Textile Exchange

Materials Benchmark Report

Suppliers & Manufacturers

December 2023

Contents

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Disclaimer

The Materials Benchmark program is based on participant self-assessment. While Textile Exchange reviews all data entries and carries out consistency checks, it does not verify the accuracy of the data or disclosures within a company's survey submission, or the process of preparing the disclosures. That responsibility remains with the participating company. The opinions expressed in this publication are those of Textile Exchange and do not necessarily reflect the views of any participants, funders, member organizations, or advisors.

Key terms

Priority: A material is deemed a priority if it meets one or more of the following criteria:

- **Scale:** The company is using 10% or more of the material in its overall material portfolio, or 10% of product share in the case of down.
- **Risk:** The material represents a substantial risk to the company. Risks associated with low-volume materials include sourcing from environmentally and/or socio-economically high-risk sourcing regions, animal welfare risk, etc.
- **Opportunity:** The company has seized the opportunity to advance the sustainability of the material despite its low volume usage (below the 10% threshold) and/or it not being considered a substantial risk.

Raw materials: Primary or secondary materials that are used to create a product. In the context of the bioeconomy, “raw material” is used as a synonym for feedstock (Nova Institut, 2014).

Uptake: Refers to the consumption/use of raw materials, referred to as a percentage of volumes in metric tons (MT).

Key findings

Raw materials sustainability is integrated into core business strategies.

Sector average

Data from 2022

34/52

65% of total participants

Participants have collectively achieved a level 3 (Scaling) band. The majority have integrated a raw materials sustainability strategy into the core of their business operations and recognize the role that they can play in raising awareness along the supply chain.

Boards and leadership teams demonstrate a high level of accountability, and companies place a strong emphasis on building internal capacity. They recognize that working closely with stakeholders is key to progress.

However, the data shows that nearly half of companies still do not conduct risk assessments related to raw materials.

Circularity is still in its early stages for suppliers and manufacturers.

Sector average

Data from 2022

29/52

56% of total participants

Participants are in the early stages of adopting circularity into their operations, reaching a Level 2 (Establishing) band.

They are making progress in establishing formal strategies, but many have yet to define SMART targets to accelerate the incorporation of circular principles into their business activities.

Currently, the primary focus appears to be recycling post-consumer waste, although there is a wealth of unexplored potential for suppliers and manufacturers to further develop and expand their efforts in terms of circularity.

Participants are using more preferred materials but need to focus on key fiber types.

Sector average

Data from 2022

52/52

100% of total participants

Preferred raw materials account for 52% of all raw materials reported by suppliers and manufacturers. Another 5% comes from recycled sources, leaving the percentage of conventional materials used at 43%.

However, for some of the most common fiber types – such as cotton and polyester – conventional practices still prevail. In contrast, materials that are reported in smaller volumes such as cashmere, flax, and hemp mostly come from preferred sources.

Measuring impacts is a relatively new area for participants.

Sector average

Data from 2022

25/52

48% of total participants

There is an awareness of the importance of measuring impacts among participating suppliers and manufacturers, and some have initiated assessments of their impact on climate and nature through greenhouse gas calculations and life cycle assessments (LCAs).

However, further progress can be made in understanding and addressing these impacts, particularly through the adoption of sourcing restrictions and sustainable sourcing practices.

Introduction

Introduction

Purpose & scope

The purpose of this report is to provide an overview of how brands and retailers are moving towards adopting more preferred materials, based on data from the Materials Benchmark program. Textile Exchange analyzed the data submitted by 52 suppliers and manufacturers for the year 2022.

The scope of the study comprises both new and returning suppliers and manufacturers across Tier 1 (finished production assembly), Tier 2 (material production), Tier 3 (raw material processing) and Tier 4 (raw material extraction).

The Materials Benchmark program keeps growing year by year, allowing us to better understand the state of the sector and the solutions needed. Collaboration is essential to achieve this and drive positive change in the textile industry.

As part of the Materials Benchmark program, we are proud to actively collaborate with several leading initiatives and sustainability organizations to jointly accelerate progress towards a more sustainable future, including the Sustainable Apparel Coalition, The Fashion Pact, Ellen MacArthur Foundation, World Benchmarking Alliance, and the Taskforce on Nature-Related Financial Disclosures.

What makes this report different?

Our focus on Tier 4

We encourage companies to transition away from conventional raw materials towards ones from preferred sources. The Materials Benchmark enables a comprehensive assessment of the actions being taken right at the start of the supply chain, where raw materials are grown, cultivated, or produced.

Our holistic approach

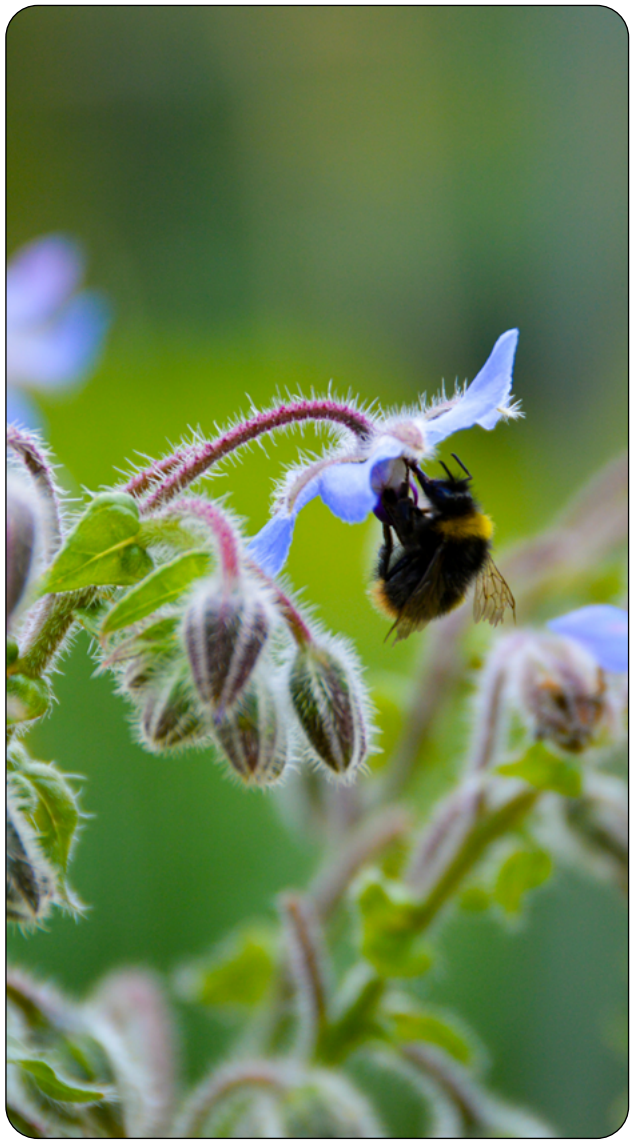
We promote a comprehensive path to sustainability by weaving together key principles and impact areas, looking at the integration of raw material strategies into a business, the steps being taken in the transition to a more circular economy, and the substitution of conventional materials. In addition, we explore how participants are addressing climate and nature in their overall strategies.

Our commitment to transparency

Our data-driven approach offers insights into the reality of our participants' sustainability journeys. We are committed to transparency and believe in continuous improvement, which is why we have updated our methodology this year.

Our results are part of the largest peer-to-peer comparison initiative in the textile industry.

The more the Materials Benchmark program grows, the better we can showcase the current state of the sector.



Background and the big picture

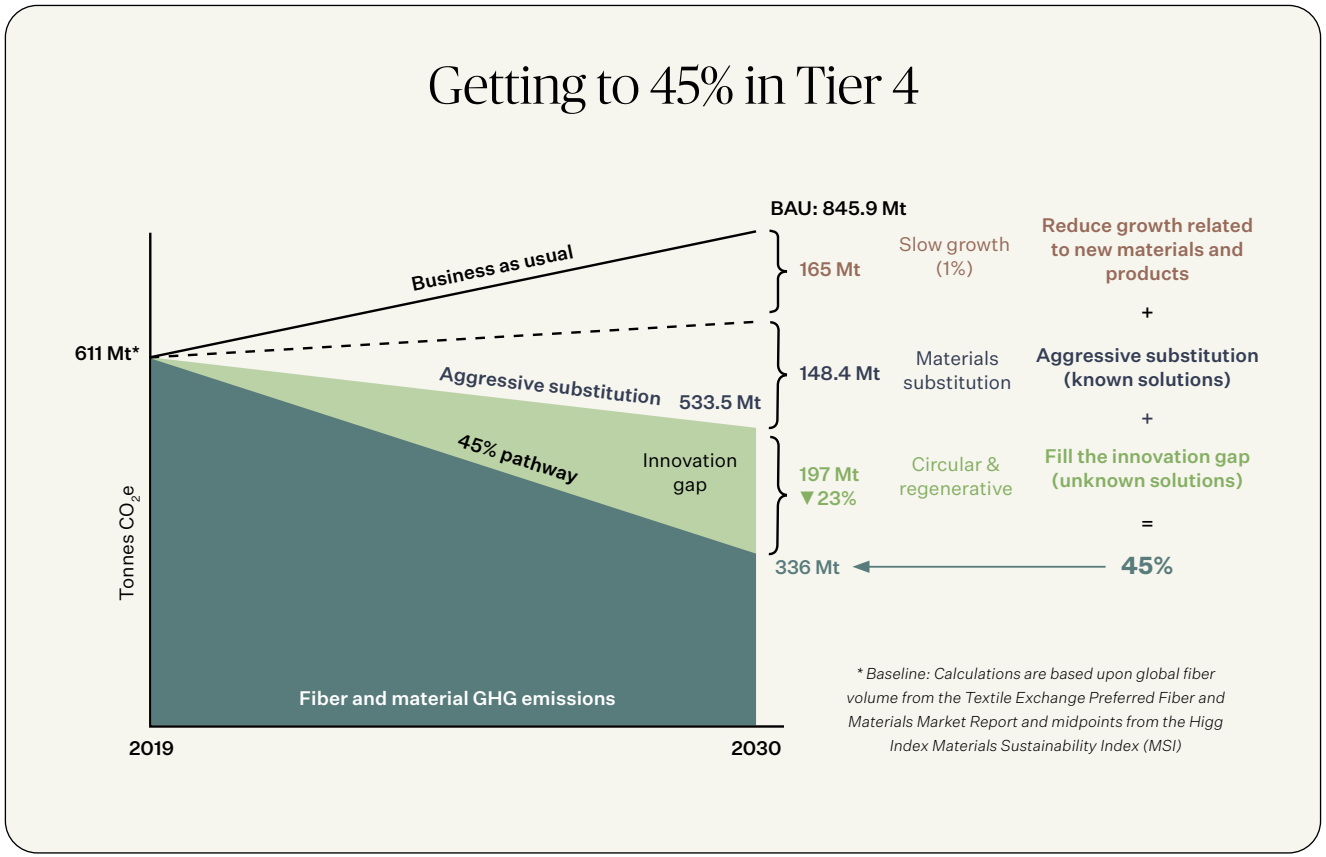
The global fashion, textile and apparel industry needs a paradigm shift. It can no longer continue business as usual under the guise of vague sustainability promises. Instead, companies must embrace the transition, transforming their business models on a large scale to address climate and nature impacts right from the start of their supply systems.

Textile Exchange, its members, and a wide range of governmental and non-governmental stakeholders stand united behind the goal of limiting global warming to 1.5°C above pre-industrial levels.

In the context of the fashion, textile and apparel industry, Textile Exchange is setting out to drive a 45% emissions reduction from raw materials production by 2030. This target, alongside three interconnected impact areas – soil health, water, and biodiversity – forms the basis of our "Climate+" strategy.

To achieve holistic improvement across these areas and reach our emissions reduction target, we have identified three critical points to focus on: **material substitution, closing the innovation gap, and slowing growth.**

The Materials Benchmark program contributes to this progress by collecting data from almost 450 companies and providing participants with a best-practice framework to guide the transition towards a preferred fibers and raw materials portfolio.



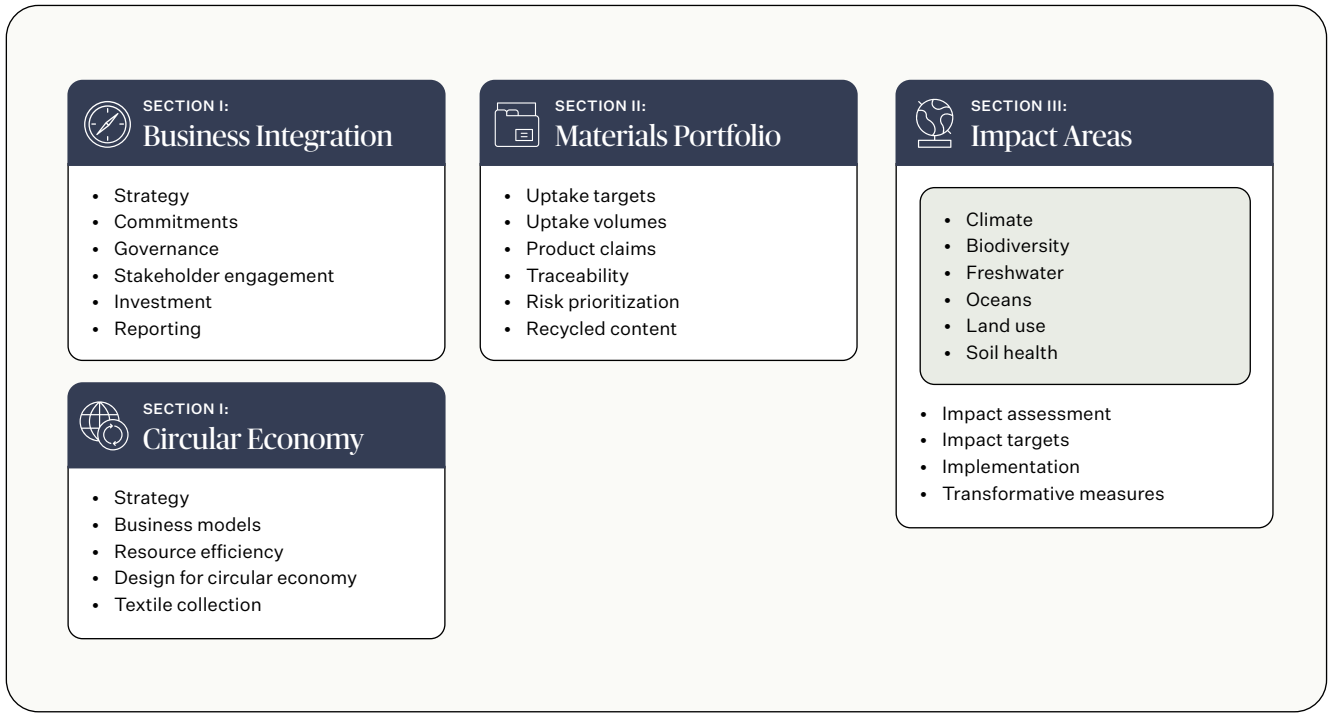
Modelling of interventions needed in the apparel and footwear raw materials extraction phase in order to achieve 45% GHG impact reduction by 2030, as measured against a 2019 baseline. Source: Textile Exchange

Materials Benchmark framework and methodology

The Materials Benchmark program's mission is to continuously nurture and challenge our participants and help them determine the direction of their climate journeys.

In 2023, as part of our ongoing commitment to greater sustainability in the fashion, textile and apparel industry, Textile Exchange made the strategic decision to review and update our scoring methodology. The rationale was that we need to be more aggressive if we want to achieve our 2030 goals as an industry and stay within our planetary boundaries. As a result, we rescaled the performance bandings to show where the industry needs to improve in line with our Climate+ goals, and further aligned them with our organizational tools such as the Preferred Fiber and Materials Matrix (PFMM).

The biggest change in the scoring is in Section II: Materials Portfolio. Given the need to rethink growth, our goal is to reward companies for transitioning to more preferred raw materials as a percentage of total volumes. This shift in ranking should be viewed as a rescaling and readjustment rather than a "drop" in score. For more information, see the scoring methodology guide.



The 2023 Materials Benchmark Community

The 2023 Materials Benchmark Community

Textile Exchange Member

62%
Textile Exchange members

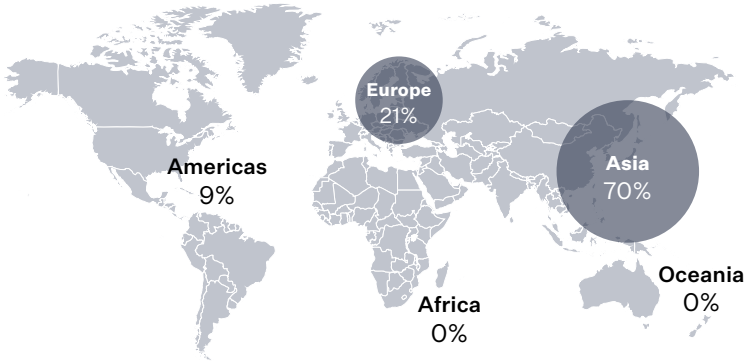
52
companies
(including subsidiaries)

46%
returning companies

23
new participants

245 636
employees

Regional distribution and scale of preferred materials uptake



Textile Exchange Challenges*

19%
Sustainable Cotton Challenge

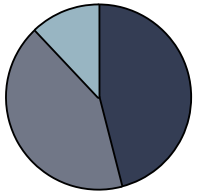
27%
Recycled Polyester Challenge

Collaboration*

4% THE FASHION PACT

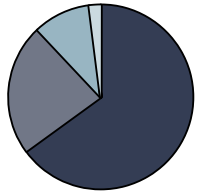
**Note: Percentage of participants who also participated in the Textile Exchange Challenges and/or other organizations we collaborate with.*

Regions



- Asia (46%)
- Europe (42%)
- Americas (12%)
- Oceania (0%)
- Africa (0%)

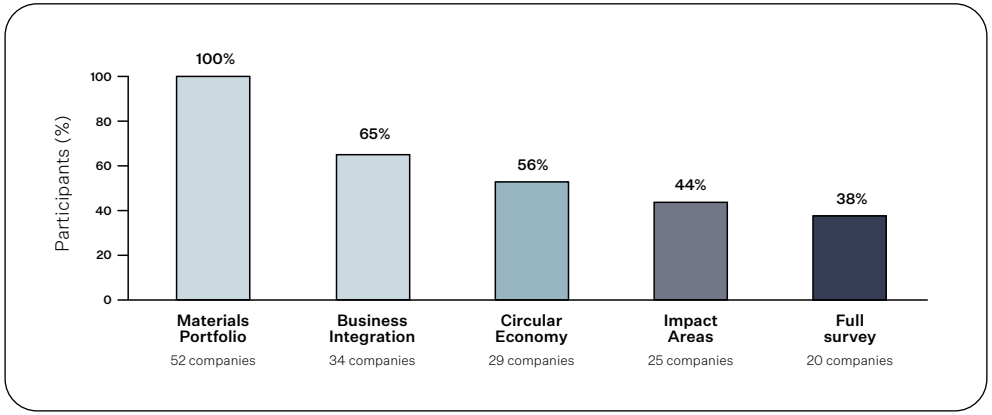
Company size



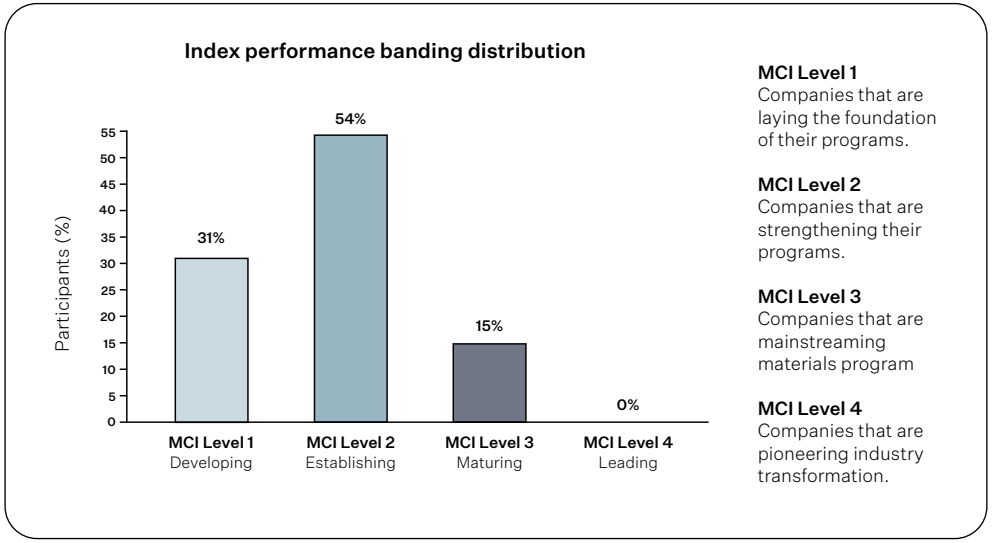
- Large (65%)
- Medium (23%)
- Small (10%)
- Micro (2%)

The 2023 Materials Benchmark Community

Survey completion



Banding distribution

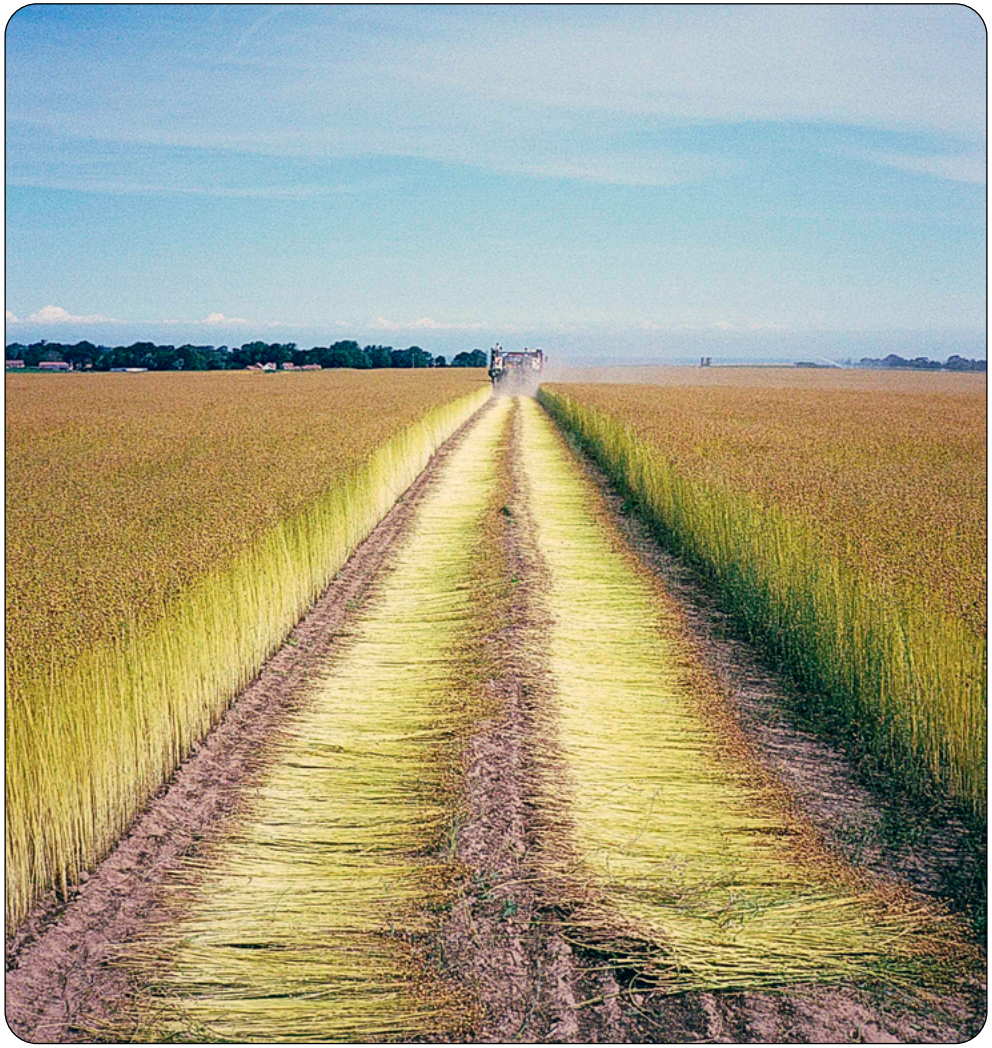


MCI Level 1
Companies that are laying the foundation of their programs.

MCI Level 2
Companies that are strengthening their programs.

MCI Level 3
Companies that are mainstreaming materials program

MCI Level 4
Companies that are pioneering industry transformation.



Business Integration

Raw materials strategy

What is included in this section:

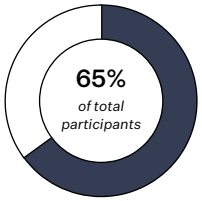
- Business strategy
- Global goals and commitments
- Governance
- Corporate risk assessment
- Stakeholder engagement
- Investment
- Reporting

Participant profile

Sector average

Data from 2022

34 of 52 participants reported data.



Why are we collecting this data?

We collect this data to understand whether companies have started to strategically work on an approach or formal strategy for their raw materials and, if so, how it is being integrated into their business.

Findings

Participants have collectively achieved a level 3 (Scaling) band. Most have incorporated their raw materials sustainability strategy into the core of their business operations and recognize the role they that can play in raising awareness along the supply chain.

Boards and leadership teams were reported as being accountable, and participants place a strong emphasis on building internal capacity. They recognize that working closely with stakeholders is key to progress.

However, the data shows that nearly half of companies still do not conduct risk assessments related to raw materials.

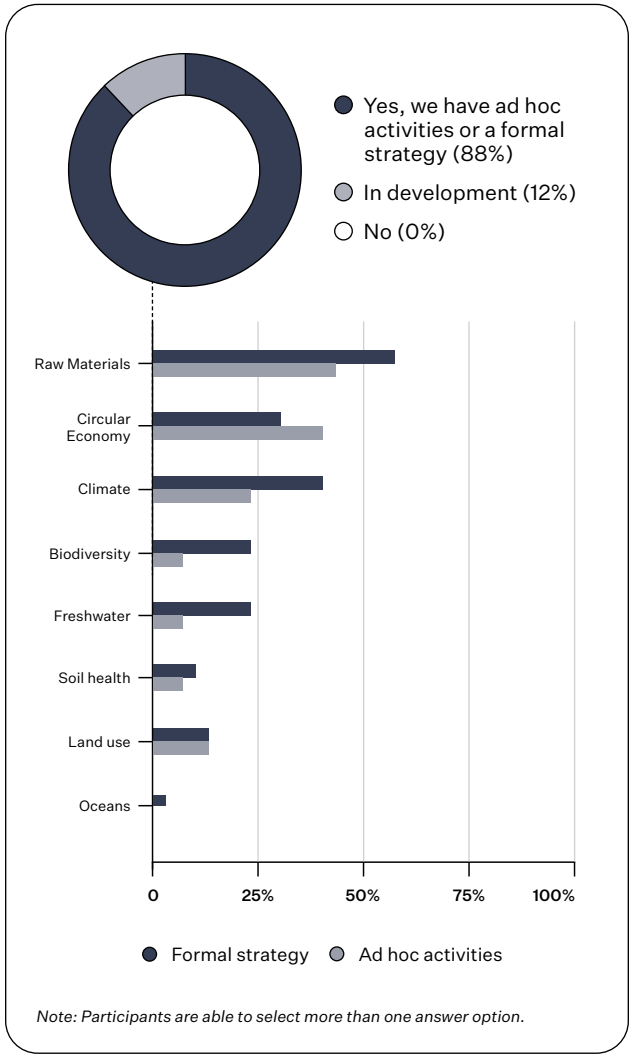
Strategy and commitments

Raw materials approach

Participants recognize the importance of establishing a formal strategy for raw materials.

Most of the respondents have formalized a strategy or have ad hoc activities for their raw materials sustainability, primarily focusing on climate and the circular economy followed by biodiversity. Companies are just beginning to establish formal strategies for freshwater, soil health and land use.

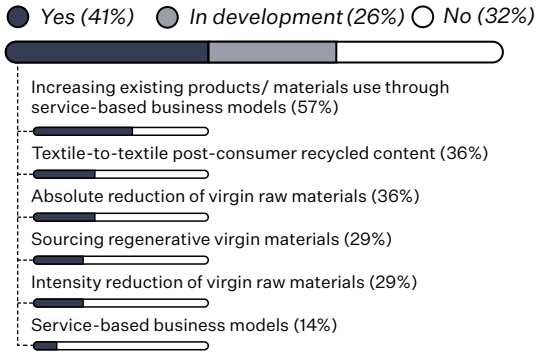
The remaining either have ad-hoc activities or are in the process of developing strategies.



Note: Participants are able to select more than one answer option.

Strategy and commitments

Decoupling economic growth



Note: Participants are able to select more than one answer option.

Companies are taking initial steps towards recognizing "slow growth."

The industry needs to rethink value creation. This requires a shift from the traditional growth-driven model based on exponential increases in production and consumption volumes that result in the depletion of natural resources.

Most of the respondents recognize the validity of this statement and are taking the first steps in this direction by increasing the use of existing products and materials, as well as incorporating textile-to-textile post-consumer recycled content.

Global goals and commitments

Note: Participants are able to select more than one answer option.

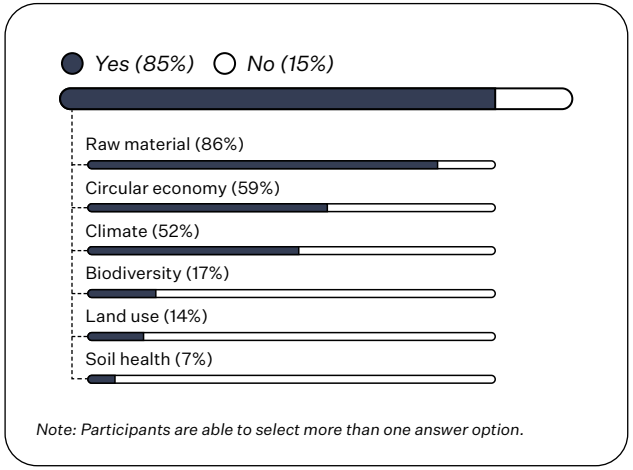
Participants are positively responding to global goals and commitments.

Collective goals and commitments play a critical role in shaping company behavior. In today's globalized world, they are essential to successfully scaling impact and driving action, as well as aligning the business sector with the ambitious goals set by independent organizations.

Suppliers and manufacturers have mainly committed to aligning with the Science Based Targets initiative and joining the United Nations Global Compact.

Governance

Board accountability

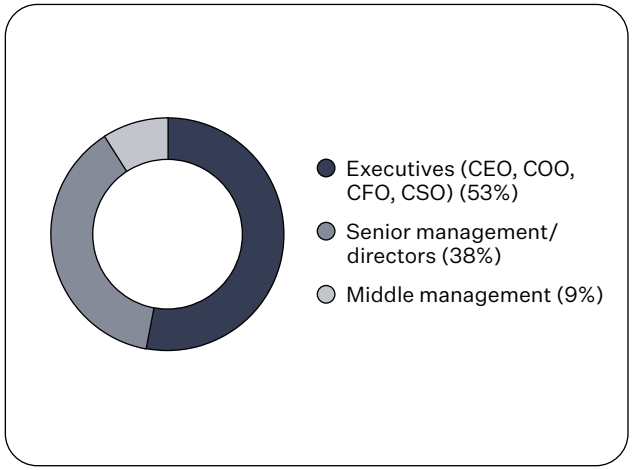


Boards are involved, often with a focus on raw materials and circular economy areas.

Ensuring the involvement of leadership teams is needed to successfully execute the strategy, as well as extend its influence across all company departments and set the tone from the top.

The responses from the participants support this statement. For most of them, the board has oversight of their strategies and activities, and is particularly involved when it comes to raw materials and the circular economy.

Leadership

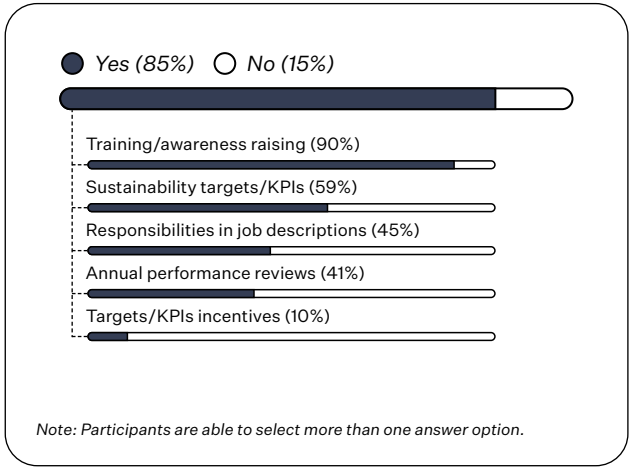


Operational accountability mostly sits in companies' top levels.

Leadership roles are key to defining a shared path by using their position to integrate raw materials sustainability strategies and activities across the company.

The data reflects a growing awareness of the importance of leadership-level responsibility. As such, nearly all participants reported that the highest level of operational accountability sits with executives and senior management teams/ directors.

Capacity building



Everyone plays an active role in the path to sustainability.

Capacity-building beyond businesses' sustainability teams is essential to spread awareness, share responsibilities and commit to the same goals.

The most common methods used within the supply chain to distribute responsibilities include training and awareness raising, as well as setting sustainability targets and KPIs.

Risk assessments and engagement

Risk assessment and top risks

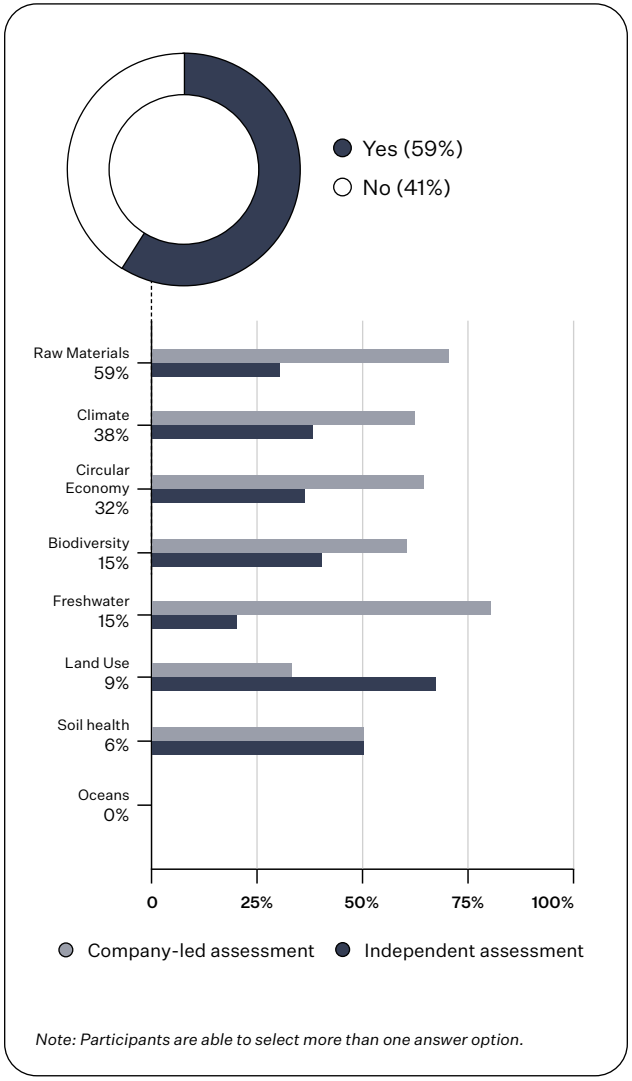
Risks assessment is a key tool for assessing raw materials-related vulnerabilities.

Risk assessments help companies to determine the nature and extent of risks by analyzing hazards and evaluating existing areas of vulnerability that could potentially harm exposed people, services, livelihoods, and the environment.

Participants mainly implemented internal, rather than independent, assessments, focusing their analysis on raw materials, climate, and the circular economy.

This process of identifying and ranking the risks related to raw materials help participants to prioritize and take action. The top risks identified were climate change, economic uncertainty, and biodiversity. On the other hand, topics like land use, soil health and oceans are not yet covered by a specific risk-driven approach.

Risk assessment



Note: Participants are able to select more than one answer option.

Top risks

Risk assessments and engagement

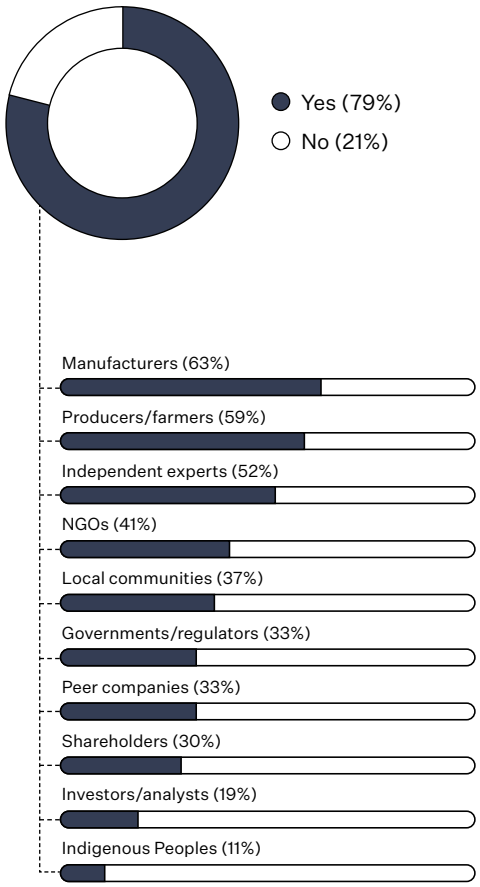
Stakeholder engagement

Participants are recognizing their role in spreading awareness and engaging with multiple stakeholders.

Engaging with both internal and external stakeholders is essential for successful strategic planning and enables businesses to capture of a range of expertise and perspectives to avoid unexpected risks and seize opportunities. Nearly all of the participants have positively engaged with relevant external stakeholders such as manufacturers, producers, farmers and independent experts.

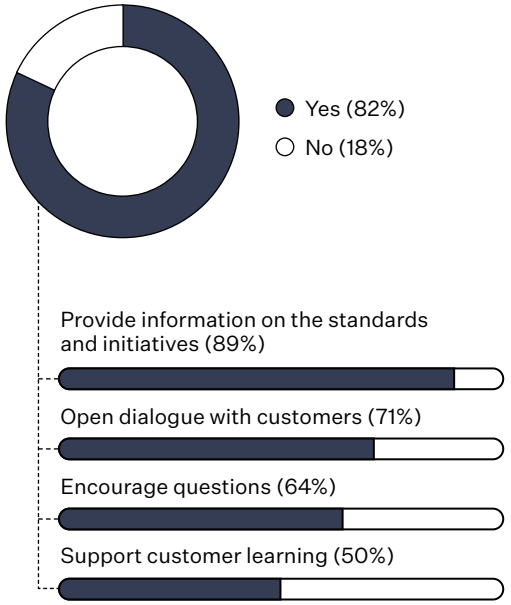
Suppliers and manufacturers are recognizing the role they can play in raising awareness and informing customers about sustainability issues. They are taking action by providing information on standards and initiatives as well as incentivizing open dialogues.

Stakeholder engagement



Note: Participants are able to select more than one answer option.

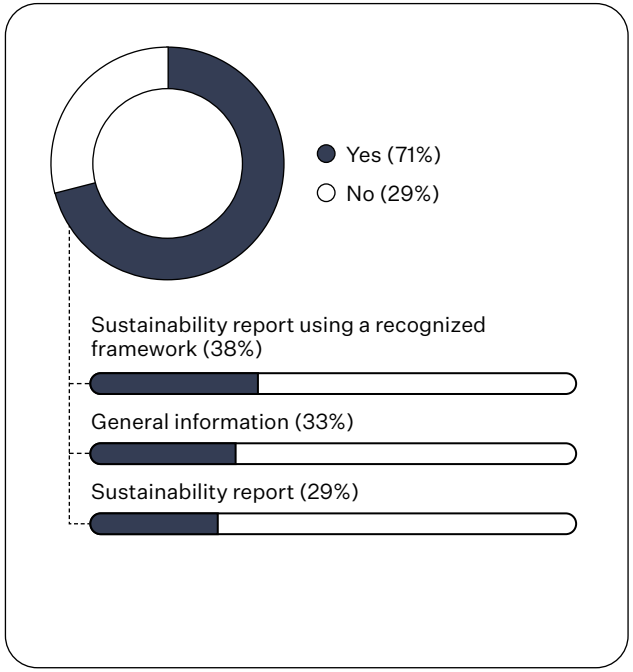
Customer engagement



Note: Participants are able to select more than one answer option.

Reporting

Public reporting

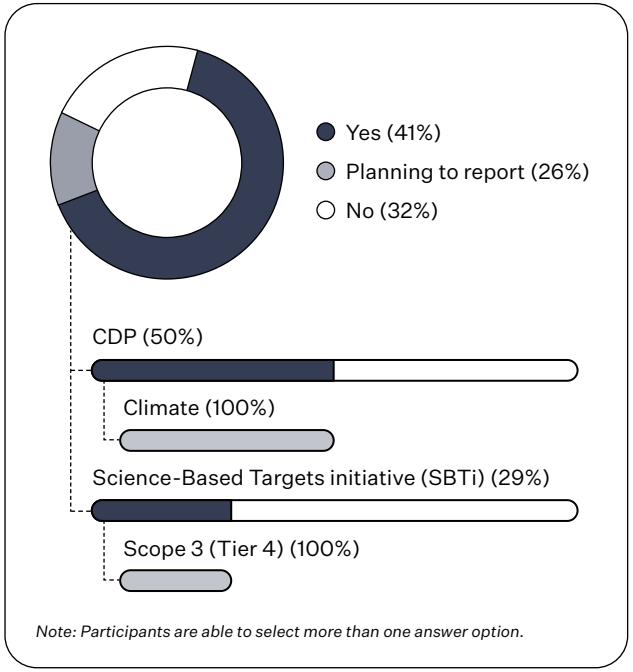


Reporting on raw materials continues to increase transparency.

Reporting is essential to monitor business performance and provide insights for management. It helps companies to make informed decisions, forecast future results and improve accountability and risk management.

Most participants communicate their raw material progress and performance using a recognized reporting framework, followed by general information, and reporting on their activities through sustainability reports.

Disclosure framework



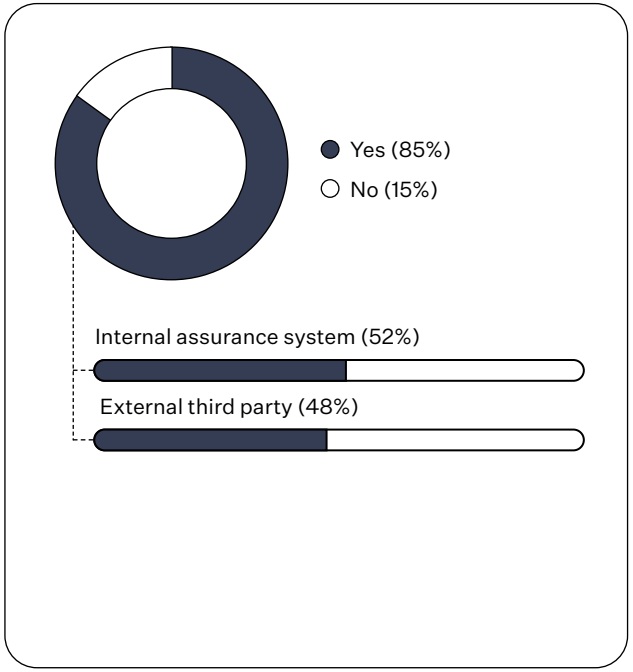
Note: Participants are able to select more than one answer option.

Most participants report through recognized frameworks.

Reporting frameworks play a critical role in the global reporting landscape by standardizing ESG reporting across different industries and regions, providing a systematic approach for company disclosures.

Most of the participants are planning to report or have already aligned their reporting activities with recognized frameworks, such as CDP and the Science-Based Targets initiative (SBTi).

Reporting assurance



Respondents' approach to reporting assurance is split.

External, independent reviews of sustainability management processes and reporting activities are intended to increase the robustness, accuracy and trustworthiness of information disclosure.

Respondents are divided in their approach: half rely on internal assurance systems, while the other half opt for external third-party assessments.

Deep dive

Sustainable Development Goals (SDGs)

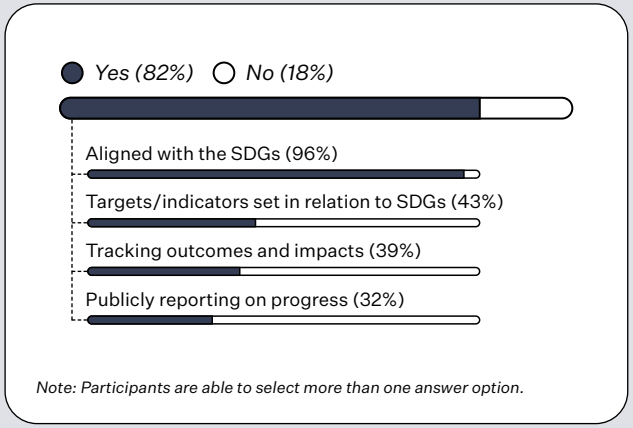
The Materials Benchmark is a partner of the World Benchmarking Alliance and is aligned with the United Nations Sustainable Development Goals (SDGs), helping us monitor progress on global challenges.

The Sustainable Development Goals must be achieved by 2030. 82% of suppliers and manufacturers that participated in the Materials Benchmark align their sustainability strategy with the SDGs.

However, only half of them set targets/indicators for at least one of these goals, or track outcomes and impacts.

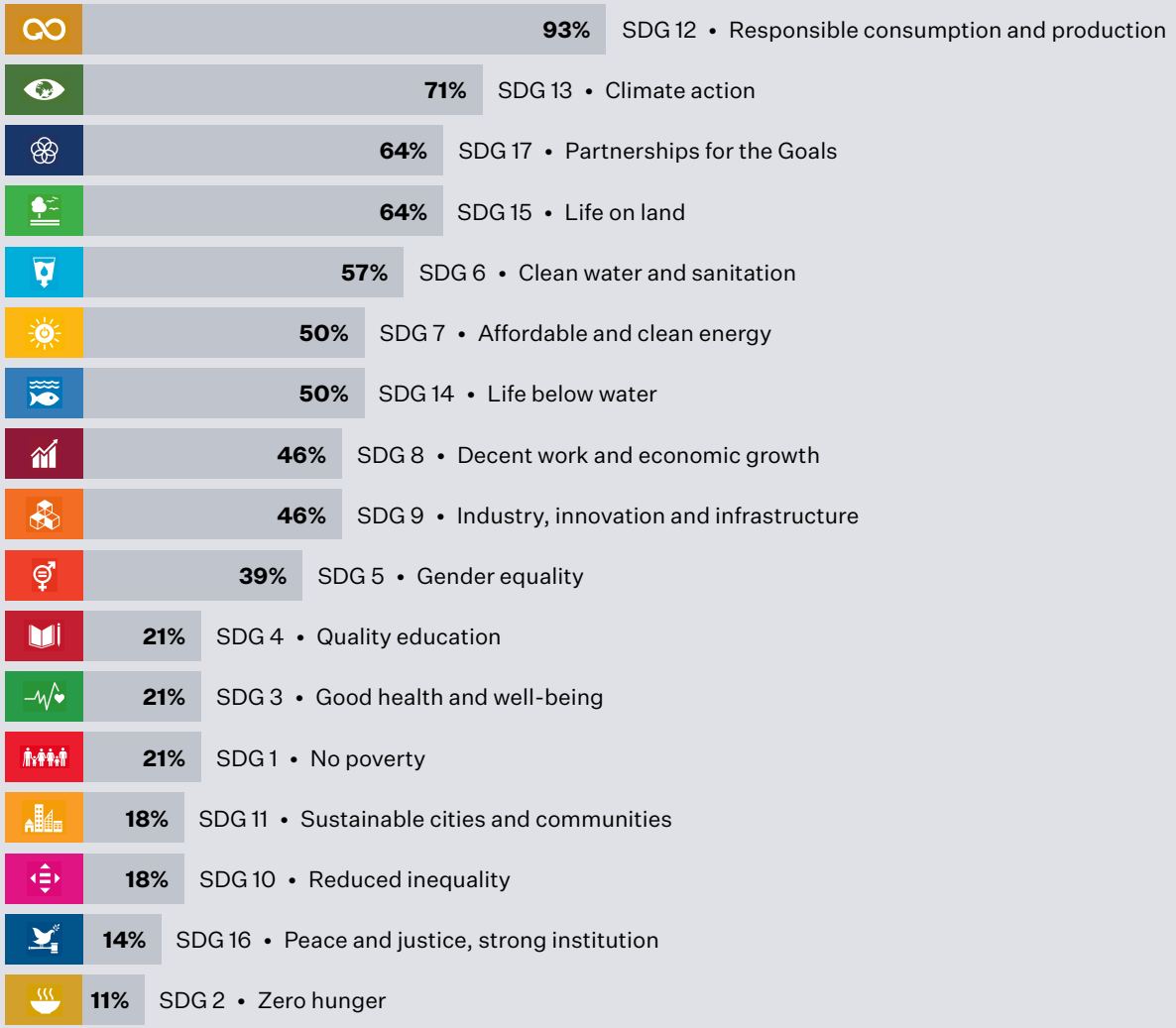
SDG 12 (Responsible consumption and production) remains at the top in terms of strategic alignment, followed by SDG 13 (Climate action) and SDG 17 (Partnerships for the Goals).

In collaboration with World Benchmarking Alliance



Note: Participants are able to select more than one answer option.

Alignment with the Sustainable Development Goals



Circular Economy

Shifting to a circular economy

What is included in this section:

- Circular economy strategy
- Circular economy targets
- Circular business models
- Resource efficiency
- Design for circular economy
- Post-consumer textile collection
- Certification schemes

Circular economy questions developed in collaboration:

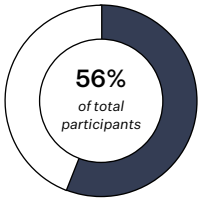
ELLEN MACARTHUR FOUNDATION Member

Participant profile

Sector average

Data from 2022

29 of 52 participants reported data.



Why are we collecting this data?

We are collecting this data to determine whether companies have begun to integrate circular economy activities into the core of their business.

Findings

Participants are moving towards adopting circularity in their operations, reaching a Level 2 (Establishing) band. They are making progress in establishing formal strategies, but many have yet to define SMART targets to accelerate the incorporation of circular principles into their business activities.

Currently, the primary focus appears to be recycling post-consumer waste, although there is a wealth of unexplored potential for suppliers and manufacturers to further develop and expand their efforts in terms of circularity.

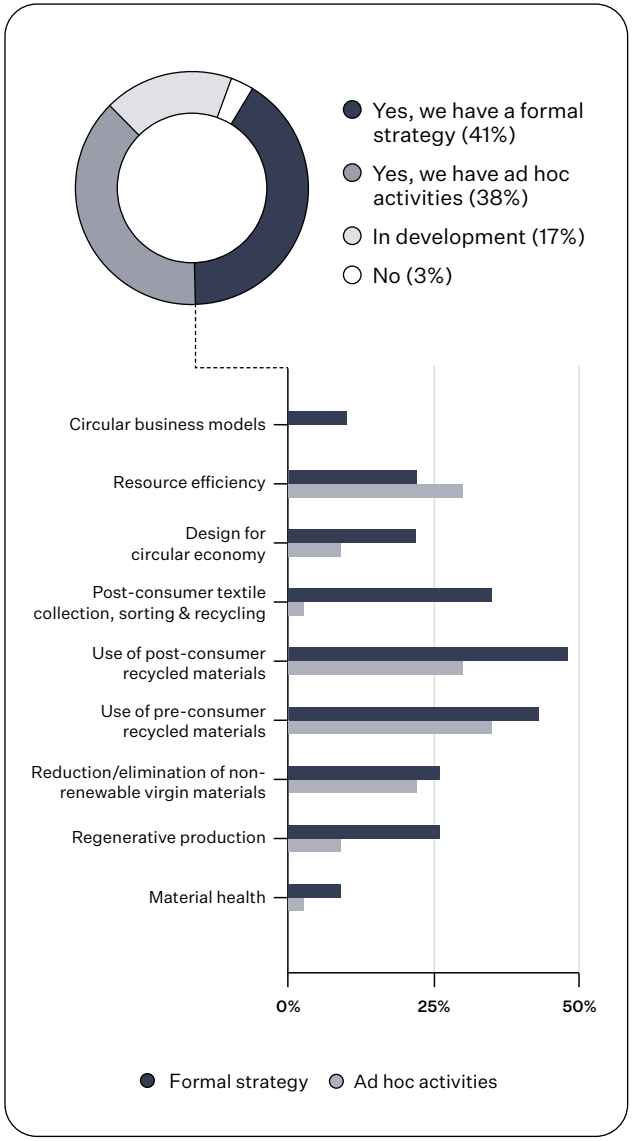
Strategy and targets

Circular economy approach

Ad-hoc activities are underway – the next step is to formalize a strategic circular approach in the supply chain.

Shifting towards a circular economy can be challenging for businesses, especially when factors such as company size are a hindrance. More than half of the respondents have clearly communicated that they have ad-hoc activities or formal strategies for addressing circularity in their business.

Companies are mainly focusing on integrating more pre- and post-consumer recycled content into their portfolios to reduce reliance on virgin raw materials, and some are focusing on design and resource efficiency.



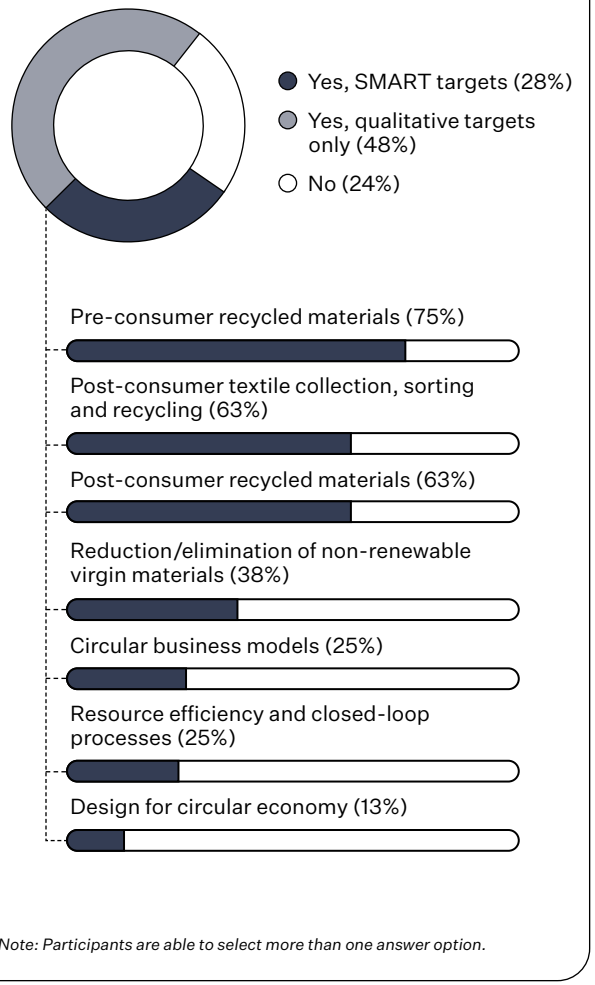
Strategy and targets

Circular economy targets

Companies are yet to set SMART targets for circularity.

SMART goals (Specific, Measurable, Achievable, Relevant, and Time-Bound) help to clearly define how the goals are to be achieved.

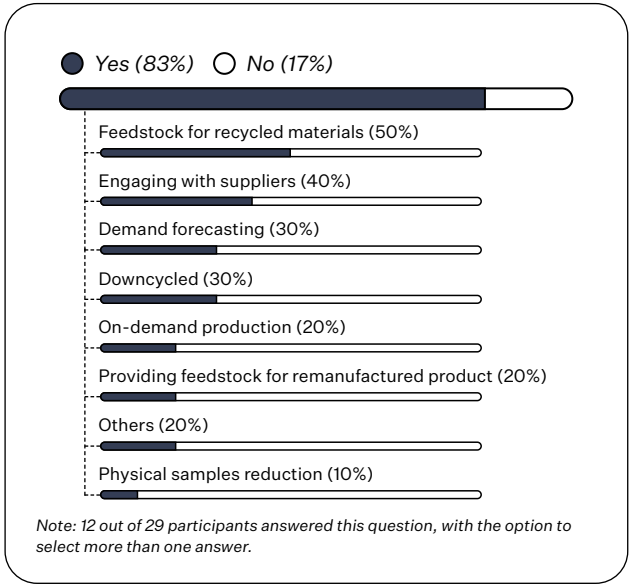
Even though participants are working on implementing circular economy activities and strategies, half of the respondents have only set qualitative goals so far. There is great potential for suppliers and manufacturers to establish SMART goals as an important tool for tracking progress and accelerating best practices.



Note: Participants are able to select more than one answer option.

Resource efficiency

Pre-consumer waste



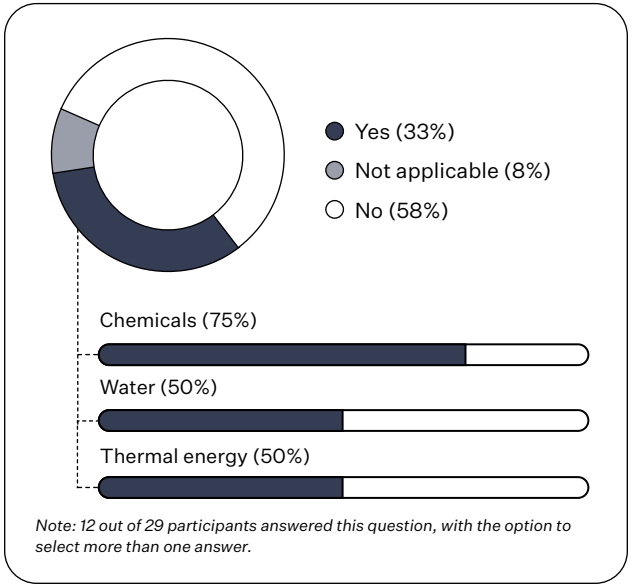
Note: 12 out of 29 participants answered this question, with the option to select more than one answer.

Collaborating with peers is key to innovation and progress.

Pre-consumer products – materials that have been discarded or thrown away before the consumer-use phase – are often disposed of as waste. However, they hold enormous potential for innovation and efficiency if they can be transformed into useable materials.

For participants, resource efficiency is a vital part of reducing and possibly eliminating waste during the manufacturing and production phase. Participants are avoiding waste by engaging with peers along the supply chain and forecasting demand. When pre-consumer waste is produced, they ensure it is given a second life as feedstock for recycled materials, or downcycled for alternative purposes.

Closed-loop processes



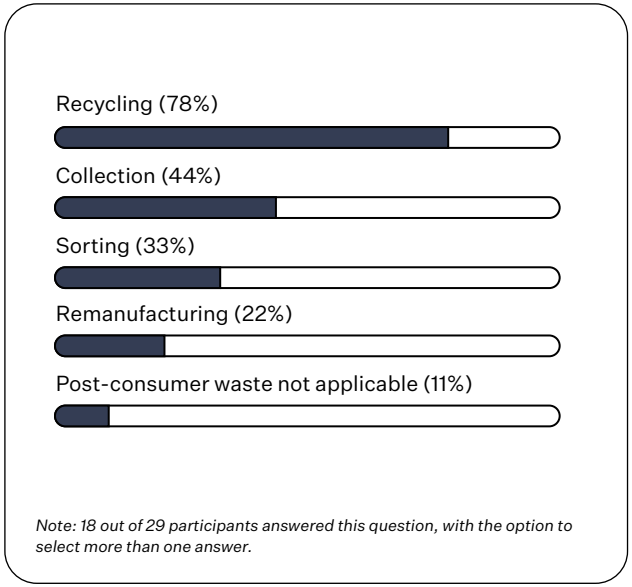
Note: 12 out of 29 participants answered this question, with the option to select more than one answer.

Investment is being made in closed-loop processes for circular production.

Only 33% of the participants are investing in closed-loop processes to optimize efficiency and to make sure that resources are never wasted.

75% of companies that responded “yes”, reported chemicals are top priority, with a focus on avoiding their release in the environment and the consequent effects on human health.

Post-consumer waste



Note: 18 out of 29 participants answered this question, with the option to select more than one answer.

Recycling post-consumer waste is a key activity.

As most post-consumer waste is sent to landfill, it is crucial to create more effective collection systems.

Almost all respondents are involved in recycling processes focusing on developing ways to transform post-consumer waste into feedstock for recycled products.

Half of the reporting companies are also involved in collecting and sorting waste to support recycling operations.

Progress to Preferred

Overview

What is included in this section:

- Uptake targets
- Uptake data
- Prioritization assessments
- Recycled

Participant profile

Sector average

Data from 2022

52 of 52 participants reported data.

Why are we collecting this data?

This section is designed to track participants' progress towards the adoption of a preferred materials portfolio that helps to reduce and eliminate the impacts of materials sourcing. This section is mandatory for all participants as it is the core of the Materials Benchmark survey.

Please note that all percentages marked as "recycled" are also considered as preferred materials. In this breakdown, "preferred" includes primary (virgin) fibers and raw materials from preferred sources, and "recycled" covers secondary (renewable) fibers and raw materials. All other recycled materials, which are from a non-recognized sustainability system, are allocated to conventional.

Findings

Preferred raw materials account for 52% of all raw materials reported by suppliers and manufacturers. Another 5% comes from recycled sources, leaving the percentage of conventional materials used at 43%.

However, for some of the most common fiber types – such as cotton and polyester – conventional practices still prevail. In contrast, materials that are reported in smaller volumes such as cashmere, flax, and hemp mostly come from preferred sources.

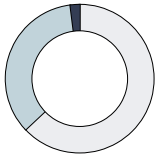
Overview: Progress to preferred

Conventional Preferred Recycled

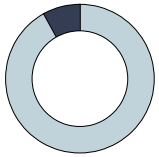
Plant-based fibers and materials

Plant-based fibers and materials include cotton, flax and hemp. They are “preferred” when cultivated or harvested using more sustainable methods, with production practices that have a reduced impact on climate, soil health, water, or biodiversity.

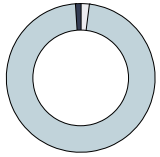
Cotton



Flax



Hemp

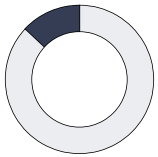


Click the pie charts below to get further insights into the respondents’ progress towards a preferred materials portfolio.

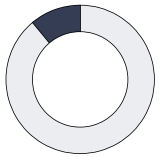
Synthetic fibers and materials

Synthetic fibers and materials can be categorized as conventional, recycled, and biobased. Conventional synthetics are created from non-renewable fossil fuels. Recycled synthetic textiles are often made from post-consumer plastic waste, while biobased synthetics are derived from plants such as corn and sugar.

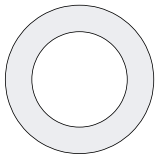
Polyester



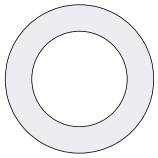
Polyamide



Acrylic



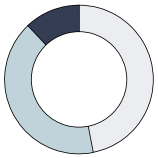
Elastane



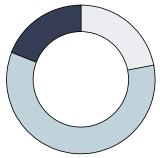
Animal-based fibers and materials

Animal-based fibers and materials include sheep wool, mohair, cashmere, alpaca, leather, and down. They are popular natural choices for textiles, but attention must be paid to the welfare of the animals and the land they graze on.

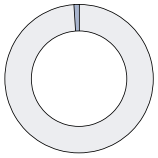
Wool



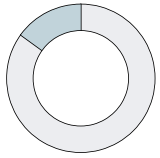
Cashmere



Alpaca



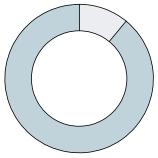
Mohair



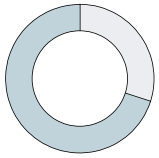
Manmade cellulosic fibers (MMCFs)

Manmade cellulosic fibers (MMCFs) such as viscose, modal, and lyocell have naturally produced feedstocks, mainly derived from the bark of trees like birch and eucalyptus or other plants such as bamboo. MMCFs are made from these feedstocks through industrial processes and consist of pure cellulose.

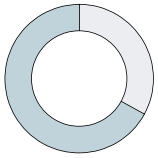
Viscose



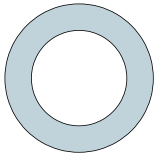
Lyocell



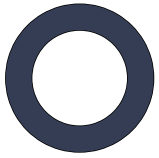
Modal



Acetate

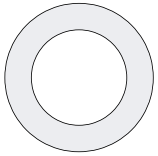


Cupro

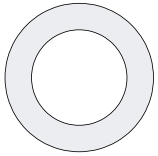


Other fibers and materials

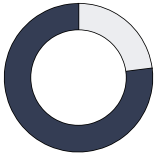
Plant fibers



Animal fibers



Synthetic fibers



Materials portfolio

There are many predictions about the share of the fashion, textile, and apparel market. Based on the data, MMCF is at the top of the market share in terms of uptake volumes, followed by polyester.

Manmade cellulosic fibers

MMCFs represent the most reported fiber category in terms of uptake volumes used by the participants. At about 2.85 million metric tons, they have a market share of approximately 49%. This is down to the large participation of MMCF producers in the Materials Benchmark.

Viscose accounts for the majority of the reported MMCFs used, followed by lyocell and acetate. Read more.

Synthetic fibers

Polyester is the second most reported fiber in terms of uptake volumes used by the participants. At about 1.71 million metric tons, it has a market share of approximately 29%.

Other synthetics, including polyamide, elastane and acrylic, represent less than 1% all together. Read more.

Plant fibers

Cotton is the third most reported fiber in terms of uptake volumes used by the participants. With about 1.03 million metric tons, it has a market share of approximately 18%.

The market share of flax represents 4% while hemp volumes account for less than 1%. Read more.

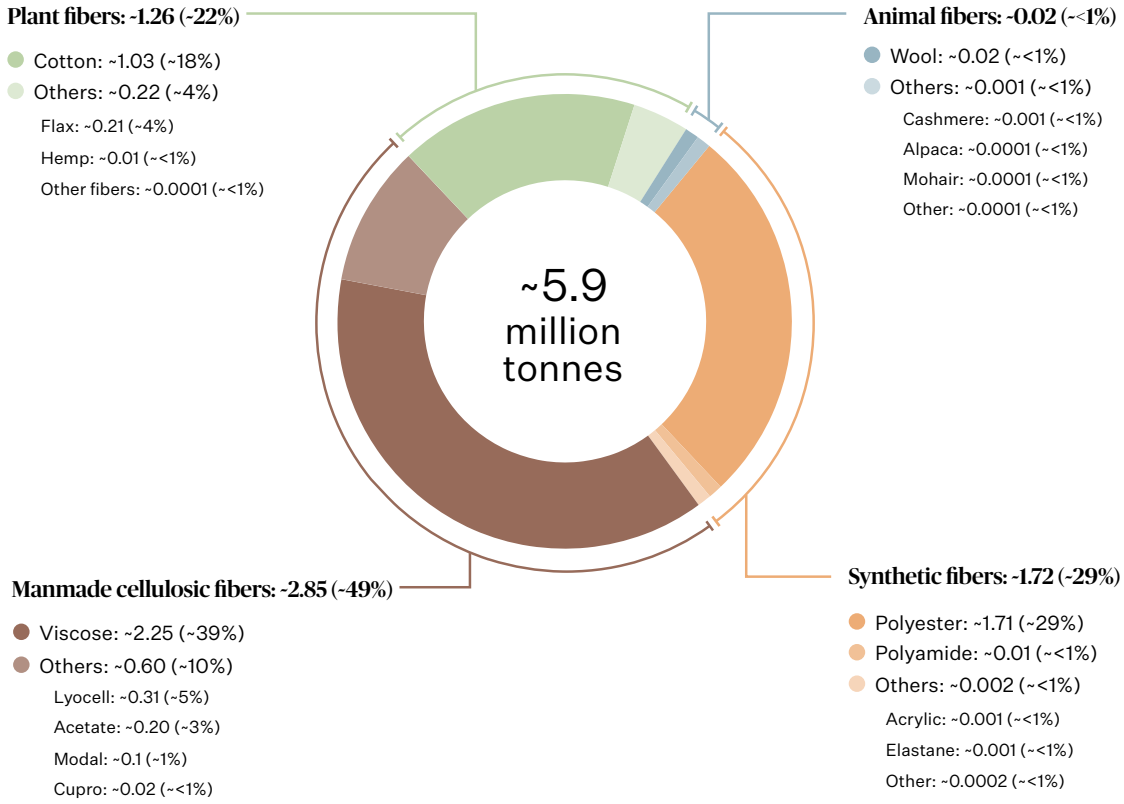
Animal fibers

Wool is the most reported animal fiber but volumes are very low compared to the other categories. Animal fibers represent 0.02% of the participants' market share. Read more.

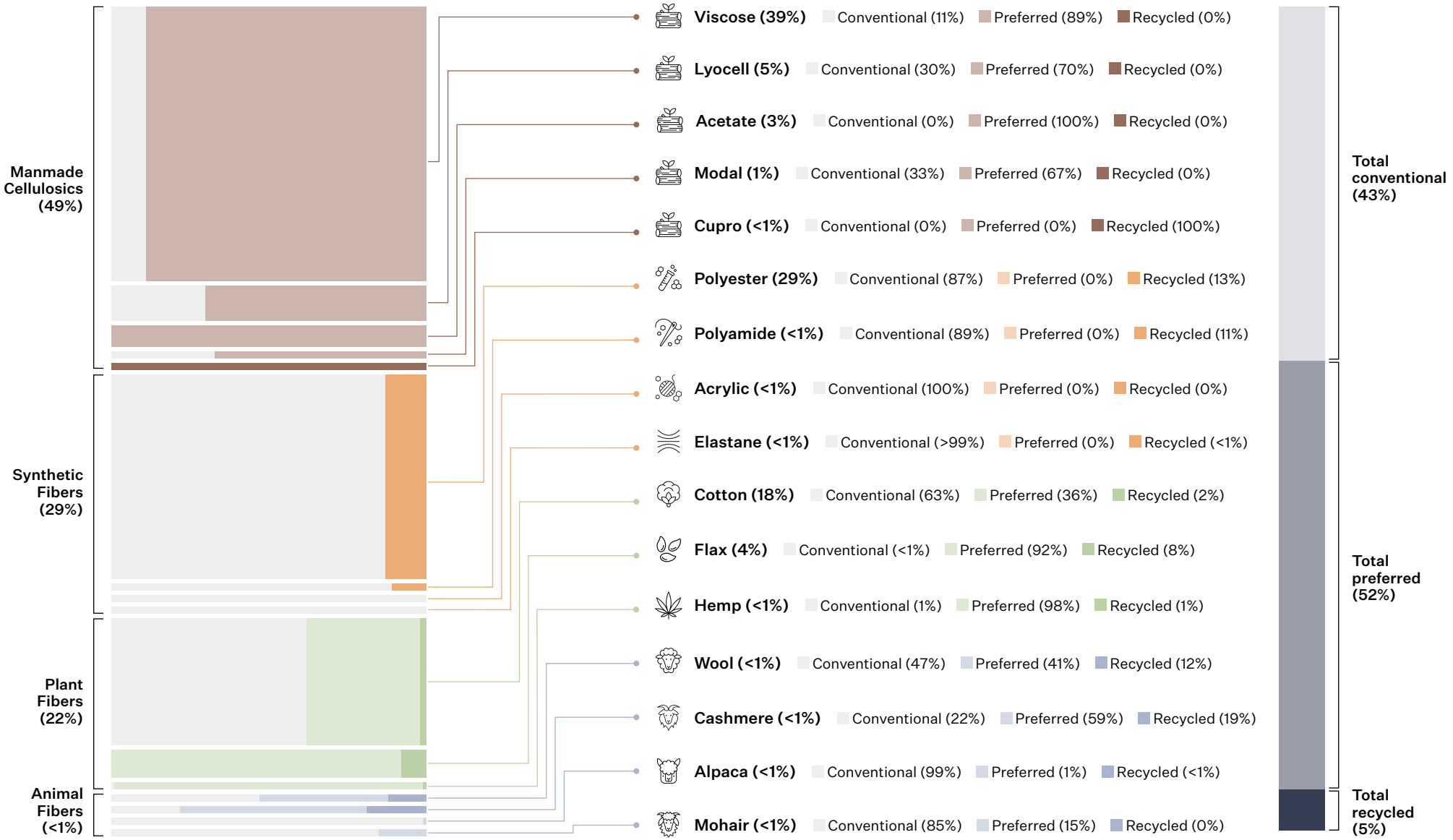
No suppliers or manufacturers reported on leather and down.

Fiber and raw materials uptake in 2022

(in million metric tons and %)



Uptake volumes and progress to preferred

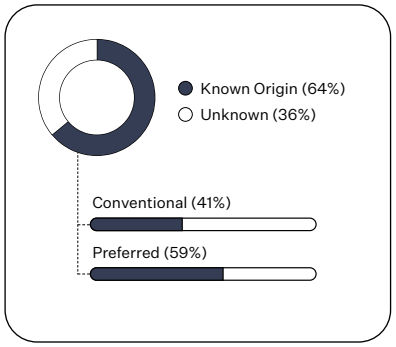


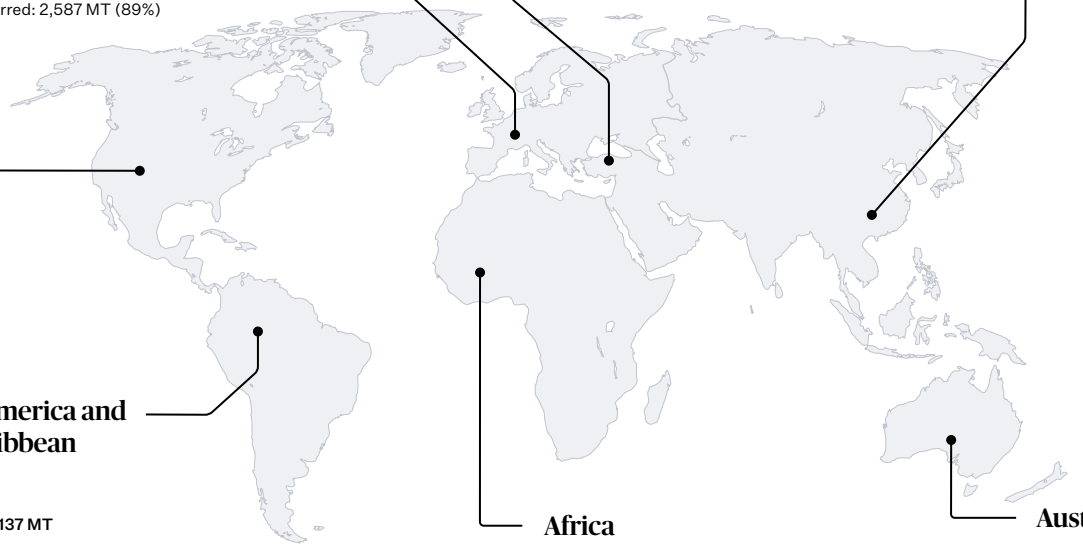
Country of origin

MT = Metric tons ○ Conventional ● Preferred

This chart lists only the top countries by uptake volumes reported.
For preferred, recycled is included within preferred in this chart.

Many of the on-the-ground impacts of raw materials happen where they are grown, cultivated or produced. Based on the data, 36% of participants do not know their country of origin. The following map provides an overview of the main countries from which participants source the raw materials for which the countries of origin are known.





Northern America

UNITED STATES

Total: 940,056 MT

Polyester
- ○ Conventional: 733,267 MT (99%)
- ● Preferred: 3,859 MT (1%)

MMCF
- ○ Conventional: 0 MT (0%)
- ● Preferred: 200,161 MT (100%)

Cotton
- ○ Conventional: 2,186 MT (79%)
- ● Preferred: 571 MT (21%)

Southern Europe

AUSTRIA

Total: 2,937 MT

MMCF
- ○ Conventional: 325 MT (11%)
- ● Preferred: 2,587 MT (89%)

Latin America and the Caribbean

BRAZIL

Total: 100,137 MT

Cotton
- ○ Conventional: 1,834 MT (2%)
- ● Preferred: 98,303 MT (98%)

Middle East

TURKEY

Total: 5,426 MT

Cotton
- ○ Conventional: 1,832 MT (35%)
- ● Preferred: 3,448 MT (65%)

Africa

BURKINA FASO

Total: 8,127 MT

Cotton
- ○ Conventional: 0 MT (0%)
- ● Preferred: 8,127 MT (100%)

Eastern and South-Eastern Asia

CHINA

Total: 1,872,402 MT

MMCF
- ○ Conventional: 72,201 MT (4%)
- ● Preferred: 1,713,686 MT (96%)

Polyester
- ○ Conventional: 37,296 MT (57%)
- ● Preferred: 27,704 MT (43%)

Cotton
- ○ Conventional: 17,391 MT (>99%)
- ● Preferred: 71 MT (<1%)

TAIWAN

Total: 435,021 MT

Polyester
- ○ Conventional: 375,979 MT (87%)
- ● Preferred: 58,589 MT (13%)

VIETNAM

Total: 286,698 MT

Polyester
- ○ Conventional: 256,237 MT (89%)
- ● Preferred: 30,127 MT (11%)

Australia and New Zealand

AUSTRALIA

Total: 8,413 MT

Wool
- ○ Conventional: 4,560 MT (82%)
- ● Preferred: 977 MT (18%)

Impact Areas

Measuring impacts

What is included in this section:

- Prioritization assessments
- Recycled
- Implementation

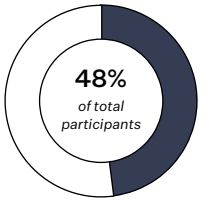
Participant profile

Sector average

2

Data from 2022

25 of 52 participants reported data.



Why are we collecting this data?

This section is designed to track industry progress, targets, monitoring, and reporting on climate and nature-related impact areas such as biodiversity, freshwater, ocean, land use, and soil health, in line with Textile Exchange's Climate+ strategy. The framework's inclusion of areas impacting Climate+ is a new addition to the Materials Benchmark.

Findings

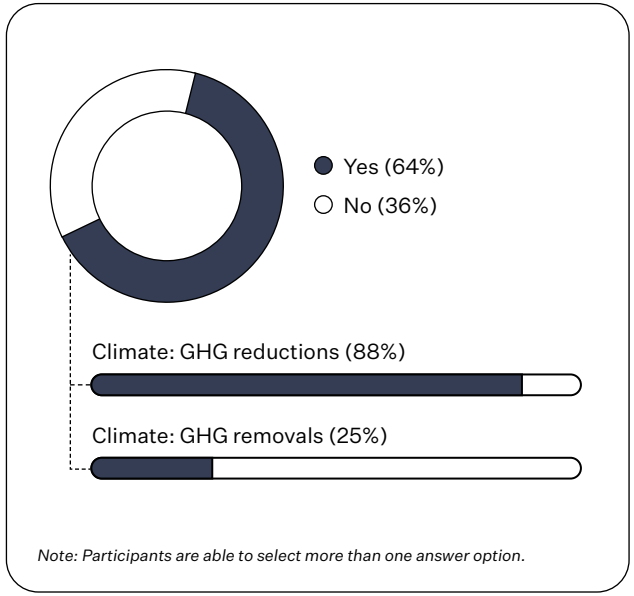
Measuring climate and nature-related impact areas is relatively new for participants, but they are starting to integrate them in their strategy and analysis, reaching a Level 2 (Establishing) band.

Responding suppliers and manufacturers are aware of the importance of impact measurement and are starting out with greenhouse gas calculations and life cycle assessments. They are mostly reliant on standards and certifications as tools to monitor and mitigate impact, leaving room for improvement through the adoption of sourcing restrictions and sustainable sourcing practices.

Only 25 participants out of 52 completed this section, which may also indicate that suppliers and manufacturers are not yet focusing their efforts in this area.

Impact assessments

Impact assessment (climate-related)

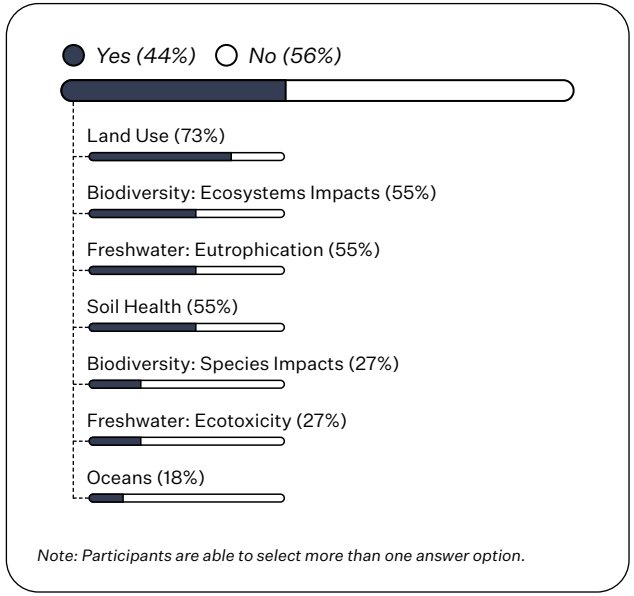


Reducing greenhouse gas emissions is the most common focus area.

Climate impact assessments at the raw materials level focus primarily on the impacts associated with growing and extracting these materials. These assessments help companies understand and assess their wider environmental impact.

64% of the respondents that say “yes” are actively engaged, particularly in reducing greenhouse gas (GHG) emissions, while only a small number are focusing on carbon removal.

Impact assessment (nature-related)

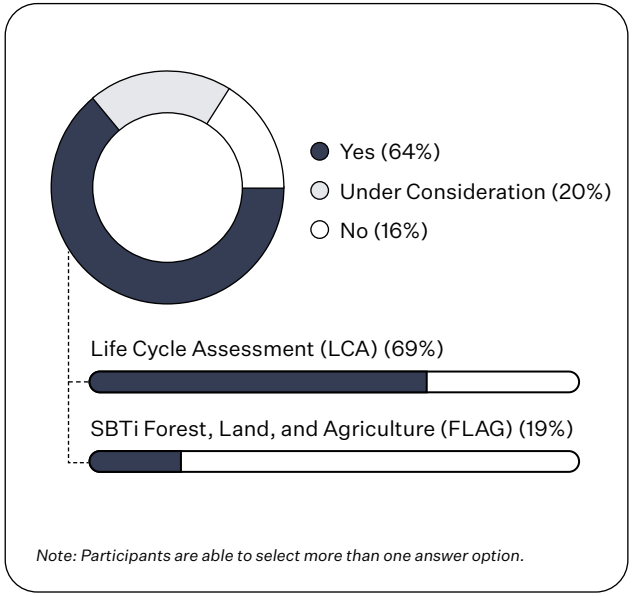


Further assessments on nature impacts is needed.

As with climate, nature impact assessments at the raw materials level focus on the impacts that cultivating and extracting raw materials has on nature. These assessments are needed to identify ways to restore and regenerate biodiversity and stop nature loss.

The data shows that suppliers and manufacturers assess different areas, with land use, biodiversity, freshwater and soil health being top priorities. However, other areas such as the industry’s impact on species or ecotoxicity are still low in the agenda.

Tools and frameworks



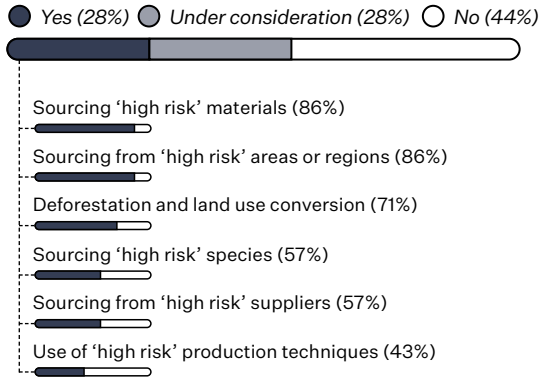
Life cycle assessment (LCA) is the tool most used by respondents to assess impact.

Different tools and frameworks can be used to help to carry out climate and/or nature impact assessments.

Of the suppliers who answered yes, 69% already carry out or are considering carrying out LCAs, but only a small proportion use other tools, with SBTi being the second most commonly used.

Targets

Sourcing restrictions



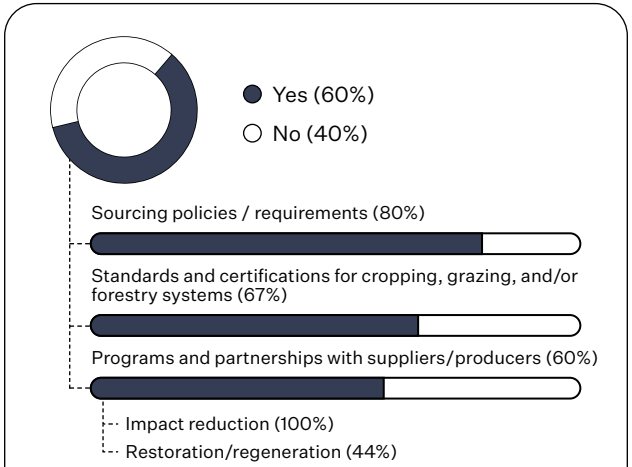
Note: Participants are able to select more than one answer option.

Sourcing restrictions are not set by many respondents yet.

Sometimes, companies might want to set restrictions to avoid the high-risk factor associated with certain materials, suppliers, practices or locations from their procurement portfolio.

The main restrictions set among include avoiding sourcing high-risk materials or sourcing from high-risk areas or regions.

Measures to reduce impact on climate/nature



Note: Participants are able to select more than one answer option.

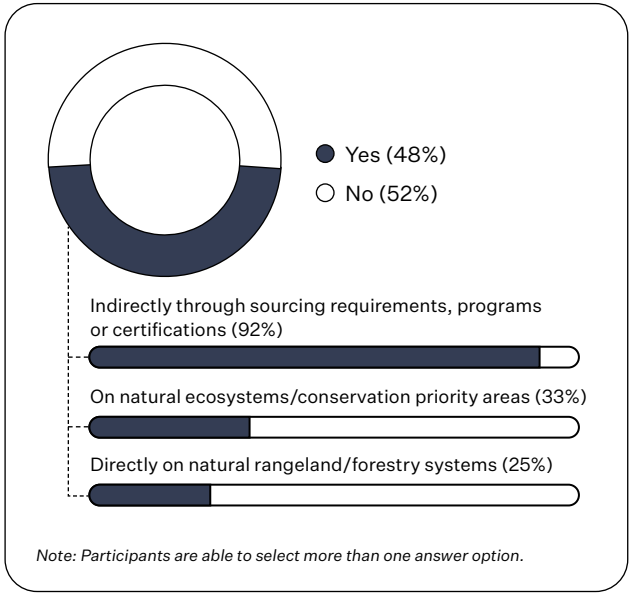
Measures to reduce impacts on climate and nature are already in place.

Companies are taking a variety of approaches to reduce impacts on climate and nature, either directly or indirectly.

The most commonly reported measures include setting policies and requirements that relate to the cultivation or extraction of raw materials, as well as using standards and certifications for cropping, grazing and/or forestry systems.

Targets

Measures to restore and regenerate nature

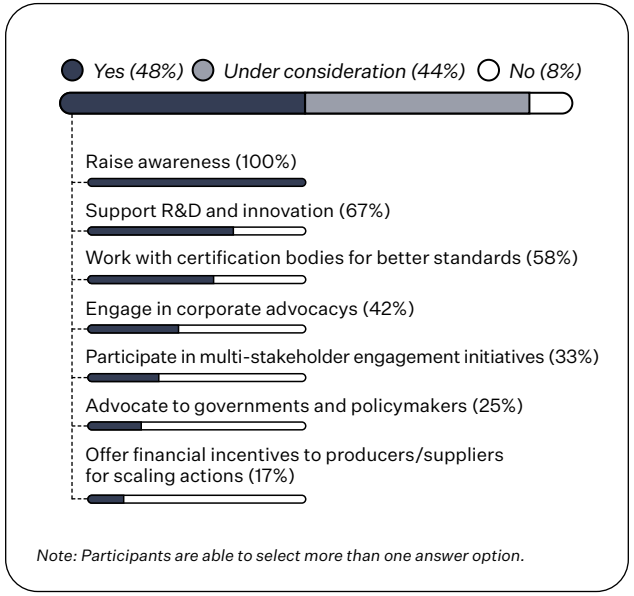


Efforts to restore and regenerate natural ecosystems are still in the early phases.

Restoration primarily aims to return degraded ecosystems to a near-original natural state, while regenerative actions aim to increase ecological integrity in areas where humans benefit from natural resources.

Suppliers reported that the most implemented measure to restore and/or regenerate nature is indirectly through sourcing requirements, programs, or certifications.

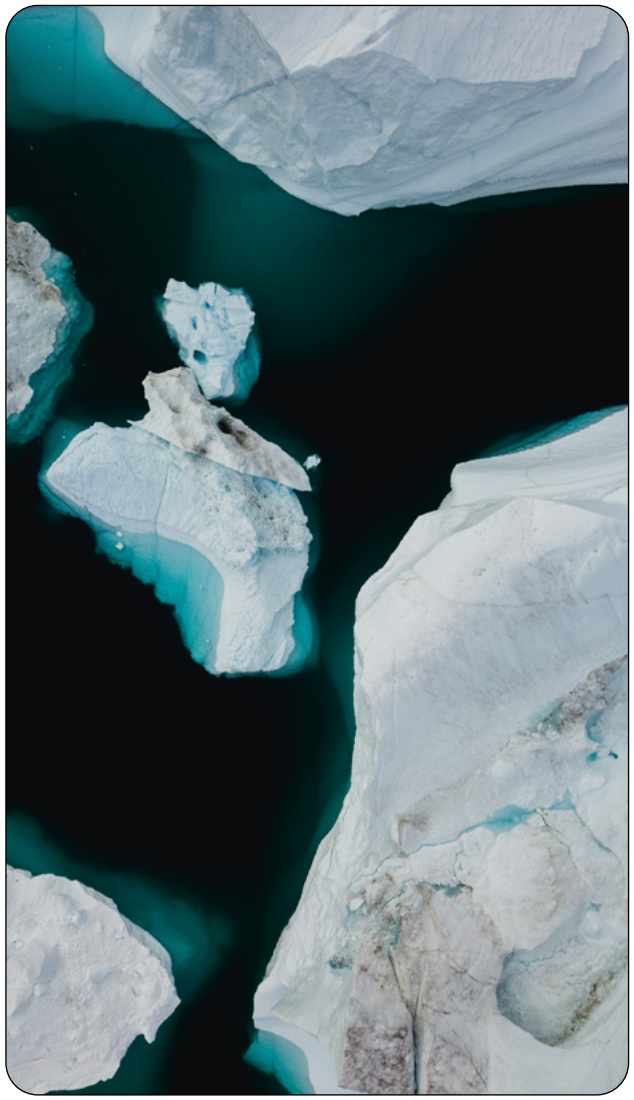
Transformational activities



Only some participants are advocating for change to the wider industry.

The potential for companies to actively engage in actions that support systemic change in the fashion, textile and apparel industry underlines the central role they can play in promoting positive change.

The data indicates that most of the respondents are considering implementing these activities. Among those that have already begun these efforts, the primary methods have included raising awareness and supporting R&D and innovation.



Plant Fibers and Materials

Cotton

Cotton uptake data was reported by 32 out of 52 participants, with cotton volumes accounting for 18% of overall material uptake.

Of the 32 participants that reported on cotton, 31 companies (97%) identified it as a priority raw material. Based on the data, cotton sits in the Level 2 (Establishing) band.

Conventional cotton dominates the total portfolio at 63%, with the remaining 36% being preferred and a small amount recycled.

SMART targets are driving progress and defining the direction. More than 30% of participants have set a target for “100% more sustainable cotton” and most of them have been made public, demonstrating a commitment to accountability in this area.

Uncover the Sustainable Cotton Challenge Dashboard

19% of participants representing 10 companies, including subsidiaries of which 2 have achieved their target.*

** The Cotton Challenge calls on companies to commit to sourcing 100% of their cotton from recognized programs and initiatives by 2025.*

Participant profile

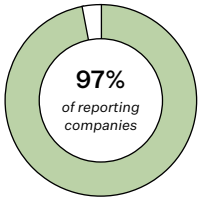
Sector average

Data from 2022

32 of 52 participants* reported uptake data.

(Both priority + non-priority)

Of the 32 participants, 31 reported that cotton as a priority material.



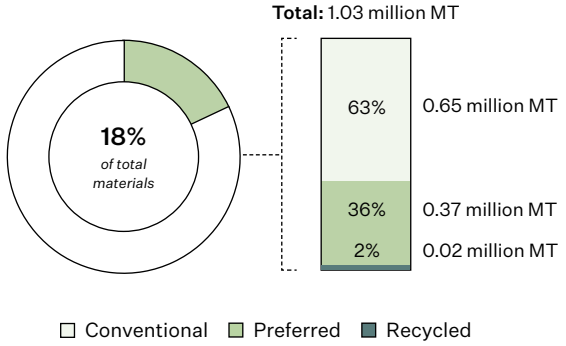
*3 participants reported that they use cotton but did not provide uptake volumes.

Uptake targets

34% have a 100% SMART target for at least one preferred cotton

58% that have SMART targets share them in the public domain

Cotton overview



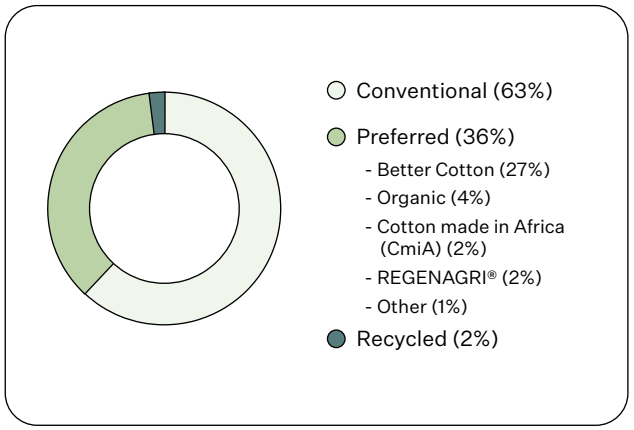
Cotton

Note: This data is not indicative of clear trends due to the change in participants and Textile Exchange's updated taxonomy.

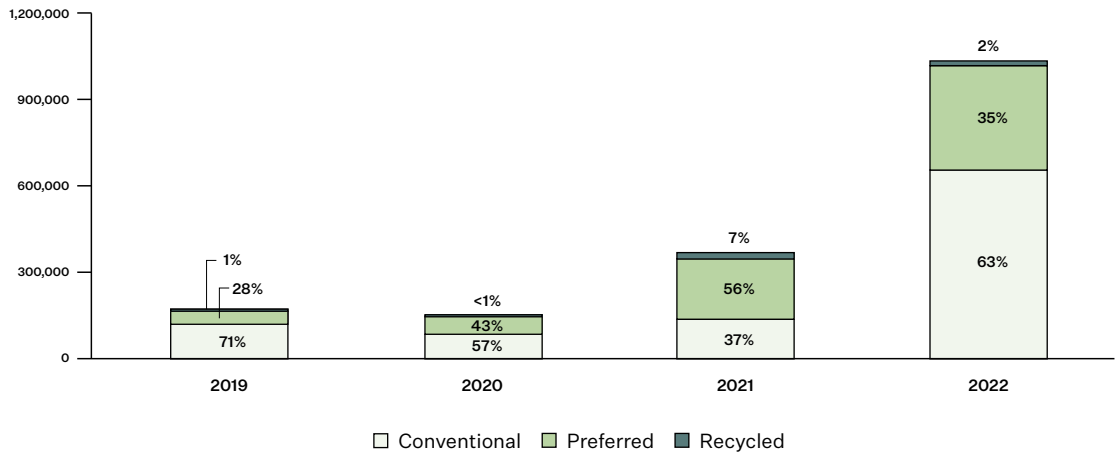
Cotton portfolio

The percentage of preferred and recycled cotton is slightly increasing year by year, but decreased in 2022. Most of the cotton reportedly used by participants is still conventional (63%). Better Cotton is the most commonly reported preferred option used (27%), followed by organic cotton (4%).

Portfolio



Trend (MT)



Cotton

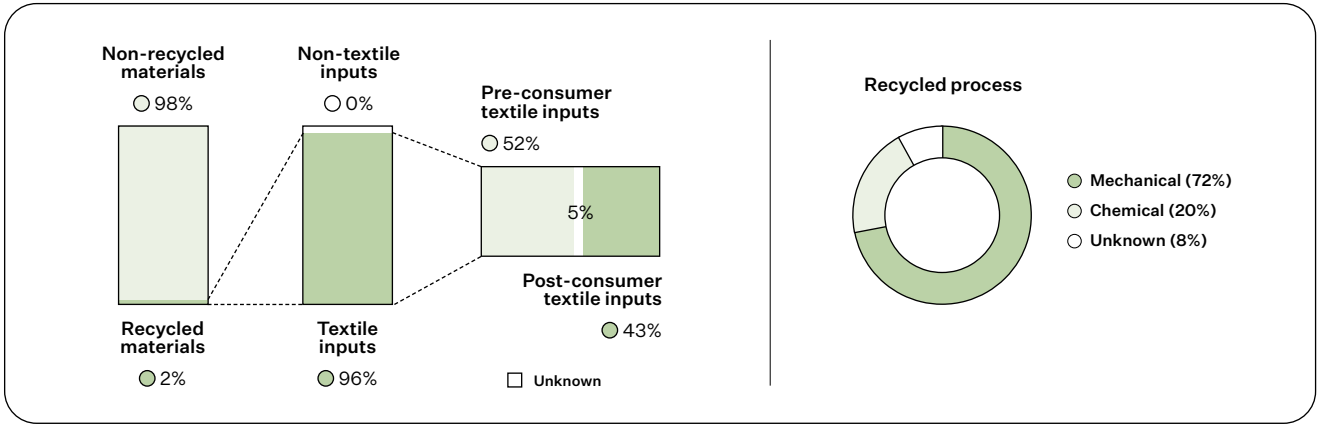
Traceability

Traceability in cotton sourcing presents challenges.

Achieving traceability within supply chains is essential for companies to properly manage the environmental, socioeconomic and political risks that come with materials sourcing. It all starts with the country of origin, where the raw materials are grown, cultivated or produced.

The data reveals that only 19% of participants' cotton uptake can be traced back to its country of origin. Over half comes from Brazil, followed by Pakistan, India, China and Burkina Faso.

Recycled cotton portfolio



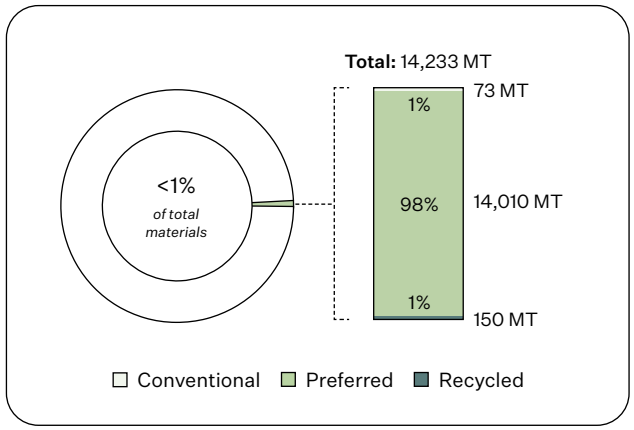
Recycled cotton is still in its early stages.

Textile-to-textile recycling plays an important role in helping companies transition to a circular economy. Cotton recycling can be broadly defined as the conversion of cotton fabric into cotton fibers that can be reused in textile products.

The data shows that further growth is needed, since only 2% of cotton used by participants is recycled. This is mainly produced through mechanical processes using both pre-consumer and post-consumer sources in nearly equal measures.

Other plant-based fibers

Hemp

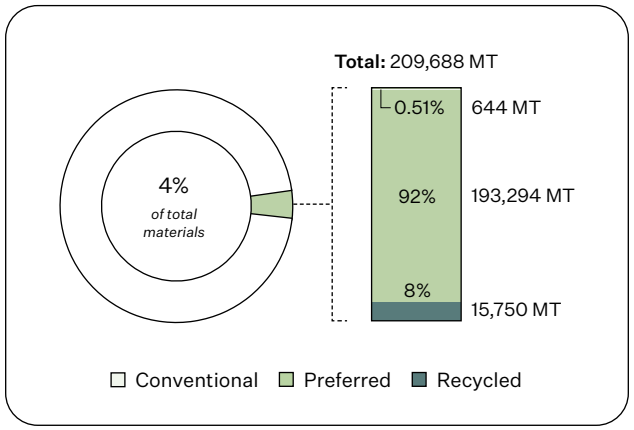


8 companies out of 52 reported using hemp, with volumes accounting for less than 1% of the overall material uptake.

Of the participants that reported on hemp, 4 (50%) identified it as a priority raw material. Based on the data, hemp sits within the Level 1 (Developing) band, and preferred hemp accounts for 98% of the reported hemp uptakes.

Hemp production is expanding, primarily due to recent legalization in countries around the world. It's a crop with a multitude of uses that has the potential to help brands "tick off" several of the sustainability criteria they are looking for in a fiber: low-input, with strong environmental attributes, and durable. However, attention must be paid to the production practices used.

Flax



Flax has been reported by 13 companies out of 52, with volumes accounting for 4% of the overall reported uptakes.

Of the participants who reported on flax, 4 companies (31%) identified flax as a priority raw material. Based on the data, flax sits within the Level 2 (Establishing) band.

Preferred flax accounts for 92% of the reported flax uptakes, including 90% of the volumes certified under European Flax and 2% European Flax Organic. Recycled flax constitutes the remaining 8%, along with 0.51% conventional.

In 2022, hemp and flax collectively accounted for only 4% of the raw material uptake reported by all participants. Although their volumes are significantly lower compared to cotton, we have provided a brief overview for each of these two raw materials due to their potential.

Synthetic Fibers

Polyester

Polyester uptake data was reported by 36 out of 52 participants, with volumes accounting for 29% of overall material uptake.

Of the participants that reported on polyester, 28 companies (78%) identified it as a priority raw material. Based on the data, polyester sits in the Level 2 (Establishing) band.

Participants predominantly use conventional polyester, with only 13% being recycled polyester.

SMART targets are driving progress, with half of the companies setting them. However, only 14% are aiming for 100% preferred polyester.

[Uncover the Recycled Polyester Challenge Dashboard]

27% of participants representing 14 companies, including subsidiaries of which 4 have achieved their target.*

** The Recycled Polyester Challenge presses the industry to commit to bringing the market share of recycled polyester up from 14% in 2019 to 45% by 2025.*

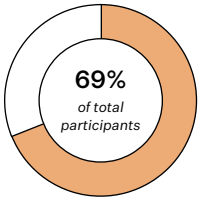
Participant profile

Sector average

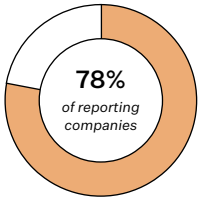
Data from 2022

36 of 52 participants* reported uptake data.

(Both priority + non-priority)



Of the 36 participants, 28 reported polyester as a priority material.



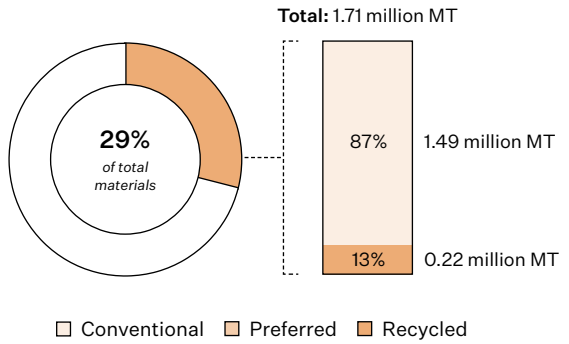
*3 participants reported they use polyester but did not provide uptake volumes.

Uptake targets

14% have a 100% SMART target for recycled polyester

67% that have SMART targets share them in the public domain

Polyester overview



Polyester

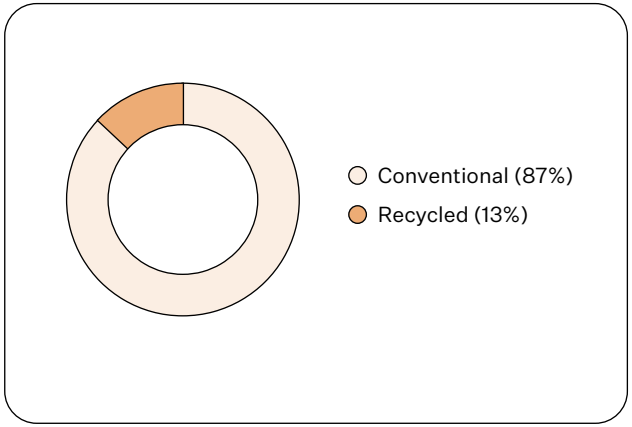
Note: This data is not indicative of clear trends due to the change in participants and Textile Exchange's updated taxonomy.

Polyester portfolio

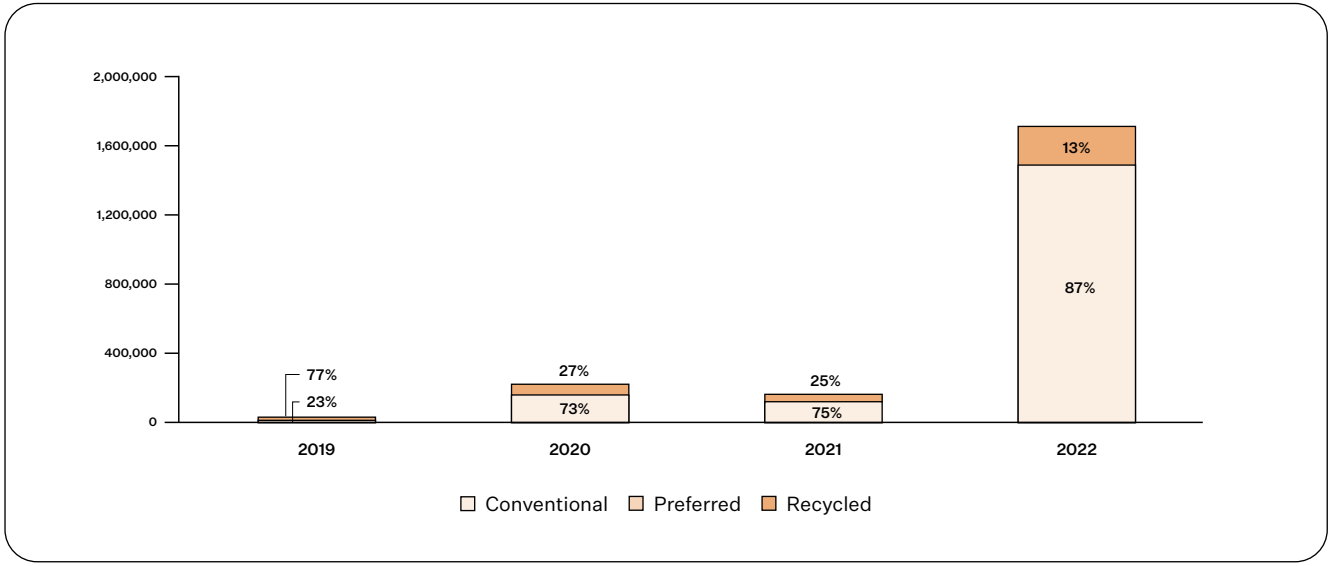
Overall, trends show a positive increase in recycled polyester volumes, in part due to an increased number of suppliers and manufacturers participating in the Materials Benchmark. However, conventional polyester volumes remain high, indicating that companies are still heavily dependent on fossil-based feedstocks.

Suppliers and manufacturers did not report any bio-based solutions used during the reporting period.

Portfolio



Trend (MT)



Polyester

Traceability

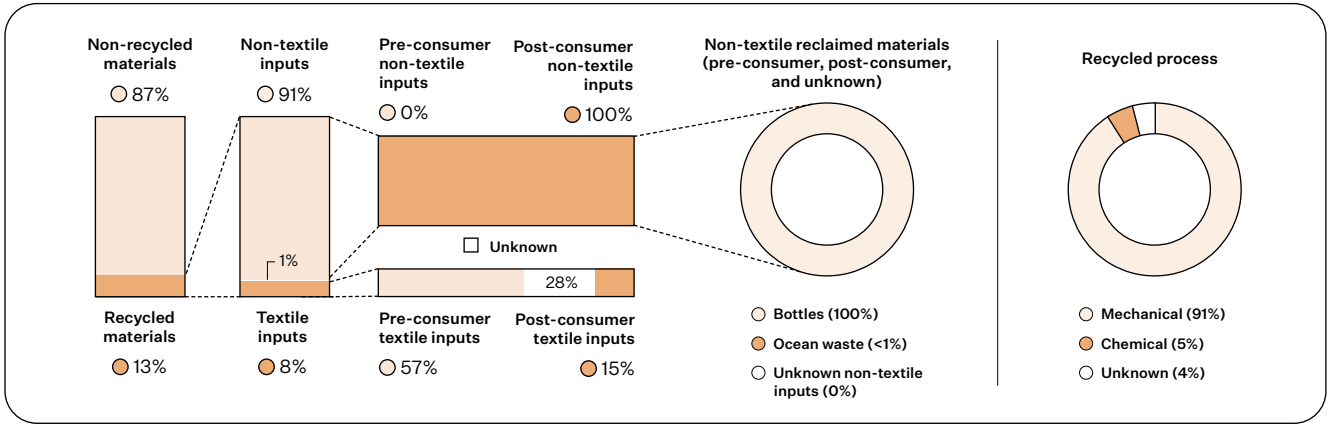
USA	Taiwan	Vietnam	China	India
43%	25%	17%	4%	1%

Suppliers and manufacturers are setting an example when it comes to traceability.

Traceability within supply chains is essential to properly manage the various environmental, socioeconomic and political risks that come with materials sourcing. It all starts with the country of origin where the raw materials are grown, cultivated or produced.

The data reveals that 91% of polyester uptakes can be traced back to its country of origin. Almost half comes from the United States, followed by Taiwan, Vietnam, China, and India.

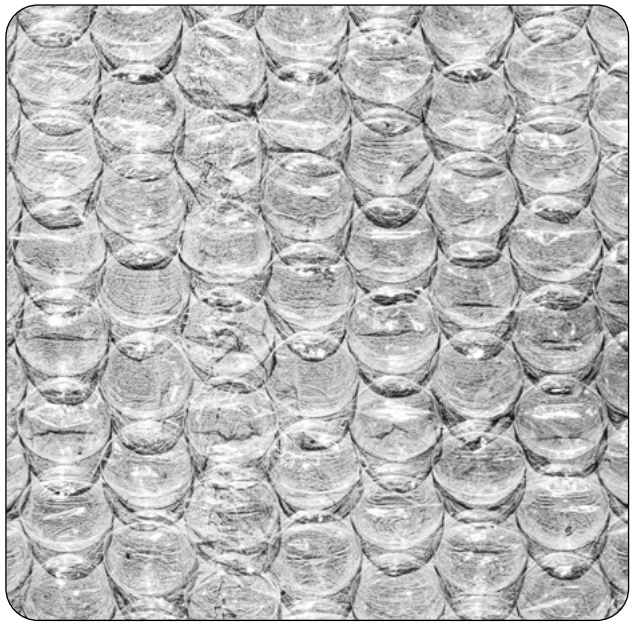
Recycled polyester portfolio



Recycled polyester is primarily derived from plastic bottles.

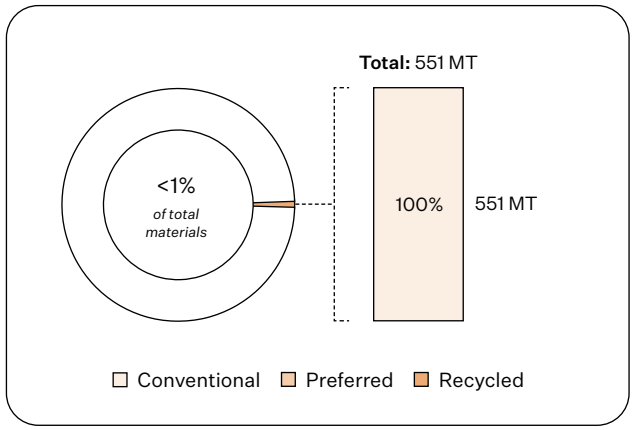
The data indicates that recycled polyester accounts for 13% of participants' total polyester volumes. Most of this recycled polyester comes from non-textile inputs, mainly plastic bottles. The most common recycling process used is mechanical.

While recycled polyester most commonly comes from post-consumer plastic bottles today, Textile Exchange does not want to incentivize their production. Companies should instead invest in circular solutions such as textile-to-textile recycling by partnering with recyclers and other links in the supply chain.



Other synthetic raw materials

Acrylic

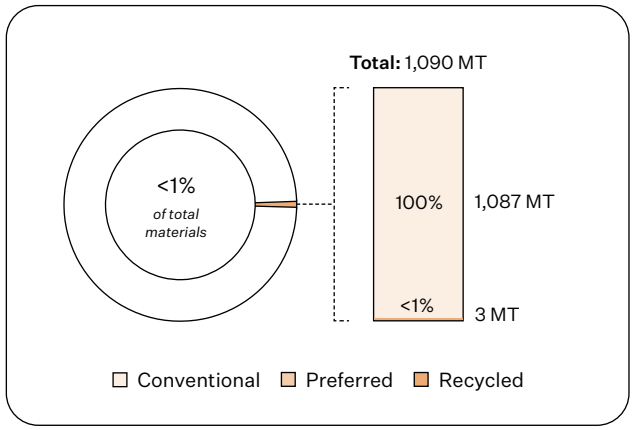


Data on acrylic was reported by 9 out of 52 participants, with acrylic volumes accounting for <1% of overall material uptake.

Of the participants that reported on acrylic, only 1 company identified it as a priority raw material.

Conventional acrylic represents 100% of the reported volumes, showing that no preferred options have been sourced by participants in 2022.

Elastane

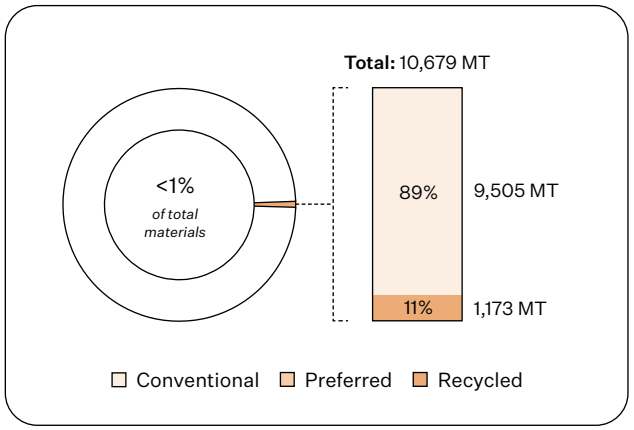


Data on elastane was reported by 12 out of 52 participants, with elastane volumes accounting for <1% of overall material uptake.

Of the participants that reported on elastane, 4 companies (33%) identified it as a priority raw material. Based on the data, elastane sits within the Level 1 (Developing) band.

Conventional elastane accounts for almost 100% of the reported volumes, with only 3 metric tons of recycled elastane reported, indicating that companies are not yet focusing on preferred options.

Polyamide



Data on polyamide (nylon) was reported by 16 out of 52 participants, with polyamide volumes accounting for <1% of overall material uptake.

Of the participants that reported on polyamide, 6 companies (38%) identified it as a priority raw material. Based on the data, polyamide sits within the Level 1 (Developing) band.

Conventional polyamide accounts for 89% of the reported volumes and 11% comes from recycled feedstocks.

In 2022, acrylic, elastane and polyamide collectively accounted for <1% of the raw materials reported on by participants. Although their volumes are significantly lower compared to polyester, we have provided a brief overview of these three raw materials since they are commonly used in the industry.

Animal Fibers and Materials

Wool

Wool uptake data was reported by 18 out of 52 participants, with volumes accounting for less than 1% of the overall material uptake.

Of the participants that reported on wool, 11 companies (61%) identified wool as a priority raw material. Based on the data, wool sits within the Level 2 (Establishing) band.

Conventional (47%) and preferred wool (41%) dominate the total portfolio almost equally, with the remaining 12% being recycled.

SMART targets are driving progress, although still only a small number of participants are setting these targets. Only 6% out of 18 is aiming at 100% preferred wool.

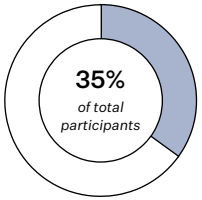
Participant profile

Sector average

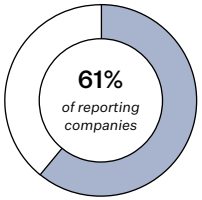
Data from 2022

18 of 52 participants* reported uptake data.

(Both priority + non-priority)



Of the 18 participants, 11 reported wool as a priority material.



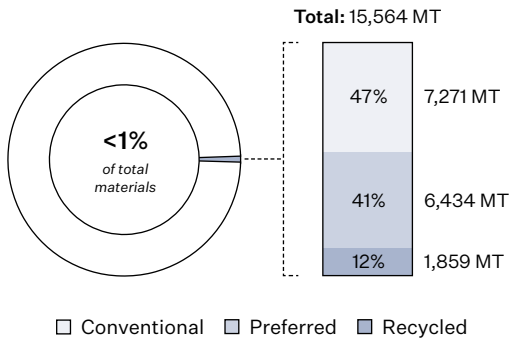
* 2 participants reported that they use wool but did not provide uptake volumes.

Uptake targets

6% have a “100%” target for at least one preferred wool

40% that have targets share them in the public domain

Wool overview



Wool

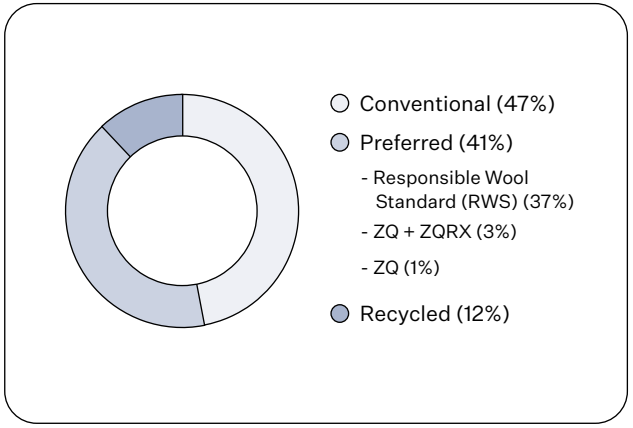
Note: This data is not indicative of clear trends due to the change in participants and Textile Exchange's updated taxonomy.

Wool portfolio

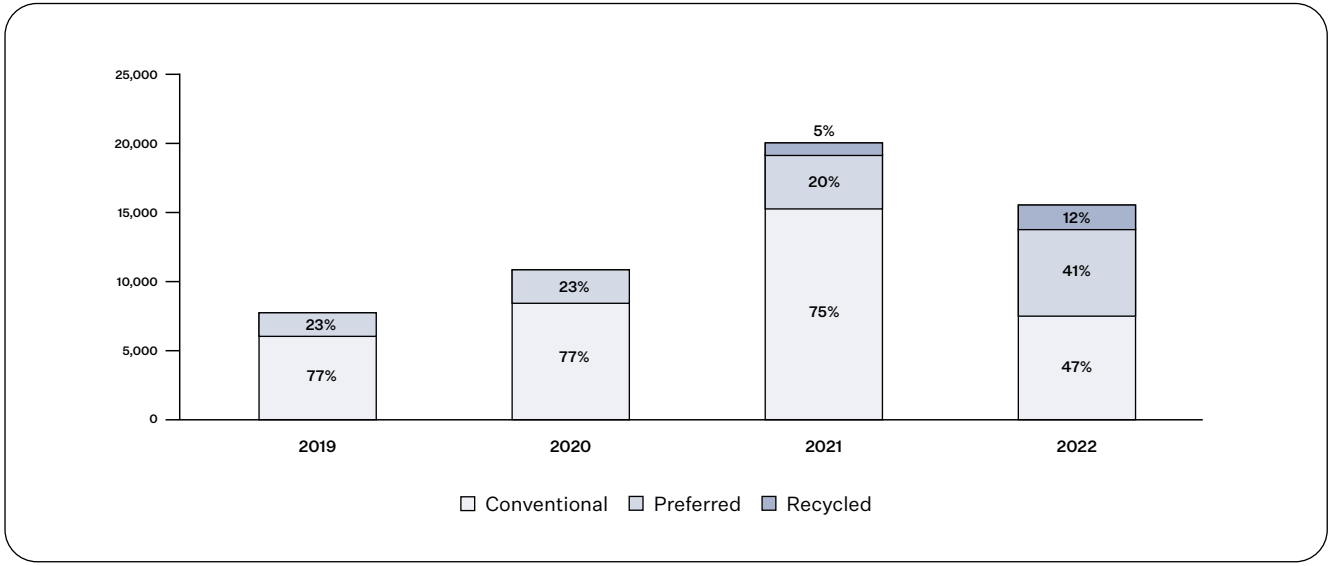
Over the years, the share of preferred and recycled wool in participants' portfolios has increased. This is due to the growing number of suppliers and manufacturers participating in the Materials Benchmark program.

The data shows that the Responsible Wool Standard (RWS) is the most popular preferred program, followed by recycled wool, and the other programs listed in the pie chart.

Portfolio



Trend (MT)



Wool

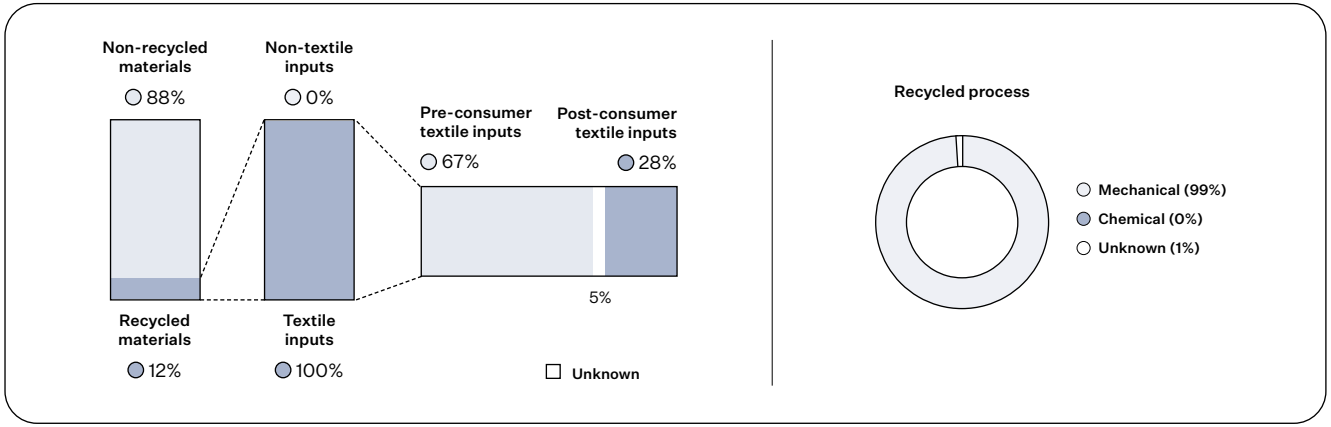
Traceability

Over half of participants can trace their wool back to where the animals are raised.

Traceability within supply chains is essential to properly manage the environmental, socioeconomic and political risks that come with materials sourcing. It all starts with the country of origin where the raw materials are grown, cultivated or produced.

The data reveals that 53% of wool used can be traced back to its country of origin. Over half comes from Australia, followed by Italy, New Zealand, Uruguay and Pakistan.

Recycled wool portfolio



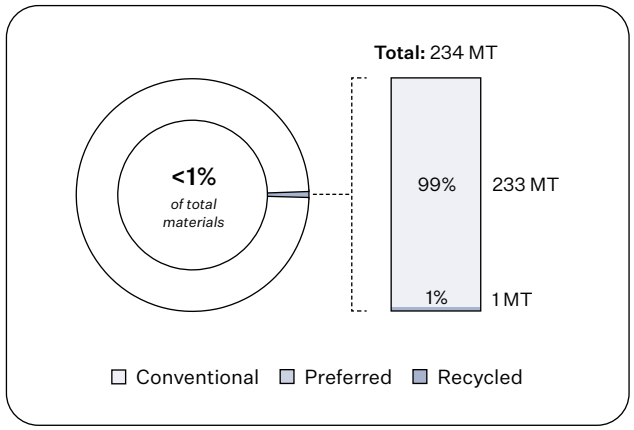
Recycled wool is still in its early stages.

There are various forms of wool recycling, including mechanical, closed-loop systems, open-loop systems, and re-engineering.

Choosing durable, easily recyclable wool can help reduce the amount of textile waste sent to landfills. However, the percentage of recycled wool is still low, accounting for just 12% of participants' total wool portfolio, with the majority coming from pre-consumer sources. Mechanical is the most used recycling process for wool.

Other animal raw materials

Alpaca

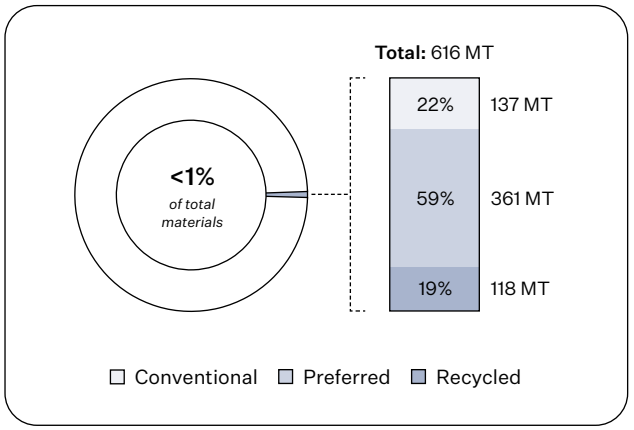


Data on alpaca was reported by 7 out of 52 participants, with volumes accounting for less than 1% of overall material uptake.

Of the participants that reported on alpaca, 1 company identified it as a priority raw material.

Conventional alpaca makes up the majority, accounting for 99% of the total portfolio, with the remaining 1% certified to the Responsible Alpaca Standard, and 0.01% certified recycled.

Cashmere

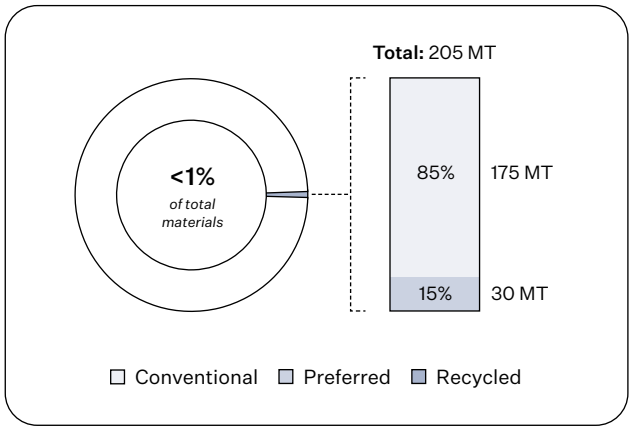


Data on cashmere was reported by 10 out of 52 participants, with volumes accounting for less than 1% of overall material uptake.

Of the participants that reported on cashmere, 6 companies identified it as a priority raw material. Based on the 2022 data, cashmere sits within the Level 2 (Establishing) band.

Preferred uptakes constitute the predominant share of participants' cashmere portfolio, with 38% of the reported volumes being certified under the Good Cashmere Standard, followed by 21% under the Sustainable Fiber Alliance. 19% is recycled and the remaining 22% is conventional.

Mohair



Data on mohair was reported by 7 out of 52 participants, with volumes accounting for less than 1% of overall material uptake.

Of the participants that reported on mohair, 3 companies identified it as a priority raw material. Based on the 2022 data, mohair sits within the Level 2 (Establishing) band.

Conventional mohair makes up the majority, accounting for 85% of the total portfolio, with the remaining 15% certified to the Responsible Mohair Standard.

In 2022, alpaca, cashmere, and mohair collectively accounted for less than 1% of the total raw material uptake reported by participants. Although their volumes are significantly lower compared to wool, we have provided a brief overview for each of them since they are still important for the industry.

Manmade Cellulosic Fibers

Manmade cellulosic fibers

Manmade cellulosic fibers (MMCFs) are regenerated fibers usually made from the dissolved wood pulp or “cellulose” of trees. Switching to preferred versions of this raw material means pushing forward deforestation-free solutions and those that preserve high conservation value forests.

MMCF uptake data was reported by 25 out of 52 participants, with volumes accounting for 49% of overall materials.

Of the participants that reported on MMCFs, 19 companies (76%) identified it as a priority raw material category. MMCFs sit in the Level 2 (establishing) band.

Based on the 2022 data, MMCF is the category with the highest percentage of preferred options reported by participants. However, only 12% of companies have set a SMART target to reach 100% preferred MMCFs.

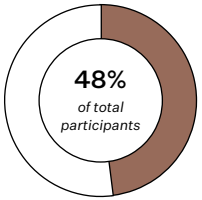
Participant profile

Sector average

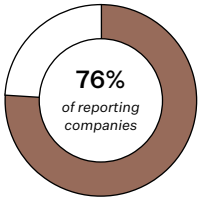
Data from 2022

25 of 52 participants* reported uptake data.

(Both priority + non-priority)



Of the 25 participants, 19 reported MMCF as a priority material.



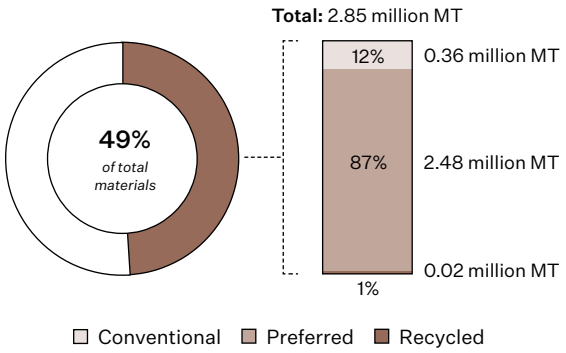
* 1 participant reported that they use MMCFs but did not provide uptake volumes.

Targets

12% have a 100% SMART target for at least one preferred MMCF

50% that have SMART targets share them in the public domain

MMCF overview



Manmade cellulosic fibers

MMCF portfolio

Annual trends show a steady presence of preferred MMCFs, with a peak in 2020, implying that participants have stabilized their “preferred” portfolio over the years.

MMCFs by material type:

Viscose
Preferred dominates the total portfolio (89%), with the remaining 11% being conventional.

Lyocell
Preferred accounts for 70% of the total portfolio, with the remaining 30% being conventional.

Modal
Preferred dominates the total portfolio (67%), with the remaining 33% being conventional.

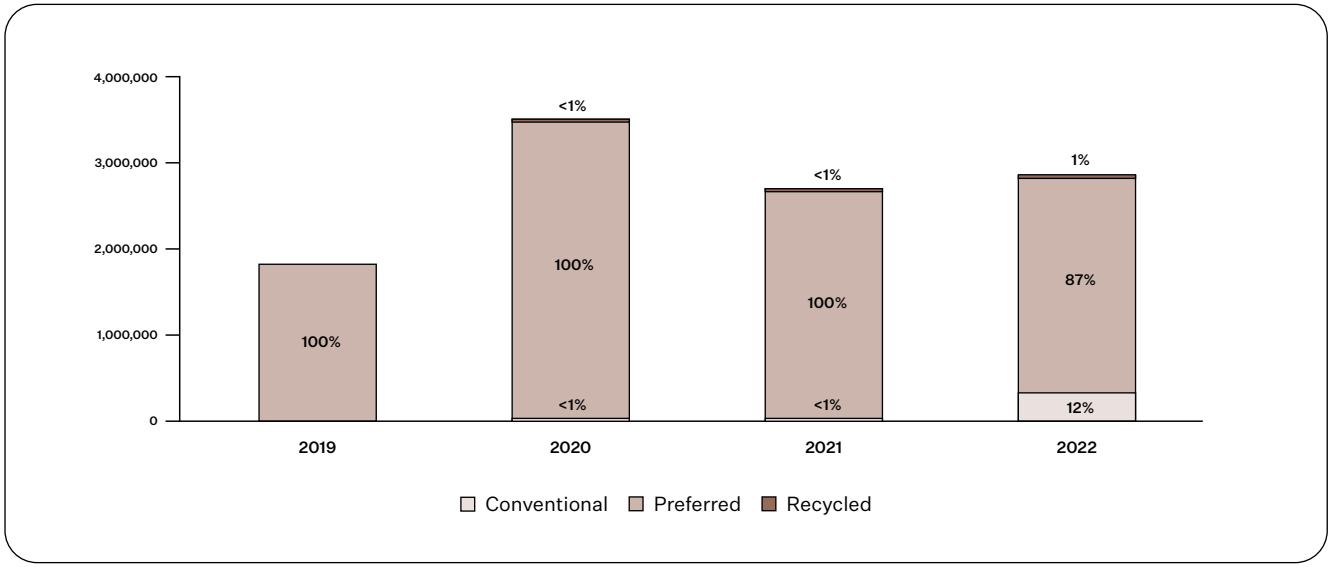
Cupro
Cupro is fully recycled as it is a “regenerated cellulose” fiber made from cotton waste.

Acetate
100% of acetate reported is preferred.

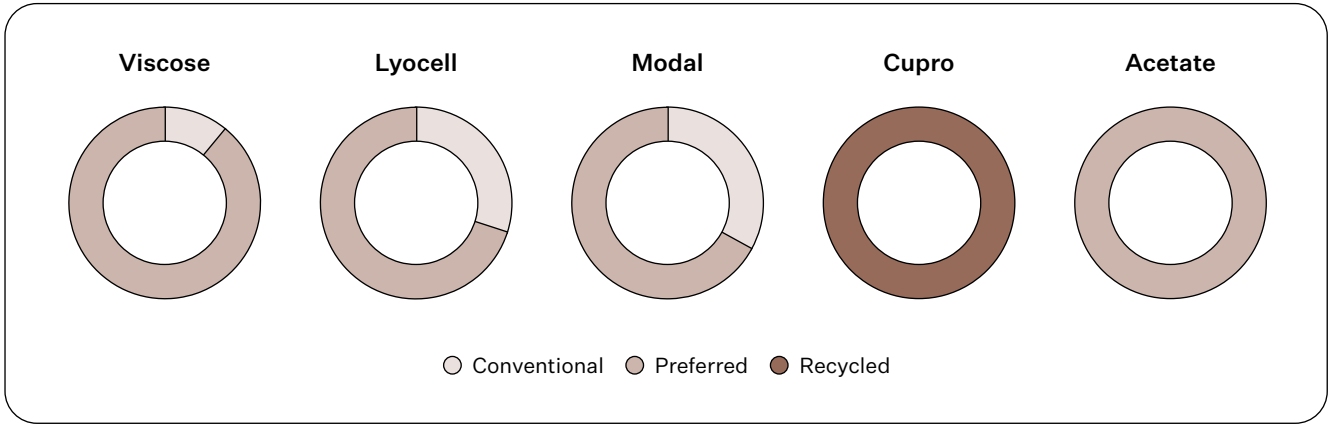
All preferred programs refer to PFEC + FSC.

Note: This data is not indicative of clear trends due to the change in participants and Textile Exchange’s updated taxonomy.

Trend (MT)



Portfolio



Manmade cellulosic fibers

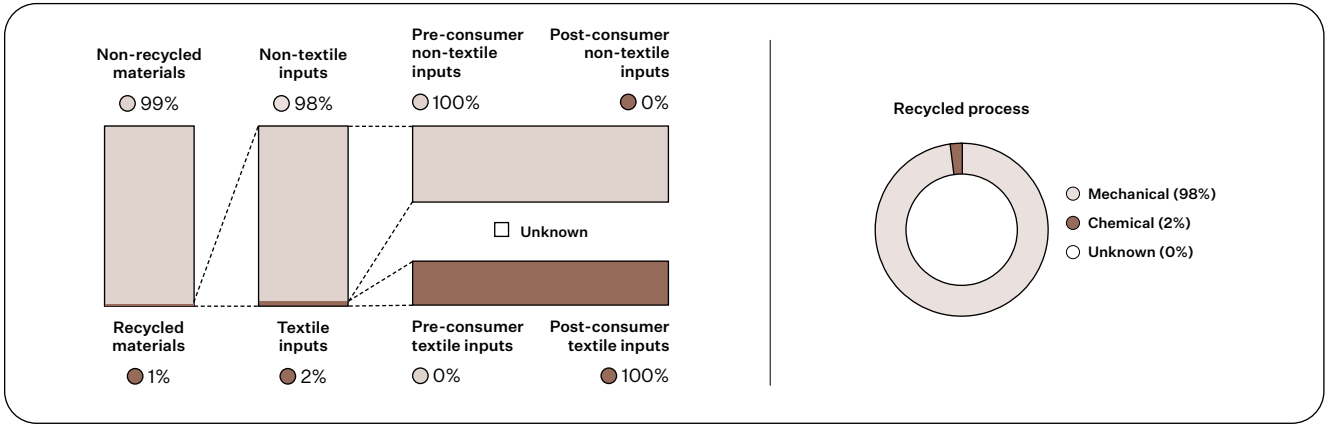
Traceability

Suppliers and manufacturers show strong awareness of their MMCF country of origin.

Traceability within supply chains is for companies to properly manage the environmental, socioeconomic and political risks that come with raw materials sourcing. It all starts with the country of origin where the raw materials are grown, cultivated or produced.

The data reveals that 70% of MMCFs used can be traced back to their country of origin. China accounts for the majority of the uptake, followed by the United States, Japan, Austria and India.

Recycled MMCF portfolio



Recycled MMCFs are still in the early stages.

Recycled MMCFs are very limited, accounting for only 1% of the total portfolio. Most of the recycled content is sourced from pre-consumer sources, and is most commonly processed using mechanical methods.

The latest research says that recycled MMCF production is expected to grow significantly in the coming years thanks to increased investment in research and development.

Other Fibers

Other fibers

The Materials Benchmark survey includes specific sections for 14 of the raw materials most frequently reported on by respondents. However, there are many more fibers and raw materials available.

12 participants reported on their use of other fibers and materials, with volumes accounting for less than 1% of the overall material uptake.

Overall, conventional materials account for 76% of the total volumes for “other fibers”, with the remaining 24% being recycled materials.

Other plant-based raw materials are 100% conventional, with bamboo accounting for the highest volumes. Other animal raw materials are also 100% conventional, with silk representing the highest volumes.

For other synthetic raw materials, a good number of participants use recycled alternatives (77%) and the rest are conventional (23%).

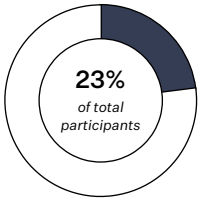
Participant profile

Sector average

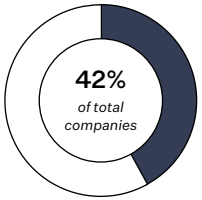
Data from 2022

12 of 52 participants reported uptake data.

(Both priority + non-priority)

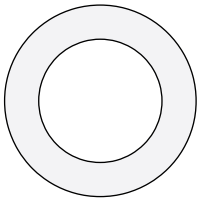


Of the 12 companies, 5 reported other fibers as a priority material.



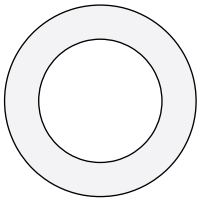
* 1 participant reported that they use other fibers but did not provide uptake volumes.

Plant fiber portfolio



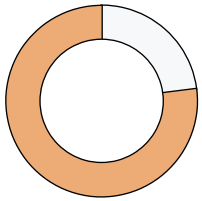
- Conventional
- Preferred
- Recycled

Animal fiber portfolio



- Conventional
- Preferred
- Recycled

Synthetic fiber portfolio



- Conventional
- Preferred
- Recycled

Fundamentals

Process Factory collaboration

For the 2023 Materials Benchmark cycle, Textile Exchange collaborated with Process Factory, an Italian-based consulting and training company that specializes in supporting businesses in their transformation to becoming more sustainable.

The goal was to support leading Italian textile companies in reporting and tracking their progress in adopting more preferred raw materials through the Materials Benchmark, as well as aligning methodologies and requirements.

The pilot project aimed to:

- Support suppliers and manufacturers in collecting and reporting materials-related data according to a recognized framework.
- Align the content and methodology of the Materials Benchmark and the Materials pillar of Process Factory's 4sustainability® framework.
- Increase the number of suppliers reporting though the Materials Benchmark and start to implement the Italian regional outreach strategy.
- Collect feedback from Process Factory and the participants on the new Materials Benchmark program and survey for future improvements.
- Process Factory supported the companies in collecting the uptake data for their priority materials, created a calculation methodology, and verified the accuracy and trustworthiness of the data reported through the Materials Benchmark.

2023 updates

Updated performance bandings

We updated our scoring methodology in 2023, working with internal teams and key stakeholders. The scoring methodology was last updated in 2019, and alongside changes to the framework, it was a good time to revisit and revamp the scoring to ensure it was fully aligned with Textile Exchange's Climate+ goals. Some of the key changes for this year are the removal of "absolute" uptake volumes, the alignment with Climate+ goals, the alignment with the scoring used in the Preferred Fiber and Materials Matrix, and the fact that not all questions are scored.

New Materials Benchmark framework

We enhanced collaboration and alignment with organizations such as the Sustainable Apparel Coalition and Ellen MacArthur Foundation, as well as climate and nature experts. We streamlined Section I: Business Integration and Circular Economy; remodeled Section II: Materials Portfolio, and updated Section III, which now focuses on climate and nature impact areas.

Enhanced partnerships and alignment

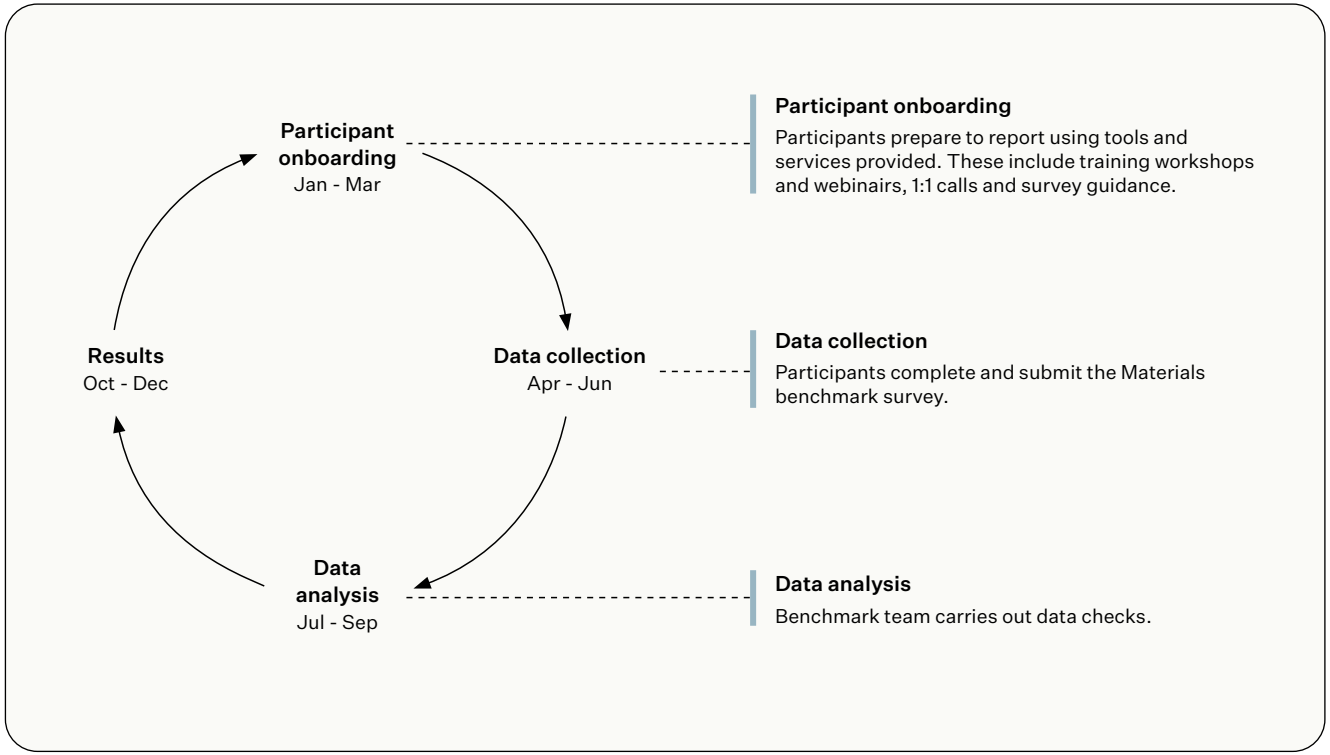
We have been fortunate to continue to work with Ellen MacArthur Foundation on our circular economy module, and they have been a key adviser to ensure these questions were updated. Another key partnership was with the Sustainable Apparel Coalition (SAC). We first started to work on alignment with the SAC last year. The timing of this alignment with the Higg Brand & Retail Module (BRM) 2023 made sense as the questions for both were being revised.

Suppliers and manufacturer's survey

For the first time, the Suppliers and Manufacturers Materials Benchmark survey has been moved out of the pilot phase, following supplier consultation with participants and other partners. We adjusted the questions to ensure that they were all relevant to this cohort. The scoring methodology is the same as for brands.

Updated reporting cycle

Finally, we have made a change to the reporting cycle to provide results to participants in the same year as the survey's completion.



Get involved

Next Steps

- Take part in the Materials Benchmark
- Sign up to the Sustainable Cotton Challenge
- Sign up to the 2025 Recycled Polyester Challenge
- Sign up to the Deforestation-Free Call to Action for Leather

Benchmark results & Hub community

The Materials Benchmark community continues to grow. We know that participants value not only the results provided, but also the peer-to-peer learning, knowledge-sharing, collaboration and support. That is why we have our Hub Community.

Join the Community on the Hub

Confidential Scorecard

Assess your progress towards preferred.

Material Change Index (MCI)

Discover the “race to the top.”

Climate+ Dashboard

Gain insights into the textile industry’s impacts

Challenges Dashboard

Uncover the Materials Challenges signatory’s progress.