Sustainability and Circularity in the Textile Value Chain

A GLOBAL ROADMAP

While the science and data on the impact of textiles on the environment has reached a consensus, the level of ambition has not. It is clear that we need to act in a more ambitious and urgent manner to reach not only the Paris Agreement but also the 2030 Agenda.

This document forms an annex to the United Nations Environment Programme report, Sustainability and Circularity in the Textile Value Chain: A Global Roadmap, which outlines the key priorities and actions needed to deliver a sustainable and circular textile value chain. This document outlines the role and actions that policymakers can take in transforming the textile sector towards sustainability and circularity.

From the Roadmap report, three overarching and interconnected priorities to deliver system change emerge: 1) shifting consumption patterns, 2) improved practices and 3) infrastructure investment.

To deliver on the three priorities, UNEP proposes nine building blocks to achieve a sustainable and circular textile value chain. All building blocks consider the key drivers of environmental and/or socioeconomic impacts within the value chain, support the delivery of the existing industry goals, and require multiple stakeholders to act together.

While the Roadmap report specifically explores the cross-stakeholder opportunities for change, and how collaboration can be facilitated, in delivery against the nine building blocks, it is also important to recognize that each stakeholder group has unique challenges, and a unique role and contribution to make. For this reason, the annexes of the Roadmap report detail the barriers and opportunities, as well as specific actions for each stakeholder group.

This annex outlines the role and actions that policymakers can take in transforming the textile sector towards sustainability and circularity.

**Figure 1:** Three priorities to deliver system change in the textile value chain
DEFINITION OF POLICYMAKERS

Policymakers can be in a range of roles and institutions, from the global to local level.

Local/regional government

Local and regional governments may govern a tiny area, or entire states in larger countries. Local governments are often the most closely connected with the communities and businesses that operate within the textile value chain, and they can make or break efforts such as collective decision-making with communities on the allocation of resources, protections, social schemes or verification of impacts. Local and regional governments may also have a strong degree of autonomy over standards and regulation, with some such as in the US, India or China interpreting state edicts in their own ways or having the ability to set specific state-level laws. In all countries, it is important to ensure that local and regional governments are engaged within efforts to introduce new regulations, roll out new programmes and enforce requirements. They can also help to shape or adapt approaches in a way that is most suitable for their local context. However, given that too much variability between states and regions can also make it challenging for companies managing operations or supply chains across multiple locations, coordination and alignment are just as important.

National government

National governments are key to almost all policy interventions within the textile value chain. They are able to implement incentives, restrictions and enforcement, lead by example by leveraging their own purchasing power and drive markets towards more sustainability, as well as setting policy goals and plans. Many stakeholders consulted in the development of this report pointed to national governments as the major actor who are able to unlock the shift to a sustainable and circular textile value chain. However, it is also important to note that national governments themselves may face barriers or challenges in implementing change. They may lack resources or knowledge to enforce or create effective policy, struggle with international dynamics and the knock-on effects of legislation from other countries, and find it challenging to balance competing interests in the face of pressure from citizens. National government is not a monolith, and there are a range of different departments and roles at play. Elected officials may have different interests and timelines than civil service departments. The department for agriculture or industry might have very different plans than the department for labour, health or environment. Mandates may be conflicting or confused between departments, or policy itself may be lacking cohesion and creating unintended tensions between mandates. In order to create successful policy responses to the challenge of circular and sustainable textiles, policymakers (and those who seek to inform or influence them) may need to have a sophisticated understanding of the political dynamics and drivers influencing outcomes. There may also need to be a strong coordination with regional governments within a country, or with national governments and international governmental organizations globally to avoid unintended consequences at a global level from conflicting or uncoordinated policy interventions. Their role in providing technical assistance is covered in the NGOs annex.

International governmental organizations

International organizations such as the UN or the OECD, or supranational unions such as the EU have a strong role to play in supporting the transition to a sustainable and circular textiles industry. They can create strong leadership in policy and planning for the transition, and can provide platforms for coordination between national governments on key issues. They are also able to support analysis and direction for circular and sustainable approaches, and facilitate sharing of best practices. However, there are limits to their ability to implement solutions at scale without partnership with national governments. Their role in proving technical assistance is covered in the ‘NGOs, representative and technical organizations’ annex.

OPPORTUNITIES

Policymakers may be the pivotal stakeholders in the textile value chain, with a critical role to play in creating the right conditions for the transition, particularly if they act in coordination with each other.

The potential opportunities for policymakers of a sustainable and circular textile value chain would include major reductions in emissions, pollution and resource use from the production and use phases (and thus contribute – through the use of economic policy instruments – to meeting the SDGs and international climate and other goals), the creation of new jobs and skills in the economy, development opportunities for those in lower income countries, poverty reduction through decent work, innovation and investment in infrastructure with co-benefits for other industries, and citizens with more sustainable behaviour.
Reduced impacts and increased jobs and livelihood could in turn relieve pressure on health care systems and increase income and training levels. Addressing impacts such as GHG emissions can significantly reduce climate adaptation requirements (such as infrastructure improvements, repair or relocation, humanitarian support, supporting changes in agriculture). Increasing the resilience of industry and addressing future environmental risks also ensures that production, exports and jobs continue, thus protecting economic stability. Further, there are opportunities for requiring upstream and integrated planning for and all of the infrastructure needs of the textile industry, which could in turn help with urban development, energy, water, transport and other co-located needs and services.

**BARRIERS TO ACTION AND INTERDEPENDENCIES WITH OTHER STAKEHOLDER GROUPS**

**Disconnect between levels of policymakers:** International governmental organizations may depend on national governments to implement high-level goals, and national governments may in turn depend on local or state governments for interpretation and implementation. This can hinder efforts for a coordinated approach to circular and sustainable solutions, and variability between locations can create major challenges for private sector actors. There is often a major lack of coordination between government departments, with either gaps in implementation or overlapping responsibilities creating uncertainty around responsibilities. Departmental mandates may be conflicting or confusing, or policy itself may lack cohesion and create unintended tensions between thematic areas.

**Competing priorities:** Governments may find it challenging to balance competing interests, and sustainable and circular textile interventions may not be a political priority for the electorate despite increasing citizen awareness. National or local governments may struggle with national limits or international dynamics, as well as the ‘ripple’ effects of legislation from other countries that can create unintended consequences. Governments may also struggle with the need to provide economic growth and job creation or retention with the lack of information on to what degree a circular textile value chain would provide this compared to the linear one.

**Domestic perspectives:** The textile value chain is global, and global dynamics dictate almost all activity outcomes. However, many policymakers foremost consider national interests when addressing sustainable and circular textiles, prioritising local benefits before global change, or taking approaches that may be at odds with international norms and create confusion. For example, increased focus on the potential of onshoring production after the COVID-19 pandemic may have unintended global sustainability and trade consequences. Policymakers may also be concerned with protecting the domestic textile sector by ensuring domestic prices stay internationally competitive, rather than prioritising an investment into sustainability.

**Lack of consultation or engagement with other stakeholders:** At times, policy is designed without sufficient consultation with those being regulated or experts in the specific area of focus, and therefore potential trade-offs are neither identified nor addressed in policies. There may also be a lack of insight into how to engage citizens and consumers in desired behaviours, which is something that communications experts and behavioural science can provide.

**Limited resources for technical aspects or for enforcement:** Limited resources may lead to a lack of enforcement of existing policy, particularly in less affluent countries. Policymakers may also lack internal technical and value chain knowledge, leading to unsuccessful or inefficiently designed interventions and regulations.

**Slow pace of change:** Due to bureaucracy, a lack of policy continuity due to political instability or process requirements, the private sector may feel that policy is slow to act on sustainability and circularity, and that there may be a lack of ambition for system change from policymaking beyond symbolic actions or pilot projects.

**Lack of domestic capacity to enact policies:** The national workforce may not have the skills needed to implement sustainable and circular policies at scale. Policies must also be matched with sustainable finance mechanisms or other ways for funding access, particularly for SMEs.

**National commitments may not be aligned with textile industry targets:** National governments have their own specific defined sustainability commitments and timelines at international level, which may not match industry-level commitments (e.g., achieving net-zero transition after 2050). Depending on the level of influence that the textiles industry has in that specific country, it may become a barrier to the speed of transition desired.
EXAMPLES OF POLICY INSTRUMENTS THAT CAN BE USED TO SUPPORT THE TRANSITION TOWARDS A SUSTAINABLE AND CIRCULAR TEXTILE VALUE CHAIN

Fiscal policy:
- Tax incentives, e.g., reduced tax for repair services, import of sustainably made materials, or tax breaks on technologies like renewable energy or efficient manufacturing equipment.
- Tax increases, e.g., import taxes on highly impactful materials or inputs, impact taxes such as a carbon tax for production or imports.
- Applying Extended Producer Responsibility (EPR) financial measures that include economic incentives for producers to prevent waste at the source, while also considering making provisions for support for where products may have final disposal.
- Investment in infrastructure that reduces impacts and improves circularity, e.g., waste recycling technology and processes, shared wastewater treatment processes, renewable energy for industrial parks or grid emissions reductions.
- Investment in capacity-building, e.g., creating centres of excellence to support key actors in making the transition to environmentally and socially sustainable practices, providing seed funding for innovation.

Public procurement:
- Requiring and enforcing sustainability and circularity criteria for all textile products purchased by public entities, e.g., specified resource efficiency levels, recycled content inclusion, potential for reparability, limitation on the use of hazardous chemicals.
- Leveraging the purchasing power of public buyers to unlock specific challenges, e.g., promoting new business models based on innovative and resource-efficient solutions such as leasing of products, promoting sharing platforms and supplier take-back systems to foster circular closed loop recycling.
- Sharing guidelines on sustainability criteria for procurement authorities and eco-labelling schemes.

Industrial and agricultural policy:
- Enforcing environmentally sustainable standards of production, e.g., for energy and water use efficiency, increased use of renewable energy, protection of water sources, and responsible use of agrochemicals, including efficient use of nutrients and limiting pesticide use, encouraging nature-based solutions such as regenerative agricultural practices and ensuring that penalties are sufficient to encourage compliance, while supporting producers to meet these standards.
- Restricting or prohibiting specific practices, such as restricting or banning the use of hazardous chemicals, setting emission targets, and setting recycling and recovering quotas.
- Creating industrial and/or agricultural sustainability plans to understand and address key social and environmental challenges and future threats, e.g., climate change impacts.
- Investing in key departments so that they are equipped to take on the challenges of making a significant industry or agricultural shift towards sustainable standards and practices.
- Adopting information-based instruments such as corporate sustainability reporting, awareness campaigns, eco-labels and environmental product declarations to encourage behaviour change and help consumers make informed choices.

Employment policy:
- Implementing key protections for workers, including working hour limits, health and safety protections, child labour laws and protections against workplace abuse and harassment.
- Ensuring that key departments are equipped to enforce protections, including sharing information between labour and environmental departments, given the frequent overlap between illegal labour and environmental breaches.
- Increasing minimum wage to ensure workers can live from their employment.

Trade policy:
- Opening trade in environmental goods and services that support sustainable and circular textile value chains, such as renewable energy products, pollution control technologies, environmental monitoring and management services.
- Promoting and harmonizing standards and certification schemes to scale up circular textile value chains.
- Using bilateral and regional trade agreements to eliminate barriers to advancing circular economy and promote trade and investment cooperation on sustainable and circular textile value chains.
- Ensuring that ‘aid for trade’ programmes and preferential tariff systems (such as Generalised System of Preferences) contribute to sustainable and circular textile value chains.
- Enhancing trade and investment facilitation for sustainable and circular textile value chains, such as simplifying import and export processes and customs clearance, managing foreign direct investment (FDI) and supporting SMEs to participate in regional and international trade and investment.
- Using trade finance instruments such as export credit and insurance/guarantees to support SMEs – especially those in developing countries – to transition to sustainable and circular textile value chains.

1 More guidance on how to leverage the power of public procurement is available at: https://www.unep.org/resources/report/building-circularity-our-economies-through-sustainable-procurement
HOW TO PRIORITIZE

Policymakers can leverage their unique role in the textile value chain in its transformation towards sustainability and circularity. While there are a range of key actions listed in the following section, the three ways that policymakers should leverage their role and actions can be summarised as:

“Think holistically about the impact of policies, and consult widely on policy design and implementation.”

Consult with and coordinate key stakeholders to set ambitious and effective sustainability policy: Gather feedback and data from academia, technical organizations, and industry to ensure that policy is well designed and effective, and create forums for alignment to address multi-actor challenges requiring coordination. Engage subnational government and ensure inter-ministerial collaboration to ensure that policy has support and is appropriate across multiple areas. Consider impacts beyond your own borders and consider any potential unintended consequences that national policies can have beyond national borders.

“Invest in the transformation.”

Match funding flows to intentions: Invest in circular innovation and key shared infrastructure (renewable energy, waste processing, water management and effluent treatment systems) that will enable the transition to sustainable and circular textiles, considering innovative solutions to financing investments including blended finance. Ensure that international development funding flows are prioritized for sustainability and collaborate with financial institutions to create effective mechanisms for financing progress.

“Raise ambitions and implement sustainable and circular policy.”

Implement new policy instruments: Set strategic and progressive goals for the transformation of the textile value chain, and adopt strategies that will optimize both sustainability benefits and economic benefits from the transition. Implement ambitious policies and standards on cleaner production, sustainable agricultural practices, waste management, company strategy and reporting and consumer messaging. Invest in strengthening implementation (e.g., increasing penalties for violations, increasing resources for monitoring and enforcement, stronger oversight to avoid corruption) and address any policy barriers or unintended consequences of existing policy considering goals for sustainable and circular textiles (e.g., competition law or subsidies).
The following list of actions aims to offer a sense of the most urgent priorities for each stakeholder type, based on industry consultation and scientific analysis (i.e. actions that hold the most potential to address hotspots are prioritized). This does not mean that each stakeholder should undertake each action, but instead it is recommended that you further prioritize actions based on a number of key criteria, including:

- **What has already been done** by the actor (i.e. you might have already implemented some of the actions proposed). Further, identify existing goals or KPIs and evaluate whether they are sufficiently relevant and ambitious.

- **The degree of impact likely to be driven by each action**, based on your organization's own specific impacts, scale and challenges or the possible influence in the wider value chain. Ideally your organization should have some overall sense or full analysis of impacts in different areas to make informed decisions.

- **Which actions are feasible within the policy, influence and physical limitations of your organization**. For example, rooftop solar panels might not be feasible in a location with no rooftop space, while purchasing renewable energy might not be feasible where private energy purchase is not legally permitted, or a lack of leverage with key stakeholders like the petrochemical industry might make it challenging to address impacts.

- **Whether an activity is likely to ‘unlock’ other actions** – e.g. an evaluation of company or country impacts, an on-site audit of potential investment opportunities, a reversal of a key legal barrier to activity, or infrastructure that unlocks impact reduction – for either your organization or your value chain partners.

- **Whether there are any potential trade-offs that could be problematic** based on the specific situation, if there are important sustainability disadvantages to implementing an action, e.g. a major increase in impacts in another area, or social trade-offs. This should ideally be based on a systems analysis of your organization’s structure and dynamics as well as an analysis of sustainability impacts. Engagement with key stakeholders and actors should be prioritized when developing actions to avoid unintended consequences.

- **The outcomes of consultation with relevant and credible stakeholders** – e.g. NGOs, technical organizations, workforce, affected communities, suppliers, consumers, citizens – and what they would prioritize for your organization.

- **Practical implementation resources required and financial factors** such as available capital and return on investment. These should be considered as a secondary factor after the potential scale of impact of an action, but ’low-hanging fruit’ with low implementation costs and positive impacts can be implemented immediately compared with large investments that might take more time to authorize or obtain investment for. If you are an SME, smallholder or another actor with lower access to capital, you might find that high-cost activities are not feasible without non-commercial financial support from another actor and thus you should prioritize identifying this financial support wherever possible.

- **The availability of collaboration mechanisms and resources** for a specific action – e.g. collective programmes that can be joined or supported, forums where issues can be raised, funding sources that could be applied for, collective advocacy or influencing opportunities – that can help to deliver either internal or industry-wide solutions.

- **Based on all of these factors**, you can review the relevance of the actions below – or identify additional actions – to create your own plan for circular and sustainable textiles. This report recommends prioritizing upstream and holistic actions, such as on product design, business models or changing aspirations.
**Sustainable and circular textile business models are adopted globally**

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.

1. **Create a measurable and cohesive cross-government strategy on the role of circular and sustainable textile in delivering on overarching goals on sustainability (e.g., the Paris Agreement). Consider whether existing legislation or incentives might create barriers e.g., limitations on import of materials or technology.**

2. **Create a regulatory environment that incentivizes investment in accelerating and enhancing innovation, and specifically support early- and mid-stage innovation.**

3. **Implement policy tools such as wage subsidies, tax breaks, start-ups funding and knowledge hubs to promote more circular business models such as repair, sharing and leasing and second hand where these models (and specific businesses implementing them) can demonstrate an environmental or social benefit against a relevant business as usual baseline.**

4. **Allocate public and blended finance to de-risk investment in innovations and improvements around business models and allow for flows of private capital to where they are needed.**

5. **Work with the private sector, technical experts and other governments on definitions of circular business value to ensure a common understanding. Enforce standardized and consistent definitions of ‘circularity’ and ‘sustainable’ systems including definitions of secondary raw materials/ post-consumer waste, and provide clear guidance on circular business models, environmental and social trade-offs and risk.**

6. **Evaluate the degree of circularity within company business models when applying instruments such as extended producer responsibility (EPR) schemes or product- or company-level performance requirements.**

7. **Explore trade policy instruments (e.g., preferential tariff systems, sustainability standards and labels, trade and investment facilitation measures, trade finance) that can be used to incentivize the transition towards sustainable and circular textile value chains and create economic and social opportunities.**

8. **Support improved transparency of company performance through strong company or product due diligence and disclosure requirements on circular business model metrics, supported by robust and suitable evaluation criteria and providing consistency across topics to reduce inefficiencies.**

9. **Incentivize standardized ESG mechanisms; mandate ESG data requirements for financial institutions, make company reporting to financial institutions a requirement, and support the creation of metrics and databases.**

10. **Regulate claims and advertising messages to ensure that companies do not make false or unfounded claims, while ensuring that labels are coordinated and comparable to avoid information overload, consumer confusion and mistrust and create consistency across markets for the industry.**

11. **Use the public purchasing power to drive markets towards more innovation; apply sustainability criteria in public procurement of textiles products and incentivize circular business models at scale through government contracts, e.g., service-based contracts for uniforms where repair and longevity are incentivized. Lead by example and increase public purchasing of circular products, which will convey a strong market signal and scale the market for these sustainable and circular products.**

12. **Share knowledge on circular solutions between national governments and work together to avoid social and development trade-offs from circularity through knowledge-sharing and development funding.**

13. **Document and share indigenous knowledge and solutions to textile production and consumption, which can inform circular business models.**

14. **Consider the role of state or local government in designing bottom-up policies that are adapted for on-ground realities, recognizing – for example – the role that cities will play in selection and zoning of retailers, second-hand or repair shops.**
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.

Carry out detailed analysis of country-level textiles consumption including drivers and levers, and use this to create a targeted plan for reducing consumption in over-consuming markets and for demonstrating accessible circular alternatives in all markets. Consider the consequences of national policy choices on other markets in collaboration with governments of those regions.

Create incentives and regulations for companies to reduce overproduction, such as requiring brands and retailers to transparently report their annual scale of unsold goods, and the ways in which these have been repurposed (e.g., through outlets, reselling to third parties, repurposing, responsible donations, recycling, etc).

Collaborate with behavioural experts and stakeholders with a strong ‘consumer voice’ (such as fashion brands, magazines, or social media platforms) to support an adjustment of lifestyle aspirations and behaviour towards reduced (where applicable) and more sustainable consumption. Identify core audiences, engage and educate to build awareness, understanding and behaviour change with education initiatives to shift mindsets and habits.

Support appropriate, holistic, and effective consumer information, and work with other actors to address gaps in data and communication capacity. Support consumers with identifying more sustainable brands and solutions, such as through market standardization of brand transparency.

Consider regulation of consumer-facing messages to ensure not only that claims are substantiated, and metrics and labels are coordinated and comparable to avoid information overload, consumer confusion and mistrust and create consistency across markets for the industry, but also that consumptive messaging is increasingly discouraged.

Work with private sector and technical experts to evaluate the potential to implement global or regional metrics for product durability and emotional longevity.

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:

Encourage circular and sustainable product design through robust evaluation of life cycle impacts – including material choice, elimination of chemicals of concern, recyclability, and durability – and by applying incentives and regulations such as subsidies, tax/VAT (dis)incentives, sustainable design criteria, or links to EPR mechanisms.

Facilitate collaboration between producers and designers while fostering collaboration between policymakers in producer and consumer countries to support this process. Create innovation hubs, accelerator programmes and vocational training institutes on sustainable and circular design.

Support the development of credible global standards, decision support data and tools, and guidelines for circular design with adequate industry consultation to reflect value chain realities, ensuring that duplication is minimized, and solutions are usable across markets, such as considering the geographical variations of existing policies and initiatives.

Directly invest in R&D, innovation and start-ups working on circular and sustainable product design solutions.

Provide input into shared research and programmes to address design barriers to fibre-to-fibre recycling, including working to identify the most common challenges in the design of textile inputs to recycling systems.

Improve cross-ministerial collaboration and embed environmental and social design requirements into ministries beyond trade and industry, such as education departments. Embed circular principles in education and design curriculums for students, with a focus on fashion and design schools.
Better product care reduces impacts and improves product durability

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:

Support improved analysis of use phase impacts and data gathering on consumer behaviour globally (and for specific countries accounting for cultural norms and context) to enable brands’ and retailers’ accountability for product use phase impacts and to allow for targeted and measurable interventions.

Carry out direct outreach and campaigns to consumers about the benefits of improved product care and buying/disposal behaviour.

Support innovation in improved use phase care options through regulations, tax subsidies or investment capital, potentially including:

- Addressing impacts of outdated washing machines or dryers as part of a green stimulus package, through interventions such as buy-back, retrofitting and repair of older and lower performing machines. Recalibration of washing machine energy ratings (which in the EU are currently based upon 40-60 degree Celsius washes, for instance).
- Creating incentives for white goods and FMCG companies to innovate and improve product care technologies.
- Incentivizing the creation and scaling of new innovations and technologies, such as sprays, spot clean solutions, ozone or UV cleaning (after confirming their lower life cycle impact through research) - which could also reduce microfibre pollution if water is not discharged to municipal channels.
- Creating educational materials for schools and universities around garment care for longevity.
- Updating and extending garment care labelling at the national or regional level, taking account of the need for consistency across markets.
- Allocating public and blended finance to de-risk investment in innovations and improvements around use phase impacts, to allow for flows of private capital to where they are needed.

Implement tax incentives or subsidies for repair, resale and other longevity mechanisms.
The textile value chain drives resource efficiency and eliminates production pollution, production waste, on-site fossil fuel use and chemicals of concern.

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:

Support tier 1-3 producer improvements, including through subsidies, tax breaks, on-site performance requirements or removing legal barriers. This can include:

- Removing regulatory barriers and implementing stable frameworks to facilitate the uptake of on-site renewables, including creating an electricity market structure that allows for direct trade between corporate buyers of all sizes and renewable electricity suppliers. Supporting a credible and transparent system for issuing, tracking, and certifying competitively priced environmental attribute certificates (EACs), and creating a level playing field on which renewable electricity competes fairly with fossil fuel electricity and reflects the cost-competitiveness of renewable electricity. Promoting direct investments in on-site renewable electricity projects.
- Supporting the implementation of energy-efficient practices, including support for on-site assessments, updating machinery, optimizing production processes and training staff on efficient practices.
- Creating incentives to eliminate chemicals of concern and pollutants (including addressing microfibre and water quality issues through capture and water treatment) and creating chemical extraction and recycling programmes, particularly through placing specific, enforceable limits on air, water and hazardous waste emissions, financial support for on-site treatment, compulsory information requirements for chemicals in chemical mixtures when put in the market, and/or ban of use of chemicals of concern.
- Supporting implementation for on-site water recycling technologies to support closed loop water systems, and incentivizing water efficiency through reducing water allocations to producers, where feasible.
- Implementing mechanisms to optimize the use of pre-consumer waste, such as financial incentives or tax breaks for waste reduction, or direct support of pre-consumer waste collection and processing.

Allocate public and blended finance to de-risk investment in innovations and improvements in production processes to allow for flows of private capital to where it is needed.

Strongly enforce sustainability requirements across value chains to create a level playing field. This also requires strengthening of monitoring and enforcement, particularly for fast-evolving spaces such as chemical innovation which moves faster than legislation.

Create innovation hubs, technology centres and other capacity-building mechanisms in production locations. Implement nationally relevant training programmes for all producers to increase awareness of sustainable and circular production options and business case, as well as where resources are available to support site-level improvements.

Ensure the effective verification and enforcement of site- and company-level requirements, including investment in internal staff capacity and ensuring that penalties are sufficient to create behaviour change. Create mechanisms that evaluate company responses to supply chain impacts as part of due diligence and disclosure requirements. Develop harmonized disclosure standards to foster transparency, data availability and the harmonization of metrics.

Incentivize traceability systems when these are demonstrated to support the inclusive and effective transformation of production systems, and ensure that they are taking account of the needs of small-scale actors such as SMEs, smallholders and informal actors and are adaptive to literacy and data access needs.

Consider potential downsides to conventional textile production expansion for economic reasons; plan to ‘leapfrog’ and move straight to sustainable production models or circular solutions which provide more future-proof economic and industrial development.

Document and share indigenous textile production knowledge and solutions.
A just transition with skilled, safe, and empowered people takes place and social issues in the textile value chain are addressed

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<tr>
<th>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:</th>
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<tr>
<td>Ensure that leading social and labour standards are implemented across the value chain, including requirements on legal protections for marginalized groups, working hours, health and safety, child labour, forced labour, migrant labour and living wages. Ensure that existing international labour standards are applied through the textile value chain, and all workers’ rights are protected through concerned action by governments, employers’ organizations, and trade unions.</td>
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<tr>
<td>Embed principles of just transition and mechanisms for social dialogue into key policy instruments, including growth and fiscal policies, industrial and sectoral policies, enterprise and skills policies and policies on social protections, health and safety and labour markets.</td>
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<td>Ensure that marginalized communities are included in planning for the transformation of the textile industry to ensure that approaches take account of the needs of affected production region communities, or groups with links to key issues. Ensure that groups such as informal workers are included in consultation, and that policy is gender responsive (meaning that gender norms, roles and relations are considered when drafting policy, and policy measures are taken to reduce the harmful effects of gender norms, roles and relations, including gender inequality).</td>
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<td>Provide support and incentives to producers to implement best practice social standards on-site, and engage expert organizations in relevant regions to support a system-wide transition to better practices, including a clear understanding of living wage requirements, strengthening of legal protections for workers, and gathering relevant data to support analysis of challenges and progress.</td>
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<td>Apply social due diligence requirements to brands and retailers, to ensure that they carry out a due diligence or risk assessment process at least annually to ensure that social risks are analysed, understood and addressed. Create requirements that ensure that social and equity issues are considered during all strategic company decisions, and that a wide range of appropriate stakeholders are consulted on business and sustainability strategies.</td>
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<td>Create deliberate and resourced dialogue and processes to plan how and where a just transition will occur and the conditions required for this transition to be just. Leverage materials such as the ILO Just Transition toolkit.</td>
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<td>Support research into potential global trade-offs around circular and sustainable policy options, e.g., increased onshoring leading to reduced global development opportunities. Make this analysis available to all stakeholders for use in decision-making, and embed trade-off discussions in all key policy decisions. Explore the role of asymmetrical power dynamics in furthering a fully sustainable and circular global textile production system and address key findings.</td>
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<tr>
<td>Consider the role of international donor funding flows, international laws and rules, trade agreements, and diplomatic engagement in supporting a just transition and engage international trade and development organizations to embed technical assistance into instruments and strategies.</td>
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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:

Require strong company or product due diligence and disclosure requirements on sustainable and circular materials, supported by robust and suitable evaluation criteria developed in partnership with technical organizations and companies. Include a life cycle evaluation and risk assessment to avoid assumptions about ‘good’ and ‘bad’ materials, thereby taking account of impacts of fibre selection in other life cycle phases and considering potential trade-offs.

Implement incentives for fibre-to-fibre recycling, including tax, subsidies and EPR schemes, such as linking company-level costs with the volumes produced and degree of circularity/recyclability/sustainability of their products and processes - as well as allowing for flexibility in where funds are spent.

Create links between consumption and raw material production market policymakers, to discuss integrated global approaches to material flows, production, and incentives and to explore and address potential negative outcomes for specific countries from a global transition to sustainable and circular textiles. Work with policymakers in other regions to create standardization around material flows, (e.g., standards for recycled textiles), ensuring transparency on textile waste flows (volumes and composition), and creating a clear list of restricted chemicals.

Allocate public and blended finance to de-risk investment in innovations and improvements around raw materials and recycling technologies, to allow for flows of private capital to where they are needed.

Create links between consumption and raw material production market policymakers, to discuss integrated global approaches to material flows, production, and incentives and to explore and address potential negative outcomes for specific countries from a global transition to sustainable and circular textiles. Work with policymakers in other regions to create standardization around material flows, (e.g., standards for recycled textiles), ensuring transparency on textile waste flows (volumes and composition), and creating a clear list of restricted chemicals.

Create incentives and engagement programmes for extractives, forest, and fibre cultivation actors through the relevant ministries to roll out best practices in production (such as phasing out chemicals of concern in cotton cultivation and sustainable forest management practices).

Engage with raw materials producers to implement a range of improved technical practices through education and capacity-building, data support, subsidies, and financial incentives, including:
- Incentives for efficient water and energy use, including irrigation and rainwater management practices, soil water management, substitution of fuel sources, efficient practices such as laser levelling, selective and strategic mechanization.
- Incentives for regenerative and biodiversity-friendly practices, such as no-till, cover cropping and crop rotation.
- Incentives for eliminating chemicals of concern and reducing chemical usage.
- Incentives for eliminating discharges to the air and water, through on-site emission management systems and better practices.
- Incentives for sustainable forestry practices and pulp purchasing.
- Incentives for sustainable petrochemicals processing when creating synthetic fibres.

Create verification solutions for micro, small and medium-sized producers, unregistered producers, and producers in developing countries that will ensure that new standards do not exclude smaller players - ensuring this is done in a consistent way across countries.

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:

Work with technical organizations and consult with a range of stakeholders to understand infrastructure needs, feasibility and benefits.

Invest in key infrastructure, such as central effluent treatment plants or renewable energy in all key production regions, renewable power for the electricity grid, or central used textiles and waste sorting and processing systems with a goal to increase reuse and fibre-to-fibre recycling - considering any existing policies or local initiatives.

Collaborate with private sector actors and financial institutions to fund suitable infrastructure investment, including exploring more innovative financial solutions such as green bonds, blended finance or more traditional financial support such as international development funding.

Establish eco-industrial parks, providing shared infrastructure such as wastewater treatment and renewable energy, and supporting industrial ecology solutions. Add specific requirements for company performance in order to qualify to join the industrial park and benefit from tax incentives.

Ensure that enforcement, incentives and monitoring are integrated into infrastructure scoping, assessment and performance requirements to ensure that they have optimal social and environmental benefits nationally and globally.
## All textile waste is diverted from avoidable landfill and incineration

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.

**Engage consumers on end-of-life decision-making, providing them with clear information on credible solutions that do not result in used textiles being traded to locations that are unable to process them.**

**Invest in effective municipal waste collection and handling nationally, so that textile waste is not sent to landfill sites. Consider the role of state or local government in designing bottom-up policies that are adapted for on-ground realities, recognizing – for example – the role that cities will play in textile collection and recycling infrastructure, selection and zoning of retailers.**

**Create clear and standardized definitions of waste to promote clear waste management systems, including creation of textiles recycling standards, while ensuring consistency across markets. Simplify the definition of waste so that suppliers of waste can work directly with recyclers without needing a waste management licence.**

**Consider implementing regulations to prevent textile disposal to landfill and destruction of unsold textiles, as has been implemented in France, for example. Effectively regulate the acceptable conditions for management of hazardous products where incineration is disincentivized. Consider cap and trade regulations for textile waste and penalties for lost or destroyed stock.**

**Reconsider the scope of EPR schemes – to ensure that the focus is not solely on penalizing volumes put onto the market but rather on the product’s performance throughout the value chain, solutions that the company is putting in place to divert from landfill, and ways to incentivize overall better practices from brands and producers.**

**Provide R&D funding and start-up support for private sector waste management solutions, especially for innovations in traceability, automated sorting, recycling, use of recycled content.**

**Coordinate with other policymakers internationally to:**

- Support effective waste handling processes through aligned regional or global mechanisms for identifying materials, inputs and other key sorting information.

- Explore trade policy options for textiles waste (pre- and post- consumer) to maximize circularity across the value chain, while recognizing current challenges with countries receiving textile waste they cannot process and finding joint solutions that are beneficial on all sustainability pillars.

- Consider whether there should be a right to access textiles waste, given that the trend may be towards large corporations securing access to waste flows. Consider facilitating access to waste data from source of the waste, not relying on waste handlers.
INTERNAL AND EXTERNAL COORDINATION

Coordination is crucial in achieving a sustainable and circular textile value chain. Coordination actions that cut across all building blocks are outlined below.

Build internal capacity and systems

• Integrate a focus on sustainable and circular textiles in relevant on-boarding courses in ministries and state institutions to institutionalise knowledge in-house despite staff rotations, and nominate a focal point that also leads cross-ministerial collaboration.
• Set predictable and long-term goals and regulatory changes that allow companies to plan for transformation and signal any changes clearly to the private sector ahead of time.
• Review all relevant existing legislation and enforcement mechanisms and identify where the effective implementation of current legislation could provide major benefits (e.g., increasing penalties for violations, increasing resources for monitoring and enforcement, stronger oversight to avoid corruption).
• Consider where existing policy may be a barrier to transformation (e.g., some competition law can also provide a barrier to necessary collaboration between private sector actors, or subsidies for fossil fuels can hamper the switch to renewable energy) and rationalize existing policies to address any major barriers.
• Allocate adequate resources and capacity to enforcing existing regulations, or work with external partners to support gathering additional resources and build up organizational capacity over time.
• Consider insights from the draft OECD Recommendation on the Role of Government in promoting Responsible Business Conduct, which explores the role played by governments in promoting responsible business practices. It lays out a set of principles and policy recommendations to assist governments and other public authorities in their efforts to establish conditions that will effectively drive, support, or promote responsible business practices, in particular through:
  - Legal and regulatory frameworks that enable RBC
  - Policies and measures to encourage RBC across relevant policy areas
  - Governments’ role as economic actors and in their commercial activities
  - Stakeholder participation in the development and implementation of RBC policies, and access to remedy

Coordinate with other value chain stakeholders

• Create, fund or participate in forums for international collaboration and dialogue to ensure that unintended consequences are addressed and policy responses are aligned globally. Act as a frontrunner and promote sustainable and circular textiles in international forums and events. Use international coordination to ensure that current and new policies are adopted in the context of the wider global picture, and complex international value chain dynamics are considered. Aim to consider impacts beyond your national boundaries, and the dependencies that national stakeholders have on supply and custom from other regions.
• Consult with experts and industry and create forums for alignment, and work in partnership with companies and technical experts to co-create regulatory approaches that are both ambitious and practical, and ensure that policy mechanisms create the intended outcomes rather than unintended negative consequences. This includes realistic consultation with business on potential challenges of implementing policies, including data management and staff time, equipment and production impacts, industry disruption, sales impacts and job changes.
• Collect data to evaluate whether planned policies will have the intended impact, and if not, supplement policies with supports needed, including compensation or adaptation mechanisms.
• Create spaces for stakeholders to collaborate, gathering collective investment for problem-solving, aligning on shared goals, and addressing systemic challenges falling in between stakeholders (e.g., management of post-consumer waste).

This document is intended for policymakers within the textile value chain; for the full report, as well as annexes for other stakeholders, please visit: [www.unep.org/resources/publication/sustainability-and-circularity-textile-value-chain-global-roadmap](http://www.unep.org/resources/publication/sustainability-and-circularity-textile-value-chain-global-roadmap).

For more information on UNEP’s ongoing work on textiles, please visit [www.unep.org/sustainabletextiles](http://www.unep.org/sustainabletextiles).

**Endnotes**