# Fashion & Textiles

# What are Textiles?

A type of material composed of natural or synthetic fibers.

A type of cloth.

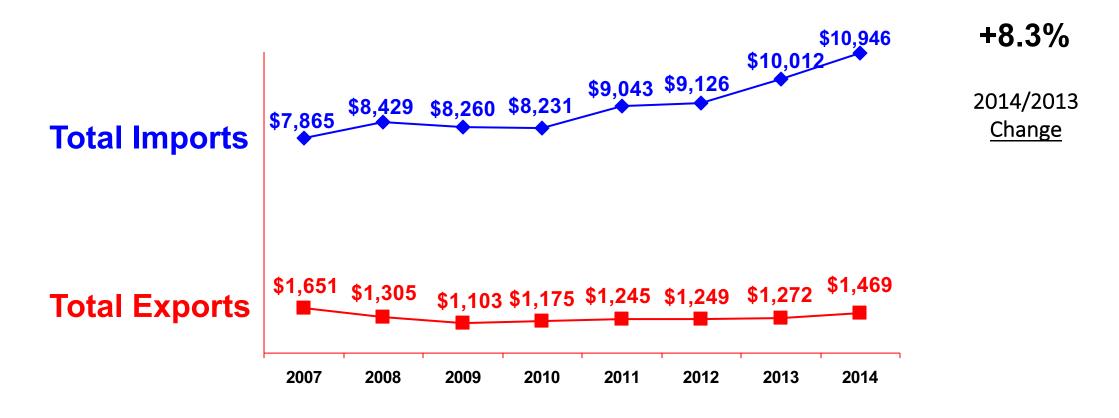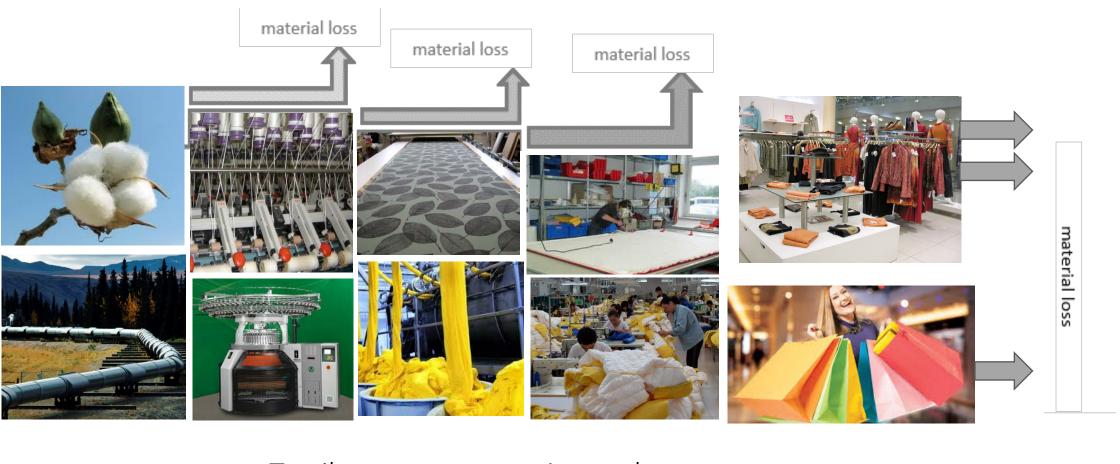Textiles are often associated with the production of clothing.

Textiles are everywhere

# Canadian Apparel Import/Export Patterns

## CANADIAN APPAREL BALANCE OF TRADE
## Millions of Dollars



**Total Imports**
- $7,865 (2007)
- $8,429 (2008)
- $8,260 (2009)
- $8,231 (2010)
- $9,043 (2011)
- $9,126 (2012)
- $10,012 (2013)
- $10,946 (2014)

**Total Exports**
- $1,651 (2007)
- $1,305 (2008)
- $1,103 (2009)
- $1,175 (2010)
- $1,245 (2011)
- $1,249 (2012)
- $1,272 (2013)
- $1,469 (2014)

**+8.3%**

2014/2013 Change

2007 2008 2009 2010 2011 2012 2013 2014

Mass Consumption is slowing, not ending

# Material Flow of Garment Production



material loss

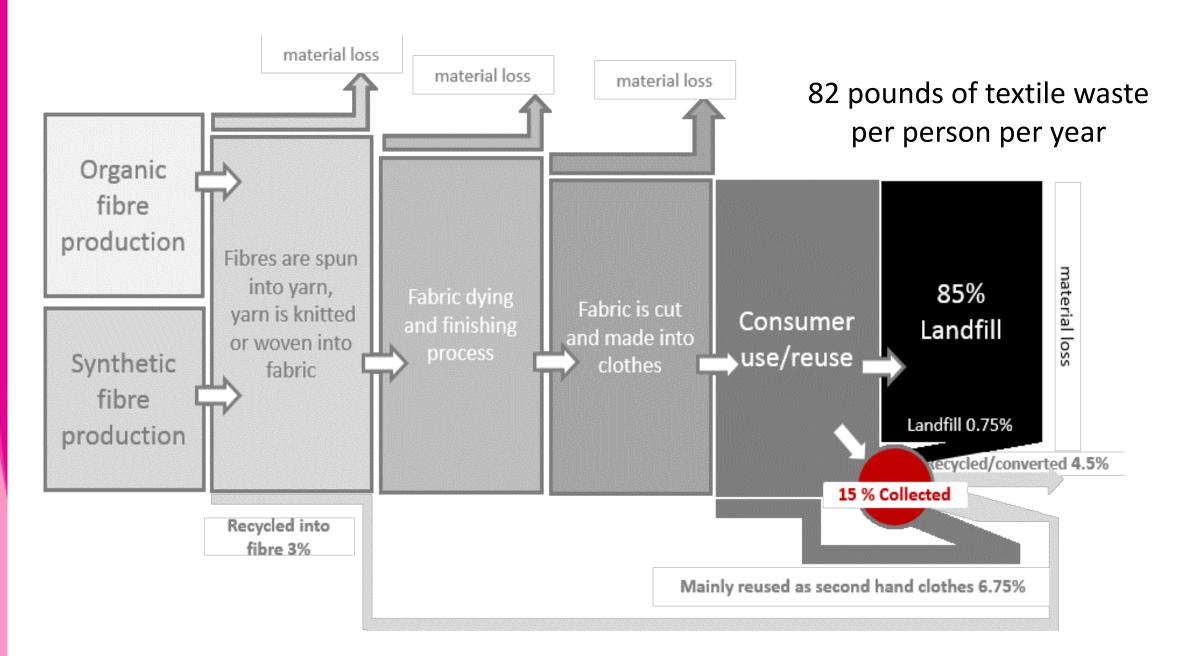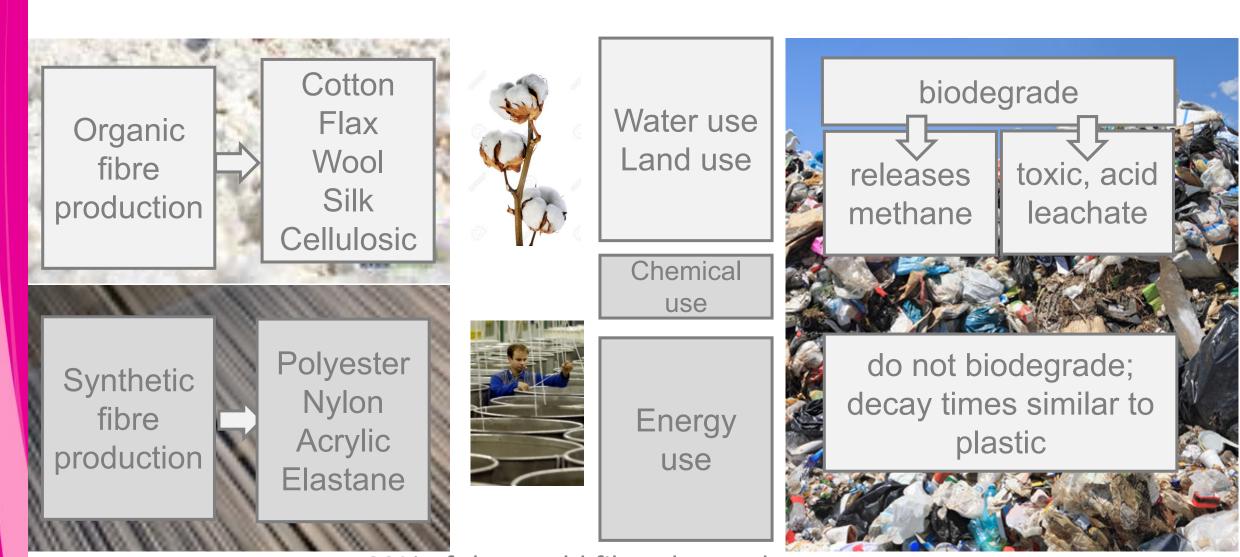material loss

material loss

Textile Industry

Apparel Industry

Distribution Channels

material loss

Pre-consumer textile waste from 1,483+ manufacturing facilities

# Material Flow of Garment Production



82 pounds of textile waste per person per year

# 85.75% Disposed Textile Material



Organic fibre production → Cotton Flax Wool Silk Cellulosic

Synthetic fibre production → Polyester Nylon Acrylic Elastane

Water use
Land use

Chemical use

Energy use

biodegrade → releases methane / toxic, acid leachate

do not biodegrade; decay times similar to plastic

83% of the world fibre demand cotton & polyester

# 15% Collected Textile Material

## Reuse

6.75%   mainly reused as second-hand clothes

## Recycle

4.5%   recycled and converted

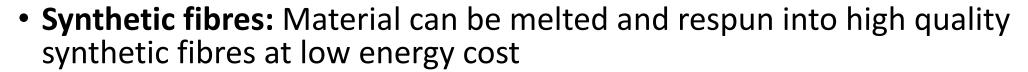3%   recycled into new fibres

0.75 %  sorted out for landfill



DISSOLVE COTTON

# Textiles can be Recycled in 2 ways:

1. Mechanical
   - Ragging
   - Shredding

2. Chemical



- **Synthetic fibres:** Material can be melted and respun into high quality synthetic fibres at low energy cost

- **Organic fibres:** Significant technological progress has been made in recent years to recycle cotton fibres into cellulosic fibres.

- Technical challenges remain, mainly the recycling of cotton and polyester and other **fibre blends.**

# Import Export Paradox of used Clothing

# We Need to Get More Textiles Out of Landfill



Photo taken by William Baird

Why do so many textiles end up in landfill?

Online survey, data were collected in February 2015, in collaboration with survey provider SSI

410 valid surveys

- a sufficient sample size for Ontario

- gender and age distribution reflects a representative sample

# Donation is a Social Norm

- Clothing donations are not dependent on gender or age.

- Nearly 92 % of the participants of the study know where to donate their garments, and estimated that they donate nearly 60 % of all their garments!

- However, this number drops down to 50% donations when participants get confronted with different clothes and have to make "real life" decisions about what to do with the garment.

# People Don't Know What To Donate



- Participants donate clothes for reuse not for recycling!

- Textiles, such as towels or bedsheets are often forgotten.

- 49% of the participants throw their clothes away because they think they are in such a bad condition that nobody could wear them anymore.
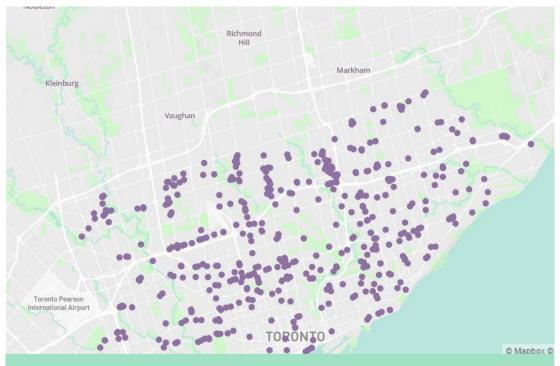
# Communication

- Here's a picture of recycling bins placed outside the University of Boras, Sweden

# Donation is Dependent on Convenience & Accessibility of Donation Boxes

- Convenience plays a big role in whether people will donate.

- 34% name accessibility as the main barrier to donation.

- Only 42% of the participants know at least one spot that is very convenient to reach.



Clothing Drop Boxes, Toronto, ON
Katia Vasilyeva, Virginia W. Maclaren, PhD, MCIP, RPP, University of Toronto

# Further Factors Influencing Donation Participation:

- **Volume influences behaviour:** People are more likely to dispose of garments in the waste when the volume is low.

**When people dispose**:

- Nearly 28% stated they that they get rid of their clothing whenever they noticed them.

- Nearly 27% of people keep their clothes for a spring and fall clean-up.

- 22% clean out their closets when there's no more room.

# Disposal is Widespread

- 9% of the participants admit to dispose everything!

Why do we need to worry about this?

  - 13,500,000  residents in Ontario
  - 37.2  kg of textile waste each person per year

We estimated that Ontario alone produces more than 500,000 tonnes of **residential textile** per year.

# Industrial Textile Waste



The not so low hanging fruit

Thank you