

# DESIGNING CLIMATE-COMPATIBLE INDUSTRIAL STRATEGIES FOR SOUTH AFRICA: THE TEXTILES VALUE CHAIN

Findings and recommendations: 22 September 2022

*Trade & Industrial Policy Strategies (TIPS)*



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# Research aim & objectives

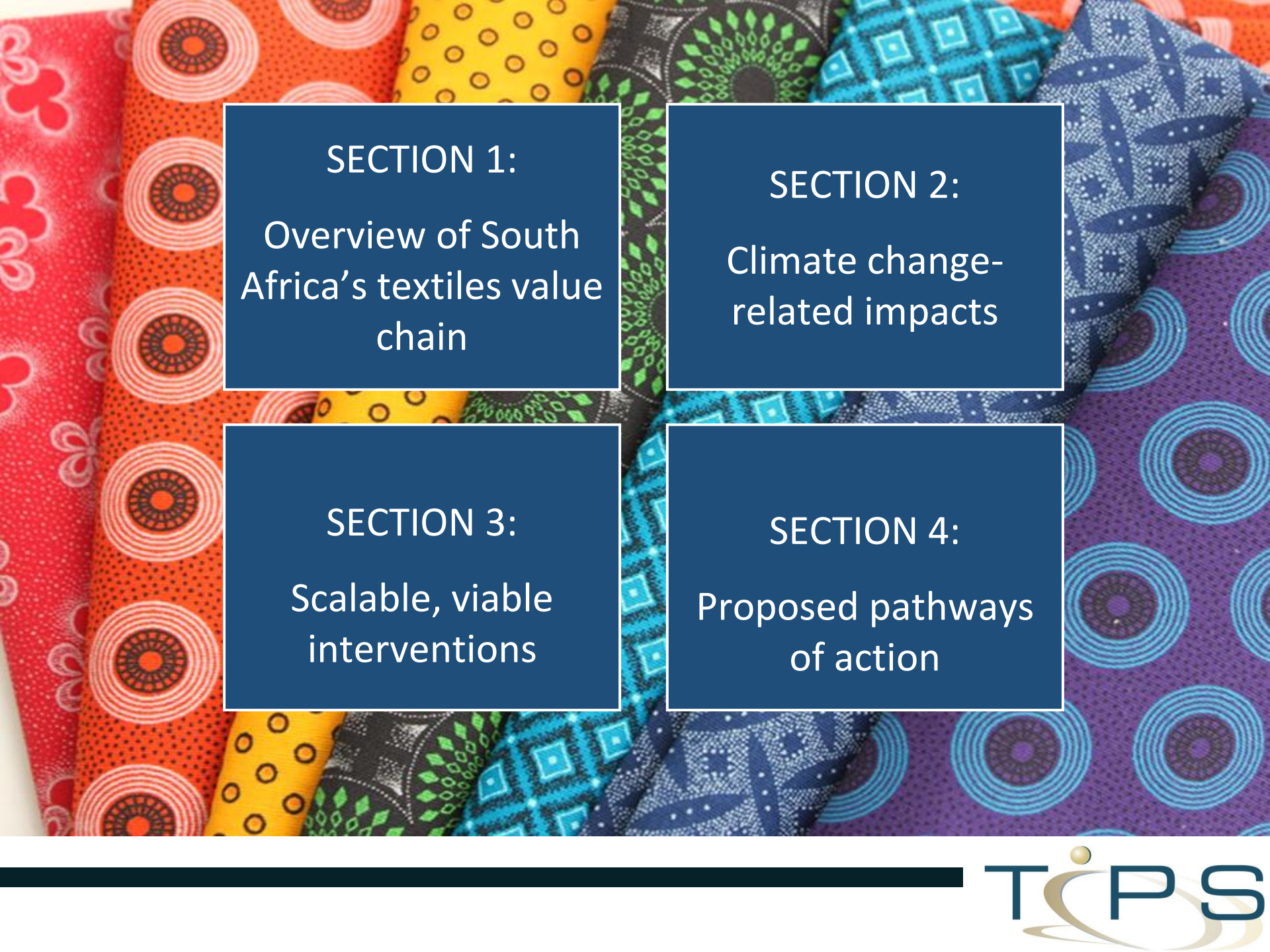
## Aim

To establish a long-term climate-compatible and environmentally sustainable industrial development strategy for South Africa's textiles value chain, along with a clear roadmap or pathways on how to achieve this.

## Objectives

1. To provide an overview of South Africa's current textiles value chain.
2. To unpack the textiles value chain's climate-change (environmental) and socio-economic related impacts and challenges.
3. To identify and unpack viable priority solutions / pathways to mitigate the environmental and socio-economic impacts associated with South Africa's textiles value chain, with reference to enabling a transition towards and adaptation to a climate-compatible economy.

To build on and compliment current textiles research and initiatives in the country e.g. the dtic's Retail Clothing, Textile, Footwear & Leather (R-CTFL) Master Plan, NCPC-SA's InTex, and GreenCape's work with the City of Cape Town.

The background of the slide is a collage of various colorful fabrics with different patterns, including circles, squares, and abstract designs in shades of red, orange, yellow, green, blue, and purple.

SECTION 1:  
Overview of South  
Africa's textiles value  
chain

SECTION 2:  
Climate change-  
related impacts

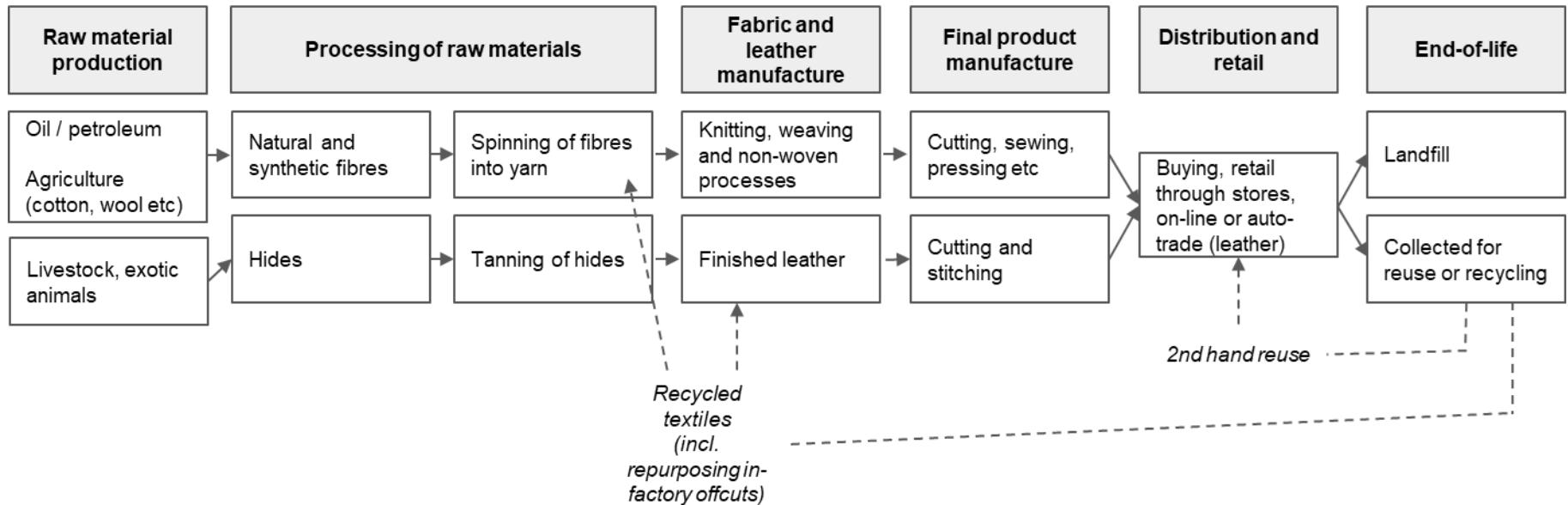
SECTION 3:  
Scalable, viable  
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# South Africa's textiles value chain

- Textiles in the broadest sense include: clothing, textiles, footwear and leather (CTFL).
- **Report focus:** mainly textiles and clothing (doesn't include furniture and refurbishment)

A typical textile value chain (will vary from product to product)



# South Africa's textiles sector

*The textile industry is one of the most complicated manufacturing industries. It is a fragmented and heterogeneous sector dominated by retailers and brands, and small and medium enterprises (SMEs) (Hasanbeigi, 2010).*

- Contributed R70b to SA's GDP in 2016 (3% of total GDP)
- Employs approx. 210,000 people (2020) - numbers vary, but declining trend

## **Some key sector characteristics:**

- Predominantly import focused: 56% textiles, 54% clothing and 61% footwear sales
- Recognised globally for high-quality wool, mohair and cotton - mainly exported
- Manufacturing component in decline since 1990s - lack government support, difficult manufacturing conditions, influx of cheap and illegal clothing (need to compete)
- Signs of upliftment:
  - Retailers / R-CTFL Master Plan driving domestic sourcing to meet 'just in time' production
  - Increase in online sales of clothing and footwear (Covid-19 pandemic)
  - Significant increase in pre-loved (second-hand) market
- Recognised for its employment potential, especially SMEs

# Climate-change related hotspots

The textiles industry is a major contributor to climate change and creates significant environmental impacts through resource depletion, air and water pollutants, energy and toxic chemical use.

## Main GHG emissions impact:

Impact varies depending on textile type and processes adopted

- Leather tanning process
- Spinning of polyester
- Dyeing and finishing
- In-home washing of clothing

These mainly occur outside South Africa (unless processing and manufacturing occurs locally).

- 1/3rd global CO<sub>2</sub> emissions arise in China

## Other key environmental impacts:

- **Water consumption:** Dyeing, finishing, in-home washing, and leather tanning
- **Hazardous chemicals / water pollution:** Tanning, dyeing and finishing
- **Waste:**
  - In-factory offcuts
  - Consumer throwaway culture
  - Only 13% textiles recycle, and less than 1% recycled back into clothing

The background of the slide is a collage of various colorful fabrics with different patterns. From left to right, the patterns include: red fabric with white floral motifs, orange fabric with white concentric circles, yellow fabric with black dots, black fabric with green leaf-like patterns, blue fabric with white squares, and purple fabric with blue concentric circles. A dark blue rectangular box is overlaid in the center, containing the text.

SECTION 3:  
Proposed industrial scalable, viable interventions



# Proposed low-carbon interventions

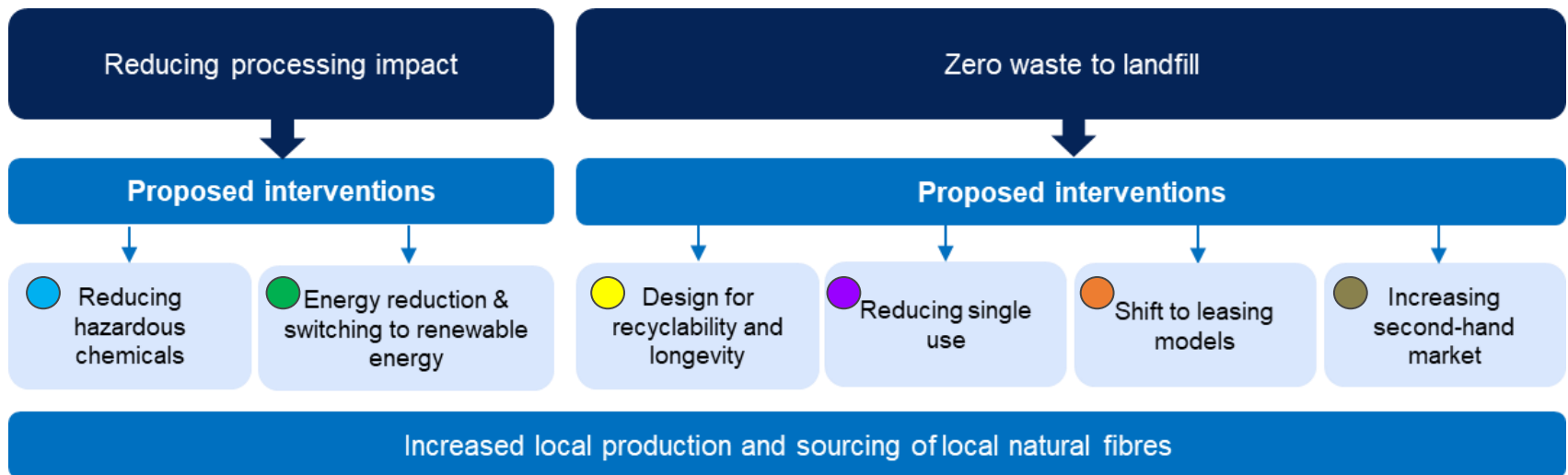
## EU strategy for sustainable and circular textiles target:

- ☐ Carbon neutrality by 2050
- ☐ 50% reduction in GHG emissions by 2030

## UNs Climate Change Fashion Industry Charter for Climate Action:

- ☐ Net zero emissions by 2050

While several interventions exist to mitigate climate change and environmental impacts associated with the textiles value chain, the following have been identified as key interventions for decarbonising the sector.



# Reducing processing impact: Hazardous chemicals

## Hazardous chemicals reduction

- About 8,000 chemicals used, mostly during pre-treatment and finishing
- Hazardous to humans, wildlife and environment (water pollution)

## Proposed interventions

- Adoption of hazardous substance regulations and standards - prioritise high volume clothing e.g. uniforms
- Retailers/brands specify non-hazardous chemicals (procurement guidelines and adopt restricted substances lists)
- Adopt technologies to reduce chemical use (e.g. laser finishing, leather alternatives, concentrated dyes)
- Reuse water and effluent (filtration) and improved water purification prior to release into the environment

## Some significant barriers

- Cost barriers: operating licences, lab testing and audits, installation of new technologies / upgrades
- Reduced textiles options, therefore potential higher cost

## Some key stakeholder actions

- Textiles manufacturers / dye houses: Adopt EcoIndex standards / REACH (or similar) and new technologies
- Importers / retailers / brands: Adopt chemical restriction lists, traceability / audits of chemicals used
- Government: Include hazardous chemical reduction in R-CTFL, develop guidelines, procurement of corporate wear, school uniforms with reduced chemical use, and monitoring and enforcement

# Reducing processing impact: Energy consumption

## Energy consumption

- Main contributor to GHG emissions in the textile value chain (80% in manufacturing)
- Compounded in SA by high energy costs, and unstable supply
- Energy management improvement could realise a net potential value of R993b, and 90mt of GHG emissions by 2030 in the global textiles sector
- About 45% of GHG emissions savings can be derived from energy efficiency improvement in raw material production, preparation and processing

## Proposed interventions

- Adopt energy efficiency opportunities in-factory (processing and manufacturing) e.g. adopt energy management programmes, machinery maintenance, upgrade machinery / new technologies
- Switch to renewable energy technologies, notably solar PV (processing and manufacturing) procurement from IPP (save approx. 15% electricity costs)

## Some significant barriers

- Cost barriers: new technology purchase, upgrade costs, solar PV payback period
- Government financial incentives exist - need to streamline and communicate to the sector

## Some key stakeholder actions

- Manufacturers: Implement energy management programme, audits of current machinery, purchase energy-star rated machinery,
- Government: Facilitate and provide support to identify collective energy efficiency / renewable energy interventions, communicate financial incentives to the sector, include energy consumption reduction / security in the R-CTFL

# Zero waste to landfill: Recyclability and longevity

## Textiles waste and opportunities

- Waste arises pre- and post-consumer (e.g. off-cuts, damages, no longer worn / end-of-life)
- Post-consumer waste on the rise due to 'fast fashion' and throw away culture
- About 13% of textiles are recycled, and less than 1% recycled back into clothing
- Minimisation of production and manufacturing waste could realise 24mt GHG emissions savings globally

## Proposed interventions

- Minimisation and recycling of production and manufacturing textile waste
- Develop guidelines for increasing textiles recycling and longevity (e.g. repair and reuse)
- Set textile recycling targets e.g. 25% of textile waste to be recycled / reduce clothing to landfill and incineration by 15%
- Introduce / recognise textiles as a product in government's current Extended Producer Responsibility (EPR) Scheme

## Some significant barriers

- Cost barriers: new technology / upgrades to use recycled content, procurement recycled fibers/textiles, EPR scheme levy, supplier switch
- Implementation of EPR levy scheme / incentivisation; Consumer acceptance / adoption
- Potential reduction in manufacturing output if longevity is increased / consumers purchase less

## Some key stakeholder actions

- Manufacturers: Assess current wastage rates, identify opportunities to minimise and recycle in-factory, procure fibers and textiles containing recycled content (not rPET)
- Importers / retailers: Stipulate recycled content, recyclability and reparability of product procured; identify suitable suppliers
- Government: Include textile waste reduction in the R-CTFL; facilitate / develop design for recyclability and longevity guidelines; incentivise for recyclability (include textiles in current EPR)

# Zero waste to landfill: Reducing single-use sanitary wear

- **Greater circularity needed**- solution to increase the production of washable multi-use highly absorbent healthcare products (Sanitary towels and nappies)
- Results, less waste and less pollution, increase social and economic impact for consumers to be able to extend the use of these items and thereby lowering costs.
- **Increase manufacturing of sanitary items** like single-use nappies and sanitary towels

## Reusable menstrual products

- To increase production of re-usables
  - Washable highly absorbent menstrual towels
  - Re-usable menstrual cups
- Education environmental benefits

## Significant barriers

- Consumer behavior, perception - hygiene
- Access to sanitation (water to wash)
- Upfront cost is high, with longer term savings

## Main stakeholder actions

- Government procurement to include multi-use sanitary towels
- Support SMMEs local manufacturing, design to meet standards (SANS 1812) subsidize testing costs

*\* (SABS) passed the first reusable sanitary standard for the manufacturing of washable, reusable sanitary towels (SANS 1812) in May 2020 (South African Government, 2020)*

- Retailers to increase uptake of products on shelves

## Multi-use washable cloth nappies

- To increase market uptake for adults and infants
- To change consumer behaviour (perception), education and awareness campaigns

## Significant barriers

- Consumer behaviour, perception to change
- Access to water to wash products
- Product fit - leakage design improvements

## Main stakeholder actions

- Greater support from government to promote cloth nappies - manufacturing
- South Africa's Cloth Nappy User Association

# Zero waste to landfill: Clothing and footwear leasing models

- The South African leasing market is underdeveloped and will need time to prepare consumers to increase uptake of clothing rental demands
- Leasing models can reduce environmental footprints and decarbonise the textiles value chain and create jobs in the services linked to clean clothing items and collection and deliveries of items.
- Consumers can benefit from cost savings if they purchase less and consider clothing rental models.

## Interventions

- Uptake of leasing business models from both retailers (big brands) and SMEs
- Increase capabilities in the sector to scale - online shops (systems/technology)
- Low-hanging fruit lies within schools to set up second hand school uniform shops that support circulation of clothing and footwear (school emblems)

## Significant barriers

- To extend offering beyond costumes and weddings/evening wear
- Consumer awareness campaigns
- Business model innovation - Lack of technology to manage operational systems and leasing guidelines (insurance, logistics)

## Main stakeholder actions

- SMME business incubators online retail and rental models capacity building.

# Zero waste to landfill: Increase clothing and footwear second-hand markets

- Fast fashion industry 20% increase over the next 10 years, while the pre-loved market has a projected growth of about 185% by 2032.
- To increase leasing models drastically over the next 10 years.
- Circular business models, including fashion rentals, re-commerce, repair and refurbishment could enable the industry to cut around 143 million tonnes of GHG emissions by 2030 (McKinsey, 2020).
- To appeal to Generation Z and millennials
- Seen as more accessible and inclusive than sustainable fashion items (prices to suit every budget and inclusive for all body shapes and sized)
- To be cautious of how second-hand clothing imports affect local manufacturing- red flags
- Low hanging fruit school uniforms- online and physical market places at schools

## Online Markets interventions

- To increase online second hand retail shops to allow for greater SMME participation (other than only Gumtree and Facebook marketplace)

## Significant barriers

- Greater support is needed in South Africa to enable SMEs adopt re-sale models and integrate technology to enable online sales.

## Main stakeholder actions

- DSBD via seda incubators to encourage SMME participation

## Physical Markets interventions

- Opportunities to increase physical second hand markets

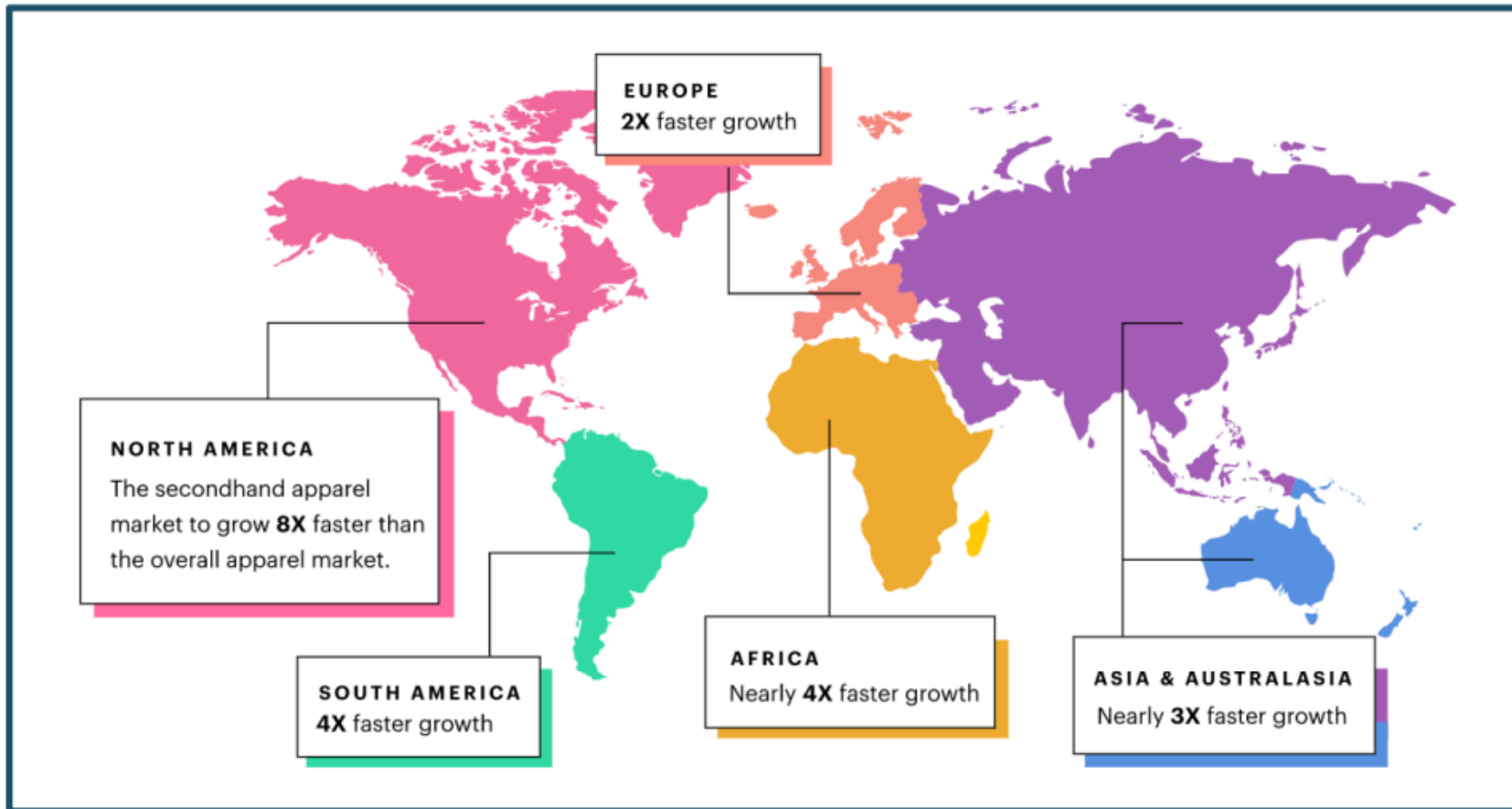
## Significant barriers

- The lack of adequate infrastructure especially in informal settlements
- To address safety & security and basic infrastructure to allow second hand trade markets in Townships
- Trading licenses

## Main stakeholder actions

- Government to identify land/space for second hand markets
- Upgrade township infrastructure to allow for safe trading spaces with access to sanitation (toilets)

Figure 4: Global second-hand clothing predicted market growth, per region



Source: ThreadUp, 2022.

Globally the second-hand clothing (resale) market is a growing, emerging trend. Globally the market saw record growth of 32% in 2021. It is estimated to be worth more than double that of fast fashion, with a projected value of US\$84 billion by 2030 (compared to fast fashion which has a projection of US\$40 billion) (Erdly, 2021).



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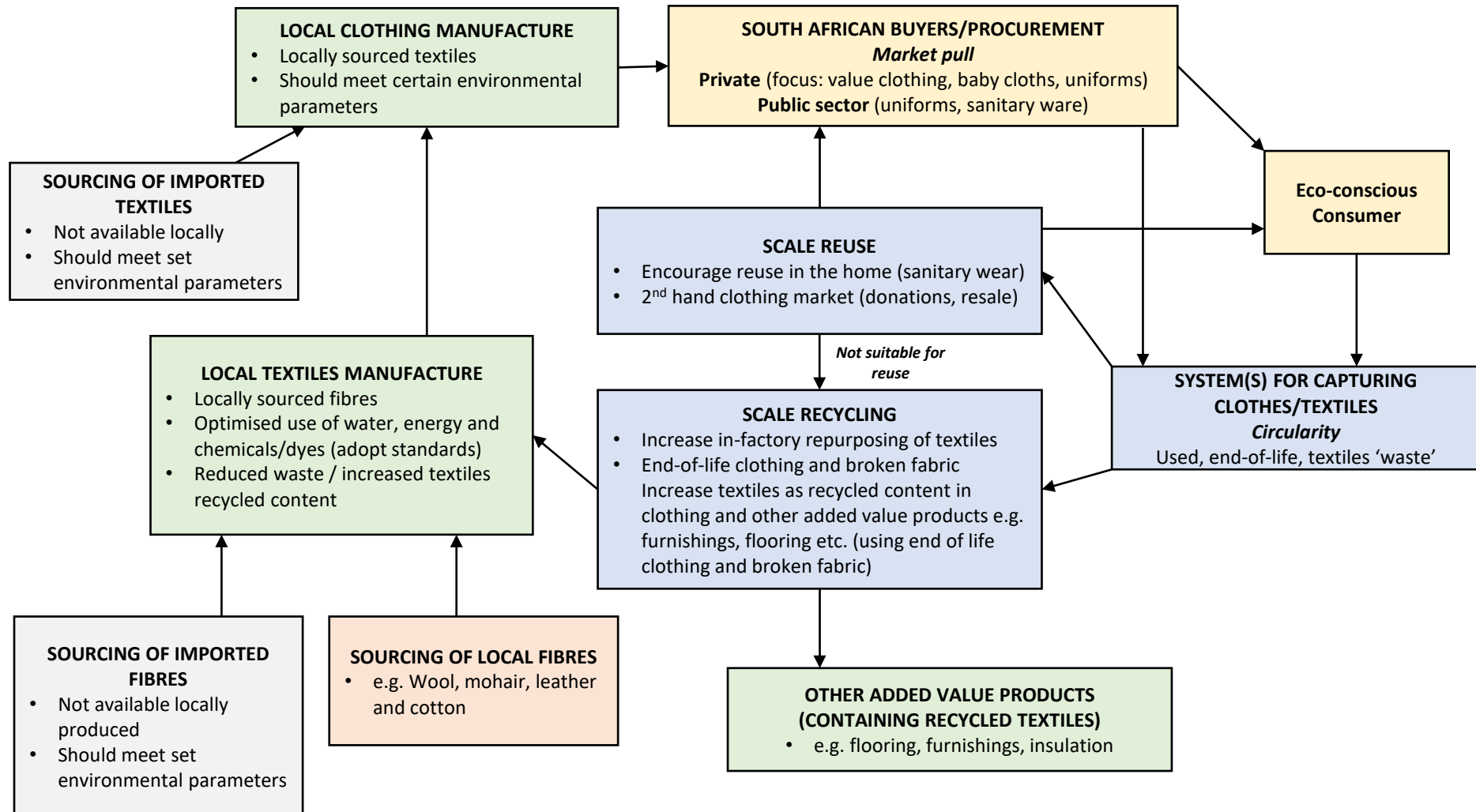
SECTION 4:  
Proposed pathways of action

# SHIFT TOWARDS A LOW CARBON [LOCALISED] TEXTILE SYSTEM - CONNECTIVITY

## Ambition

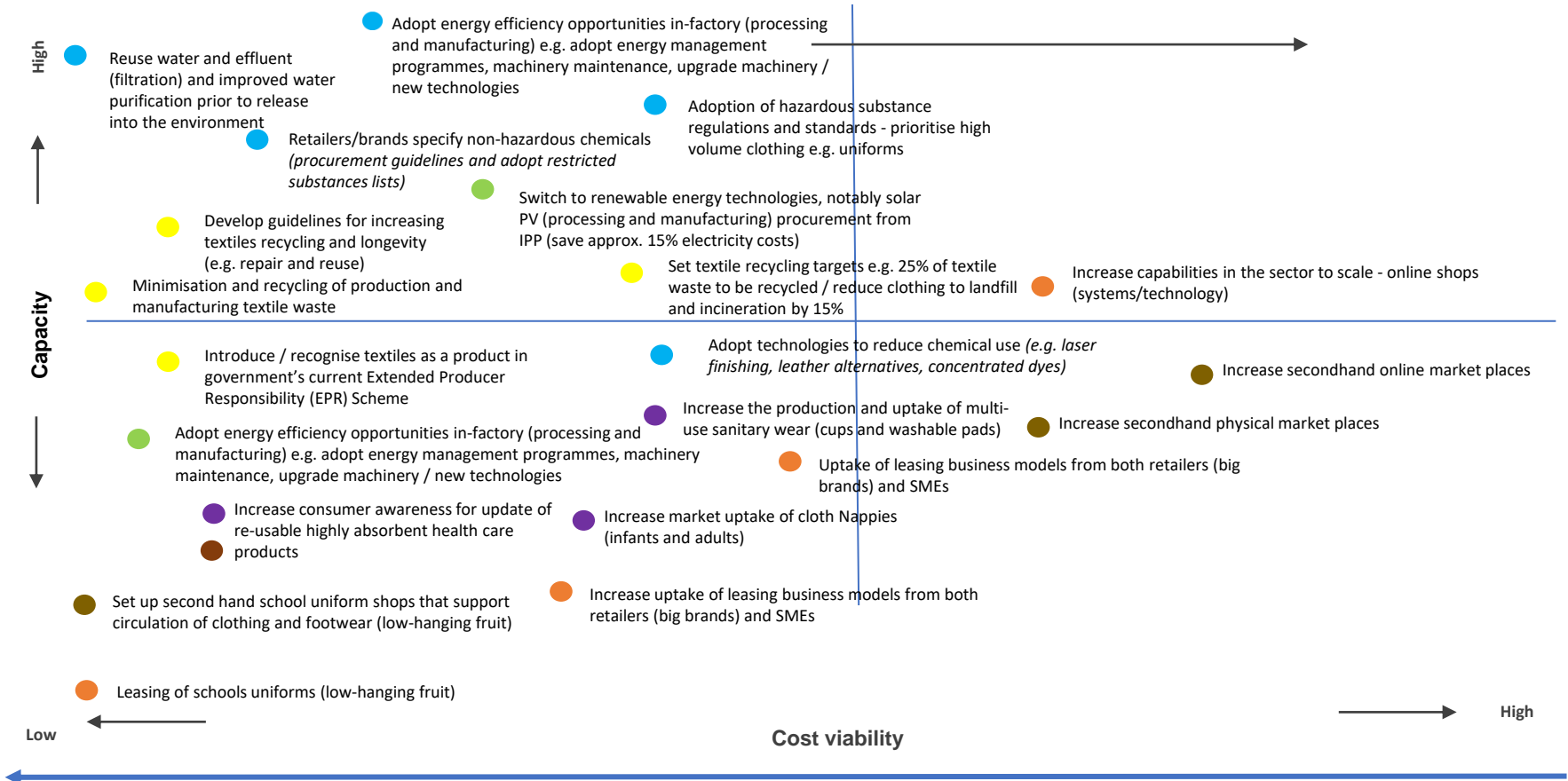
- Incl. consumption of locally produced natural fibres, enhanced and scaled manufacturing capability and capacity (incl. SMEs)
- Imported clothing to meet certain environmental parameters (traceability, recycled content, reduced chemical usage/water)

*It is acknowledged that not all textiles/clothing can be manufactured locally*



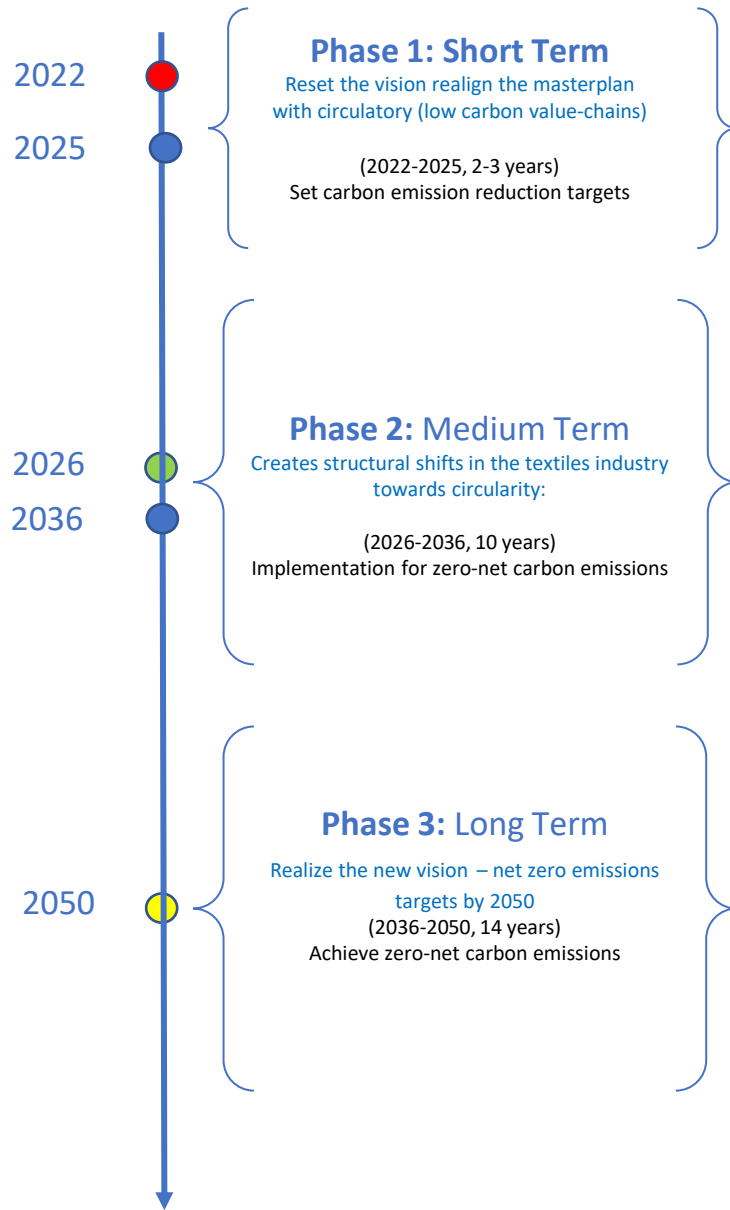
# Decarbonisation viability

- Key:**
- Reduction of hazardous chemicals
  - Energy reduction
  - Increasing Recyclability
  - Reduce single-use
  - Adoption of clothing and footwear leasing models
  - Increased second-hand and footwear markets





# Proposed Action: Implementation Timeline



## Phase 1: During 2022 address the following low hanging fruit:

To review the SA R-CTFL masterplan and align / build on it to incorporate a low-carbon element, this should include and consider the following:

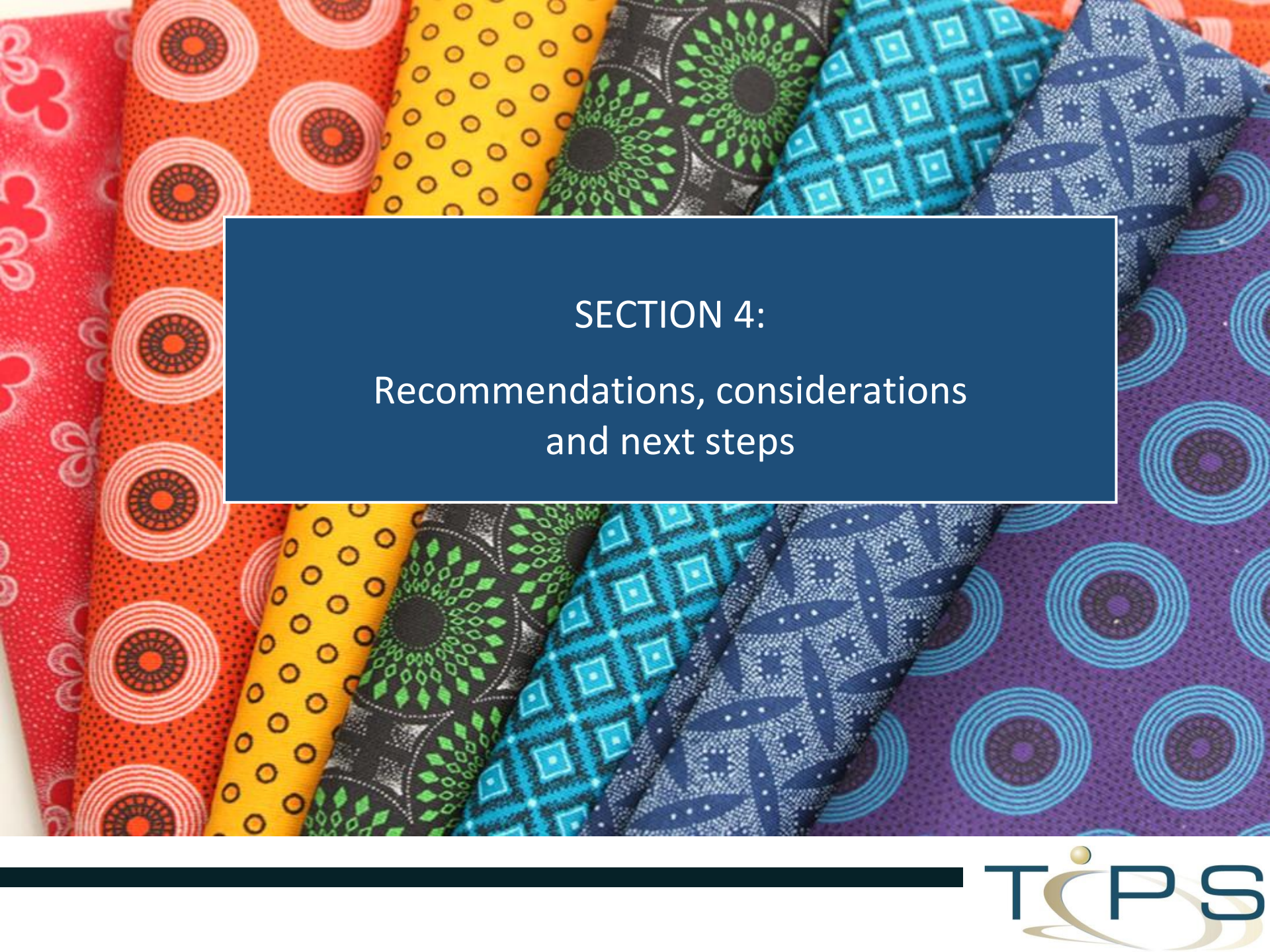
- Imported textiles to have traceability requirements
- Buyers Private: value clothing, baby cloths, uniforms and Buyers Public sector uniforms, sanitary ware
- Incentives to push local manufacturing - agreement on local manufacturing targets set, to encouraging retailers to adopt these targets
- Incentives to increase the use of natural fibers
- Reducing chemicals/dyes, voluntary agreement for the adoption of international dye and chemical standards aligned with eco-labelling.
- Consumer shift towards second hand purchases
- Government provide systems for clothing collection and recycling
- Increase energy efficiency in operations & move to renewable energy

## Phase 2: By 2026 | ten year implementation (textiles climate roadmap) in alignment with the SA R-CTFL masterplan to implement the above.

- Set up a textiles voluntary agreement and sector forum
- Working groups to set up on particular themes to work on developing and setting specific targets and activities for achievement
- e.g. 1) Reducing chemicals/dyes or Policy & Standards; 2) Shifting to local manufacture; 3) Reuse and recycling /circular; and 4) Shifting to natural fibers.
- Lobby retailers to adopt clothing and footwear leasing models
- Reduce energy during operations (energy efficiency) & move to renewable energy mix
- Prepare for net-zero emissions – capacity building across value chains

## Phase 3: By 2055 the industry represents the new vision – a transformed new low carbon inclusive textiles industry:

- Run with initiatives that is in place e.g., government structures/agreements, establishing forums/platform for engagement, financial mechanisms, develop the business plan for implementing the roadmap for sustainable development (according to phase 2 plans)
- Commit to achieving net zero emissions no later than 2050

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SECTION 4:  
Recommendations, considerations  
and next steps

# Implementation recommendations and considerations

- **To acknowledge and align low-carbon transition interventions in the R-CTFL Master Plan and align, notably:**
  - Commitment 1: Growth the market for local CTFL producers
  - Commitment 2: Increase local CTFL procurement
  - Commitment 5: Investment support for local value chain and firm verticalisation and transformation...upgrade programme to improve...efficiency and effectiveness
  - Commitment 7: Value chain transformation
- **To acknowledge and align with international initiatives and targets** (EU and United Nations)
- Pathways and initiatives should be **staggered and seen as stepping stones** to achieve transformation to a low-carbon sector
- Propose setting up a **'low-carbon' textile-sector forum** (build on R-CTFL stakeholder base (such as that developed for South Africa's food loss and waste initiative)
- **Build on and alignment with other South African textile sector projects and initiatives** e.g. NCPC-SA Intex, Green Cape and City of Cape Town, and current manufacturer and retailer activities (what have you been doing / how does this build on / add to this TIPS strategy?)

# Trade & Industrial Policy Strategies

Supporting policy development  
through research and dialogue

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