

Scaling Circularity

A product inventory classification method for design for recycling

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challenge

A scaled circular textile economy relies on good quality feedstock that can be adequately transformed into new resources after an extended lifecycle (McKinsey, 2022). Current product-by-product approaches lack a strategic inventory-wide perspective (WRAP, 2023). The Scaling Circularity project proposes a tool to classify entire product inventories based on recyclability, showing hotspots for immediate action to increase circularity across a brand's collections.

industry context

The research team has been working closely with a network of fashion brands, and delving deep into product data with Tesco. Through these connections the project connects with the priorities identified in industry for data transparency in preparation for Extended Producer Responsibility (EPR) legislation and the establishment of digital product passports (DPP).

what is garment recyclability

For a garment to be certified as recyclable, it must be made of a fibre that can be processed by a fibre-to-fibre recycling technology (Ellen MacArthur Foundation, 2017). We consider three fibre types that can be recycled at scale: polyester, cotton, and wool. Garments must be made of one of these fibres as a mono-material (preferable) or only include a small portion of contaminating fibres as accepted by the recycler. All hard and soft trims must be of the same material as the main fibre, fall within the recycler's contamination allowance, or be removed.

recyclability classification

The main fabric of the garment is not currently recyclable and does not indicate a clear redesign option. Recyclability may not be the best strategy for this piece. Consider other option such as design for longevity or remove the product from the range.

The main fabric of the garment is currently not recyclable, or trims are not compatible. However, the main fabric has a large proportion of a recyclable fibre, or the trims could be reconsidered. If the garment can be redesigned to follow the recycling parameters for this fibre, then it could be certified for recycling. In a new version of the product, use recyclable fabrics and check any trims or prints for compatibility with recycler parameters.

The main fabric of the garment is currently accepted by one or several scaled recyclers and trims are compatible. Follow the requirements for the fibre recycling (cotton, polyester, wool) and check for any additional trims not already assessed before submitting the product for certification.

CHALLENGING

REDESIGN

OK TO CERTIFY

classification tool

The identification of recyclable garments put forward for certification is currently left to the interpretation of designers and other brand stakeholders without a standard system for checking their compatibility with recycler parameters. The Scaling Circularity project puts forward a method for checking garment's compatibility with scaled recycling systems and shows 'low hanging fruit' for strategic action.

what next

An interactive tool for data entry based on Bill of Materials (BOM) information has been developed and is currently being trialled with fashion brands. This trial phase will provide insights into the logistical challenges for brands to record garment composition within such a tool. While there are known barriers to transparency within fashion supply chains, this level of reporting can be based on simple observation of the garments and contact with suppliers, promising an entry point to better accountability for a circular transition.

references

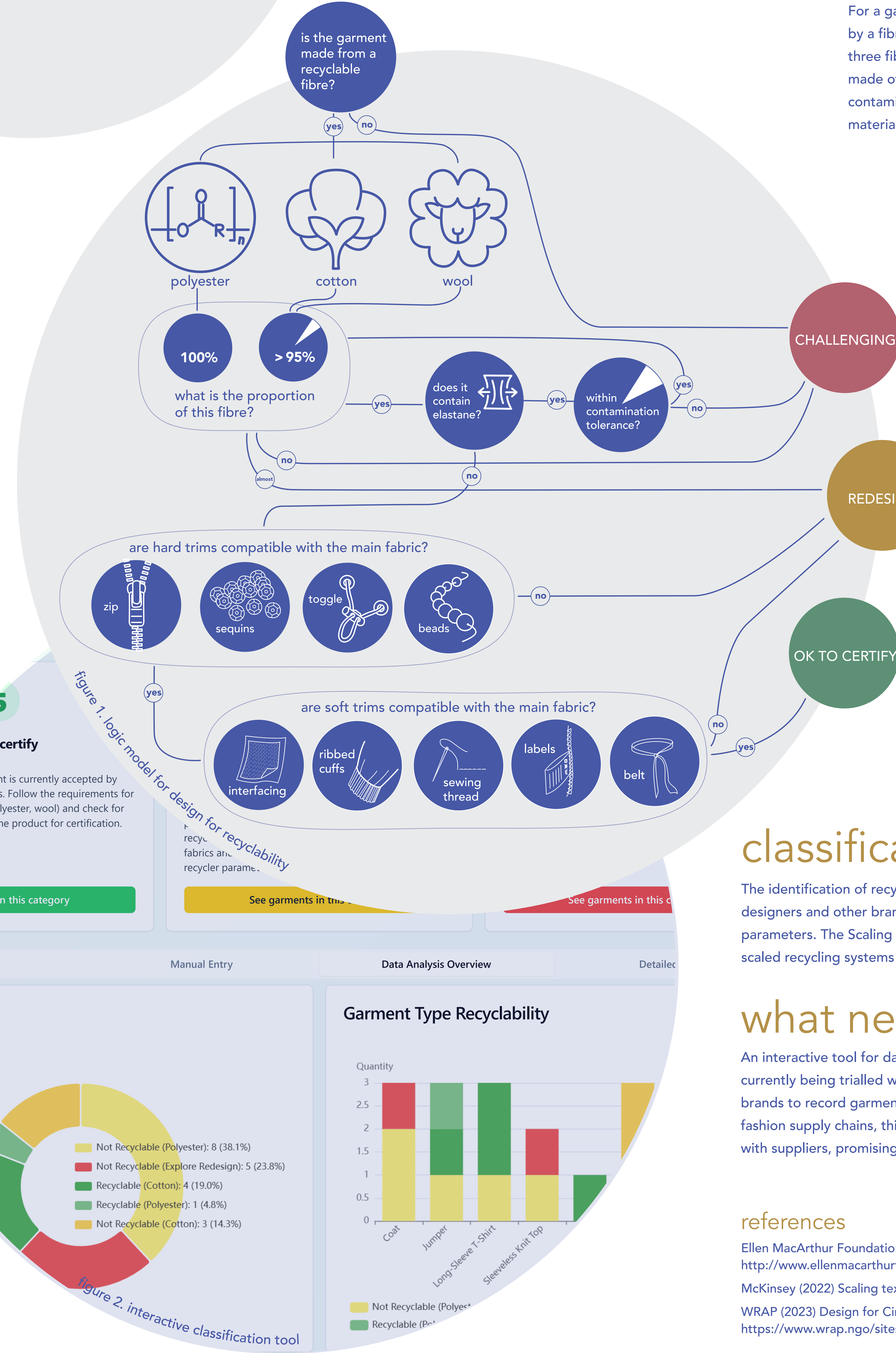
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acknowledgements

This project has received funding from the Impact + Network led by Northumbria University



certify

nt is currently accepted by
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polyester, wool) and check for
ne product for certification.

n this category

Manual Entry

Data Analysis Overview

Detailed

Garment Type Recyclability

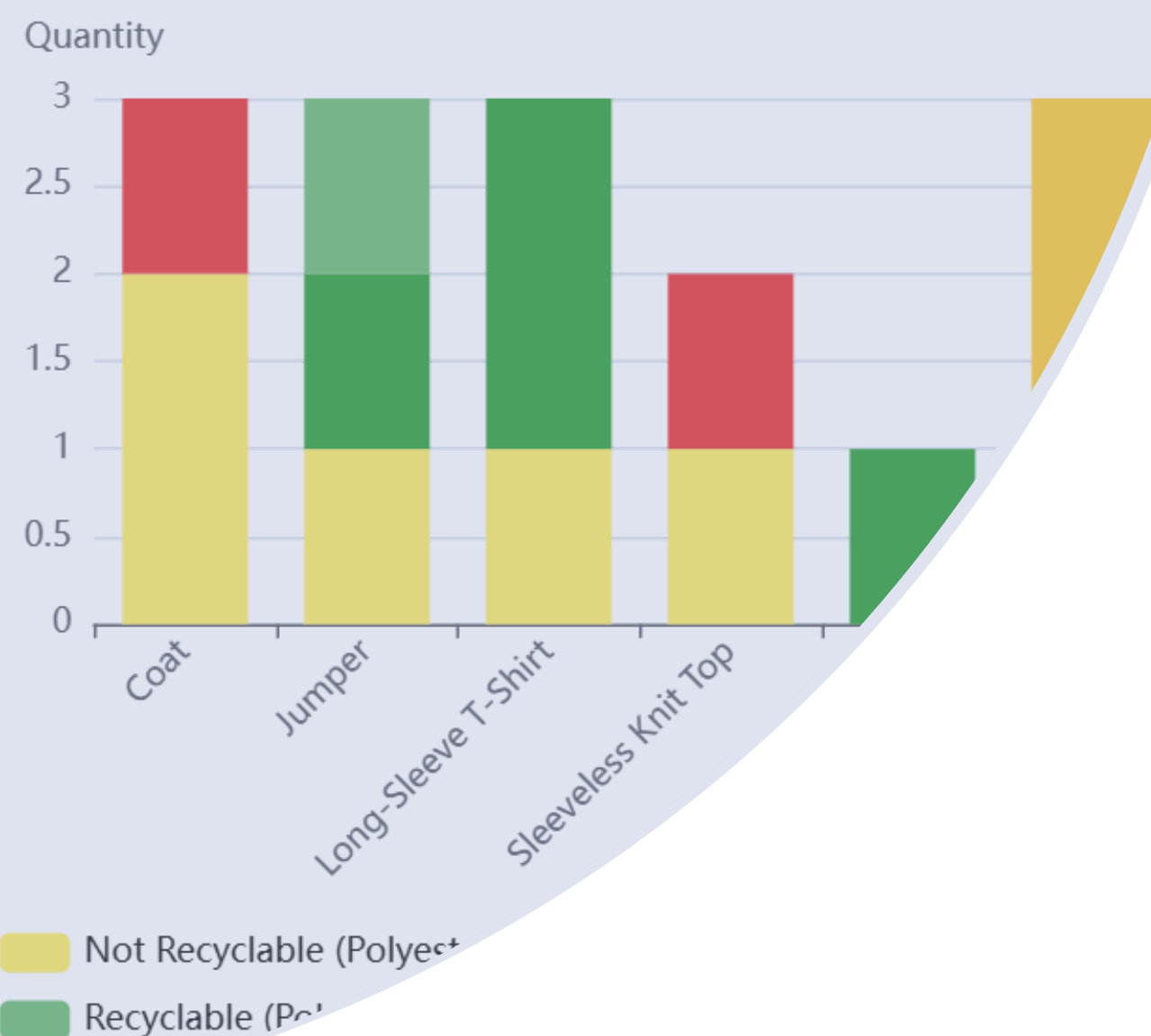


figure 2. interactive classification tool