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Mapping textile waste and leftover materials in Rivatex's textile and garment production process

Part of the project
"Transferring UPMADE Know-How to Kenya"
Report No. 1

2025

Project info

Responsible partner:
Stockholm Environment Institute Tallinn Centre

Contributing partners:
Estonian Academy of Arts
Moi University

Task duration:
15.09.2023–28.02.2025

Project is financed by the Republic of Estonia.

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Table of contents

Introduction

Textile waste and fabric leftovers are inevitable by-products of textile and garment production, often considered unsuitable for their original purpose. Generated at various stages of production, they can result from technical issues (e.g. cutting waste and sewing damage), fabric quality problems (such as defects or unsuitability) and production/resource planning challenges (e.g. overproduction or order errors). However, with the growing adoption of the circular economy, there is increasing recognition that post-industrial textile waste and leftovers can be effectively utilized for closed-loop recycling. One such system is UPMADE, which uses the upcycling method to turn industrial textile waste into new garments. Through the UPMADE model, textile waste and leftover materials are reintroduced into the production process, turning them into valuable new upcycled products instead of discarded, contributing to a more circular and sustainable fashion ecosystem. Mapping and analysing textile waste and fabric leftovers is a necessary first step in implementing the UPMADE production system. It provides a detailed overview of leftover material streams, qualities and quantities, helping to determine their suitability for upcycling and establishing a baseline for integration into UPMADE production processes.

As part of the project "Transferring UPMADE Know-How to Kenya", the first task focused on assessing textile waste and fabric leftovers at Rivatex, a textile factory based in Eldoret, Kenya, to explore opportunities for industrial upcycling. Additionally, a thorough understanding of Rivatex's operations and production workflows was necessary to determine how the UPMADE model could be integrated into the factory's production processes.

Based on an online survey, document analysis and an on-site visit to the factory, this report presents key findings from the mapping of textile waste and fabric leftovers. It provides recommendations for improving the factory's operational efficiency, optimising resource allocation, and streamlining business processes to facilitate the implementation of circular and upcycling processes, including integrating the UPMADE system into Rivatex's existing production processes. Furthermore, the insights from this study lay the foundation for the subsequent task (Report No. 2), which will focus on leftover material analysis and the development of upcycled garment designs.

This report is divided into five sections. Section 1 provides an overview of the Rivatex textile factory, including its historical background, the journey from collapse to revival and its current management structure. Section 2 outlines the methodology used for data collection. Section 3 details the production process at Rivatex, starting with an overview of the order management system, followed by a detailed description of the fabric and garment production processes. Section 4 focuses on textile waste and leftover material generation, analyzing the quantities and categories of textile waste and leftovers produced, and includes an overview of Rivatex's textile material data and record-keeping system. The final section presents recommendations for improving production efficiency and optimizing the use of textile waste and leftovers.

1 Overview of Rivatex textile factory

This section provides an overview of Rivatex’s textile factory, focusing on its historical development, the challenges encountered, and its journey through modernisation. It also outlines the factory’s operations and organisational structure. The information presented in this section is based on various sources, including Rivatex’s presentations, an online survey, and interviews with staff conducted during the on-site visit.

1.1 A historical overview and modernisation

From prosperity to collapse and revival

Rivatex has a long history, dating back to its establishment in 1975 as Rift Valley Textiles. The factory plant was also constructed in the same year, marking the beginning of a significant venture in Kenya's textile industry. For much of its early years, Rivatex operated effectively and profitably, contributing to the growth of the local textile sector. However, the 1990s witnessed significant challenges for the industry, with the Kenyan government embarking on Structural Adjustment Programmes imposed by the International Monetary Fund and World Bank. The shift from a protected domestic market to a more liberalised environment, coupled with stiff competition from East Asia and Turkey and the influx of second-hand clothes from Western countries, severely impacted the local textile industry. The devaluation of the Kenyan shilling further exacerbated the crisis, leading to the collapse of Rivatex in 1998, alongside many other textile industries in Kenya. Some of the company's assets and properties were vandalised during the receivership period.

In 2007, Moi University acquired Rivatex, marking a turning point for the company. The modernisation project began in 2017 with a clear objective to revitalise the facility and expand its capacity. The goal was to establish Rivatex as a vertically integrated textile factory that manufactures products from cotton, polyester and viscose fibres.

Factory's modernisation

Since launching its modernisation initiative, Rivatex has made significant progress. The company expanded its factory floor by adding spaces for spinning, finished goods, design studios and laboratories. An effluent treatment plant was also constructed to ensure sustainable operations. Furthermore, it operates several factory outlets in major cities and towns across Kenya, including Nairobi, Kisumu, Eldoret, Nakuru and Kitale.

Modernisation has increased production efficiency and enabled a more diverse product portfolio. It has many production parts, from converting cotton lint to textile dyeing and pattern making. In 2023, Rivatex could produce over 40,000 meters of fabric per day. Their machinery enables the production of various fabrics, including shirting and suiting fabrics, woven furnishing fabrics, *khanga, kitenge* and camouflage fabrics. Rivatex has its private label and produces various products, including uniforms,

bed sheets, brushed cotton for baby blankets, curtains, tablecloths and various types of bags. They also offer custom-made clothing, such as shirts, dresses, jackets and more, tailored to meet customer needs. Rivatex supplies textile products to independent retailers, schools, universities and other public sector institutions such as the National Police Service.

Furthermore, Rivatex is certified by the Kenya Bureau of Standards and the National Environmental Management Authority. It has also been awarded certifications by the Zero Discharge of Hazardous Chemicals Academy (ZDHC Academy) and the Society of Dyers and Colourists. It has obtained a World Bank Centre of Excellence in phytochemicals and textiles. Rivatex also cooperates with the Ministry of Trade, Investments and Industry, *Salon International du Textile Africain* and Gatsby Africa to ensure compliance with national and international standards, enabling access to the African Growth and Opportunity Act market and the Export Processing Zones Authority.

Rivatex sources its main raw materials, including locally grown cotton from Kenya and the East African Community Region and polyester imported from India and China. However, the sustainable supply of cotton remains a challenge due to the collapse of the textile sector in Kenya. To address this, Rivatex has undertaken extension services and cotton sensitisation programmes in more than 20 counties in the Rift Valley, Western and Nyanza regions, working closely with the Ministry of Agriculture to promote sustainable cotton production in Kenya. Due to the challenges of the cotton supply in Kenya, some of the raw materials are sourced from neighbouring countries such as Uganda and Tanzania.

Through the company's commitment to the *Buy Kenya, Build Kenya* initiative[1], Rivatex plays a key role in supporting the local economy and strengthening the textile industry in Kenya. As of 2023, the company employs 757 people, including 300 seamstresses. Of the total workforce, around 45% are women and 55% are men.

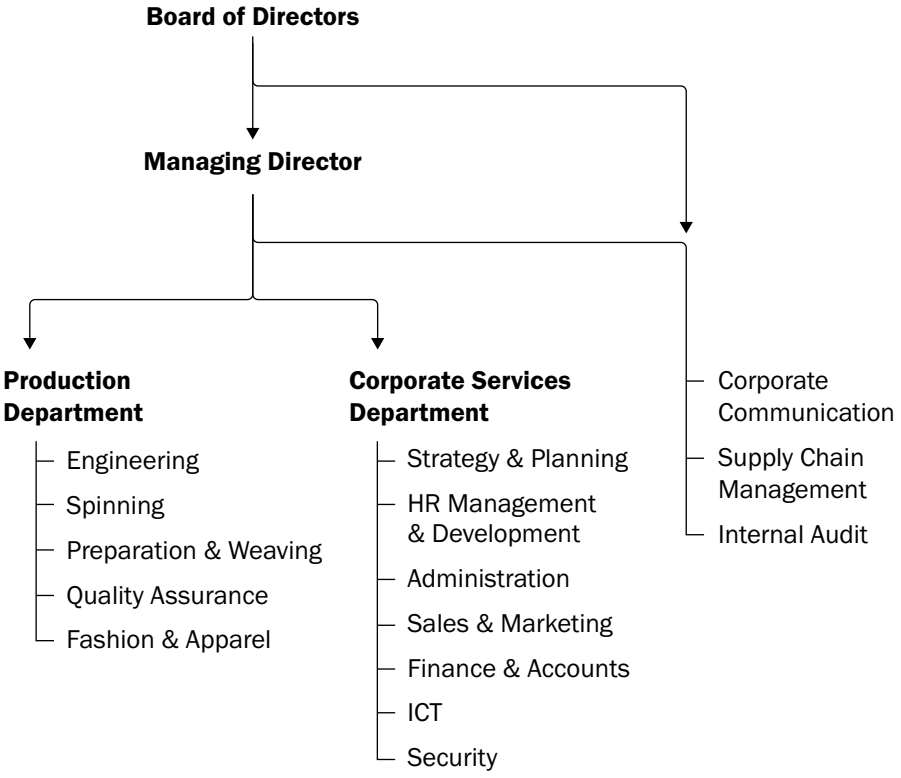
1 A national strategy aimed at encouraging the consumption of locally produced goods and services, generating employment and decreasing dependence on imports. Source: https://www.industrialization.go.ke/sites/default/files/2023-08/Buy%20Kenya%20Build%20Kenya%20Strategy%20June%202017.pdf

1.2 Rivatex's management structure

Rivatex follows a hierarchical management structure where responsibilities and tasks are distributed across two departments with subdivisions and units. Diagram 1 illustrates this structure, providing a visual representation of the different levels of management and how they interact within the organisation.

The board of directors is at the top of the hierarchy, which oversees the company's overall strategic direction and decision-making processes. A managing director manages the factory. Several separate units, including the corporate communication, supply chain management and internal audit unit, interact directly with the board of directors and the managing director. The company has two main departments: the production department and the corporate services department, which are further divided into divisions. Each division is led by a head of the division, who is responsible for day-to-day operations.

Diagram 1.
The management structure of Rivatex textile factory.



2 Data collection

A comprehensive data collection approach was implemented to systematically evaluate textile waste and leftover materials at Rivatex, combining desk research with an on-site field study. The goal was to obtain detailed insights into textile waste and fabric leftover generation, handling, and management across the production process and to identify opportunities for integrating the UPMADE production system.

Data collection was executed in two distinct phases. The first phase was a preliminary online assessment. In early October 2023, an online survey was distributed to Rivatex's managing director to gather baseline information regarding the company's management structure, production processes, and existing practices for handling textile leftovers and waste. Additionally, it captured data on workplace safety and employee well-being, setting the stage for a more targeted field investigation.

The second phase involved an on-site visit from November 27 to December 1, 2023. A mixed-method approach was adopted during this period to validate and enrich the initial findings. Key activities included a thorough review of production records (e.g. request for stitching

Photo 1. Visual inspection of textile waste and leftover fabrics in the factory storeroom.

instructions, local purchase orders, fabric stock records) and waste reports to pinpoint areas where textile waste and leftovers accumulate; a material flow analysis to assess the contribution of production materials to waste streams; and direct observations of critical production stages (such as spinning, weaving, processing and tailoring) to document waste and leftover generation patterns and process inefficiencies. Furthermore, semi-structured interviews were conducted with key personnel, including heads of divisions and the general manager, to gather qualitative insights on current waste management practices, challenges and prospects for the UPMADE system's integration and applying the certification scheme.

Photo 2. The Head of Finished Goods explained Rivatex's fabric record-keeping system.

Photo 3. Visual inspection of textile waste and leftover fabrics in the factory storeroom.

3 Production process at Rivatex

Rivatex's main products include a variety of textile fabrics, such as shirting and suiting fabrics, woven furnishing fabrics, *khanga*, *kitenge* and camouflage fabrics, and garments including shirts, dresses and bags. This section provides an overview of the fabric and garment production process at Rivatex. Given the importance of order management in implementing the UPMADE system, this section also details the order management process (see Diagram 2). This process describes how client inquiries and specifications are translated into production instructions, encompassing all stages from initial sample development and pricing to final order confirmation.

3.1 Fabric and garment production process

The textile and garment production process at Rivatex is carried out in the following divisions:

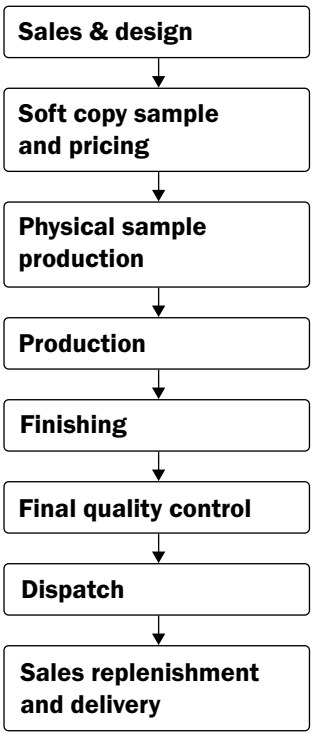
- Spinning
- Preparation and weaving
- Processing
- Fashion and apparel

The production process begins in the **spinning division,** where raw materials such as cotton, polyester and viscose are transformed into yarn. This department is equipped with modernised machinery, producing 12 tonnes of yarn daily. Once the yarn is made, it moves on to the **preparation and weaving division**, where it is woven into fabric. In this division, both older projectile weaving machines and newer rapier and air-jet machines are used. The department has a production capacity of 27,000 meters of fabric per day. After the woven fabric, it enters the **processing division** for further treatment. This division is responsible for pre-treatment, dyeing, printing and finishing processes. The fabric undergoes multiple steps, beginning as grey cloth and going through singeing or de-sizing, washing, drying, dyeing, finishing, and printing. This process improves the fabric's appearance and quality, preparing it for the final stages of production. The processing division can process 40,000 meters of fabric daily. The final stage of the production process is garment production in **the fashion and apparel division**, where fabric is transformed into finished garments. This process involves cutting, stitching and additional finishing touches, such as buttoning, ironing, embroidery and packing.

The production manager and assistant production manager oversee the overall efficiency and quality of the production process, coordinating and supervising the entire production line. According to the general manager, the production capacity varies depending on the produced item. For instance, 373 long-sleeved shirts can be made in an 8-hour shift, depending on the item's Standard Allowed Minute (SAM).

3.2 Order management and processing

Diagram 2. Order processing workflow at Rivatex.



The order management and processing system begins when a client submits an inquiry through various channels such as WhatsApp, email or by providing a physical reference sample. In the initial sales and design phase, the sales & marketing division checks fabric availability and provides an initial cost estimate. When additional design details are required, the fashion & apparel division collaborates with the client to finalise specifications, including print, color matching and other customisations.

Once the design is confirmed, the process moves into the soft copy sample-making and pricing phase. Digital design samples are created using software like Adobe Illustrator, InDesign or Photoshop and shared with the client for approval. Concurrently, the division calculates fabric consumption, labour and material costs, which are then sent to the finance & accounts division for final pricing. After pricing is confirmed, a pro forma invoice is issued to the client.

With design and pricing approved, the physical sample production phase commences. Two physical samples are produced – one for the client and one for Rivatex's records. Upon final client approval and issuance of a Purchase Order (PO), the order transitions into full-scale production. The sales division coordinates with the production division to generate technical manufacturing instructions and a reference number is assigned to the order. Production begins with fabric cutting, where up to 800 items may be processed in a single batch, followed by assembly through either a line production method or an individual production approach overseen by line technicians.

The garments then move into the finishing phase, where tasks such as buttoning, trimming, and ironing are completed. Quality control plays a critical role in this process, with the quality assurance division rigorously inspecting the assembled garments and returning any defective items for correction. Finally, the dispatch department packs the finished goods according to client specifications, while the sales division manages delivery logistics and sales replenishment.

4 Textile waste and leftover material generation in textile and garment production

Effective implementation of an upcycling-based garment design and production process requires a comprehensive understanding of the categories and quantities of textile waste and leftover materials generated during production. As part of the mapping process, textile waste and fabric leftovers were categorised based on two primary production processes at Rivatex – fabric production and garment production – as the materials from these processes can be utilized for upcycling. These processes occur in the following divisions:

- Processing division
- Fashion and apparel division

4.1 Processing division

All fabrics at Rivatex are produced in-house within the processing division, where leftover fabrics are inevitably generated as part of the production process. Some materials may fail to meet the required standards during fabric production or may not align with market demand. Leftover fabrics can result from deviations in the original order (e.g. issues with color, texture or other quality specifications), as well as from defects that occur during production (such as seam impressions, bowing or dye streaks) or damage resulting from improper storage or treatment.

Rivatex categorises the leftover fabrics generated in the processing division based on their quality, nature and potential for further use. The following categories of fabrics are considered leftovers from the processing division.

- **Non-moving fabric.** Non-moving fabric refers to finished fabric that has quality issues or is affected by other factors, such as lack of demand or market changes. As a result, it partly (estimated 1/3) remains unsold for an extended period. This fabric is kept in rolls and stored in the processing area, with some non-moving fabrics having been there since 2014. Non-moving material is kept in the processing division. These materials are stored in rolls awaiting potential repurposing or future sales.

Photo 4. Non-moving fabric.

- **Grade A fabric.** Grade A fabric refers to leftover fabric not sold for various reasons, such as being leftovers from the initial fabric order. This category of leftover fabric typically meets quality specifications and is kept for potential secondary orders or sales. It is ready for sale as fabric or can be used to produce products based on client orders. Grade A fabric leftovers are registered and stored in the finished goods section, specifically in the leftover fabric storage area. Grade A fabrics are stored in clearly marked polypropylene sacks.

Photo 5. Grade A fabric.

- **Grade B fabric.** Grade B fabric has minor defects identified during the final inspection process. Although these defects are minor, the fabric is considered lower quality than grade A fabric. Despite these imperfections, grade B fabric can still be used for specific purposes, often in discounted sales or for creating products without noticeable defects. It is stored in the finished goods section alongside grade A fabrics in polypropylene sacks.

Photo 6. Packaged grade B fabric.

- **Grade C fabric**. Also known as “fents”, grade C fabric consists of leftover materials with significant quality issues or short lengths. During the inspection process, fents are typically identified and discarded due to defects such as oil stains, tears or other forms of contamination that render them unsuitable for sale or further use. This category of leftover fabric is generally considered waste, as it is usually discarded and not sold as fabric.

Photo 7. Grade C fabric (fents) packed in fabric bags.

4.2 Fashion and apparel division

The fashion and apparel division is where the garment production process takes place. This process involves several stages, including cutting, stitching and additional finishing touches such as buttoning, ironing, embroidery and packing. Various categories of textile waste and leftover materials such as off-cuts, roll-ends and defective garments are generated as part of these operations.

- **Off-cuts.** Off-cuts are small fabric remnants generated during the garment production process, primarily in the cutting phase. These leftovers occur when the fabric is cut according to the required pattern shapes. Due to their small size and irregular shapes, off-cuts have no resale value and are treated as waste because of limited storage space. Off-cuts are stored on the second floor in the cutting section in the fashion and apparel division, where space constraints hinder their repurposing and tracking.

Photo 8. Off-cuts in the cutting section of the fashion and apparel division.

- **Roll-ends and end-bits.** Roll-ends and end-bits are fabric leftovers generated during the spreading process in garment production. These remnants result from the variation in fabric roll lengths and the allocation of fabric rolls during the cutting process. End-bits are shorter pieces, typically up to 3 meters long, while roll-ends refer to longer fabric pieces, generally exceeding 3 meters. End-bits are usually stored in plastic bags, while roll-ends are kept in rolls. Both categories of fabric leftovers are regularly generated, with roll-ends being more commonly used in garment production due to their longer length. However, managing end-bits and roll-ends is hindered by storage constraints and the lack of a formal tracking or sorting system, limiting their efficient reuse.
- **Defective garments.** Defective garments are a common form of textile waste generated during garment production, typically arising from issues encountered during the cutting, sewing or assembly stages. These defects result in products not meeting quality standards and must be discarded or reworked. At Rivatex, some defective garments are sold as lower-quality products, while others are treated as waste.

Photo 9. The storage of roll-ends and end-bits in the fashion and apparel division.

4.3 Quantities of textile waste and fabric leftovers

This section provides an overview of the quantities of textile waste and fabric leftovers generated during the various stages of the fabric and garment production process at Rivatex based on data from 2022. In addition to the previously discussed fabric and garment production waste, this section also includes textile waste generated in the spinning and weaving processes, which is not suitable for upcycling but is important for the overall waste accounting at the factory level and offers insights into potential improvements in waste management.

Spinning division

The spinning division is the first stage in the textile production process, where raw materials such as cotton and synthetic fibres are spun into yarn. In 2022, the spinning division generated 40 tonnes of textile waste. This includes 18 tonnes of droppings, 10 tonnes of comber noil, 6 tonnes of flatstrips, and other materials like pneumafil and textile dust. These materials are treated as waste in the factory.

Table 1. Textile waste generated in the spinning process in 2022.

Textile waste generated	The amount generated (tonnes) in 2022	Treatment
Dropping (cotton & blends)	18	Treated as waste
Flatstrips (cotton & blends)	6	Treated as waste
Comber noil (cotton & blends)	10	Treated as waste
Pneumafil (cotton & blends)	2	Treated as waste
Textile dust and yarn waste	4	Treated as waste
Total	**40 tonnes**	

Preparation and weaving process

The preparation and weaving division is responsible for transforming yarn into fabric. The waste generated in this division is mainly a result of fabric handling during the weaving process. In 2022, this division generated 7.09 tonnes of textile waste. Most of this was weaving yarn waste (6.2 tonnes), while 0.89 tonnes came from sizing yarn waste.

Table 2. Textile waste generated in the preparation and weaving process in 2022.

Textile waste generated	The amount generated (tonnes) in 2022	Treatment
Sizing yarn waste	0.89	Treated as waste
Weaving yarn waste	6.2	Treated as waste
Total	**7.09 tonnes**	

Processing division

The processing division handles the finishing processes of fabric, including dyeing, printing, and other treatments to prepare the fabric for garment production. In 2022, the processing division generated 556.2 tonnes of fabric leftovers. Of this, 500 tonnes were classified as grade A fabric, which meets quality specifications but is not sold for various reasons, such as being leftover from the initial fabric order. The remaining 50 tonnes were grade B fabric, still usable despite imperfections. The remaining 4 tonnes were treated as waste, mainly of fents (fabric scraps).

Table 3. Textile leftovers and waste generated in the fabric production process in 2022.

Textile waste and leftovers generated	The amount generated (tonnes) in 2022	Treatment
Non-moving fabric	2.2	Sold or reused within the factory
Grade A fabric	500	Sold or reused within the factory
Grade B fabric	50	Sold or reused within the factory
Grade C (fents)	4	Treated as waste
Total	**556.2 tonnes**	

Fashion and apparel division

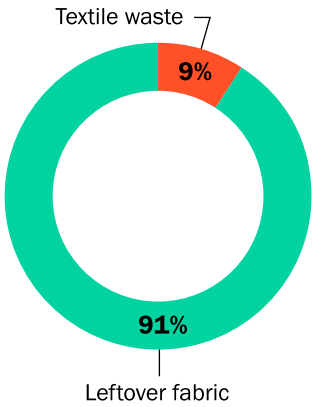
The fashion and apparel division handles garments cutting, sewing, and finishing. This division generated 3.87 tonnes of textile waste and leftovers in 2022, mostly from off-cuts (2.4 tonnes). Smaller amounts of roll-ends and end-bits (0.57 tonnes), rejected fabric and garments (in total 0.9 tonnes) were also produced. These leftovers and waste materials are either reused or treated as waste, depending on their quality and suitability for further use.

Table 4. Textile leftovers and waste generated in the tailoring process in 2022.

Textile waste and leftovers generated	The amount generated (tonnes) in 2022	Treatment
Off-cuts	2.4	Treated as waste
Roll-ends and end-bits	0.57	Sold, reused within the factory or treated as waste
Rejected fabric	0.1	Sold
Rejected garment	0.8	Sold
Total	**3.87**	

Total textile waste and leftover generation in Rivatex

Diagram 3. Distribution of leftover fabric and textile waste at Rivatex in 2022.



In 2022, Rivatex generated 607.2 tonnes of textile waste and fabric leftovers across all production divisions. Most of this waste was leftover fabric, which accounted for 91% of the total, while textile waste comprised 9%. The processing division contributed the most significant portion, generating 556.2 tonnes of fabric leftovers. The spinning division followed with 40 tonnes of waste, while the preparation and weaving division produced 7.09 tonnes. The fashion and apparel division accounted for 3.87 tonnes of textile waste and leftovers, with the majority being off-cuts. At the same time, fabric end-bits and roll-ends comprised a smaller portion.

Table 5. The breakdown of generated textile waste and fabric leftovers by production divisions in 2022.

Production division	Textile waste and leftovers generated (tonnes) in 2022
Spinning	40
Preparation and weaving	7.09
Processing	556.2
Fashion and apparel	3.87
Total	**607.2 tonnes**

4.4 Textile material data and record-keeping system

Rivatex's textile leftover and waste recording-keeping system, introduced by the new general manager in 2020, has significantly improved the tracking of various aspects of production. The digital system now records stitching orders, keeping track of the specific orders for stitching to ensure customer requirements are met. It also monitors balances, providing an overview of inventory levels to avoid shortages or overstocking. The system tracks which products have been dispatched to clients, ensuring smooth logistics and order fulfilment while recording incoming materials and products, offering a clear view of the supply chain. Additionally, it monitors fabric consumption, providing insights into material usage and waste management. While transitioning from the previous manual system to a digital one has significantly improved efficiency, accuracy and accessibility, some records, such as dispatch logs, remain in hard-copy form.

Photo 10. Storage area of fabric leftovers in the finished goods section (stock of grade A and B fabrics).

5 Recommendations

Drawing on the mapping of textile waste and fabric leftovers generated throughout Rivatex's production processes and the analysis of existing production procedures, several key recommendations are outlined below. These recommendations are designed to improve the efficiency of textile waste management, optimize the use of fabric leftovers, and enhance the overall production processes at the factory. By implementing these changes, Rivatex will reduce its environmental impact and streamline its operations, ultimately positioning the factory to successfully integrate the UPMADE production system and work toward UPMADE certification.

Improving data collection and storage for textile waste and leftovers

A comprehensive overview of textile waste and fabric leftovers is a pre-requisite for implementing resource efficiency measures, such as upcycling and integrating the UPMADE system. It is crucial to distinguish between waste materials and fabric leftovers suitable for upcycling, ensuring they are stored in designated areas for efficient management and future use. The following actions are recommended to optimize the collection and storage of textile waste and leftovers.

- **Implement regular inventory management for upcycled materials.** An efficient system should be set up to track textile waste and leftover fabrics that can be repurposed for upcycling. Regular inventory checks will help monitor the materials used during production, ensuring the necessary fabrics are available for clients who wish to create products from fabric leftovers.
- **Create an Upcycling Leftover Inventory Report**. This report should include detailed information for each fabric category, such as fabric code, category (e.g., Grade A, Grade B, non-moving, roll-ends), color, composition, length or weight, and estimated price. It will help track the available materials for upcycling and ensure accurate inventory management for future production.

- **Store materials for upcycling separately.** A more structured approach to storing textile waste and fabric leftovers suitable for upcycling should be implemented. Creating clearly defined storage areas will help Rivatex track, assess, and identify reusable materials, improving the flow of materials into the upcycling process.

Developing upcycling procedures for textile leftovers and waste

The production of upcycled products from fabric leftovers and waste requires establishing clear procedures within the factory. These procedures must align with the requirements of the UPMADE scheme and the associated certification criteria. To achieve this, the following recommendation is proposed.

- **Establish Standard Operating Procedures (SOPs) for UPMADE product production.** It is recommended that comprehensive SOPs be developed that clearly outline the responsibilities and processes involved in segregating, storing, and upcycling textile waste. The SOPs should cover all aspects of the production process, from identifying and categorising fabric leftovers to creating final upcycled products. Specific tasks should be assigned at each process step, with a designated person overseeing the segregation, storage, tailoring, and upcycling production. This will ensure that a structured and efficient system is in place to handle textile waste and leftovers for upcycling.

Implementing a system for data exchange on textile waste and leftovers with clients

The successful implementation of an upcycling business model for textile waste and leftovers requires establishing a system to exchange necessary data with clients, including information and sample fabrics suitable for upcycling. This system forms the basis for designing and producing upcycled products for clients and brands.

- **Establish an information exchange system with clients**. Develop the necessary forms and procedures for exchanging data with clients. These should include methods for sharing the required information and managing orders, enabling the factory to receive and produce upcycled products based on client specifications efficiently.
- **Develop a swatch book.** Creating a swatch book cataloguing the various fabrics and materials used in production can enhance planning and resource allocation. Clients and in-house design and production teams can better manage material usage with a visual record of available materials, minimizing the risk of over-ordering or

under-utilizing specific fabrics. This tool can also streamline material sourcing, promote the use of existing stock, and reduce the need for new fabric purchases.

Implementing a data collection system for assessing the environmental impact of textile products

To effectively produce upcycled products, the factory must have accurate data on the environmental impacts of its products throughout their life cycle, focusing on environmental sustainability.

- **Establish a standardized data collection system for environmental impact calculation.** Develop a system to collect data at each relevant stage of production, from raw material sourcing to the final product, which will allow Rivatex to calculate the environmental impacts of its products. This system should be aligned with life cycle assessment method, enabling the factory to assess the sustainability of its textile production and identify areas for improvement.

Transferring UPMADE Know-How to Kenya, 2025

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