of shared responsibility and participation in Lagos' circular fashion movement.

Finally, a **shared Industry Code of Conduct**, co-developed with associations, NGOs, and local leaders, would establish a collective baseline for responsible behaviour – aligning the fashion ecosystem toward a circular textile economy that balances creativity, sustainability, and social value.

## Pathway to Scale

These recommendations begin with **small, practical interventions,** designer offcut exchanges, factory collection hubs, and neighbourhood clothing swaps – forming a proof-of-concept ecosystem led by local actors.

As participation grows, **physical hubs and digital tools** provide visibility and connectivity, while **policy incentives and investment** help embed these practices into formal systems. Over time, these grassroots initiatives can evolve into **citywide frameworks** for collection, recycling, and circular production.

Through this phased approach, Lagos can cultivate a **self-sustaining circular fashion economy,** where local leadership drives innovation, communities model behavioural change, and supportive policies enable scale.

Table 11

***Strategic Recommendations for Textile Waste Management in Lagos***

| Actor | Root Problem | Proposed Interventions |
|---|---|---|
| Fashion Houses & Designers | Offcuts, unsold stock, and inefficient design practices lead to avoidable waste. | • Create a fashion hub for fabric recovery, upcycling, and training.<br>• Use a circular fashion app to exchange or resell surplus materials.<br>• Support designers through micro-grants and mentorships for circular design. |
| Garment Factories & Workshops | High volumes of cutting waste and defective items discarded due to lack of collection and recovery systems. | • Establish cluster-level collection hubs for offcuts.<br>• Pilot low-cost textile-to-fiber recovery technologies.<br>• Introduce a voluntary Code of Conduct for |

| | | |
|---|---|---|
| Consumers & Households | Clothing routinely mixed with general waste due to low awareness and absence of alternatives. | • Run large-scale awareness campaigns (schools, youth, influencers).<br>• Organise community-based collection drives and swap events.<br>• Enable resale, swap, and donation through the circular fashion app. |
| System-Wide (Cross-cutting) | Weak infrastructure, poor alignment of stakeholders, and lack of enabling policy. | • Create a central hub for textile waste sorting and transformation.<br>• Offer tax breaks/subsidies for recycling investment.<br>• Pilot extended producer/importer responsibility frameworks.<br>• Co-create a shared industry Code of Conduct.<br>• Use tech (the circular fashion app) to connect stakeholders. |

# Acknowledgment

This report was produced by Style House Files as an extension of its long term sustainability agenda. The initiative builds on earlier work including Green Access and Woven Threads, expanding the conversation about responsibility from individual practice to systems level understanding. With the new data, designers and brands can make informed decisions about production and sourcing, while innovators gain clarity about material flows that can support new business models in repair, upcycling, and material recovery. It also draws attention to consumption patterns and the role of consumers in diverting textile waste from landfills.

It is supported by Bestseller Foundation and includes contribution from Lagos State Waste Management Authority.

**Research:**

- Green Sage for Style House Files / Lagos Fashion Week
- Design and Empathy Studio for Style House Files / Lagos Fashion Week

**Editorial Review Status:**

Independent Critical Review: October 2025

Reviewer: Didi Daley, Daleycoach Global

Review Type: Comprehensive Critical Analysis

# APPENDICES.

# Appendix A: Methodological Notes

This appendix provides a detailed account of the methods and assumptions used to generate the findings in this study. It expands on the methodology described in the main report and documents the rationale for site selection, sampling, and scaling.

## A1. Research Design

This study applied a mixed-methods approach, combining quantitative and qualitative techniques to capture both the scale and the drivers of textile waste in Lagos. Quantitative data were drawn from field surveys in markets and garment factories, alongside household-waste composition figures from the 2021 LAWMA–UN factsheet. These were complemented by qualitative interviews with market traders, garment workers and consumers, providing context on behaviours, challenges, and disposal practices.

## A2. Site Selection

Sampling sites were selected to capture the major sources of textile waste in Lagos:

- **Markets:** Balogun, Katangua, and Oshodi were chosen for their high trading volumes, presence of fashion houses, and concentration of textile-related activity.

- **Garment Factories & Workshops:** Medium-sized factories and tailoring clusters were sampled to represent the diversity of production scales in Lagos.

This strategy balanced **representativeness** with **feasibility**, ensuring data reflected the city's waste landscape while remaining manageable within project constraints.

## A3. Sampling Approach

- **Markets:** Traders and fashion houses were surveyed to estimate weekly textile production volumes and the proportion that became waste.

- **Garment Factories & Workshops:** Managers/workers provided figures for weekly production, percentage offcuts, and defective products.

Respondent counts and activity-based reporting were cross-checked through follow-up discussions and observation where possible.

## A4. Scaling & Extrapolation Assumptions

Because it was not possible to survey all markets, garment factories, or households in Lagos, several scaling assumptions were applied to estimate citywide textile-waste volumes:

**Markets & Garment Factories**

A **×10 multiplier** was applied to sample-based waste estimates from markets and factories. This reflects the approximate number of comparable units across major commercial clusters in Lagos. While not a full census, the multiplier provides a conservative and practical way to scale pre-consumer waste in a highly fragmented ecosystem.

**Households & Consumers**

Household textile-waste estimates were derived from the **2021 LAWMA–UN waste-composition factsheet**, which identifies textiles and shoes as **8% of household waste**. To reflect Lagos' rapid population and waste-generation growth, a **13% adjustment** (compound annual increase from 2021 to 2025) was applied to produce updated 2025 figures.

## A5. Limitations

**Extrapolation Uncertainty:**

The ×10 multipliers used for markets and garment factories introduce uncertainty, as real activity levels vary across Lagos. These factors provide conservative, field-informed estimates rather than exact counts.

**Data Gaps:**

Reliable, disaggregated data remain limited. Lagos lacks detailed statistics on textile imports (formal and informal), comprehensive garment-factory waste composition, and multi-site waste audits across different disposal locations. These gaps constrain the precision of citywide estimates.

**Household Baseline Dependence:**

Household textile-waste figures rely on the 2021 LAWMA–UN waste-composition study, adjusted for 2025 growth.

While this is the strongest available baseline, it may not fully capture seasonal fluctuations, economic shifts, or changes in consumption patterns.

Despite these limitations, the methods and assumptions applied here provide the **first structured and transparent framework** for estimating textile waste flows in Lagos.

# Appendix B: Calculation Frameworks

This appendix details the calculations and assumptions used to estimate textile waste generation in Lagos. The goal is to ensure transparency and replicability of the study's findings.

## B1. Market Textile Waste

**Sample Data (from trader/fashion house surveys):**

- Average weekly production volume (sample): **X tonnes**
- Average waste fraction: **Y%**

**Step 1: Sample Waste Generation**

*Sample Weekly Waste = Average Production Volume × Waste Fraction*

**Step 2: Extrapolation**

A **×10 multiplier** was applied to scale up from the sampled markets (Balogun, Katangua, Oshodi) to reflect the wider Lagos market system.

*Estimated Lagos Market Waste (weekly) = Sample Weekly Waste × 10*

**Step 3: Monthly and Annual Conversion**

*Monthly Waste = Weekly Waste × 4*

*Annual Waste = Monthly Waste × 12*

**Final Estimate (rounded):** ≈ **38 tonnes/month** of textile waste generated in Lagos markets.

## B2. Garment Factories & Workshops

**Sample Data (from factory/workshop surveys):**

- Average weekly production volume (sample): **X tonnes**
- Average waste fraction: **Y%**

**Step 1: Sample Waste Generation**

*Sample Weekly Waste = Average Production Volume × Waste Fraction*

**Step 2: Extrapolation**

A **×10 multiplier** was again applied to scale up from sampled factories and workshops to the city level.

*Estimated Lagos Factory Waste (weekly) = Sample Weekly Waste × 10*

**Step 3: Monthly and Annual Conversion**

*Monthly Waste = Weekly Waste × 4*

*Annual Waste = Monthly Waste × 12*

**Final Estimate (rounded):** ≈ **106 tonnes/month** of textile waste generated in garment factories and workshops.

## B3. Consumers & Households

**Data Source**

Household textile-waste estimates are based on the **2021 Lagos Municipal Solid Waste Factsheet** published by **LAWMA and the United Nations**, which provides the most authoritative breakdown of household waste composition.

**Step 1: Household Waste Baseline (2021)**

Total household waste generation: **7,944 tonnes/day**

Share of "Textiles/Shoes": **8%**

*2021 textile waste from households: 7,944 × 0.08 = 635.52 tonnes/day*

**Step 2: Adjusting for 2025 Waste Growth**

To reflect current (2025) conditions rather than relying solely on 2021 data, an adjustment was applied to account for **growth in population and waste generation** in Lagos over four years.

Lagos annual growth rate ≈ 3% per year (population + urban waste generation trend)

Growth over 4 years (2021 to 2025) using compound growth: (1.03)^4 − 1 ≈ 12.55% increase

*4 year growth ≈ 13%*

*2025 textile waste from households: 635.52 × 1.13 ≈ 718 tonnes/day (2025)*

**Step 3: Monthly and Annual Conversion**

*Monthly Waste = 718 × 30 ≈ 21,540 tonnes/month*

*Annual Waste = 21,540 × 12 ≈ 258,480 tonnes/year*

**Final Estimate (rounded):** ≈ **21,540 tonnes/month** of textile waste generated by Lagos households.

## B4. Total Textile Waste in Lagos

This section consolidates estimated textile-waste contributions from **markets**, **garment factories**, and **households**, using the updated 2025 figures derived from field sampling and the 2021 LAWMA–UN waste-composition factsheet.

**Pre-Consumer Waste Estimates (Field-Based)**

- Markets: ≈ **38 tonnes/month**
- Garment factories & workshops: ≈ **106 tonnes/month**

**Post-Consumer Waste Estimate (LAWMA–UN Factsheet + 2025 Growth Adjustment)**

- Household textile waste (2025): ≈ **21,540 tonnes/month**

**Total Textile Waste Generated in Lagos (2025)**

**Monthly total (2025):**

*38 (markets) + 106 (factories) + 21,540 (households) ≈ 21,684 tonnes/month*

**Annual total (2025):**

*21,684 × 12 ≈ 260,000 tonnes/year (rounded to reflect estimate precision)*

**≈ 21,684 tonnes/month**

**≈ 260,000 tonnes/year**

# Appendix C: Tables & Figures

This appendix presents a comprehensive list of the tables and visualisations presented in the report.

## C1. Markets

- **Table 3a:** Weekly Production Volumes of Sampled Market Respondents
- **Table 3b:** Waste Percentages by Production Category
- **Table 4:** Activities Generating Textile Waste (share of respondents reporting waste by activity)

*Associated Figures:*

- **Figure 1:** Market Production vs Waste
- **Figure 2:** Activities Generating Textile Waste

## C2. Garment Factories & Workshops

- **Table 5:** Production vs Waste (sampled factories/workshops).

- **Table 6:** Sources of Waste Generation (selected factories).

*Associated Figures:*

- **Figure 3:** Production vs Waste

- **Figure 4:** Sources of Textile Waste in Factories

## C3. Consumers & Households

- **Table 7:** Household Waste Type Distribution at Disposal Sites (Lagos, 2021).

- **Table 8:** Reported Barriers to Textile Waste Recycling (Household Respondents).

- **Table 9:** Awareness of Textile Waste (by gender and age demographic).

- **Table 10:** Who Should Be Responsible for Textile Waste Management? (Household Respondents).

*Associated Figures:*

- **Figure 5:** Waste Type Distribution in Olusosun

- **Figure 6:** Reported barriers to textile waste recycling among households

- **Figure 7:** Awareness Levels by Demographics

- **Figure 8:** Household perceptions of responsibility for textile waste management

## C4. Overall System

*Associated Figures:*

- **Figure 9:** GIS Hotspot Map of Textile Waste in Lagos.

- **Figure 10:** Conceptual Flow Diagram of Textile Waste.

## C5. Strategic Recommendations

- **Table 11:** Strategic Recommendations for Textile Waste Management in Lagos (actor → root problem → intervention).

# Appendix D: Sensitivity Analysis

This section tests the robustness of Lagos' textile waste estimates by modelling how changes in market, factory, and household inputs influence total projected volumes.

Table D1 — Sector-Level Sensitivity (t/month)

| Sector | Base | −20 % | −10 % | +10 % | +20 % |
|---|---|---|---|---|---|
| Markets | 38 | 30.4 | 34.2 | 41.8 | 45.6 |
| Factories & Workshops | 106 | 84.8 | 95.4 | 116.6 | 127.2 |
| Households | 21,540 | 17,232 | 19,386 | 23,694 | 25,848 |

Table D2 — Citywide Totals under Uniform ± Change

| Scenario | Markets | Factories | Households | Total |
|---|---|---|---|---|
| Baseline (no change) | 38 | 106 | 21,540 | 21,684 |
| –20 % uniform | 30.4 | 84.8 | 17,232 | 17,347 |
| –10 % uniform | 34.2 | 95.4 | 19,386 | 19,516 |
| +10 % uniform | 41.8 | 116.6 | 23,694 | 23,853 |
| +20 % uniform | 45.6 | 127.2 | 25,848 | 26,021 |

*All values rounded to 1 decimal place.*

*Interpretation:*

The baseline estimate of **21,684 tonnes of textile waste per month** represents the central projection for Lagos in 2025. Sensitivity modelling shows that even when all sector inputs vary by ±20%, total volumes fall within a range of approximately **17,350 to 26,020 tonnes per month**, indicating that the overall system remains stable despite uncertainty in individual assumptions. While households overwhelmingly drive the scale of textile disposal, the sensitivity results demonstrate that the city's overall textile-waste burden remains consistently high across all scenarios. This provides a practical confidence range of **±20–25%**, offering policymakers and circular-economy stakeholders a realistic window for planning interventions, forecasting infrastructure needs, and assessing long-term waste-management priorities.

# Appendix E: Visual Documentation

This appendix contains selected images captured during market visits, garment-factory audits, and disposal-site observations. The photographs provide visual context to the environments and activities encountered during field research.







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