

# Sustainability and Circularity in the Textile Value Chain

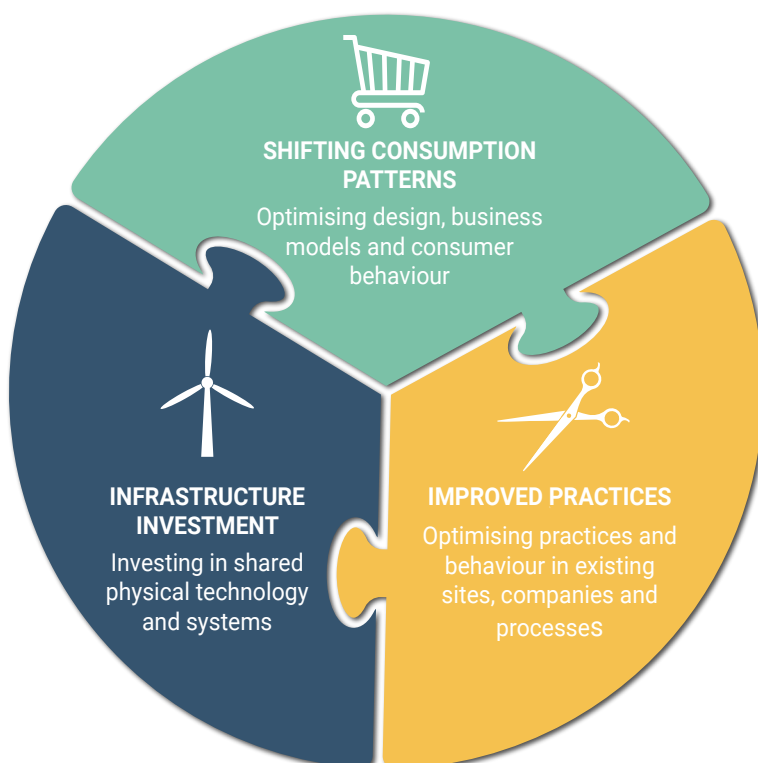
A GLOBAL ROADMAP

## EXECUTIVE SUMMARY

The textile sector plays a key role in driving industrialization, trade, development and social value. It rapidly develops regional and global value chains by connecting producers, retailers and consumers from across the world. It is also a sector struggling to address its contributions to the triple planetary crisis on climate change, nature loss and pollution. Every year, the textile sector emits 2-8% of the world's greenhouse gases, uses the equivalent of 86 million Olympic-sized swimming pools of natural water resources, and is responsible for 9% of microplastic pollution to our oceans. Additionally, the value chain has deep social impacts, with textile workers at risk of exploitation, underpayment, forced labour, health risks and abuse. Women are particularly vulnerable as they represent an average of 68% of the garment workforce, and 45% of the overall textile sector workforce.

Transforming the textile value chain into one that is sustainable and circular will allow us to address these environmental and social impacts, while also supporting people, prosperity and equity. However, no single group of actors can achieve this scale of sector transformation alone, but rather it requires all stakeholders to use their resources and efforts to work together towards a common goal.

In order to prioritize effective action for all stakeholders and encourage collective engagement, **this report** applied a systemic value chain approach. Building on research and consultations with over 140 textile value chain stakeholders, it defines a common agenda of transformation towards sustainability and circularity.



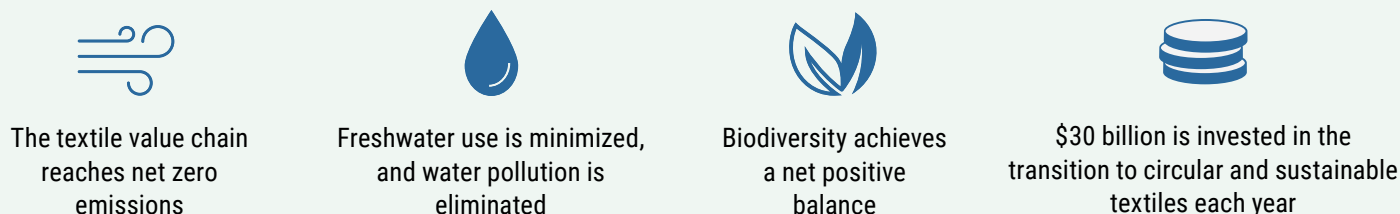
THE THREE PRIORITIES  
 TO DELIVER SYSTEM  
 CHANGE ARE SHIFTING  
 CONSUMPTION PATTERNS,  
 IMPROVED PRACTICES AND  
 INFRASTRUCTURE INVESTMENT

Figure 1: Three priorities to deliver system change in the textile value chain

**These priorities are interconnected and require a coordinated approach by all value chain actors.** For example, a focus on shifting consumption patterns – how products are designed, what kind of business models are offered to consumers and how aspirations are set – could radically reduce pressure on the production system (e.g., reducing the need for raw materials by extending the use phase of products).

Several initiatives have set ambitious goals to shift towards a sustainable and circular textile value chain, although progress on their delivery is often slow due to the scale of the challenge, the complexity of the value chain, the lack of system-level policy, technical and financial barriers and the fragmentation of stakeholders beyond a small number of sustainability-minded multinational brands.

## OVERALL INDUSTRY GOALS



**Figure 2.** Existing quantified industry goals for a sustainable and circular textile value chain

**Within the three priorities, the roadmap proposes nine 'building blocks' that shape a sustainable and circular textile value chain.** The building blocks address the key drivers of environmental and/or socio-economic impacts ('hotspots') within the value chain, support the delivery of the existing industry goals, and require multiple stakeholders to act together. The report identifies the priority actions that each stakeholder group can take to deliver against the building blocks.

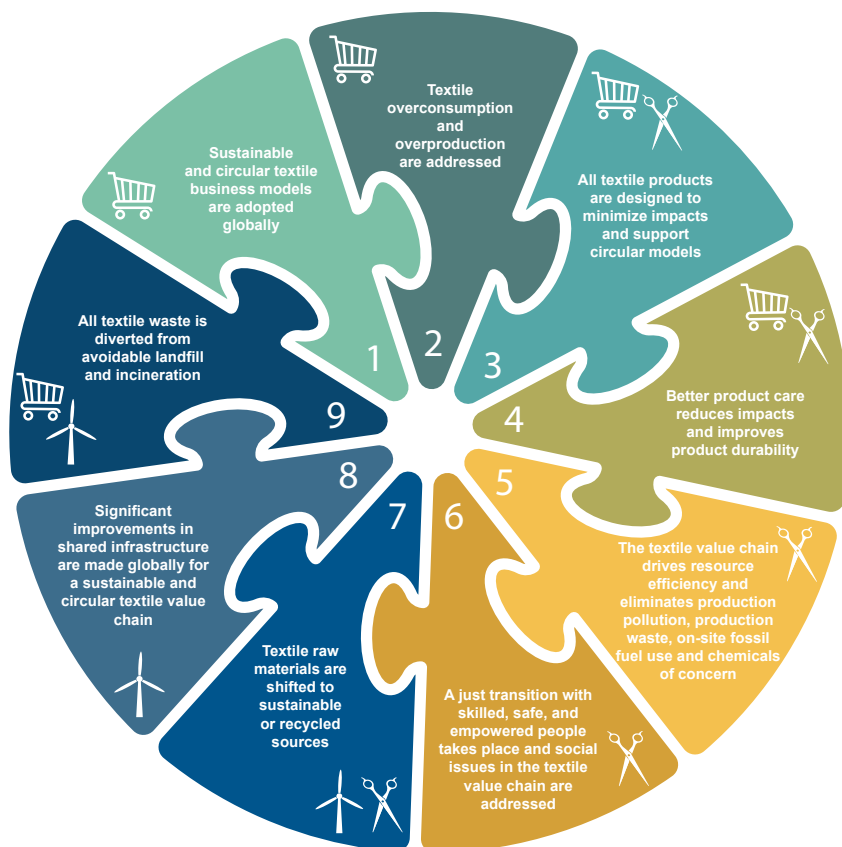


Figure 3. Nine building blocks needed to deliver the three priorities

Shifting Consumption Patterns	1	<b>Sustainable and circular textile business models are adopted globally.</b> This requires a significant shift in perception of what ‘value’ means for consumers, brands and retailers. The focus must be placed on shifting the market and business revenue away from linear models towards circular models that have demonstrated environmental and social impact reduction across the life cycle, or focusing on selling experiences or other non-material goods rather than physical products.
	2	<b>Textile overconsumption and overproduction are addressed.</b> A significant decrease in overconsumption is required, particularly in developed countries. This can be achieved through a combination of increased clothing utility (how long a product is used) and shifting consumer norms and aspirations towards lower consumption through engagement with the social and emotional aspects of behaviour. Reducing overproduction will be important for brands and retailers, and can be achieved through improved stock and demand management, as well as exploring new models such as on-demand production.
Shifting Consumption Patterns + Improved Practices	3	<b>All textile products are designed to minimize impacts and support circular models.</b> Design must be informed and intentional. Improved data and feedback loops will be critical to take into account knock-on effects of design at each stage of production, use and end of use. Products should be designed to consider the relevant circular business model (e.g. durability for rental), and with the assumption that they will be an input to closed loop recycling.
	4	<b>Better product care reduces impacts and improves product durability.</b> The consumer ‘use’ phase for textiles has chemical, energy, and water impacts, alongside microfibre and product durability issues. However, most textile brands do not include the consumer use phase in their impact evaluations and there are no large initiatives working on this phase. There is especially a need for more data on product care impacts and behaviour, also considering that consumers are diverse and global.
Improved Practices	5	<b>The textile value chain drives resource efficiency and eliminates production pollution, production waste, on-site fossil fuel use and chemicals of concern.</b> Textile production sites – especially wet processing sites – require major support and investment to substitute machinery and apply circular production methods. This is particularly important for sites beyond tiers 1 and 2 of large multinational brands, or production countries without strong policy enforcement on cleaner production.
	6	<b>A just transition with skilled, safe, and empowered people takes place and social issues in the textile value chain are addressed.</b> This includes collaborating with less-developed countries and previously marginalized communities, including – but not limited to – women, young people, indigenous and tribal peoples and persons with disabilities, which will help to avoid significant trade-offs and negative consequences.
Improved Practices + Infrastructure Investment	7	<b>Textile raw materials are shifted to sustainable or recycled sources.</b> There is a need to rapidly scale new and more sustainable production and cultivation practices for virgin raw materials, and to mainstream fibre-to-fibre recycling through improved practices as well as investment in waste management systems and infrastructure.
Infrastructure investment	8	<b>Significant improvements in shared infrastructure are made globally for a sustainable and circular textile value chain.</b> This includes renewable energy, waste management and water treatment, as investment in shared infrastructure is essential to unlock the potential of individual actors to make changes in their own systems.
Infrastructure Investment + Shifting Consumption Patterns	9	<b>All textile waste is diverted from avoidable landfill and incineration.</b> Shifting consumer behaviour and global dynamics are required to avoid the need for landfill and incineration; for example, through circular solutions that reduce waste outputs. Solutions are needed to avoid shifting responsibility for waste disposal, such as trade of used textiles to locations that cannot use them and lack the infrastructure to adequately process textile waste.



## WHAT CAN EACH STAKEHOLDER DO?

Many stakeholders are dependent on others to create enabling conditions for action, and no single stakeholder group alone holds the key to reach a sustainable and circular textile value chain. Therefore, one of the most important actions that stakeholders can undertake is to join collective dialogue and activities.

However, there is also a role for each stakeholder to take action within their own sphere of influence. Alongside opportunities for collective action, this report highlights some individual opportunities for a range of stakeholders, identifying the following priorities for each:



### Brands and retailers

- create revenue in a more sustainable way and dematerialize business value through new business models
- prevent problems at the design stage instead of trying to solve them later through design for low impact and circularity
- make decisive business improvements based on science-based evidence to reduce environmental and social impacts



### Raw materials producers and manufacturers

- identify and implement the best technical practices for production sites and prioritize on-site improvements and innovation for environmental impact reduction
- protect, invest in and empower workers, and work together to address shared barriers
- benefit from symbiotic opportunities and drive system change



### Innovators and recyclers

- provide the solutions and innovations for change and create new circular offers and technologies
- create accessible and scalable solutions and ensure that solutions are adapted for multiple types of users and contexts
- be realistic and purposeful about scaling change in a challenging system, including planning for market realities



### Non-governmental, representative, and technical organizations

- advocate for and support rapid action from the industry and policymakers, and drive ambition and improvements
- provide credible mechanisms, recommendations and data for prioritization and accountability
- address system-level barriers through convening stakeholder collaboration



### Policymakers

- raise ambitions and implement new sustainable and circular policy instruments
- invest in the transformation and match funding flows to intentions
- think holistically about the impact of policies, consult widely on policy design and implementation, and coordinate key stakeholders to set ambitious and effective sustainability policy



### Financial institutions

- understand and address the actual investment needs of diverse stakeholders in the transition to sustainable and circular textiles and address systemic funding barriers
- build internal capacity, understand the details, and plan for the transition
- drive real innovation in solutions, processes and metrics, create innovative financial products and increase available funding for sustainable and circular solutions



### Communication and consumer engagement actors

- make behaviour change aspirational and reframe the narrative
- understand the complexities of 'the consumer' rather than assuming that all consumers are the same
- move as many people as possible away from the mindset of consumption being the norm



## WHAT COMES NEXT?

Implementing the priorities identified in this global roadmap will require an unprecedented degree of coordination, investment, regulation and business model adaptation but will also create new opportunities for all. All actors in the value chain must become part of the solution to develop and perpetuate a new model for the textile sector, based on science and in line with circularity principles.

While acknowledging that many organizations and initiatives are already working at the global level to help the sector to transition towards more sustainable practices, circularity and upstream innovations remain a gap. The need emerges to **embed circularity principles as part of the sector ambition targets and foster coordination, improving cohesion in the delivery of existing initiatives**, ensuring that all efforts pull in the same direction to achieve a greater, more harmonized and quantified impact.

This report underpins UNEP's Textile Flagship Initiative. Together with partners, UNEP will work to carry forward key recommendations, including leveraging its position to encourage coordination across the textile value chain towards circularity.