WHITE PAPER

Everything an ESG Leader Needs to Know about Sustainability Data Management

How to facilitate ESG reporting and create a sustainability profile using master data discipline

STIBO SYSTEMS
MASTER DATA MANAGEMENT

Contents

Sustainability is a business imperative

Around the world, companies are embracing ESG (Environmental, Social, and Governance) and CSR (Corporate Social Responsibility) strategies. ESG and sustainability leaders now face the crucial task of gathering accurate information and constructing comprehensive reports. In this era, sustainability is not merely a matter of social responsibility; it has become a business imperative. Trustworthy sustainability credentials are essential for attracting investments, securing partnerships, meeting regulatory requirements, and satisfying the demands of discerning consumers who prioritize sustainability in their purchasing decisions.

However, managing and governing sustainability data can be a complex undertaking, with over 600 existing reporting standards and certifications.

This white paper explores the challenges and opportunities of sustainability data management, highlighting the importance of data governance and master data discipline for ESG leaders.

Reporting on sustainability initiatives will require collecting and managing a substantial amount of data.

In many job descriptions for ESG leaders, data skills are often omitted, as if data skills were not required at all. The truth is, however, that data management plays a significant role in the job. Unfortunately, many ESG and sustainability managers do not realize this until they are in the office.

As the head of sustainability in your company, you need to identify what is missing to achieve the organization's own sustainability goals, compliance needs, or which reports, standards, assessments or certificates are approaching expiration. Therefore, data management presents both your biggest challenge and your most substantial opportunity to enhance sustainability compliance and reporting.

A vast array of sustainability reporting standards and certifications makes it a complex process to manage and govern the collection and reporting of sustainability data. This complexity has led to an explosion of additional data. More than 600 ESG standards exist today, each with subcategories and sector-specific processes. The number of permutations of standards has grown significantly, along with the volume of required data.

A few well-known examples:

Sustainability Accounting Standards Board (SASB) is a standard with more than 77 different industries and over 30 disclosure statements in each document.

The Task Force on Climate-Related Financial Disclosures (TCFD) is proposing a number of recommended disclosures around governance, strategy, risk management and metrics and targets.

Global Reporting Initiative (GRI) operates across more than 140 different topics.

UN Sustainable Development Goals encompasses 17 goals and 169 targets and indicators.

Sustainability drivers

How the disrupted consumer is changing

70% expect companies and organizations to drive positive social and environmental outcomes[i]

Governments and regulation

Governments around the world have become active in establishing sustainability-oriented laws and regulations for industries. This forward movement in regulation has helped raise the bar for societies, manufacturers and retailers to be more committed to their sustainability goals. Many of these companies operate on a global scale, with vast and complex operations. Regulations can extend deeply into organizations, affecting various aspects such as water usage, building construction, recycling, energy sourcing and consumption, etc.

Cross-industry regulations and laws such as the European Green Deal[ii], the European Due Diligence Act, the Paris climate accords, COP26, COP27 and many more, undoubtedly reshape the way organizations operate. Taxation policies aimed at reducing greenhouse gas emissions have already been enacted in many regions, and further policies are under review.

The next major sustainability requirement are the digital product passports proposed by the European Commission with the aim of making sustainable products the norm[iii].

To succeed, organizations must clearly define their goals find out which – mandatory or optional – standards to report on and, hence, what data needs to be captured to manage the reporting aspect. Essentially, this leads to the creation of your unique sustainability profile.

Organizational communities

Retail and consumer goods industry associations like Retail Industry Leaders Association, National Retail Federation, Consumer Goods Forum, Consumer Brands Association and EuroCommerce have also intensified their focus on sustainability. Leading organizations have now incorporated sustainability as a key area of focus and/or have appointed sustainability leaders to encourage companies and their trading partners to commit to and act on sustainability goals. Retailers and manufacturers are under pressure to lead in sustainability measures to stay ahead within their networks. Sustainability serves as a significant Key Performance Indicator (KPI) for market leadership and reputation.

Financial reporting

The focus on sustainability is accelerating, and financial institutions are taking notice. Banks are keen to identify where businesses fall short in achieving sustainable regulatory thresholds, as non-compliance poses risks. With more formal legal reporting and informational requirements, ad-hoc approaches to collecting and managing data silos as one-off exercises are no longer viable. Transparency - enabled through data - is essential for locations, products, suppliers, assets, and related entities. Data needs to be current and accurate, pointing to a single source of truth to make incremental and/or radical decisions. Sustainability compliance is now subject to the same level of scrutiny as financial compliance with regulation like the Corporate Sustainability Reporting Directive (CSRD) where companies need to report on Double Materiality Assessment.

Investors

Financial organizations Like J.P Morgan, ABNAmro, Rabobank and many others are eager to invest in sustainable business. These financial bodies are actively promoting sustainable stock funds and are increasingly interested in detailed information that substantiates the actions and impact of companies' sustainability efforts. Similarly, individual investors are now more frequently inquiring about ESG reporting, asking about future sustainability goals, and supporting organizations with sustainable practices through their actions and lifestyles.

Consumer needs

Consumer expectations and consumption mindsets have evolved as they gain more awareness of sustainability issues, including climate change, environmental impact and labor conditions, and continually assess their own actions and footprint. Despite the overall interest in sustainability, some consumption behaviors, such as frequent product returns and excessive consumption in fast fashion, contradict many environmental ideals. A product's ecological impact encompasses not only its manufacturing and transportation but also its usage and afterlife. Therefore, companies with extended responsibilities today are seeking to capture the data and measure consumer behavior as well.

Suppliers

Many multinational corporations have pledged to work with suppliers that adhere to social and environmental standards. Organizations expect their first-tier suppliers to comply with these standards, and they encourage these suppliers to seek compliance from their own suppliers, creating a cascading effect throughout the supply chain network[iv].

Many multinational corporations are genuinely committed to embedding fair practices and environmental responsibility throughout their supply networks. A supply chain is only as strong as its weakest link. Consequently, silos in the supply chain, lack of transparency, hidden data and poor-quality data can impose significant costs on businesses.

The data challenge

Many sustainability officers significantly underestimate the vast volume of data that needs to be collected and effectively managed. You need to look internally in different departments potentially managing data in homegrown apps or spreadsheets, as well as externally in lengthy email communications with suppliers regarding their credentials and supply chain, and interactions with business rating agencies. All this information needs to be collected, linked, validated and regularly updated. The data challenge is so immense that a sustainability officer, who may not have a background in data management, needs to collaborate closely with the chief data officer.

While driving a sustainable business is crucial, substantiating sustainability claims requires robust data management. Sustainability data forms the foundation for ESG reporting, acts as a defense against accusations of greenwashing, and enables evidence-based decision-making. Effectively managing sustainability data demands the same level of rigor and discipline as managing other digital initiatives. However, many organizations grapple with data silos and legacy systems, which hinder the agility necessary to undertake sustainable initiatives.

Data silos

Data silos lead to inefficiencies, errors and difficulties in adapting to evolving standards. To ensure the correct interpretation of data and to avoid costly mistakes, sustainability leaders need a single, authoritative version of each data element and an understanding of how it interconnects with multiple assessments, reports, products and standards. Structured data is just as essential for sustainability management as it is for data privacy compliance or building an ecommerce channel.

Data silos often result in data professionals investing significant effort into collecting and curating data. Yet, in many cases, no one knows who is responsible for making changes, where the original information is stored, or how data should be interpreted. Consequently, when standards change, the company finds itself unable to adapt.

This state of siloed data management typically evolves organically. Over time, applications are either built or purchased to address department-specific issues, and each department or line of business manages its data based on its unique requirements. However, this approach hampers data sharing and easily leads to errors because the same piece of information can be updated in different systems.

Consider the various outputs, which include regulatory and financial reporting, reports for assessors, and business intelligence for decision support. Many of these reports require the same data elements, often with different names and descriptions. To avoid potentially costly ambiguities, where different responses are provided to the same question, sustainability leaders must strive for a single, authoritative version of each data element. Furthermore, this element should be connected and mapped to multiple assessments, reports, products, and standards. This approach simplifies the process of determining which products or suppliers are compliant.

Learn more about data silos and **How to Turn Your Data Silos Into Zones of Insight.**

Data sufficiency

Requirement number one for any digital initiative is to organize your data. Fortunately, you don't need 100% data perfection. It just needs to be sufficient and suitable for your intended purpose.

Sufficiency sets a target for capturing and measuring the critical aspects of data quality. The number of data quality dimensions you need depends on the definition you adhere to, but generally, these six are widely accepted: accuracy, completeness, consistency, uniqueness, timeliness and validity.

To establish a robust foundation for sustainability data management, organizations must formulate a data policy that aligns with their business objectives, with a specific emphasis on integrating sustainability data.

The data policy is essential to clarify the standards and agreements between different departments within your organization. It formalizes key decisions, such as identifying the data owner and specifying the users authorized to dictate data formatting. It also addresses questions about data alteration and outlines procedures for sharing data both internally among departments and externally with stakeholders outside the organization.

How to create a data policy

The data policy needs to support your business goals. Therefore, there is no one-size-fits-all. However, these steps should generally be observed:

1. **Scope and purpose**: Clearly define the scope and purpose of the data policy. Explain why the policy is being developed, which business goals it supports and what data it covers, including the types of sustainability data that are included.

2. **Data collection**: Detail how data is collected, including the sources of data and any relevant data collection procedures. This may include information on data quality, data integrity and data security. Is data provided by suppliers or third parties? Is it being validated by subject matter experts or data scientists? What are your

requirements for accepting external data? What is your data quality threshold?

3 **Data use**: Define how your sustainability data will be analyzed and how it will be incorporated into decision-making processes. Who will need access? Who is the data owner? And who is needing it for operational purposes?

4 **Data processing**: Explain the enrichment, validation and approval processes, i.e., how you ensure the data reaches the defined level of data quality. Which business rules and gates need to be in place? This means statements that structure your data according to purpose. Data processing encompasses automated, as well as clerical reviews.

5 **Data sharing**: Explain how sustainability data will be shared, both internally and externally. This may include guidelines on sharing data with stakeholders, partners or the public, as well as authorities. Define the required data attributes and formatting output as is required by the standards and regulations against which is being reported.

6 **Compliance**: Explain how the data policy aligns with relevant laws, regulations and standards related to sustainability data. This may include environmental or social reporting requirements, or industry-specific standards.

7 **Continuous improvement**: Outline how the data policy will be regularly reviewed and updated, to ensure it remains relevant and effective over time. This may include processes for monitoring data quality, collecting feedback and evaluating the impact of sustainability data on business operations.

Mapping your stakeholders

As the head of sustainability in your company, it's essential to collaborate closely with your chief data officer, or the person responsible for managing the organization's data and data processes. Your CDO can assist you in crafting the data policy and provide practical support for data governance, including data modeling, and setting up integrations and workflows to manage the influx of sustainability data.

To successfully navigate the intersection of sustainability and data, both your sustainability and data departments will need to work together with a diverse group of individuals to establish common definitions, taxonomies and responsibilities, and to collect the necessary data.

This network comprises data scientists, ESG subject matter experts, materials and process engineering specialists, account managers, supplier relations managers, as well as external data agencies and business consulting advisors. Subject matter experts can provide insights into whether a particular raw material can be replaced with a more eco-friendly alternative. Data agencies can contribute essential calculations required for compliance.

You may discover that there are more stakeholders in your data value chain than initially anticipated, including:

- Authorities and audit firms
- Investors
- Distributors and retailers
- Consumers
- Internal data analysts
- Suppliers
- Government agencies
- Industry associations

Mapping your data sources

One of the most frustrating aspects of managing sustainability data is the frequent discovery that it's scattered across various documents and applications. When collecting data, it's imperative to understand your sources. Sustainability data is diverse and widespread, with its relevance contingent on the standards and requirements you wish to measure against. Here are a few examples:

In the fashion industry, assessments of labor conditions and water consumption during the manufacturing process may hold significance.

For food and beverage manufacturers, documenting sustainable farming practices, pesticide and fertilizer use and packaging materials is often required, along with carbon footprint data to track progress towards achieving net-zero emissions.

Other manufacturing companies may need to account for raw materials, chemicals, carbon emissions and investments in carbon reduction, including the sourcing and manufacturing locations, often to ensure they aren't associated with conflict zones.

The sources of sustainability data comprise a diverse landscape. To ensure transparency, it's crucial to consolidate and unify this disparate information. When describing these sources, it quickly becomes apparent that you're dealing with extensive data domains and categories.

Data domains

Supplier data: Sustainability data from the supplier gives the lens to companies' visibility on product sustainability. Some examples:

- **Carbon footprint**:
  Suppliers' procurement policies and own carbon footprint play a vital role in the journey towards net zero emissions under scope 2 and scope 3 of the Green House Gas

(GHG) protocol – a globally adopted framework – where supplier assessment forms a strong basis.

The GHG protocol has 3 parts:

Scope 1 - Direct emissions from sources owned or controlled by an organization, such as on-site combustion and vehicle fleets.

Scope 2 - Indirect emissions from purchased energy, including electricity and heat, used by the organization.

Scope 3 - Indirect emissions from sources not owned or controlled by the organization, such as supply chain activities, employee commuting, and product lifecycle emissions.

- **Raw materials sourcing**:
  Where are materials and components coming from? Who are the tier 2, tier 3, etc., suppliers? Understanding supplier location can also help in your procurement strategy, e.g., are raw materials being sourced or components manufactured in regions with water scarcity?
- **Labor conditions:**
  Do your suppliers provide fair contracts with their workers, and do you have insight into the validity of said contracts?

Product data: Sustainability requirements must be included in the product onboarding, and relevant sustainability data must be included in commercial product descriptions.

- **Product information**:
  With proper data around the product, it is easier to select the greener alternative closest to the item in demand

  Innovative sourcing can be done if consumers are aware of the item properties presented as enriched product information.

  Retailer item data related to packaging, chemicals and usage enables consumers to make an eco-friendly choice.
- **Industry standards:**
  Global data platforms like GDSN and ECLASS/ETIM and others provide sustainability data sets.
- **Life cycle assessments**:
  Life cycle assessment plays a vital role in understanding the environmental impact of any item like its cradle-to-grave, cradle-to-cradle, and cradle-to-gate impacts. Life cycle details of an item require the underlying data to be accurate and precise.

Learn more about: **How to calculate life cycle assessment scores for food products**

Location data:

- The sourcing of a certain raw material may have larger impact in one location than in others.
- Are there endangered animal species in the area where your crops are grown, or your manufacturing plant is located?
- Does your manufacturing process impact natural water resources?

Asset data:

- Buildings, transportation and server parks each account for measurable energy consumption. This involves not just the meter data but also the master data of the assets (GHG scope 1 and 2[v]).
- Upgrading or recycling equipment represents a value in terms of life-cycle assessments.

The two examples below underscore the importance of structuring master data domains, specifically supplier and product data, to provide a context for sustainability data.

Example 1 – Supplier Data Management

Achieving supply chain transparency necessitates a data-driven, comprehensive and accurate understanding of your suppliers. This includes knowledge of their organizational structure, products, performance, compliance and operating practices.

Oatly, the manufacturer of dairy alternatives, has set a highly ambitious goal of reducing their climate footprint by 70% as part of their sustainability profile. This commitment prompts the company to reviewing their supply chain for valuable data sources:

"We need to work with our suppliers, getting more insights off the data around our ingredients and packaging material to really understand where our hotspots are when it comes to reaching this target and this ambition [reducing climate footprint with 70%]. For example, it can be data around the full content of the ingredients, the country of origin, the type of transportation used, etc." – Sustainability Reporting Lead, Oatly

Regulators and investors are increasingly scrutinizing your data processes, evaluating how your data is collected, prepared and augmented. Enhanced transparency and traceability of data make audits much more straightforward.

Example 2 – Digital Product Passports

A novel initiative led by the European Commission, Digital Product Passports, aims to support the transition to a circular economy by meticulously examining supply chains to enrich products with sustainability information.

Digital product passports aim to address the information gap concerning circularity and environmental impact. The critical question is: how can stakeholders, spanning from manufacturers to resellers, consumers, authorities and NGOs, track and verify products and their components throughout their lifecycle while measuring their environmental impact?

To achieve this level of transparency, data and insights that might not be readily available to retailers and manufacturers are necessary. This implies that the calculations required for reporting must be sourced externally from suppliers or from aggregation agencies that have curated information on sustainability credentials for specific products, ingredients and raw materials.

Learn more about: **Digital Product Passports – The next sustainability requirement that needs effective master data management.**

How to get started: Apply master data discipline to sustainability data

You may need to explore new sources and request additional information from your suppliers. However, in general, managing sustainability data is an extension of existing practices. This means you can apply established data management practices to this new content. A significant portion of the data required for your ESG reporting is either master data or connected to it. Therefore, a good starting point is to ensure you have access to trusted master data, which significantly simplifies the management of sustainability data. In essence, you can construct your sustainability reporting strategy using master data discipline.

"Sustainability in the supply chain and circular economy at a large scale are only possible if data is structured and shared through global and open standards." – GS1.org: Sustainability

Master data governance

Master data is low-volatility, business-critical information that defines various company assets and entities categorized into master data domains. Common domains include customer, supplier, product and location data. A master data record can encompass numerous attributes describing diverse aspects of specific company assets, ranging from a product's physical characteristics to a customer's business affiliations and creditworthiness. Master data serves multiple purposes across the enterprise, offering context for business transactions and analytics. Ensuring its accuracy is paramount before embarking on any digital initiative, including sustainability data management.

Get the infographic: What is Master Data?

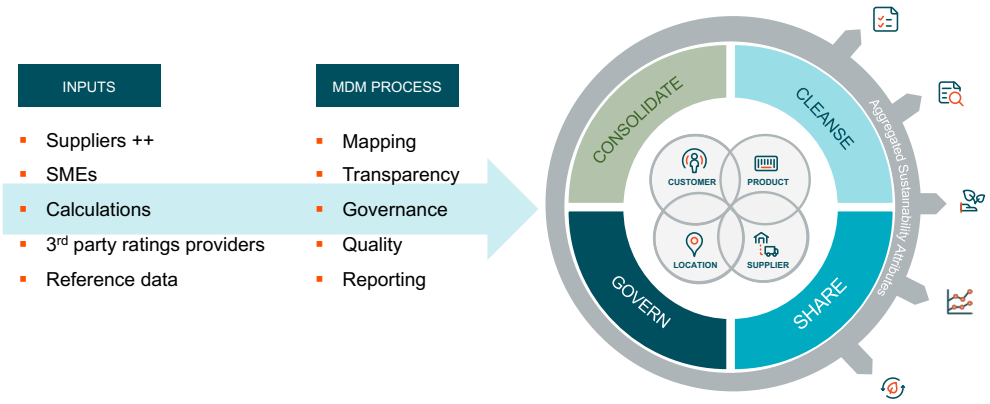
Although sustainability data isn't per se a master data domain, master data provides the framework for understanding sustainability data. Specific sustainability data can be recorded alongside master data, making it convenient to access certificates, manufacturing addresses or the ESG goals of a particular product. Therefore, governing and consolidating your master data will inevitably streamline the management of sustainability data and facilitate reporting.

As ESG goals gain momentum and the program becomes active, documenting progress through predefined data sources and reporting is crucial. Capturing and organizing this data can be a monumental task without a well-established master data management strategy. Incorporating master data management as a foundation can ensure the accuracy and timeliness of progress reports.

Master data management (MDM) offers several vital tactics, including:

- Data cleansing, such as de-duplication and completeness scoring, to guarantee data accuracy and reliability.
- Data modeling and enrichment: Utilizing AI and automation to facilitate effective hierarchy placement, content development and adaptation over time in response to changing market demands, such as sustainability data requirements.
- Automated workflows to maintain data quality and transparency in processes.
- Data integration: With robust governance policies and data models, MDM can serve as a central system of record for all downstream applications, eliminating the need for spreadsheets and data silos.
- Data sharing: An open master data platform enables you to share pertinent information via APIs with business partners, data pools and customers.

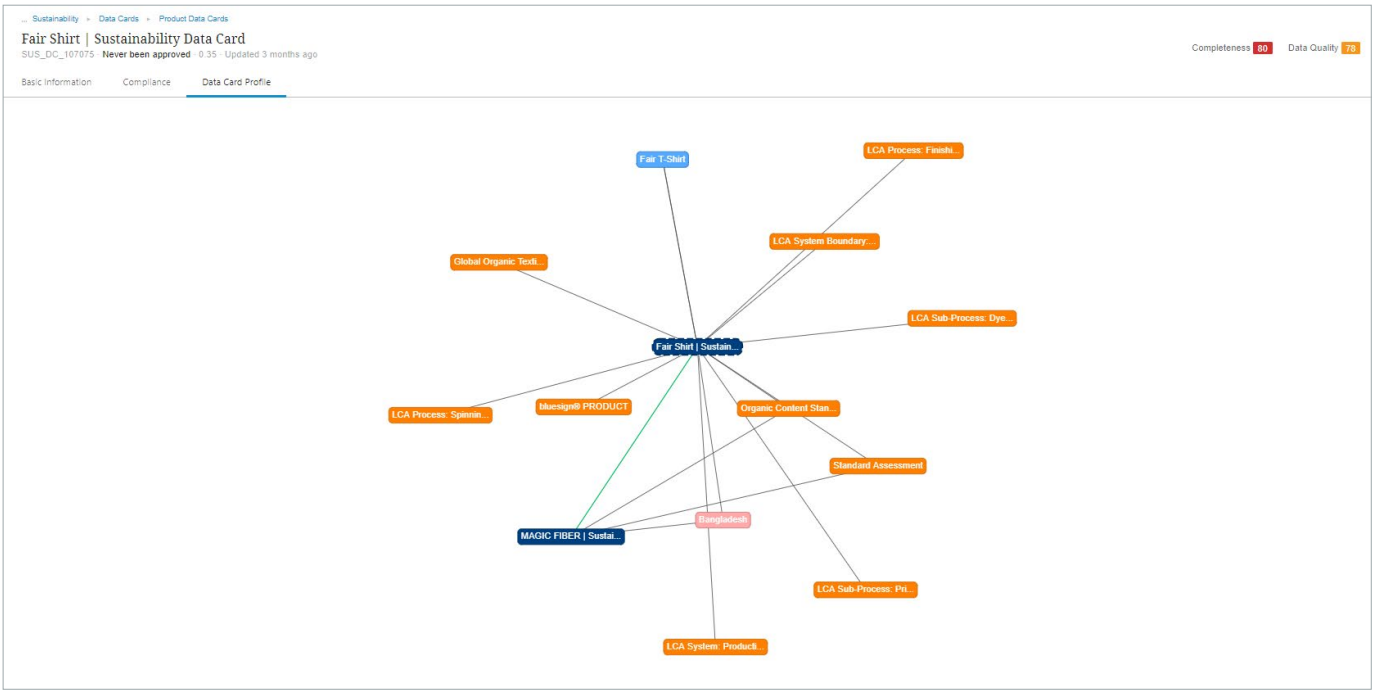
With the master data management process as your single point of ingestion and governance, you can create a trusted overview of your data sources and a context for your sustainability data to make it fit for reporting. Setting up appropriate integrations and business rules allows you to pull the desired mix of data into a combined view and conveniently hold it up against your compliance metrics.



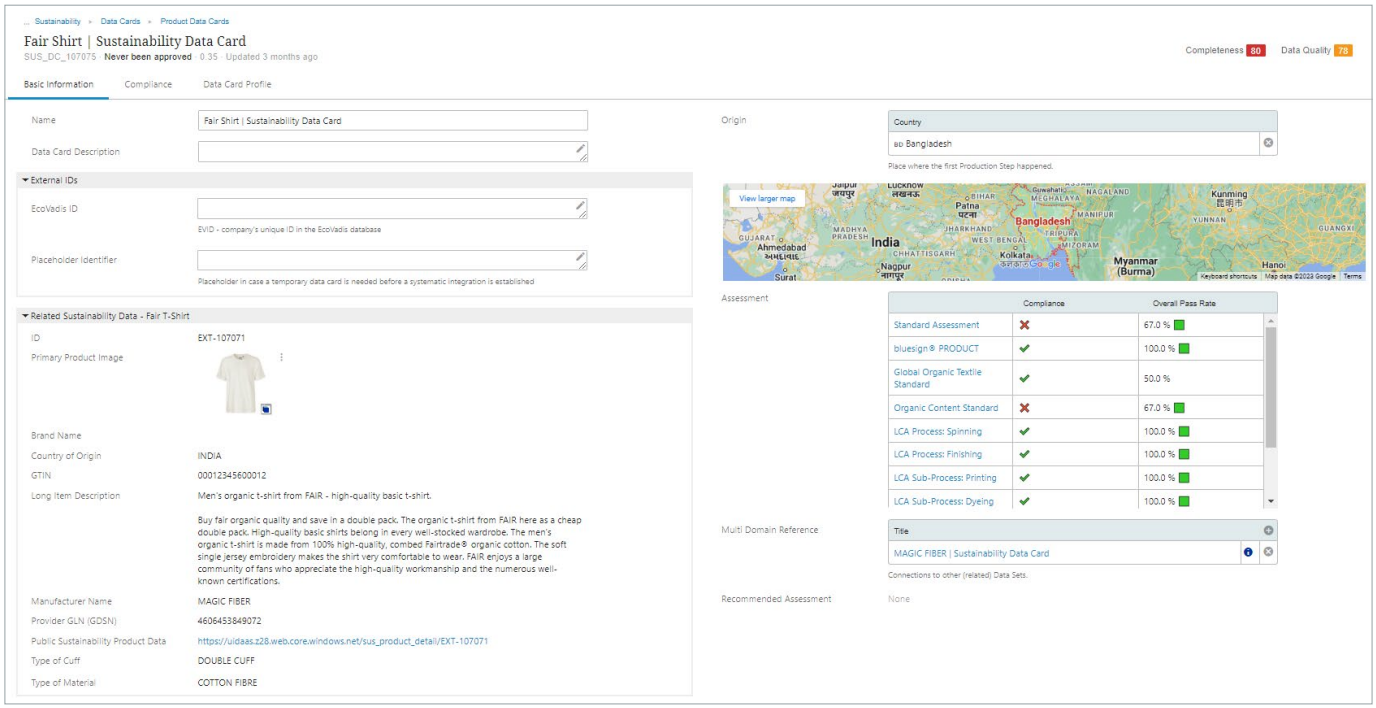
Create your own sustainability profile

There is no one-size-fits-all solution for sustainability data management. But connecting sustainability data to your master data enables you to build a sustainability profile that perfectly correlates with your unique business assets and responds to the standards you want to measure against.

Behind the scenes, you are effectively separating master data from sustainability data while linking them together as relations. These relations can be visualized on a sustainability data card showing the numerous standards, goals and targets against which a particular product is evaluated. For example:



Shifting to a basic information view of the sustainability data card allows you to delve into the enhanced information:



Applying master data discipline to sustainability data management enables you to configure a sustainability profile that aligns with the requirements of your industry, brand, ethics and regulatory standards. Your sustainability profile is unique, depending on your trade, the region in which you operate, your supply chain eco-system, customer segments and many more factors. This means there can be no one-size-fits-all solution for your sustainability data management.

This profile is meticulously crafted to prioritize your reporting objectives. It encompasses the sustainability data points you intend to capture and links them to associated targets within the product, supplier and location data domains. This integrated approach allows you to assess and report both qualitative and quantitative metrics seamlessly from a unified platform. The fact that sustainability data is integrated with product, supplier and location information system, gives you precise visibility into which products are compliant and aligned with your sustainability profile.

Sources:

i EY/The Consumer Goods Forum, "**Pursuit of harmony in turmoil: working together to make a difference**".

ii European Commission, "**Green Deal: Green Deal: New proposals to make sustainable products the norm and boost Europe's resource independence**". 2022

iii Simon Tuson, "**Digital Product Passports. The next sustainability requirement that needs effective master data management**". 2023

iv Harvard Business Review, "**A More Sustainable Supply Chain**". 2020

v Capgemini, "**Data for Net Zero. Why data is key to bridging the gap between net zero ambition and action**". 2022