GS1 Sustainability Outlook

Developed in collaboration with Accenture

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GS1 Competition Law Caution

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- The best way to avoid problems is to remember that the purpose of the group is to enhance the ability of all industry members to compete more efficiently.
- This means:
  - **There shall be no discussion of prices, allocation of customers, or products, boycotts, refusals to deal, or market share**
  - If any participant believes the group is drifting toward impermissible discussion, the topic shall be tabled until the opinion of counsel can be obtained.
- The full caution is available via the link below, if you would like to read it in its entirety: http://www.gs1.org/gs1-competition-law-caution

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Purpose of the GS1 Sustainability Outlook document

The purpose of this document is to summarise the outcome of the analysis of sustainability needs conducted from March to May 2024 in the context of the GS1 Sustainability Project (Discovery Phase)

The sustainability needs have been researched, analysed and categorised into seven topics and by sector

To learn the sustainability industry needs, interviews and research were conducted

Industry expressed their needs and challenges categorised into seven Sustainability Topics

The industry needs have been analysed in detail by sector

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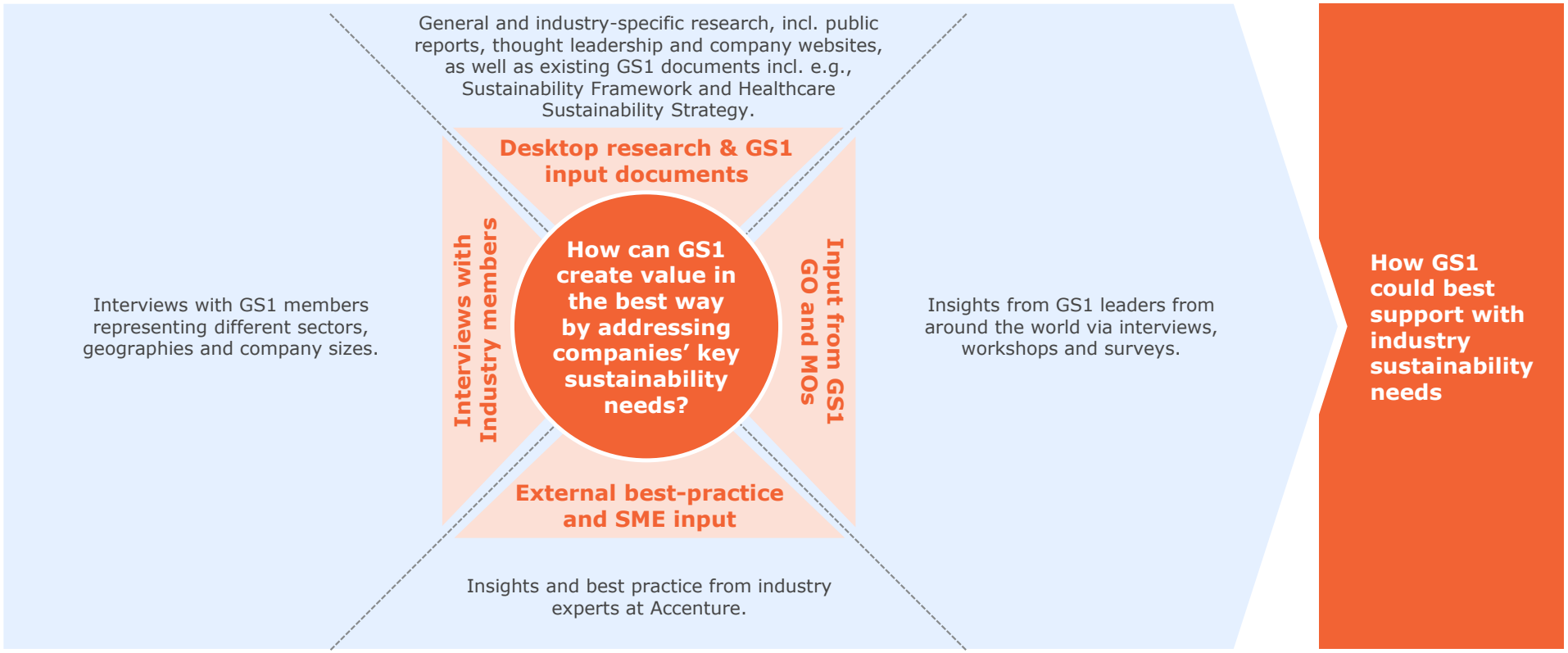
To learn how GS1 can create value by addressing industry sustainability needs, interviews and research have been conducted



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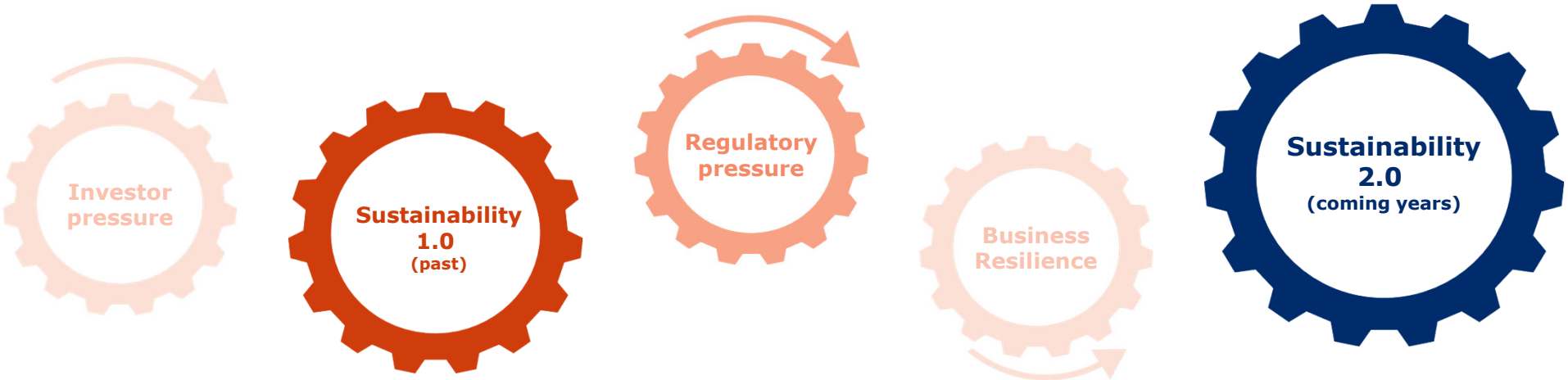
Sustainability is transforming from siloed voluntary commitments in organisations, to a data-driven topic integrated into core operations



Stricter requirements to access capital, be listed in stock exchange and to meet investor's needs to understand sustainability aligned plans and commitments.

Manual data gathering from often unreliable sources, lack of data availability, convoluted process and error prone reporting with sporadic disclosures. Sustainability metrics are not included in capital allocation decisions.

Evolving frameworks, global and local regulations demand more details and more accurate plans in shorter timelines to ensure a license to operate, leading to a rising need for audit-proof sustainability data across value chain.

Sustainability risk management framework is required, and risks and opportunities must be factored in during business planning and scenario modelling for holistic decision making.

Integrating Sustainability and Financial data in one source of truth, including auditable automated data input, calculations and disclosures with analytics for decision support. Utilising sustainability-driven investment criteria and robust scenario modelling to ensure value focus and capture.

The sustainability transformation is ongoing, and organisations need to evolve with it to ensure capabilities of the future

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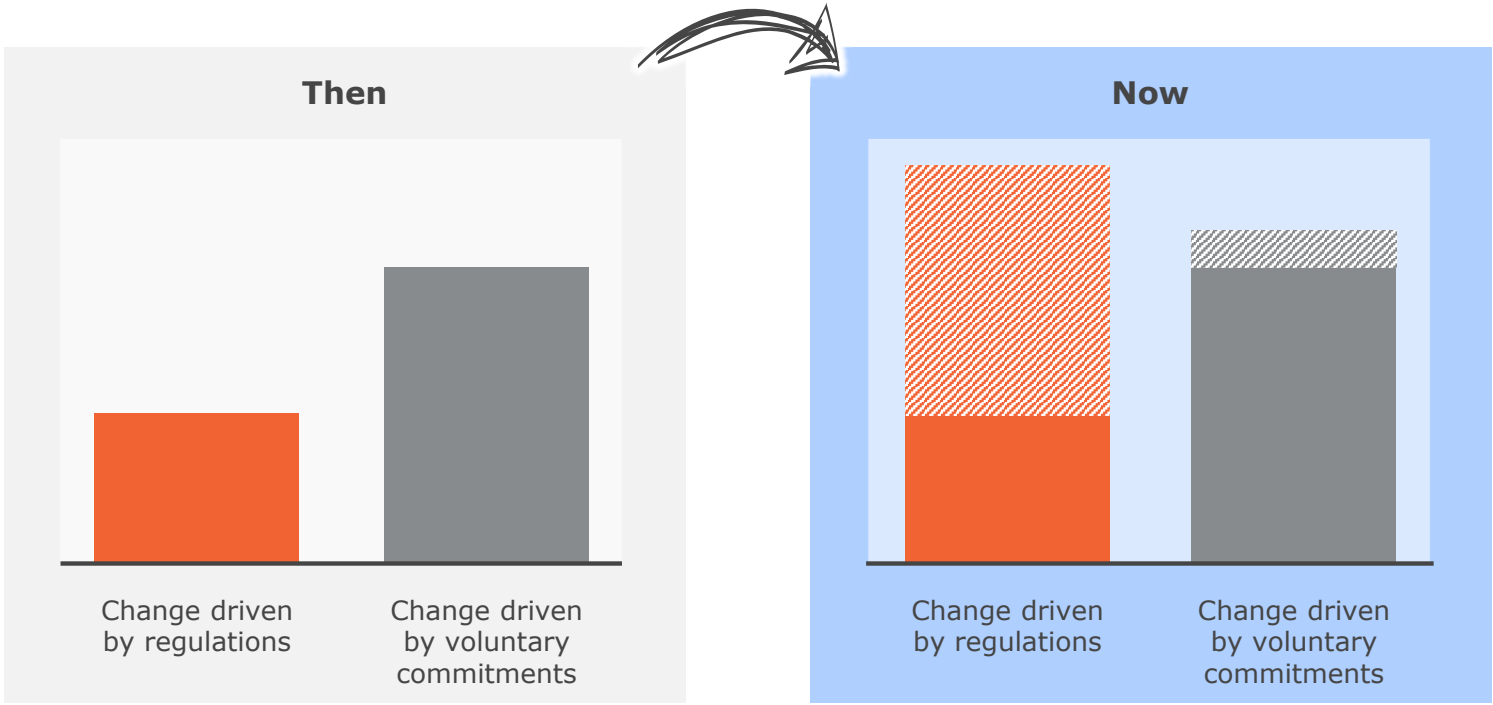
The shift has raised the bar for what "good" looks like and, in the shorter-term, change is expected to be driven primarily by regulations

Illustrative



The exception would be mainly for Climate/CO2, where voluntary commitments are still exceeding regulations (even though the bar is raised across).

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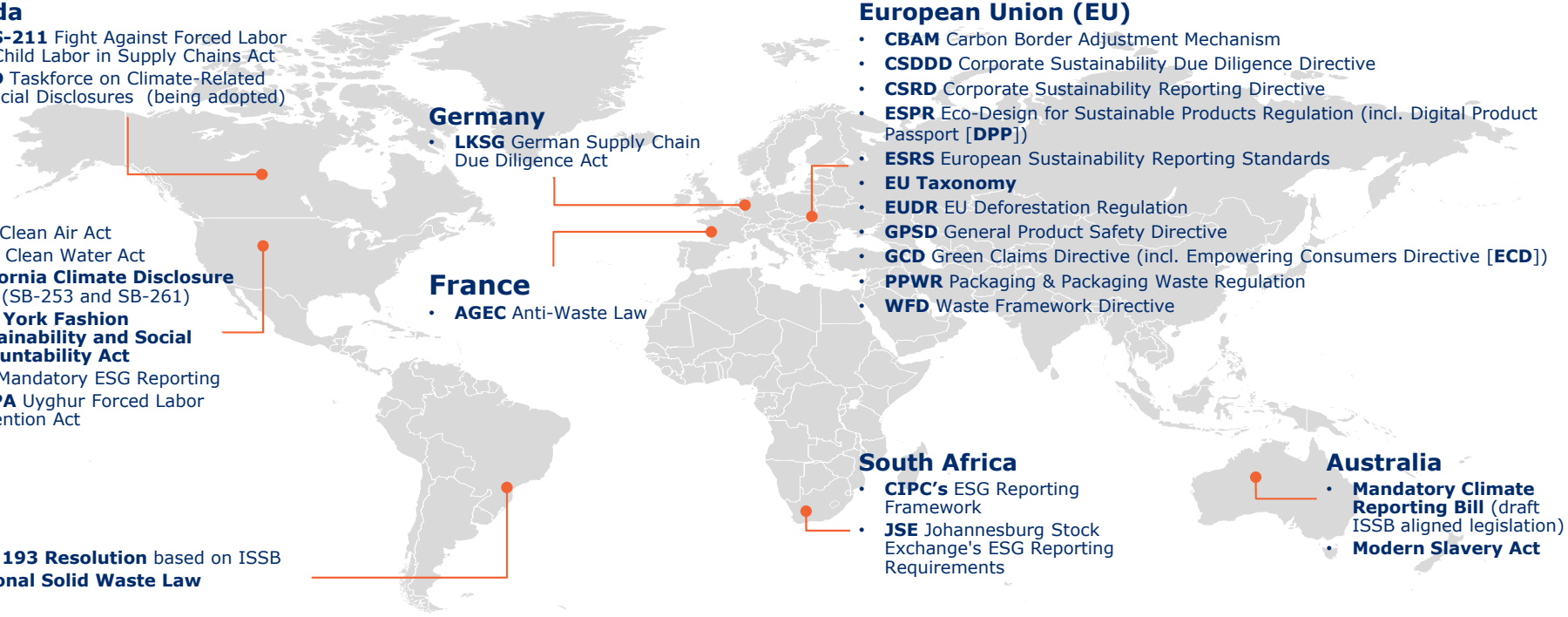
The regulatory pressure comes from all corners of the world, with the European Union (EU) leading the way in many areas

Non-Exhaustive

The image provides a high-level, non-exhaustive, overview of current mandatory regulations and voluntary disclosures that have high impact on organisations. The purpose is to exemplify the current complex regulatory sustainability landscape*.



Canada

- **Bill S-211** Fight Against Forced Labor and Child Labor in Supply Chains Act
- **TCFD** Taskforce on Climate-Related Financial Disclosures (being adopted)

USA

- **CAA** Clean Air Act
- **CWA** Clean Water Act
- **California Climate Disclosure Bills** (SB-253 and SB-261)
- **New York Fashion Sustainability and Social Accountability Act**
- **SEC** Mandatory ESG Reporting
- **ULFPA** Uyghur Forced Labor Prevention Act

Brazil

- **CVM 193 Resolution** based on ISSB
- **National Solid Waste Law**

Germany

- **LKSG** German Supply Chain Due Diligence Act

France

- **AGEC** Anti-Waste Law

European Union (EU)

- **CBAM** Carbon Border Adjustment Mechanism
- **CSDDD** Corporate Sustainability Due Diligence Directive
- **CSRD** Corporate Sustainability Reporting Directive
- **ESPR** Eco-Design for Sustainable Products Regulation (incl. Digital Product Passport [**DPP**])
- **ESRS** European Sustainability Reporting Standards
- **EU Taxonomy**
- **EUDR** EU Deforestation Regulation
- **GPSD** General Product Safety Directive
- **GCD** Green Claims Directive (incl. Empowering Consumers Directive [**ECD**])
- **PPWR** Packaging & Packaging Waste Regulation
- **WFD** Waste Framework Directive

South Africa

- **CIPC's** ESG Reporting Framework
- **JSE** Johannesburg Stock Exchange's ESG Reporting Requirements

Australia

- **Mandatory Climate Reporting Bill** (draft ISSB aligned legislation)
- **Modern Slavery Act**

*some of the regulations have not yet been adopted

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Companies are facing six compounding pressures, but regulations and pressure from trading partners are the most prevalent

Currently **the biggest** driver and a high priority for all sectors

Regulatory Pressure
Regulators are pushing for disclosures on material topics such as climate risks, human capital and sustainable investment. Many countries are implementing mandatory regulations that are stricter than before, requiring increased data harmonisation, standardisation and disclosure, raising the bar for compliance.

Commitment Delivery Pressure
Many companies have made strategic sustainability commitments with ambitious targets, but **93%** of all companies with net-zero commitments are already **off-track** to reach their targets[1], indicating a need for a transformational approach.

Employee Pressure
Employees want their employers to be sustainable, with nearly **70% of employees** saying they would not work for a company without a strong purpose[3]. Moreover, purpose-driven organisations have **30%+ increased productivity** and have higher talent acquisition and retention[4].

Trading Pressure
Customers and suppliers want to be part of a sustainable supply chain and are putting pressure on other actors in the value chain to showcase sustainability data and certifications as condition for trade. As such, sustainability is increasingly becoming a license to operate.

Second biggest driver and a high priority for most sectors

Consumer and Societal Pressure
Consumers are considering features such as commitment to sustainability and ethics when making purchasing decisions, with **70% of consumers** interested in buying from sustainable businesses[2]. But consumers will not necessarily pay a price premium. Still, companies need to invest in sustainability to keep consumers and stay relevant.

Investor Pressure
Investors are increasingly screening for businesses to deliver on sustainability practices, with global Environmental, Social and Governance (ESG) assets on track to exceed **$50 trillion by 2025**[5]. At the same time sustainability requirements are even higher for financial services than other sectors, driving a shift in capital allocation.

Sources: 1) Accenture, 2022, 2) CGS Retail and Sustainability Survey, 2019 3) Harvard Business School Insights, 2021 4) Global Tolerance, 2024 5) Bloomberg, 2021

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Also, the GS1 Sustainability Framework points towards the importance of the evolving regulatory landscape across Sustainability Topics

The impact that the increasing regulatory landscape has on companies' sustainability work is already prevalent for representatives in the GS1 federation, who identified seven areas for GS1 as part of the Sustainability Framework development in 2022 and 2023. The areas are all, to some extent, connected to current or upcoming regulations or voluntary disclosures, e.g., Digital Product Passport (DPP), Corporate Sustainability Reporting Directive (CSRD) and the EU Packaging & Packaging Waste Regulation (PPWR).

The seven areas identified in GS1's Sustainability Framework have been analysed in a broader context to ensure there is an "apples to apples" comparison and that the prioritisation is taking the voice of the members into consideration as well as the outside-in perspective of experts to secure a model that is applicable across MOs and industry.

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Overall, the pressing needs and challenges that the industry has expressed fall into either of seven topics

Key user needs highlighted in bold within each sustainability topic

1 Regulatory Compliance

- **Regulatory compliance & disclosures**

2 Energy & Climate Action

- **Greenhouse gas (GHG) emission reduction**
- Energy efficiency
- Renewable energy
- Green IT

3 Supply Chain Responsibility & Transparency

- **Traceability**
- **Certifications & labelling**
- Supply chain transparency
- Supply chain resilience
- Responsible sourcing
- Transportation & distribution
- Reverse logistics

4 Material & Resource Management

- **Waste management**
- **Packaging**
- **Circularity**
- Raw material sourcing
- Sustainable product design
- Material usage/resource management

5 Social Responsibility & Human Rights

- **Human rights**
- Consumer, patient & customer safety
- Diversity & inclusion
- Employee safety
- Data privacy & security
- Animal welfare
- Stakeholder education & awareness

6 Nature & Environmental Conservation

- **Deforestation**
- Decertification
- Water management
- Biodiversity
- Regenerative Agriculture
- Pollution

7 Performance Management & Steering

- Managing sustainability costs
- Securing viable business models
- Green financing
- Performance analytics | Scenario modelling
- Risk Management

Note: The seven Sustainability Topics above are all interlinked and have dependencies, hence no hard lines can be drawn between the categories and the boxes are simplifications of a complex reality. In particular, Regulatory Compliance and Performance Management & Steering goes across the other topics, for example regulations tend to be related to any of the other topics, such as climate or human rights.

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Complying with regulations and accessing sustainability data is at the core for industry

Key user needs from previous page **detailed**

Non-Exhaustive

1 Regulatory Compliance

- Increased understanding of the regulatory landscape development, on global, regional and local level
- Capability to secure compliance, including right processes and access to quality sustainability data (incl. material, carbon, nature etc.) that is standardised and harmonised and enables accurate data analysis

2 Energy & Climate Action

- Capability to report Scope 1, 2 and 3 emission
- Ability to track and measure climate footprint on product-level in a standardised way to facilitate regulatory compliance and enable data-driven decision-making to reduce emissions
- Capability to shift to cleaner energy sources

3 Supply Chain Responsibility & Transparency

- Ability to track and trace products, including product origin, through the supply chain (e.g., DPP), incl. after point of sales (e.g., EPR)
- Ability to validate certifications on company and product level and access reliable and harmonised certification data

4 Material & Resource Management

- Capability to track material, components and products throughout the value chain (incl. recycling) to enable circularity
- Capability to track packaging on product level to enable take-back and facilitate EPR
- Means to limit waste (material, food etc.) in production, operations and post-production, e.g., through improved inventory capabilities or circular design

5 Social Responsibility & Human Rights

- Ability to show that products are produced without child labour or other forced labour
- Ability to track products to facilitate take-back of hazardous goods

6 Nature & Environmental Conservation

- Connect deforestation data to entities, locations and products to comply with regulations
- Enable reduced deforestation through data transparency
- Ability to track water usage to increase resource efficiency

7 Performance Management & Steering

- Capability to optimise sustainable decision making based on quality data
- Ability to perform risk analysis, e.g., supply chain resilience, to avoid and mitigate financial and sustainability impact on the company and its stakeholders

Note: The seven Sustainability Topics above are all interlinked and have dependencies, hence no hard lines can be drawn between the categories and the boxes are simplifications of a complex reality. In particular, Regulatory Compliance and Performance Management & Steering goes across the other topics, for example regulations tend to be related to any of the other topics, such as climate or human rights.

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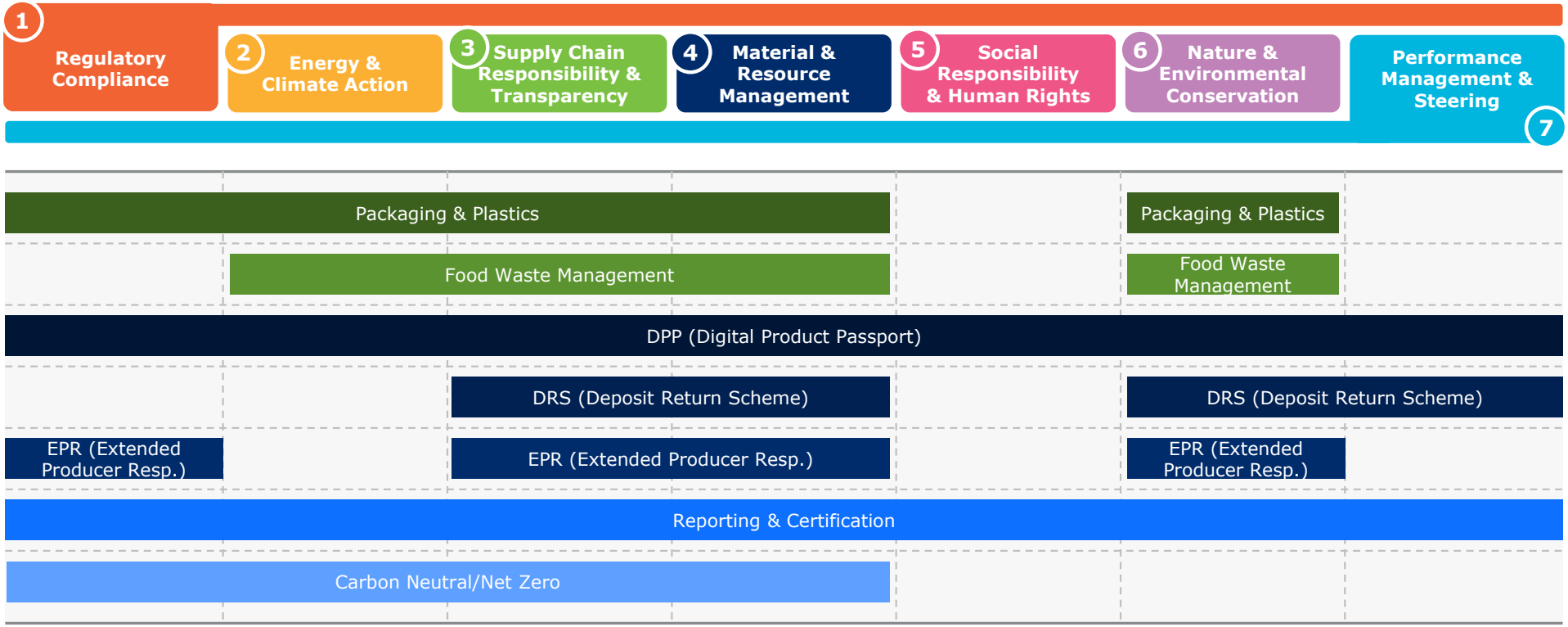
The seven Sustainability Topics cover all areas identified in the Sustainability Framework developed in 2022 and 2023

Non-Exhaustive



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The seven Sustainability Topics are interrelated and often sequenced, but come with their own unique challenges

Illustrative example

Maturity phases	**Ensure compliance**	**Overcome environmental and social challenges**	**Drive value from sustainability**
Description	• Sustainability regulations stretch across Sustainability Topics (e.g., energy, material, social etc.) and is a key driver for change in a majority of these. • Ensuring regulatory compliance is one of the most pressing challenges for companies and the prioritised focus of companies' sustainability work.	• As a next step comes direct sustainability challenges, i.e. where the actual challenge is connected to one of the Sustainability Topics (e.g., energy efficiency, conservation of farmland or human welfare) and not connected to it by proxy challenges of regulatory nature (e.g., CO2 reporting, deforestation regulations, human rights regulations). • These challenges include issues affecting the company, but also issues the company is causing. An example being deforestation that a company might cause, but which might also impact the company's operations (for example an Agriculture company). • The materiality of Sustainability Topics is highly dependent on industry, e.g., packaging being more important for Marketplaces, and deforestation being more important for Agriculture.	• Sustainable non-compliance performance management, e.g., leveraging granular data on product level, can have a large positive impact on companies, e.g., through proactive data-driven decision-making, environmental risk mitigation or building a competitive business advantage. • Few companies are, however, mature enough for this stage. Most currently lack resources to take on challenges/ opportunities all the way through phase 3.
Sustainability Topics			
Example: Plastic packaging (non-exhaustive)	***Challenges include:*** • *Packaging and plastics regulations, e.g., PPWR in the EU* • *Extended producer responsibility (EPR) regulations*	***Challenges include:*** • *Limit CO2 emissions from plastics production* • *Increase reuse/recycling of packaging raw material through e.g., circular design and reverse logistics* • *Limit plastic pollution in oceans and landfills*	***Challenges include:*** • *Optimise packaging design based on financial and sustainability parameters* • *Manage material shortage risk*

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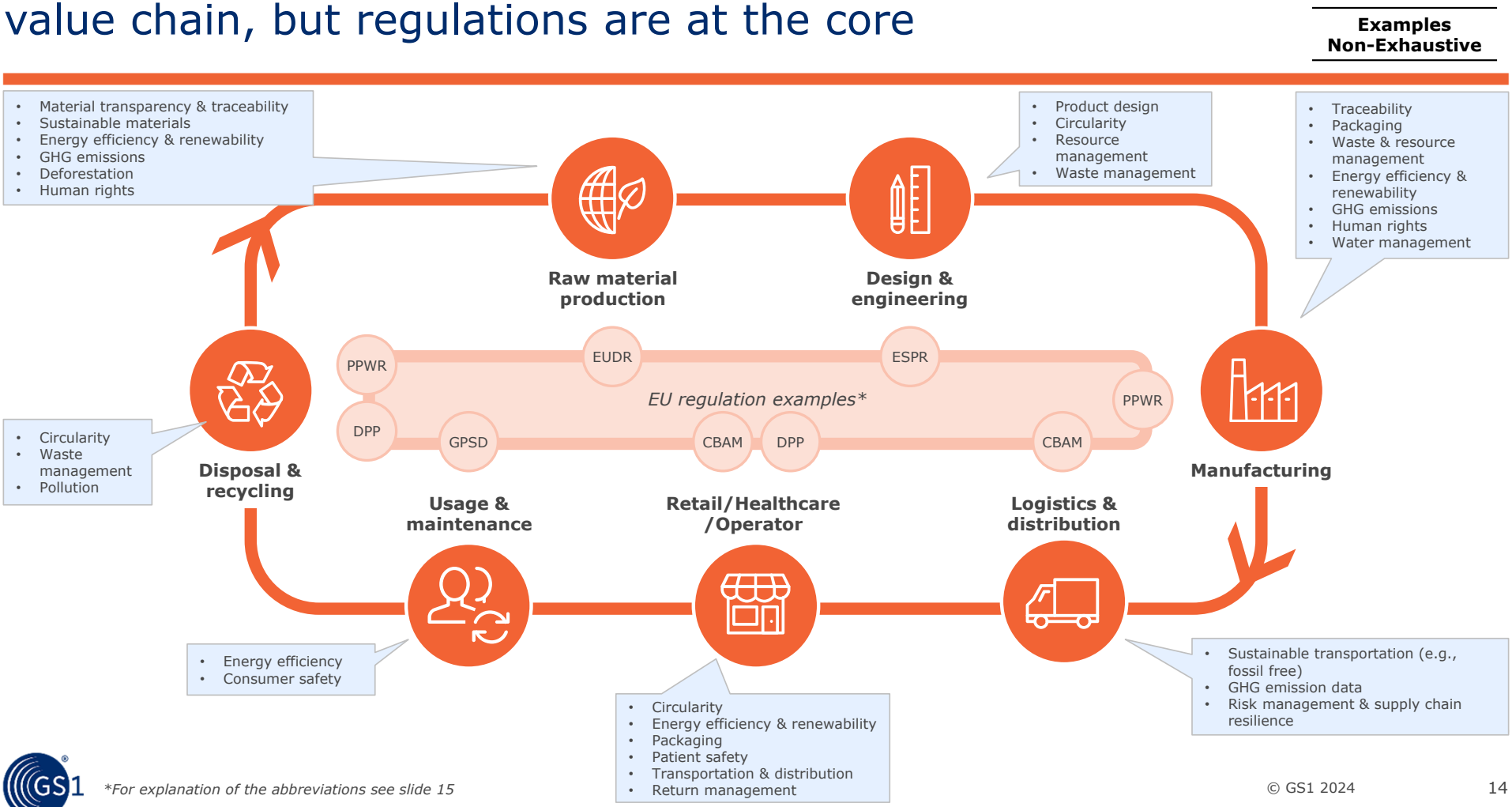
The materiality of Sustainability Topics vary across the value chain, but regulations are at the core



*For explanation of the abbreviations see slide 15

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Likewise, the challenges differ depending on company size

Small companies

…often struggle with limited financial resources and capacity to invest in sustainability initiatives and regulatory compliance, driving them to seek support from external stakeholders. Due to their small scale, exemption from initial sustainability regulatory requirements is common and supply chain concerns such as transparency are less challenging.

Medium-sized companies

…face increasing pressure from regulators and other stakeholders to adopt sustainable practices. They also face supply chain responsibility concerns, and increased regulatory complexity as they expand their operations.

Large companies

…must manage extensive supply chains, comply with complex global regulations across regions, and face high stakeholder expectations on environmental (e.g., energy, GHG emissions) and social impacts of supply chains. They, however, tend to have more resources to deploy.

Regulatory pressure, either directly or indirectly through stakeholder demands (e.g., trading)

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Sustainability challenges also vary slightly depending on the sector, but materiality on the highest level is somewhat consistent across sectors

Sustainability challenges and needs per GS1 focus sectors are presented in the following section ”**Sector Deep-Dive**”. The section captures the most material challenges and needs and the key drivers for change and exemplifies key sustainability trends for the sectors.

Example slides from ”Sector Deep-Dive” section

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Sector Deep-Dive

Sustainability outlook from a sector perspective

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The sector deep-dive covers eight sectors in focus for the project

Sector	Description
Retail & Consumer Goods	Retail & Consumer Goods sector encompass subsectors such as Consumer-Packaged Goods (CPG), Fresh Foods, Apparel and General Merchandise, in which products are commonly available in physical and/or online retailers. This sector encompasses all sectors and services involved in producing goods for consumers, including B2B trade of materials for further processing into consumer goods.
Marketplaces	Marketplaces sector consists of online marketplaces, whether in the form of a website, mobile app or similar, serving as a platform facilitating transactions between buyers and sellers of goods or services. It offers a centralised space for sellers to showcase their products or services, allowing buyers to browse, search and make purchases. Notably, Marketplaces typically do not own inventory themselves.
Healthcare	Healthcare sector is a system of organisations, institutions, professionals and resources, that provide medical services, diagnosis, treatment and prevention of illness, injury and disease and is critical in maintaining and improving public health and well-being. This includes for example, hospitals, pharmaceutical manufacturers or providers of medical devices that are sold or dispensed in a controlled environment.
Transport & Logistics	Transport & Logistics sector involve moving people, goods, or materials using various transportation modes like road, rail, air and waterways. It includes planning, coordinating and optimising the flow of goods and information from origin to point of consumption and end-of-life (e.g., waste, reuse, etc.). The logistics play a critical role in optimising the entire supply chain process to meet customer demands and achieve organisational goals.
Technical Industries	Technical Industries refer to operations characterised by the application of specialised knowledge, skills and technologies to produce, operate, or maintain complex systems or structures. Subsectors include mining, rail, aerospace, automotive and construction. These typically involve the utilisation of advanced engineering principles, machinery and equipment to achieve specific objectives related to extraction, transportation, manufacturing or construction.
Governments & Regulatory Bodies	Governments & Regulatory Bodies encompasses institutions and organisations responsible for creating and enforcing laws, regulations and policies within a society. These organisations and institutions are responsible for maintaining order, protecting public welfare and enforcing legal and regulatory frameworks, focusing on governance, legislation, regulation, enforcement and public services.
Chemicals	Chemicals sector refers to the manufacturing, distribution and application of various chemical substances used in sectors such as Agriculture, pharmaceuticals, manufacturing and consumer products. Companies within the Chemical sector are typically upstream in the supply chain converting raw materials such as oil, metals, minerals and other materials into either chemical substances to be used as inputs for other sectors or chemical products.
Agriculture	Agriculture sector involves the cultivation of crops, the breeding and raising of livestock and the production of food, fibre and other agricultural products. It relies on advanced practices, machinery and equipment to achieve specific goals related to cultivation, production and distribution.

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The analysis points out the most material topics for industry – by sector

Checkmark indicates **high materiality** and focus of the industry. Non-checked boxes ***does not*** necessarily indicate that the sustainability topic is irrelevant, but only less relevant than those checked

Sector	Key drivers*	Key sustainability challenges						
		1 Regulatory Compliance	2 Energy & Climate Action	3 Supply Chain Responsibility & Transparency	4 Material & Resource Management	5 Social Responsibility & Human Rights	6 Nature & Environmental Conservation	7 Performance Management & Steering
Retail & Consumer Goods	• Regulations • Commitment to deliver • Consumers & society	✓	✓	✓	✓	✓		
Marketplaces	• Regulations • Consumers & society • Commitment to deliver	✓	✓	✓	✓			
Healthcare	• Regulations • Trading • Employees	✓	✓	✓	✓	✓		
Transport & Logistics	• Trading • Regulations • Commitment to deliver	✓	✓	✓		✓		
Technical Industries	• Trading • Regulations • Investors	✓	✓	✓	✓		✓	
Governments & Regulatory Bodies	• Regulations • Commitment to deliver • Consumers & society	✓	✓		✓	✓	✓	
Agriculture	• Regulations • Trading • Consumers & society	✓	✓	✓		✓	✓	
Chemicals	• Trading • Regulations • Employees	✓	✓	✓	✓		✓	

*The key drivers are listed in descending order – from most pressing to less pressing
Note: Detailed information on each sector can be found in the following sector deep dives

Retail & Consumer Goods

Sector outlook

~90%

of the retail sector's emissions lie in its value chain (Scope 3), and is sometimes as much as 98%[1]

30%

of the world's food production is lost along the value chain, from post-harvest to retailers and households[2]

"Packaging data is very important. For 50-60 years we've known the level of protein, fat and so on in products. We have a very defined way to calculate all of these. There is nothing of this on the packaging side. Nothing."

Top three innovations CEOs say will have highest impact[3]

1. Circular business models
2. Sustainable and refillable packaging practices
3. Product-level ESG data to follow for end-to-end supply chain traceability

Examples of regulations relevant for the sector

- Product design, e.g., Eco-Design for Sustainable Products (ESPR)
- Traceability, e.g., Digital Product Passport (DPP)
- Local packaging regulations e.g., single-use plastic bans, plastic tax and packaging EPRs such as PPWR*

Now

Positioned far down in the value chain, the sector faces pressure from consumers to take responsibility for the sustainability of the supply chain (e.g., packaging). In combination with increasing regulations, retailers need easy yet trustworthy sustainability data collection.

Next

Circular business models are a growing focus for the sector, driven by consumer pressure to move away from unsustainable consumerism. However, the sector needs to find ways to present a compelling business case for circularity to ensure its long-term sustainability.

Sources: 1) National Retail Federation, 2021,
2) FAO, 2022 & UNEP, 2021, 3) UNGC, 2022
*EPR = Extended Producer Responsibility, PPWR = Packaging and Packaging Waste Regulation

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Retail & Consumer Goods

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Retail & Consumer Goods in maintaining data quality and processes for compliance. Key regulations for Retail & Consumer Goods include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as ESPR, DPP and PPWR*.

Supply Chain Responsibility & Transparency

Traceability challenges are due to supplier complexity and lack of material ID. Product and labour condition transparency, e.g., child labour, is also crucial, driving labelling and certification, especially in food. Still, while demand for ESG data is high, collecting material data remains largely manual.

Material & Resource Management

Main challenges are packaging and waste, notably single-use plastics, non-recyclable material compositions and food waste. Driven by corporate commitments and regulations, efforts focus on waste reduction and circular design, incl. recyclability and reducing virgin plastics. Retailers adhere to the strictest packaging regulations, currently from the EU.

Energy & Climate Action

The sector faces high GHG emissions and energy consumption in its global supply chains, e.g., manufacturing facilities, logistics and transportation. Most emission lies in scope 3 and challenges persist with reducing these due to insufficient supplier data for necessary calculations, making it challenging to measure a product's carbon footprint.

Social Responsibility & Human Rights

Social responsibility and human rights present challenges for the sector, especially in apparel with its complex supply chain. Ensuring fair labour practices upstream in the supply chain is crucial, particularly driven by consumer demand for transparency and accountability.

Key drivers[1]

- Regulations promoting sustainability, especially locally
- Delivery pressure on strategic sustainability commitments
- Consumer pressure for responsible and sustainable business

Sources: 1) UNGC, 2022 and industry interviews with users
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, ESPR = Eco-Design for Sustainable Products, DPP = Digital Product Passport, PPWR = Packaging and Packaging Waste Regulation

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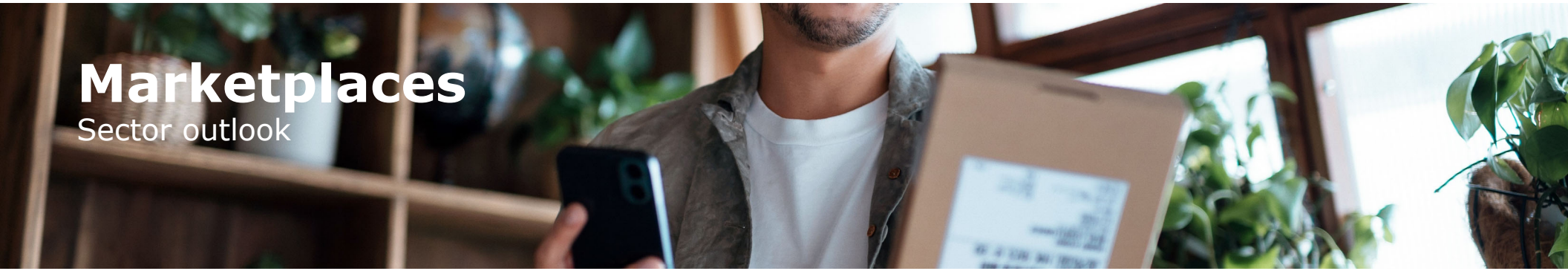

Marketplaces

Sector outlook

83%
of web shops are trying to provide better, clearer product information[1]

45%
of total estimated GHG emissions generated by the e-commerce sector comes from the packaging of goods[2]

"It's difficult to know which products are certified because the certifications aren't actually certifying products, they are certifying processes"

Key trends[3]

1. Certifications and product claims, in response to greenwashing and greenhushing pressures
2. Sustainable packaging, driven by consumer pressure
3. Second-hand Marketplaces

Examples of regulations relevant for the sector

- Product and packaging, e.g., Digital Product Passport (DPP) and Packaging & Packaging Waste Regulation (PPWR)
- Greenwashing regulations e.g., EU Empowering Consumers Directive (ECD) and the proposed EU Green Claims Directive (GCD)

Now

Focus for Marketplaces is on energy and climate. This requires more and better climate data to be able to make informed decisions such as optimising packaging and transportation to limit CO2 emissions while saving costs.

Next

Marketplaces have a complex supply chain by design, with many suppliers and buyers, often globally. But with increasing expectations on scope 3 and other 3rd party sustainability data, Marketplaces need to find a way to accurately track and trace products upstream as well as post-purchase.

Sources: 1) Ecommerce Europe; Belgium survey; 2021, 2) Statista, 2020, 3) Accenture research and user interview

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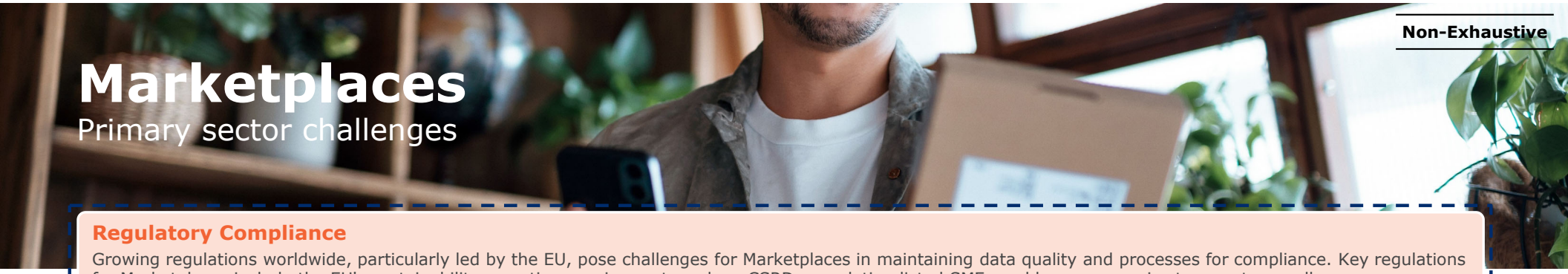

Marketplaces

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Marketplaces in maintaining data quality and processes for compliance. Key regulations for Marketplaces include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as DPP, PPWR, ECD and GCD*.

Energy & Climate Action

Online Marketplaces' infrastructure like data centres, warehouses and transportation networks, drive energy consumption and GHG emissions, prompting shifts to green energy and reducing product carbon intensity. Yet, challenges in collecting upstream product data on emissions and lacking systematic data collection processes, lead to incomplete carbon data.

Traceability

Strategic sustainability commitments and verifying product claims drive the need for upstream product traceability. However, this is difficult and Marketplaces face challenges with upstream supply chain transparency, including incomplete and unreliable data, and lack of process certification, making necessary granularity in product data difficult to obtain.

Packaging

The primary source of GHG emissions generated by the e-commerce sector come from the packaging of goods[1]. Customers are demanding packaging with more sustainable materials and are advocating for order optimisation, which involves consolidating multiple orders into a single shipment within a specific timeframe to reduce packaging material usage.

Transport & Distribution

Logistics account for a significant portion of the sector's carbon footprint. To reduce pollution, companies are transitioning to green energy sources like electricity. The environmental impact of transportation also prompts companies to optimise distribution methods.

Key drivers

- Regulations promoting sustainability
- Consumer expectations
- Delivery pressure on strategic sustainability commitments

Sources: 1) Statista, 2020
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, DPP = Digital Product Passport, PPWR = Packaging & Packaging Waste Regulation, ECD = Empowering Consumers Directive, GCD = Green Claims Directive

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Healthcare

Sector outlook

85%

of Healthcare CEOs support consistent sustainability reporting and disclosure standards, compared to 76% globally[1]

71%

of Healthcare's climate footprint is derived from the Healthcare supply chain (scope 3)[2]

"In general, hospitals know so little of the products they buy and how they are used. In fact, hospitals are still so new to sustainability"

Top three innovations CEOs say will have highest impact[3]

1. Digital health services delivery
2. AI to transform precision medicine and diagnosis
3. Augmented and virtual reality enabling health services or patient care services

Focus in Healthcare is currently on tech innovation rather than sustainability

Examples of regulations relevant for the sector

- Product and packaging EPRs, e.g., UK Environmental Bill and EU Packaging & Packaging Waste Regulation (PPWR)
- Patient safety and traceability, e.g., EU Medical Device Regulation (MDR) and US Drug Supply Chain Security Act

Now

The Healthcare sector has historically been excepted from many sustainability regulations, but this is about to change, and the sector needs upskilling in sustainability to accelerate the transformation.

Next

With structured sustainability data available, it can be combined with patient data to be able to optimise operations to the benefit of both patient safety and sustainability.

Sources: 1) UNGC Stocktake Health report, 2023, 2) Health Care Without Harm, 2021, 3) UNGC, 2022

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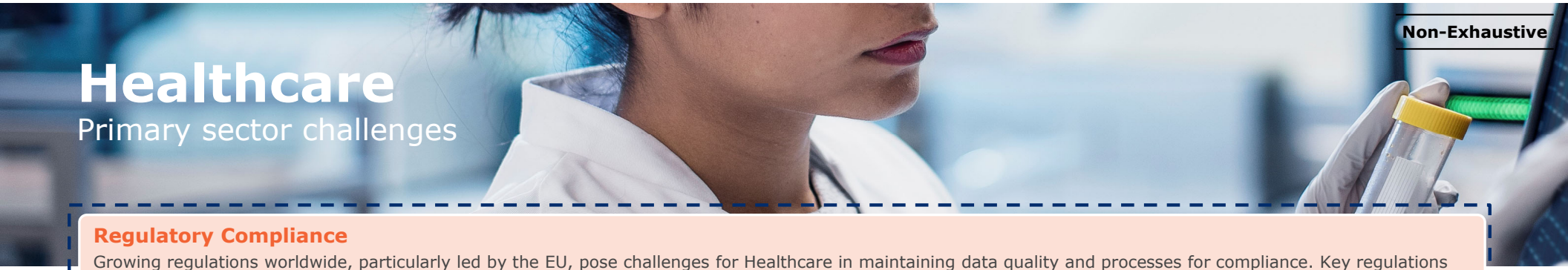

Healthcare

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Healthcare in maintaining data quality and processes for compliance. Key regulations for Healthcare include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as product and packaging EPRs (e.g., PPWR)* and Medical Device Regulation (MDR).

Supply Chain Responsibility & Transparency

Responsible supply chains in Healthcare are important, but challenges such as material traceability in a complex global supply chain persist. In health and life sciences, 65% of CEOs prioritise responsible supply chains, compared to 47% globally[1], but limited control over e.g., scope 3 emissions make data tracking difficult.

Waste Management

Medical and pharmaceutical waste, including medical devices, hazardous materials and single-use plastics in packaging, pose challenges for disposal and recycling, contributing to pollution. Sector specific rules increases waste, e.g., takeback of pills is not allowed. Reducing medical waste and improving recyclability is expected to remain a trend in Healthcare for the next 20 years[2].

Social Responsibility and Human Rights

Consumer and patient safety is key; ensuring product safety and quality control, adherence to compliance standards and protection of patient data. Key concerns for pharma is human rights and animal welfare in testing, while the hospitals struggle with measurement trade-offs in internal scorecards as formalised health metrics, like infection rates, take priority over sustainability.

Energy & Climate Action

Healthcare's high energy usage and global pollution, nearly double that of aviation[3], highlight the urgency of energy and climate action. Pressure from key suppliers are driving decarbonisation efforts, particularly for pharmaceutical companies, and there is increasingly a need to report and share scope 3 GHG emissions. Yet, this remains a key challenge as many providers are dependent on their suppliers.

Key drivers

- Fast moving regulatory landscape, particularly in EU and UK
- Pressure from large customers, especially for pharmaceutical
- Employee pressure, especially for hospitals

Sources: 1) UNGC, 2022, 2) Accenture research, 2023, 3) Our World in Data, 2020
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, EPR = Extended producer responsibility, PPWR = Packaging and Packaging Waste Regulation

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Transport & Logistics

Sector outlook

~33%

of global CO2 emissions stem from the logistics and transport sector[1]

95%

of the world's transport energy still comes from fossil fuels[2]

"All companies, as well as our customers, are speaking about sustainability"

Key trends[3]

1. Fleet transformation (e.g., electrification) & sustainable fuels
2. Tactical transport planning with CO2 as a key parameter
3. Digital transformation of supply chain (e.g., intelligent automation and real time data visibility platforms)

Examples of regulations relevant for the sector

- EU regulations (e.g., ETS, CBAM and vehicle GHG emissions regulations)*
- National GHG emission regulations (e.g., US EPA's vehicle rules, Low-emission zones [LEZ], City tolls and Tax incentives)

Now

Being a large CO2 emitter, the sector is focusing on reducing the carbon footprint, through for example transport optimisation, innovative vehicle technologies and more climate-friendly transportation options (e.g., fleet electrification).

Next

With increasing regulatory complexity, enhancing resilience to mitigate regulatory risks in the supply chain is growing in importance and better AI, computing power and real-time data will allow companies to optimise trade-offs between lead time, cost and CO2.

Sources: 1) IEA report, 2023, 2) UN Transport Report, 2021, 3) UNGC Stocktake Transport Report, 2023 & Accenture research, 2019 & 2023
*ETS = EU's Emission Trading Systems, CBAM = Carbon Border Adjustment Mechanism Regulation, EPA = US Environmental Protection Agency

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Transport & Logistics

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Transport & Logistics in maintaining data quality and processes for compliance. Key regulations for Transport & Logistics include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as ETS, CBAM and national GHG vehicle regulations*.

Energy & Climate Action

Transport is the 2nd most polluting sector in the world in terms of GHG emissions[1], primarily due to fossil fuels. Regulations and customers increasingly require emissions data from logistics providers, and providers are committing to carbon-neutrality. Efforts involve transport optimisation.

Supply Chain Resilience

Transport & Logistics face complex, global supply chains vulnerable to climate change and geopolitical instability, which can disrupt resource supplies, transportation routes and increase operational costs. In this changing landscape, logistics providers prioritise agility, flexibility and visibility, to ultimately manage risks along the supply chain.

Transport & Distribution

Companies are upgrading logistics networks through fleet and fuel transformation, de-speeding supply chains (e.g., using lower-carbon transport modes) and last-mile logistics. Yet, challenges remains due to immature technologies and infrastructure constraints. In distribution, innovative models are needed to address issues like multiple half-full vehicles delivering goods to the same recipient.

Reverse Logistics

Reverse logistics remains a challenge for the sector especially due to lack of leveraging insights from the real-time data exchange of inbound and outbound transport flow. Today, there is a need for data exchange among providers, customers, subcontractors, recyclers, etc., to increase vehicle utilisation, enable circularity of goods and enhance resource efficiency.

Key drivers[2]

- Pressure from trading partners and customers
- Regulations promoting sustainability
- Delivery pressure on strategic sustainability commitments

Sources: 1) Climate Watch, 2023, 2) European Logistics and Supply Chain Sustainability Report, 2023 & Accenture research, 2023
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, ETS = EU's Emission Trading Systems, CBAM = Carbon Border Adjustment Mechanism Regulation

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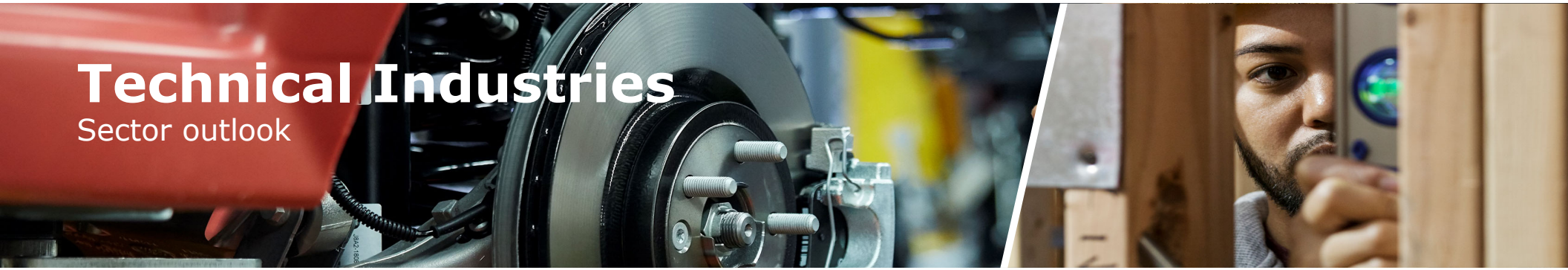

Technical Industries

Sector outlook

97%

of industrials' emissions originate from raw material purchasing (upstream) and products' usage (downstream)[1]

86%

of Automotive CEOs invest in resilient and sustainable manufacturing and design, compared to the global sector average of 69%[2]

"The sector needs to update its digital models to cover relevant information, including financial and sustainability. This would allow analysis of hundreds of different solutions in real time and enable data-driven decision-making"

Top three innovations industrial CEOs say will have highest impact[3]

1. Sustainable product design
2. Circular business models
3. R&D to identify new sources for sustainable material inputs

Examples of regulations relevant for the sector

- Carbon Border Adjustment Mechanism Regulation (CBAM) on specific materials, e.g., steel and aluminium.
- Example for construction: Swedish Climate declaration for buildings

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Now

Focus of the sector is currently on climate and energy with new innovations such as carbon-neutral concrete breaking ground, making the ability to capture scope 1-3 data is a top-priority.

Next

Focus on circularity and waste management is likely to grow, meaning an increased need for circular design and ability to track and trace products through the supply chain, including post-consumer.

Sources: 1) Accenture research, 2023, 2) UNGC, 2021, 3) UNGC, 2022

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Technical Industries

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Technical Industries in maintaining data quality and processes for compliance. Key regulations for Technical Industries include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as CBAM*.

Supply Chain Responsibility & Transparency

Customers demand transparency of materials and component information, e.g., electric vehicle (EV) batteries, or construction items. Complexity of supply chain hinder traceability, for example in construction where many actors are involved in projects and material and component information is limited.

Energy and Climate Action

Manufacturing and construction is among the most polluting sectors, accounting for GHG emissions ranking it third most polluting globally[1]. Companies are having difficulties in measuring climate and energy calculations on products due to fragmented supplier networks and lack of systematic data sharing.

Material & Resource Management

Technical Industries face high material consumption, with construction alone wasting around half of produced raw materials[2]. The material intensity causes Technical Industries to embrace circularity and product design, waste management and fossil-free material sourcing.

Nature & Environmental Conservation

Manufacturing and material intensity in Technical Industries pose challenges like habitat destruction, resource depletion and water intensity, endangering biodiversity. Harmful chemicals released during production processes further worsen environmental impacts.

Key drivers[3]

- Pressure from trading partners and customers
- Regulations promoting sustainability
- Investor demands

Sources: 1) Climate Watch, 2023, 2) GS1 NO interview, 3) UNGC, 2022
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, CBAM = Carbon Border Adjustment Mechanism Regulation

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Governments & Regulatory Bodies

Sector outlook

30%

of global fiscal stimulus is now being tied to sustainability benchmarks[1]

"If it's not a mandatory requirement, then companies don't have time for it"

Trends in the coming 20 years[1]

1. Digitisation and automation
2. Energy optimisation
3. Sustainable supply chains
4. Waste reduction and recycling
5. Carbon pricing

Examples of regulations relevant for the sector

- Governmental bodies align with international agreements and EU directives in shaping national laws, e.g., Paris Agreement, Digital Product Passport (DPP) and United Nation's (UN) plastic pollution treaty.
- Many leading governments, such as Canada, USA, France, United Kingdom, Italy and Japan, have initiated ambitious green transformation programmes targeting net zero emissions by 2050 and deforestation[1].

Now

With a wave of sustainability regulations sweeping across the globe, governments need to quickly understand what regulations they should implement and how, in order to comply with cross-nation agreements such as EU directives, but also to stay relevant for global trade.

Next

Just as for many private organisations, a next step for governments would be to move beyond regulations, find growth areas for sustainability and build physical and digital infrastructure to support a sustainable society.

Sources: 1) Accenture research 2023
*

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Non-Exhaustive

Governments & Regulatory Bodies

Primary sector challenges

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Governments & Regulatory Bodies in maintaining data quality and processes for compliance. Moreover, there is pressure in the industry to establish the right market conditions and enable policy and regulatory framework to e.g., accelerate industrial decarbonisation while balancing economic interests and stakeholder concerns. Something referred to as a policy puzzle[1].

Energy & Climate Action

Rising temperatures and increased extreme weathers, as well as delivery pressure on international climate targets, drive governments to incentivise green energy and carbon neutrality. 55% expect their government to set more demanding targets for carbon emissions in 2024[2]. Overall, governments set policies to achieve national targets.

Nature & Environmental Conservation

Climate change is increasingly affecting ecosystems and societies worldwide in different forms. Biodiversity loss, water scarcity, deforestation and water pollution are globally considered the most pressing challenges[3]. Governments worldwide are committing to bold initiatives, like ending deforestation.

Material & Resource Management

Governments are increasingly focusing their efforts on circularity and waste management, particularly related to plastic packaging. Extended producer responsibility regulations are growing in importance, and circular topics like design, end of life management and recycled content are emphasised.

Social Responsibility & Human Rights

Governments & Regulatory Bodies typically aim to ensure citizen welfare and societal well-being. This often includes promoting diversity, educating on topics like sustainability and ensuring public safety. Therefore, social responsibility is a key topic for this sector.

Key drivers

- Pressure from regulations and international agreements, e.g., Paris Agreement and EU
- Delivery pressure on domestic environmental policies
- Consumer and societal pressure

Sources: 1) Accenture research, 2023, 2) IPSOS Global Trends Study, 2024, 3) Globe Scan Survey, 2023

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Agriculture
Sector outlook

90%
of global deforestation is driven by agricultural expansion[1]

48%
of Agriculture CEOs prioritise protecting and restoring biodiversity compared to global average of 18%[1]

"The world is connected and dependent on what happens in other parts of the world. Interoperability is important, otherwise we cannot share data"

Top three innovations Agriculture CEOs say will have highest impact[2]

1. Regenerative Agriculture practices
2. Seed technology
3. Digital Agriculture

Examples of regulations relevant for the sector

- The common agricultural policy (CAP)
- Deforestation, e.g., deforestation-free products (EUDR)
- Food safety, e.g., US Food Safety Modernisation Act (FSMA)

Now
Increasing number of regulations on deforestation, e.g., EUDR, requires Agriculture sector to provide and share accurate environmental data across the supply chain.

Next
In order for the scattered supply chain with multiple small producers upstream, the sector needs digital solutions that enable automated data collection across the supply chain.

Sources: 1) FAO, 2023, 2) UNGC, 2022

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Agriculture

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Agriculture in maintaining data quality and processes for compliance. Key regulations for Agriculture include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as CAP, Deforestation-free products (EUDR) and FSMA*.

Energy & Climate Action

Agriculture faces large GHG emissions, primarily driven by beef production. Customers push for transparency and accountability for sustainability impacts, prompting the sector to increase the use of clean energy sources in agricultural operations to limit emissions[1]. Current discussions at the EU level are considering imposing a carbon tax on the Agriculture sector to reduce emissions.

Nature & Environmental Conservation

Critical dual challenge as the sector both impacts and is impacted by issues such as deforestation, biodiversity loss and water management. Regulatory pressure on retailers, e.g., EU deforestation, push the Agriculture sector to adhere, and regenerative Agriculture is among predicted trends.

Supply Chain Responsibility & Transparency

Country-based standards and fragmented supply chains hinder scalable traceability solutions. 95% of Agriculture CEOs see real-time track-and-trace as a major sector game-changer (global avg. is 71%)[2], incl. trustworthy geo-specific data. Retailers' demands for labelling, claims and certifications, along with due diligence regulations like CSRD, force agricultural actors to better manage their data.

Social Responsibility & Human Rights

Improving labour conditions, ensuring ethical practices like animal welfare, human rights and food safety in the supply chain are important. 63% of Agriculture CEOs are strengthening visibility into the social impacts of their supply chain[3]. Moreover, securing the supply of food is an ongoing concern due to increasing global geo-political disruptions.

Key drivers

- Regulations promoting sustainable Agriculture
- Pressure from trading partners and customers, e.g., labels and CSRD
- Society pressure from consumers and non-governmental organisations (NGOs)

Sources: 1) Global Data, 2024, 2) UNGC, 2021, 3) UNGC, 2022
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, CAP = the common agricultural policy, EUDR = EU Deforestation Regulation, FSMA = US Food Safety Modernisation Act

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Chemicals

Sector outlook

72%
of Chemicals CEOs prioritise lowering greenhouse gas emissions compared to the global sector average of 50%[1]

99%
of plastics are produced from fossil fuels[2]

"Traceability is a huge challenge, but also a great opportunity"

Top three innovations CEOs say will have highest impact[1]

1. Emerging fossil fuels alternatives to power chemical processes
2. Advanced recycling
3. Shift towards circular business models of production to limit virgin inputs

Examples of regulations relevant for the sector

- EU regulations, e.g., REACH, ESPR, Batteries Regulation, DPP for Batteries, Sustainable Carbon Cycle, Chemicals Strategy for Sustainability*
- United Nations (UN) plastic pollution treaty (expected signing end 2024)

Now

Focus is currently on reducing climate footprint, but the sector is highly price-driven favouring production in countries with low labour costs that tend to have a less sustainable energy mix, hence the sector need to be able to connect sustainability value to business value for its customers.

Next

Focus on circularity and waste management is likely to grow, meaning a need to move away from virgin products and facilitate tracking and tracing of material through the supply chain.

Sources: 1) UNGC, 2022, 2) UN, 2024
*REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals, ESPR = Eco-Design for Sustainable Products, DPP = Digital Product Passport

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Chemicals

Primary sector challenges

Non-Exhaustive

Most pressing

Regulatory Compliance

Growing regulations worldwide, particularly led by the EU, pose challenges for Chemicals in maintaining data quality and processes for compliance. Key regulations for Chemicals include the EU's sustainability reporting requirement, such as CSRD, mandating listed SMEs and large companies to report annually on environmental and social impacts, as well as regulations more distinct to the sector such as REACH, ESPR, DPP for batteries and United Nations (UN) plastic pollution treaty*.

Energy & Climate Action

As a subsector, Chemicals rank third in direct GHG emissions and is the largest industrial energy consumer, with half used as feedstock[1]. Decarbonisation is a key focus, yet there is rising demand for chemical products, e.g., plastics, lithium for electric vehicle batteries, etc. The sector also faces challenges with measuring environmental impact of products (e.g., carbon footprint), material and product formats.

Traceability

The sector manages complex supply chains for sourcing raw materials and delivering end products, requiring stakeholder coordination for quality control. Yet, product traceability challenges persist regarding the environmental and social impacts across the value chain. Access to scope 3 data is particularly difficult to obtain, at the same time as the DPP mandates traceability for batteries.

Waste Management

To mitigate environmental impacts and regulatory compliance, effective handling, storage and disposal of hazardous chemical waste is crucial. Globally, 53% of chemical CEOs are currently reducing product and operational waste, compared to the sector average of 42%[2]. Efforts to enhance plastic recyclability are also underway.

Nature & Climate Conservation

Chemical production heavily depends on large amounts of finite natural resources like fossil fuels, minerals and water. These processes emit pollutants and hazardous waste, causing adverse impacts on biodiversity, air, water and soil, posing environmental risks.

Key drivers[3]

- Regulations promoting sustainability
- Pressure from trading partners and customers
- Delivery pressure on strategic commitments and alliances

Sources: 1) IEA report, 2023, 2) UNGC, 2022, 3) UNGC, 2022 & user interviews
*CSRD = Corporate Sustainability Reporting Directive, SME = small and medium-sized enterprise, REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals, ESPR = Eco-Design for Sustainable Products, DPP = Digital Product Passport

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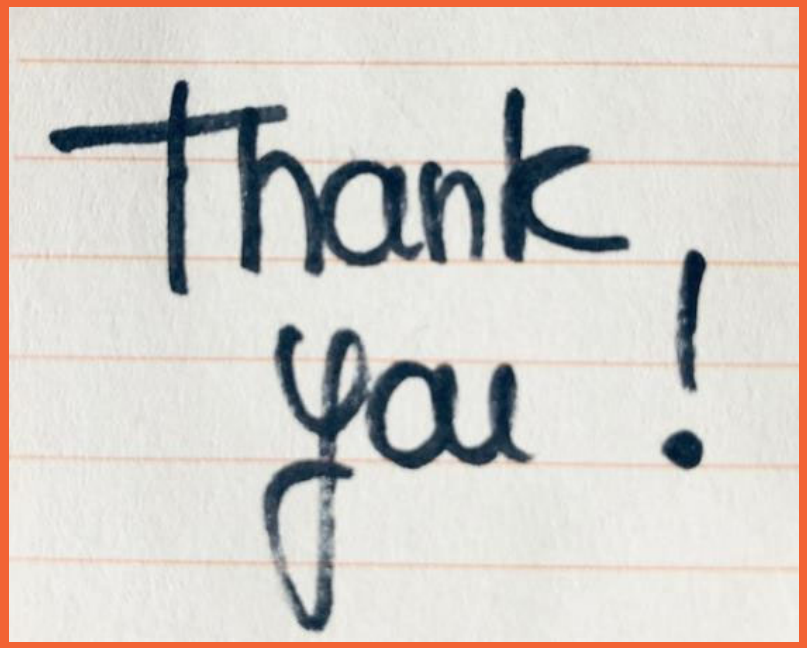

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