

# MED TEST III

*Switch to circular value chains to boost the competitiveness of Egypt's textile and clothing industry*



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## *The SwitchMed programme*

Launched by the European Union (EU), the SwitchMed Programme has since 2014 demonstrated the potential for a green and circular economy in Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, and Tunisia. Through industry demonstrations, policy development, networking opportunities, and support for start-ups and green entrepreneurs, SwitchMed up-scales the transition towards Sustainable Consumption and Production (SCP) practices in the Southern Mediterranean region.

Through the promotion of business models that can reduce the inefficient use of resources and the environmental footprint of existing economic activities, the SwitchMed programme supports long-term resilience and an economic transformation of the region to meet economic, social, and environmental challenges related to the climate change.

Designing out waste, reducing pollution, and keeping products and materials longer in use are all cornerstones of a circular economy. These principles also outline the activities of the United Nations Industrial Development Organization (UNIDO) in developing resource-efficient and circular industries under the second phase (2019-2023) of the SwitchMed programme.

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## *The textile initiative in Egypt*

Textile and ready-made garment manufacturing demands significant amounts of resources and generates unprecedented volumes of waste and effluents. At the same time, the supply of resources is limited and threatened by a worldwide shortage and high price volatility. Retaining the value of the textile waste and reducing the environmental footprint is not only a necessity for Egypt's textile industry, but would also provide a unique opportunity to strategically reposition production standards in the industry and improve the resilience of businesses to meet future market demands for sustainable produced products.

*“The textile and garment industry is vital for Egypt, employing about 1.5 million workers, contributing to about 3% of the GDP and 12% of Egypt’s exports. The government aims to develop and modernize this sector, to improve production efficiency, optimize resource use, and labour welfare.”*

Eng. Mohamed Abdelkarim,  
Executive Director of the Industrial Modernization Center (IMC)

Together with the Ministry of Trade and Industry and the Ministry of Environment, UNIDO, under the SwitchMed Programme, is working on two tracks of projects to demonstrate the benefits of eco-innovative production models in Egypt's industrial textile and clothing supply chain.

Under the first project, UNIDO, together with the ZDHC Foundation, demonstrates and builds local capacities in Egypt for the implementation of safer chemical management practices that can help to protect the environment and increase the ability of the textile and garment industry to produce in line with international standards for sustainable products.

In the second project, UNIDO, together with actors from the local supply chain of international brands, demonstrates the potential for recycling pre-consumer textile waste to assist the development of a value chain for recycling textile fibres in Egypt.

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## *Mapping the textile waste ecosystem*

In 2021, Blumine and Reverse Resources, with the support from the IMC, the Apparel Export Council of Egypt and the Textiles & Home Textiles Export Council, undertook a waste mapping study for UNIDO in Egypt. The waste mapping study engaged a representative group of stakeholders along the textile waste value chain, to estimate the volumes, type and origin of pre-consumer and post-industrial textile waste flows generated by Egypt's textile and clothing industry.

According to the study, the textile and clothing industry in Egypt generates 212,000 tons per year out of which more than 50% is composed by either 100% cotton or cotton rich blends. Much of this waste is merely down-cycled to low-value products, e.g., insulation, padding, etc. This waste would have a significant potential to be upgraded into products with a higher added value, such as textile to textile recycling applications.

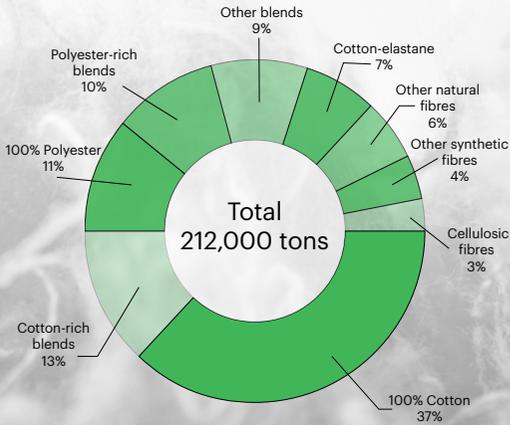
## *Valorizing textile waste: an opportunity for Egypt's industry*

In Egypt, there are already some textile-to textile recycling facilities under operation. However, these facilities rely on imported textile waste as an input, primarily due to quality issues of the local feedstock. Valorizing some of Egypt's 'valuable' cotton comprising pre-consumer textile waste could help reduce Egypt's dependency on imported short-fibre cotton as this type of textile waste has a very high recycling potential. Developing a local value chain for recycling textile fibres would also allow Egypt to create new economic opportunities and help respond to the increasing global demand for recycled fabrics. A modernization program from the Egyptian government foresees upgrading Egypt's upstream textile industry to boost its competitiveness and will play a key role in supporting the increase of production volumes of textile waste as a valuable source of materials for the industry for the following years.

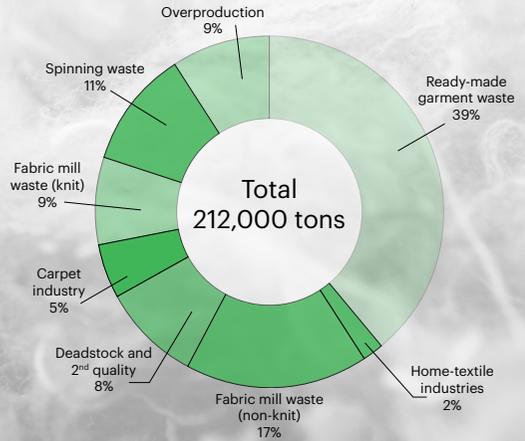
The waste mapping study also indicated market opportunities to repurpose lower value-quality waste, which cannot be recycled easily, into new yarns. With the concept of industrial symbiosis, waste streams from one sector can be redirected to another industry that will use this material as feedstock. These other destinations include, for example, non-woven applications for insulation, automotive, or furniture.

Based on these findings, two industrial pilots have been identified to demonstrate the different steps and business models for valorizing pre-consumer textile waste in Egypt. In doing so, the two pilots will evaluate the technological options to modernize the recycling capacity of the country, assessing both mechanical and chemical recycling technologies. Following the industry pilots in Egypt, UNIDO, together with stakeholders from the value chain, will develop a roadmap with recommendations and incentives that can strengthen the regulatory framework for textile waste recycling and help waste management authorities, industry federations, and other relevant institutions eliminate the obstacles for valorizing textile waste in Egypt. This is important to ensure the viability of the business models that are examined in the demonstration pilots.

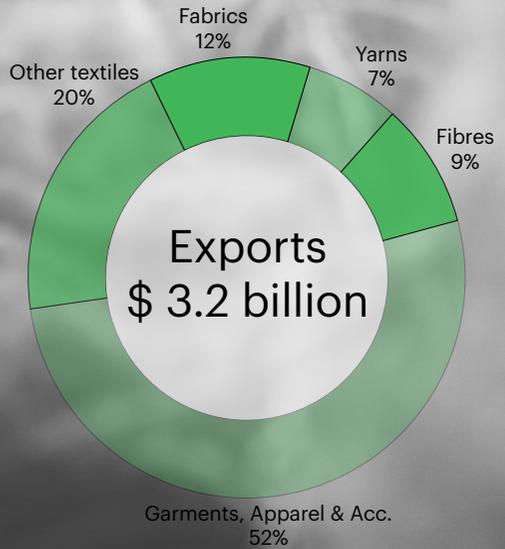
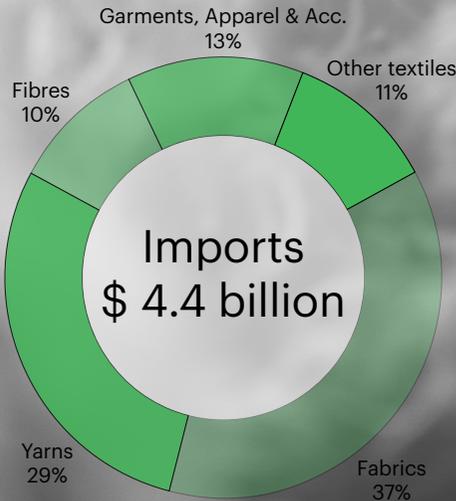
## Pre-consumer textile waste from Egypt by fibre\*



## Generation of textile waste by process in Egypt\*



## Trade in Egypt of textiles and clothing\*



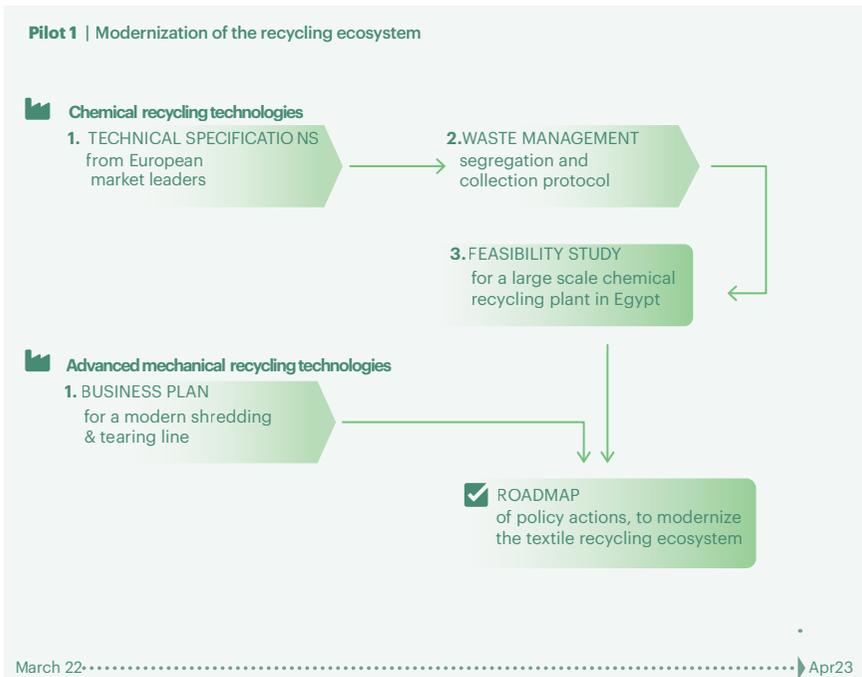
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## *Pilot project 1: Modernization of the recycling capacity in Egypt*

The objective of Pilot 1 is to advance Egypt's textile recycling capacity by assessing the viability of an investment in advanced chemical and mechanical recycling technologies. The study's findings will be presented to local stakeholders to design a roadmap on investments and policy actions to scale up textile recycling in the country.

The pilot aims to three specific objectives:

- Provide a clear understanding of investment and economic opportunities and technical and policy requirements for advanced chemical and mechanical recycling technologies;
- Improve and test waste segregation and collection processes for chemical textile recycling.
- Engage with local stakeholders to design a roadmap to modernize the recycling capacity of the country.



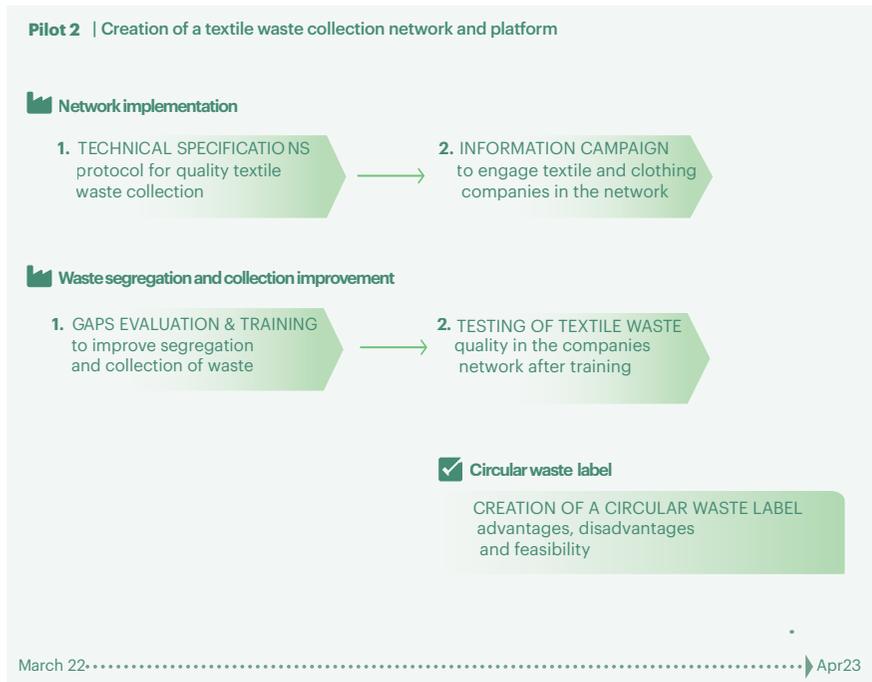
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## *Pilot project 2: Creation of quality textile waste collection in Egypt*

Pilot project 2 will set up a local network of garment makers and textile companies with the capacity to properly manage textile waste for high-quality mechanical recycling. The pilot will facilitate and test the recycling processes for various end uses of recycled materials.

The pilot aims to three specific objectives:

- Evaluate and improve the capacity of garment makers and textile companies to properly manage textile waste for high quality mechanical recycling.
- Assess the possibilities for improving the recycling value chain regarding product quality, profitability, attractiveness, and environmental impact by testing waste quality.
- Evaluate the feasibility of setting up a national “circularity label” for textile waste.



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