

Current Status and Issues of textile recycling in Japan

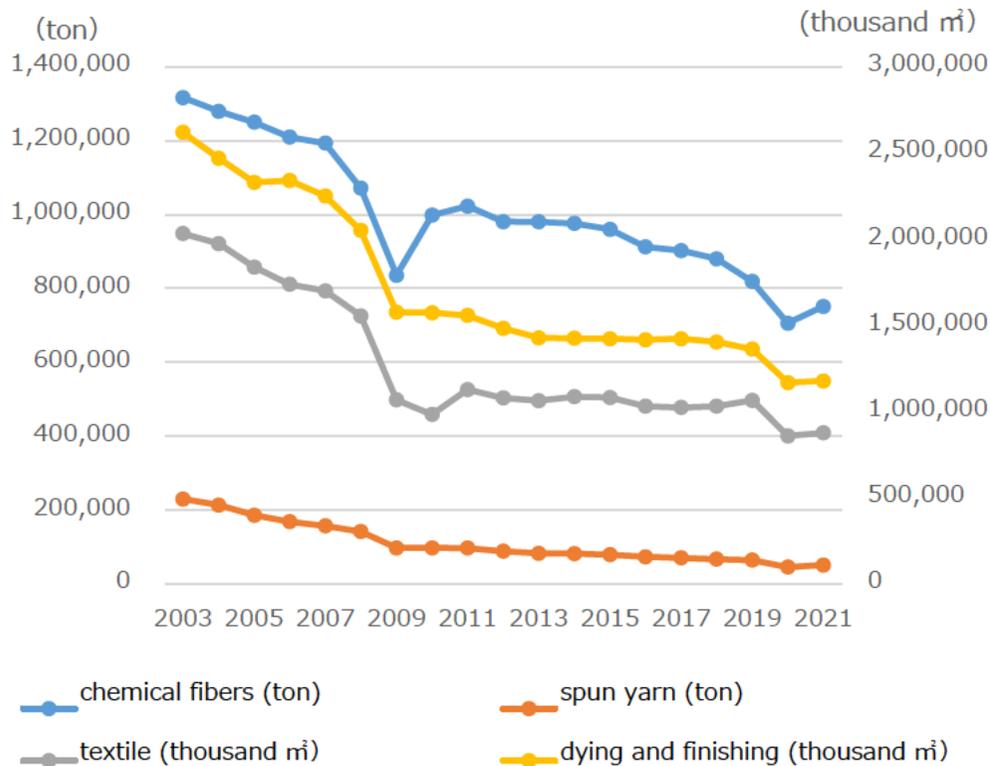
28th March, 2023

**Lifestyle industries division,
Manufacturing industries Bureau**

The current situation of textile and apparel industry in Japan

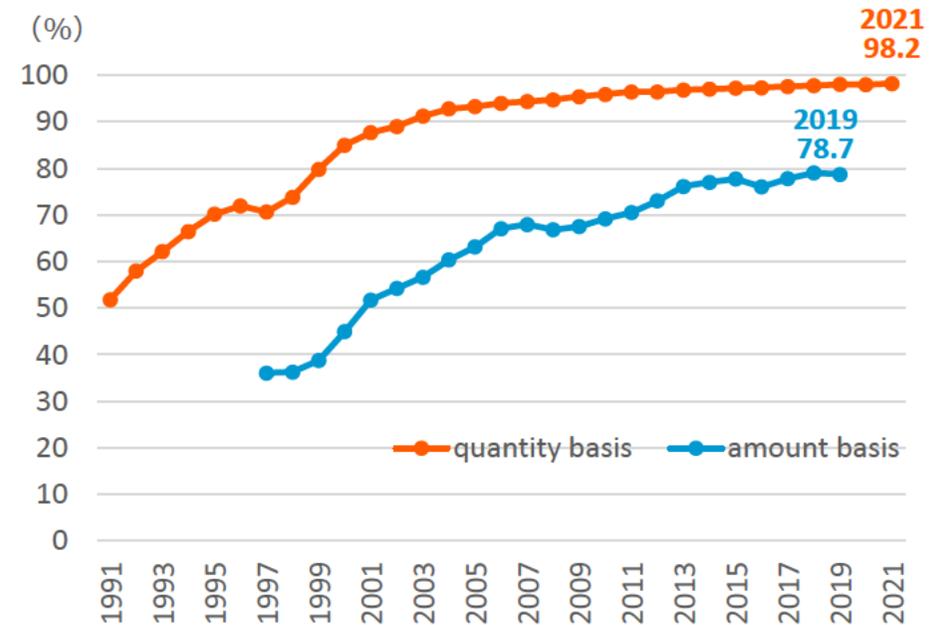
- Domestic production of textile products has been decreasing in these 20 years
- Due to shifting overseas production, import penetration ratio of apparels reached 98% on a quantity basis in 2021

Trends in domestic production



Source : CURRENT PRODUCTION STATISTICS (METI)

Import penetration ratio of Apparels in Japanese apparel market

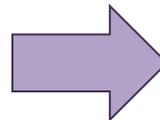


source : THE JAPANESE APPAREL MARKET AND IMPORTS 2022 (THE JAPAN TEXTILES IMPORTERS ASSOCIATION)

Japanese traditional culture in clothing

- From the viewpoint of efficient use of resources and environmental friendliness, it is important to use clothing for a long time by repairing or hand-me-down.
- In kimono, a traditional Japanese clothing, a wisdom of wearing for a long time has been passed down. Kimono is made of flat fabric, so it can adjust the size by undoing the seams and resawing as one grows.
- As a result, kimono has been handed down to children and grandchildren, and there is a sustainable system that continue to wear it. Japan has a such culture that wear clothing with care for a long time.

Re-tailoring of kimono

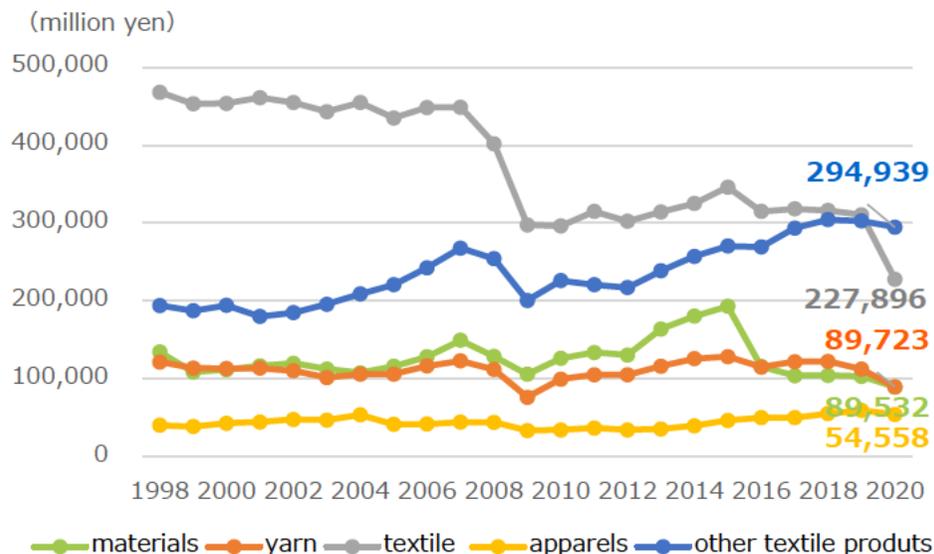


Adjusting size by re-sawing as height and sleeve length

Necessity of textile recycling system

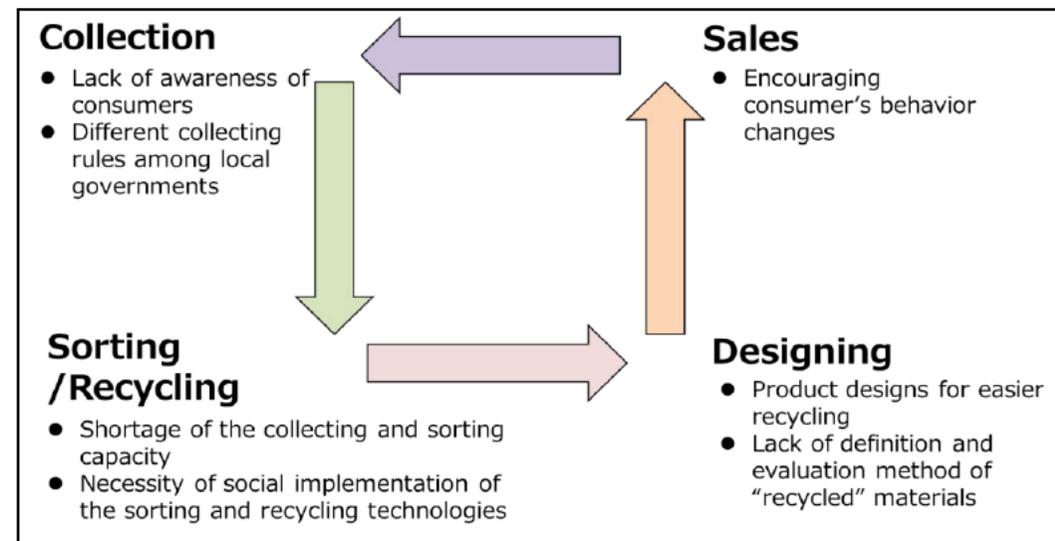
- Japanese textile has been more exported than apparel products and received relatively high evaluation in overseas market.
- The “EU Strategy for Sustainable and Circular Textiles” released in March 2022 shows a vision, such as by 2030 all textile products placed on the EU market are durable, repairable and recyclable, to a great extent made of recycled fibres, etc.
- It is necessary to take measures by identifying issues in establishing textile recycling system, that is to be a base so that Japanese textile industry will continuously produce and supply attractive products globally.

Trends in export of the Japanese textile related products



Source : Global Trade Atlas

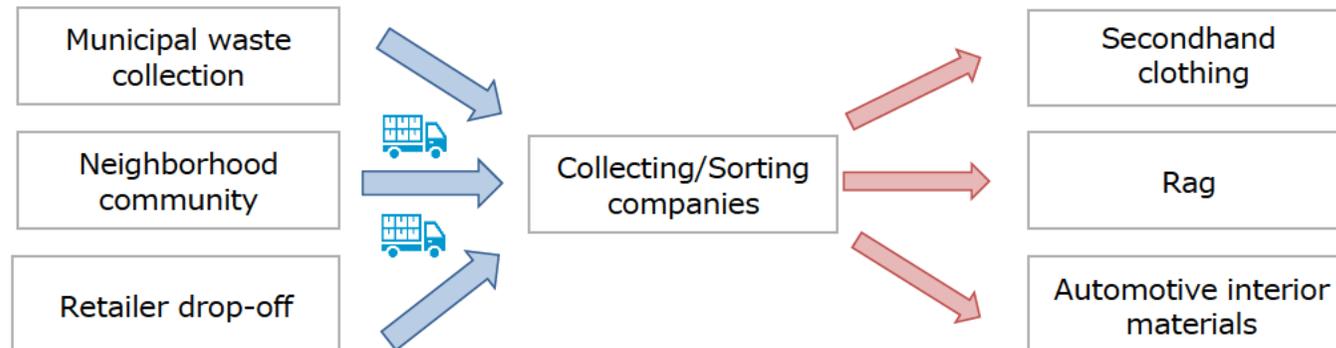
Issues in establishing textile recycling system



Issues in collection

- The major clothing collection methods in Japan are municipal recyclable waste collection and retailer drop-off.
- On the other hand, the reason why consumers discard clothing is not only lack of awareness but also shortage of convenient collecting station and insufficient information about how to treat collected clothing.
- About 60% of municipals on a population basis collect clothing as recyclable waste. Some municipals cannot do that because there are no collecting/sorting companies nearby.
- Retailer drop-off is increasing, but in many cases, it is limited to their own brand's products.

Example of collection scheme



Issues in manufacturing

- From 2023, METI will start to develop a “environmentally conscious design guidelines” cooperating with industries, in reference to ISO related to eco-design for various products and services.
- The guidelines will set conceivable items at each stage of lifecycle of the textile products while incorporating energy saving, GHG emission reduction, safety or using recycled materials.

Contents of the guidelines(tentative)

<Whole lifecycle>

1. Energy saving
2. GHG emission reduction
3. Safety
4. Using recycled materials

<each stage of lifecycle>

5. Water usage (material procurement/spinning/dyeing)
6. Drainage measures (material procurement/spinning/dyeing)
7. Waste (residue) management (sawing)
8. Reducing packaging materials (distribution/sales)
9. Waste (bad stock) management(distribution/sales)
10. Developing long-term use (using)
11. Prevention of fiber fragment released from washing (using)
12. Promoting repair and reuse services (using)
13. Reducing the impact on the environment by functional products (using)

- Also considering traceability and disclosure method, for example by utilizing RFID
- Providing advanced cases as a reference

Case : TOWA corporation



Separated down jacket

- For recycling, it is necessary to separate clothing by materials and remove garment accessories like buttons or zip fastener.



- Developed water soluble sawing yarn named AMELTIS
- AMELTIS made possible to separate products and remove accessories by immersing in 95°C water for 30 minutes.

Issues in manufacturing and sales

- Definition of recycled materials, labeling rules, and composition assessment method has not been put in place yet. It is also important how to identify difference between virgin plastic polymers and recycled ones to tackle greenwashing.
- In France, it was mandated that certain environmental information be provided from January 2023.(※)

Setting a definition of recycled textile products/labeling rules

- Each company appeal its own way



ADASTRIA Group
(put a mark on a tag)



SHIMAMURA
(put a mark on package)

Example of measures to tackle greenwashing

- Brock chain
- Third party certification
- Incorporating tracer

※Decree on consumer information about the environmental qualities and characteristics of waste-generating products

From January 1st 2023, producers, importers and any other marketer meeting certain criteria must make available to the consumer at the time of purchase and in a dematerialised format accessible free of charge, information relating in particular to :

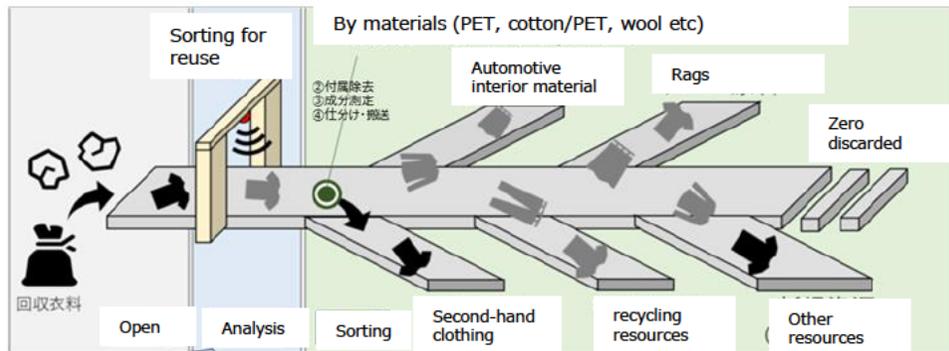
- Compostability, incorporation of recycled material, reusability, recyclability, presence of precious metals and rare earths, presence of hazardous substances, geographical traceability and presence of plastic microfibres

(<https://www.ecologie.gouv.fr/encadrement-des-allegations-environnementales-et-information-du-consommateur-sur-produits#scroll-nav> 2

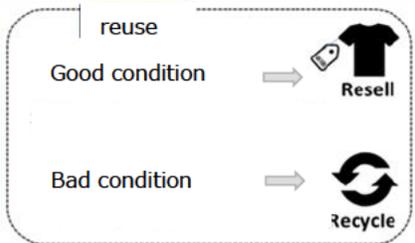
Issues in sorting / recycling

- Collected clothing are manually sorted at this moment. It is necessary to improve efficiency by developing automatic sorting technologies.
- METI supports technology development for commercializing fiber-to-fiber recycling technologies of single material.
- It is necessary to develop separation technologies for blended materials recycling.

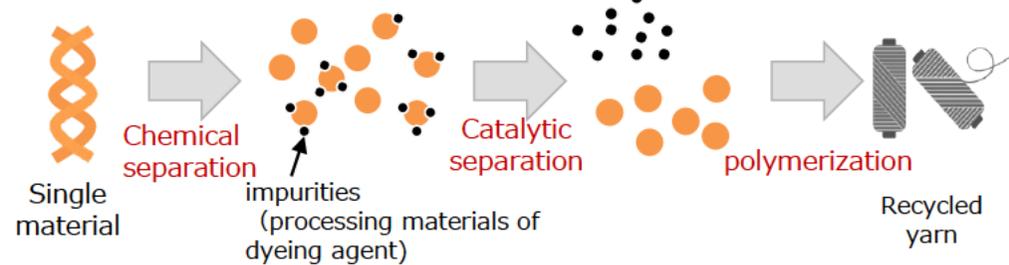
Developing automatic sorting technology



- ①IR Analysis : AI estimate mixing rate
- ②Image recognition: rating used clothing, identifying accessories



Recycling technology of single material



Separating technology of mixed materials

