A-Track

CASE STUDY

Location matters: How Henkel applies location data for feedstock assessment

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Company overview

Name:

Henkel AG & Co. KGaA

Sectors:

Consumer Goods, Adhesive Technologies

Stages in the value chain: Manufacturing, Business-to-Business and Business-to-Consumer

Company description:

Henkel is active globally in industrial and consumer businesses, with a portfolio including hair care, laundry detergents, fabric softeners, adhesives, sealants and functional coatings.

Case study audience:

This case study is relevant for manufacturing companies, sustainability teams, sourcing and procurement departments, risk managers and product developers seeking to integrate location-based nature considerations into value chain decisions.

Goal:

This case study illustrates how Henkel developed and uses a Feedstock Evaluation Dashboard to identify and manage environmental impacts and risks linked to upstream raw materials.

The Dashboard tool specifically covers "level zero feedstocks", referring to feedstock grown on a field or extracted from mines. These feedstocks are the basis for raw material production. Usually, several production steps are required to obtain the actual raw material Henkel purchases. Traceability back to this first step of the value chain is often limited, which makes it difficult to identify the impacts on affected ecosystems and assess the risks related to environmental conditions. In this case study, Henkel presents a method that combines primary, secondary and statistical data to identify priority feedstocks and sourcing countries. This is a key step in the ACT-D framework, which helps businesses integrate nature into decision-making, as well as in the Taskforce on Nature-related Financial Disclosures (TNFD) framework.

Discover the case study:

Location context:

Henkel focusses on global sourcing regions for agricultural and mined feedstocks. The company uses production and environmental risk data (e.g. water scarcity, deforestation, pollution) to assess impacts linked to sourcing countries, aiming to reduce risks and environmental pressure through smarter procurement and product development choices.

From awareness to action:

Sustainability work at Henkel evolved from early environmental policies in the 1980s to structured governance (led by the Sustainability Council), targets and action plans under its 2030+ Sustainability Ambition Framework. The Feedstock Evaluation Dashboard represents a move from general awareness of nature-related risks to applying data-driven tools that guide upstream sourcing decisions and product innovation.

How Henkel uses location-based decision-making:

- **Upstream impact analysis –** The dashboard estimates the environmental impacts of feedstocks at the country level to highlight risks (e.g. water use in water-scarce regions).
- **Procurement guidance –** Purchasing teams can use the tool to identify sourcing areas in which feedstock production causes less environmental impact.
- **Product development –** The process supports the evaluation of alternative raw materials with lower environmental impact.
- **Risk mitigation –** The strategy highlights feedstocks with limited sourcing options that could pose supply chain risks.

What businesses can learn:

- Custom data tools can provide more detailed and actionable insights than generic frameworks.
- Location-specific data is key to understanding upstream environmental risks.
- Cross-functional collaboration (sustainability, procurement, product development) improves the integration of nature into business decisions.
- Tools like dashboards provide a foundation for continuous improvement as data quality evolves.

Embedding nature in strategy and governance

How Henkel progressed on the nature journey

The company has established a structured approach to understanding and managing its impacts and dependencies on nature, integrating this work within its broader sustainability strategy.

This approach is outlined in the Henkel Nature Policy, which aligns with the company's net-zero emissions targets, goals for responsible and circular water use, and objective to contribute to a nature-positive future.

The sustainability strategy of Henkel includes establishing a governance framework, setting targets and implementing actions aimed at integrating nature considerations across its operations.

Henkel's overall sustainability strategy and approach to nature

The sustainability strategy of Henkel centers on implementing the vision of a sustainable future through concrete measures and projects, guided by three main steps:

1. **creating a robust governance framework to guide actions**
2. **setting meaningful targets and commitments towards the overarching vision**
3. **developing and implementing specific actions and action plans to reach the targets**

As part of its 2030+ Sustainability Ambition Framework, Henkel has defined long-term goals in three focus areas: Regenerative Planet, Thriving Communities and Trusted Partner. Activities on nature are covered within the Regenerative Planet pillar, which includes efforts to support a circular economy, aim for a net-zero future and contribute to the regeneration of nature.

Within this pillar, Henkel focusses its ambition on protecting and restoring biodiversity, with particular attention to forests, land and water, and on ensuring responsible sourcing practices. These priorities are closely connected to the company's strategies on circularity and climate action.

Henkel has identified four planetary boundaries as most relevant to its business operations: Climate Change, Novel Entities (related to circularity), Freshwater Change and Land System Change. The company's actions in these areas are guided by the planetary boundary framework, drawing on current research and internationally recognised scientific findings to inform its strategy.

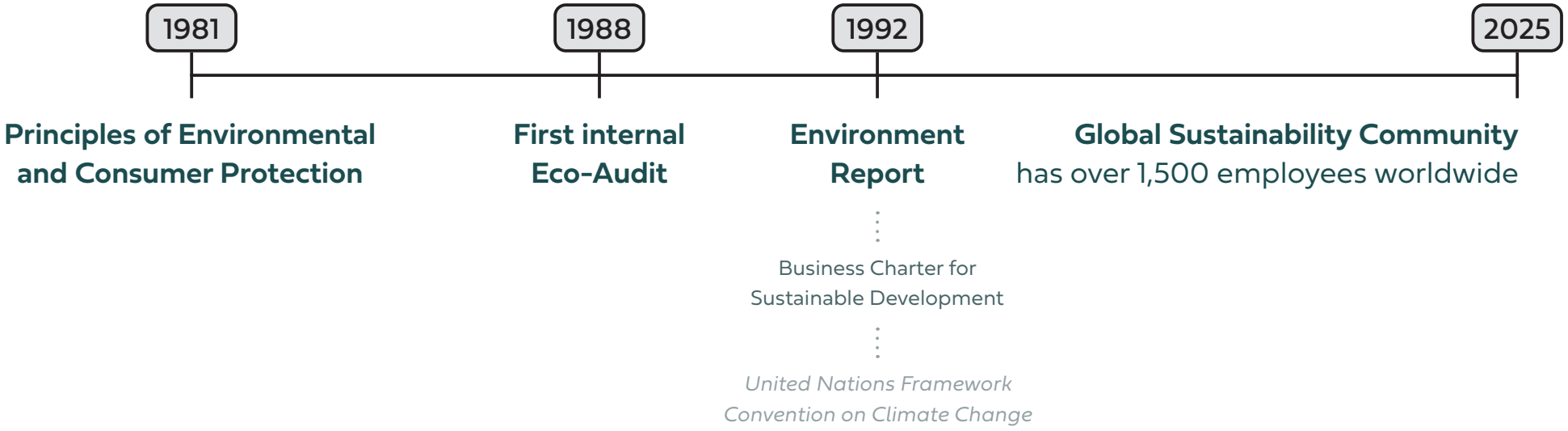
Henkel's sustainability journey: From awareness to action

Henkel's approach to sustainability has evolved over several decades, shaped by early recognition of environmental and social responsibilities.

The company published its first *Environment Report* in 1992, aligning with the Business Charter for Sustainable Development at a time when environmental reporting and climate regulations were not yet mandatory. This coincided with the establishment of the United Nations Framework Convention on Climate Change, the foundation for later agreements like the Kyoto Protocol and the Paris Agreement.

Henkel started formal sustainability efforts even earlier. In 1981, it introduced the *Principles of Environmental and Consumer Protection*, a global framework for environmentally compatible production. This was followed by the company's first internal Eco-Audit in 1988 and the launch of an Eco-Program aimed at reducing environmental pollution and energy use. These measures laid the groundwork for embedding sustainability across operations.

Today, the Henkel Global Sustainability Community includes over 1,500 employees worldwide, supporting and advancing sustainability efforts throughout the organisation.



Henkel's governance structure to support nature action

Sustainability Council

The governance on nature-related action is guided by the *Henkel Nature Policy*, a key component of the company's broader sustainability agenda. This document is an integral part of the broader sustainability agenda and it aligns with the Purposeful Growth strategy and the 2030+ Sustainability Ambition Framework. It provides direction on designing sustainable products and processes, covering the full value chain, from sourcing and production to consumption and end-of-life management. The *Henkel Nature Policy* is supported by related documents, including the *Policy on Deforestation-Risk Commodities*, the *Responsible Sourcing Policy* and various position statements on topics such as water stewardship, sustainable palm (kernel) oil and responsible biomass utilisation.

Oversight of the sustainability policies rests with the Management Board. Day-to-day governance is led by the Sustainability Council, established in 2000. This internal body, composed of experts from across the business and top management, aligns on strategic priorities, targets and the identification of risks and opportunities related to nature. The Council approves policies, establishes project groups to guide implementation, ensures compliance with common standards, supports best-practice sharing and monitors progress. It also manages cross-departmental projects and reviews progress towards nature-related targets.

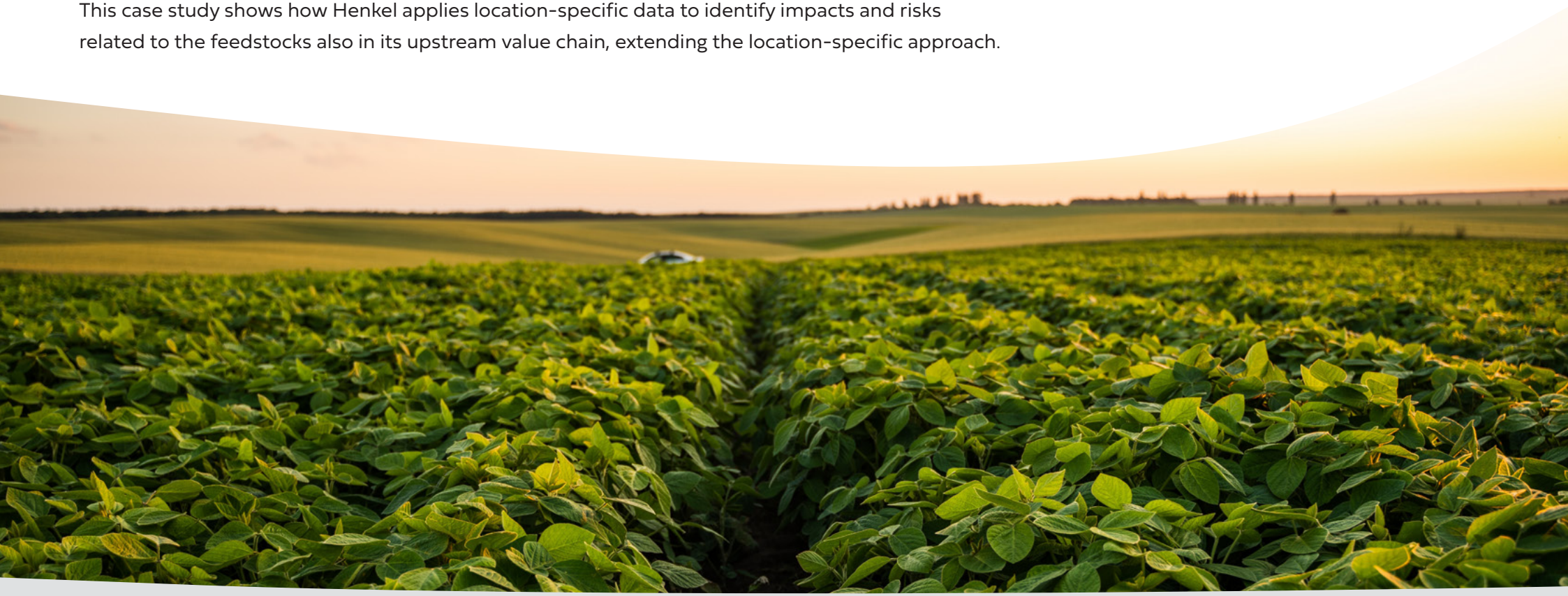
Business units (such as Adhesive Technologies and Consumer Brands) and relevant corporate functions are responsible for implementing sustainability policies, planning actions and allocating resources, being supported by a dedicated sustainability team.

Applying a location-based lens to supply chain decision-making

How Henkel's nature approach uses location-based data

The focus topics for Henkel in the field of nature are forests, land and water. These three topics are highly local in nature, so decisions will be guided by the specific context of each location.

Since 2024, Henkel has been assessing water stress and water risks in its direct operations.
This year, the company started reporting on the biodiversity-related impacts of its operations.
This case study shows how Henkel applies location-specific data to identify impacts and risks related to the feedstocks also in its upstream value chain, extending the location-specific approach.



Applying a location-based lens to a specific example

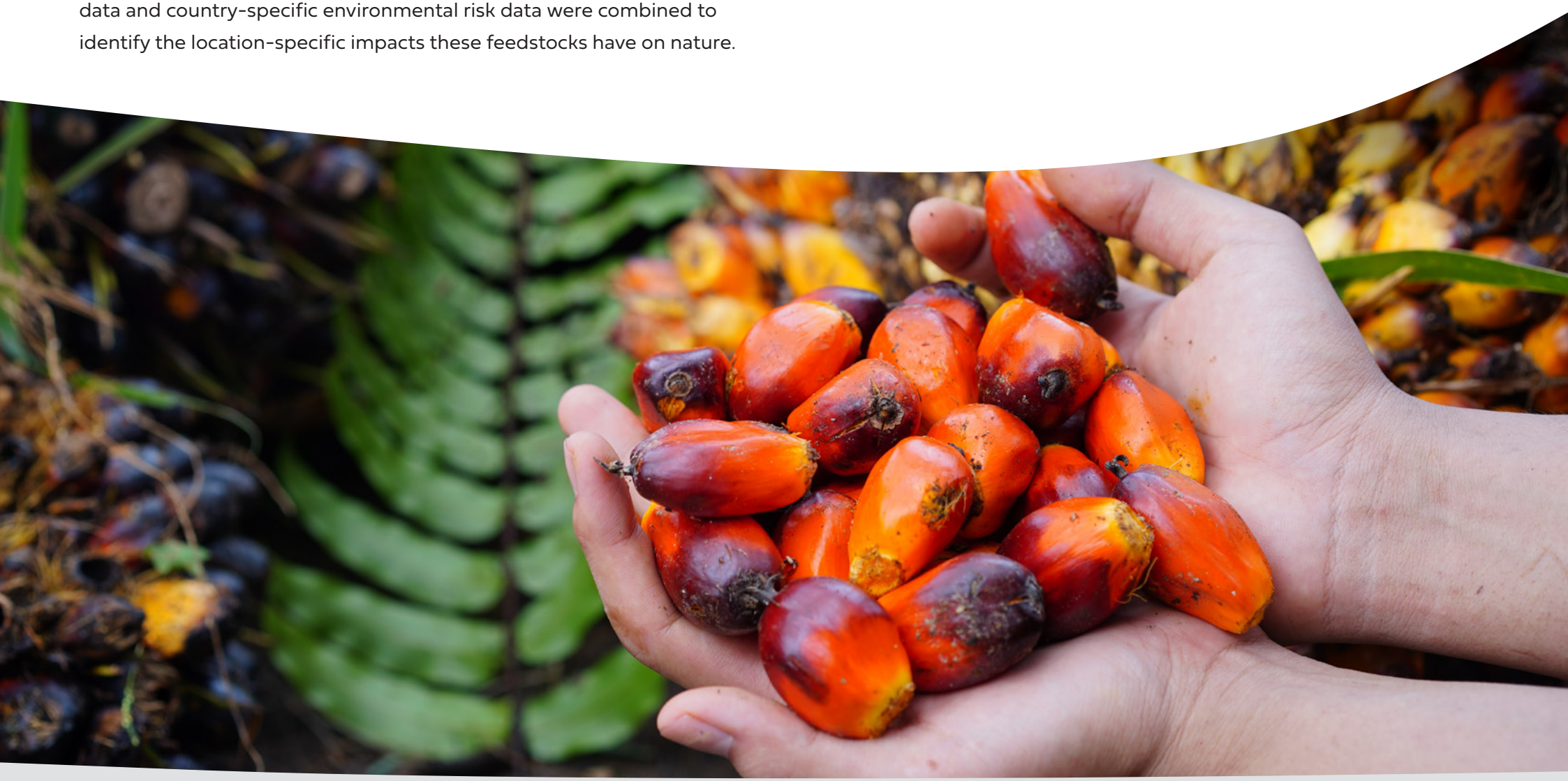
Like most other companies operating downstream in the value chain, Henkel does not have full transparency across the supply chain to identify the origin of the level zero feedstock. For some feedstocks, such as palm oil, a transparency analysis can be carried out. However, identifying the sourcing landscape of most level zero feedstocks remains very difficult and resource intensive.

Nevertheless, it is necessary to localise the original source to assess location-specific impacts and risks, such as those related to water. For example, cultivating a water-intensive crop in a water-scarce region has a greater environmental impact and increases the risk of supply chain disruptions due to drought.

1 The most basic raw materials, grown in a field or extracted from a mine, before undergoing any further processing.

To estimate the sourcing origins of level zero feedstocks in the value chain, the company applied statistical analyses to develop a more detailed impact and risk assessment. This case study describes how the environmental footprints of the feedstocks, global production data and country-specific environmental risk data were combined to identify the location-specific impacts these feedstocks have on nature.

With this data, Henkel created the Feedstock Evaluation Dashboard that it uses for purchasing, product development and risk assessments, allowing the company to reduce its impact on nature and mitigate nature-related risks upstream.



Identifying location-specific impacts on nature with in-house Feedstock Evaluation Dashboard

Because of the extensive raw material portfolio, using general lists or sector-specific approaches like ENCORE is too vague for conducting detailed risk assessments, impact analyses and prioritisation. Developing its own dashboard enabled Henkel to use more background data for identifying results.

Goal: Henkel developed the Feedstock Evaluation Dashboard to identify location-specific environmental impacts and risks of feedstocks by combining environmental footprint data with global production and country-specific environmental risk data.

Data sources: The data was obtained from multiple sources:

- environmental footprints: secondary life cycle impact assessment (LCIA) databases, literature data
- global production data: FAOStat agricultural statistics (from the UN's global database of agricultural and food statistics), the *World Mining Data 2024* report and Observatory of Economic Complexity world export data
- country-specific environmental risks: WWF Biodiversity Risk Filter
- specific risks and impacts: Science Based Targets Network's High Impact Commodity list and European legislation on deforestation and conflict minerals.

Data compilation: The selected planetary boundaries were based on business relevance rather than value or natural capital accounting. We excluded those not yet transgressed and focused on six.

Planetary boundary	Environmental footprints	Risk indicators
Climate Change	Climate change, fossil	Extreme heat and air condition
Novel Entities	Inorganic and organic freshwater ecotoxicity, ionising radiation	Soil condition, water condition, air condition and pollution
Freshwater Change	Water use	Water scarcity
Land System Change	Land use change and deforestation	Tree cover loss and other important delineated areas

Boundaries like "biogeochemical flows" were removed, as Henkel has limited direct impact (e.g. we don't produce fertilisers). Similarly, "biosphere integrity" was excluded, as we don't use protected species or introduce GMOs. Impacts like deforestation are instead addressed under "land system change," where we have greater influence.

See the following two pages for a visual representation of this Practical example...

Practical example: Feedstock A has a water footprint of 96.0 m^3 world equivalent deprived (method EF v3.1). Of the 131 feedstocks in the Feedstock Evaluation Dashboard, this is the sixth-highest water footprint. Based on this rank, the Pressure Factor of 4.85 for Freshwater Change is assigned.

Using the same method, a Climate Change Pressure Factor of 3.63, a Land System Change Pressure Factor of 3.89 and a Novel Entities Pressure Factor of 3.78 is assigned to Feedstock A.

For a sourcing country Z, the WWF Biodiversity Risk Filter is used to assign the Influence Factor. For Freshwater Change, the Influence Factor is equivalent to the water scarcity risk in the Biodiversity Risk Filter.

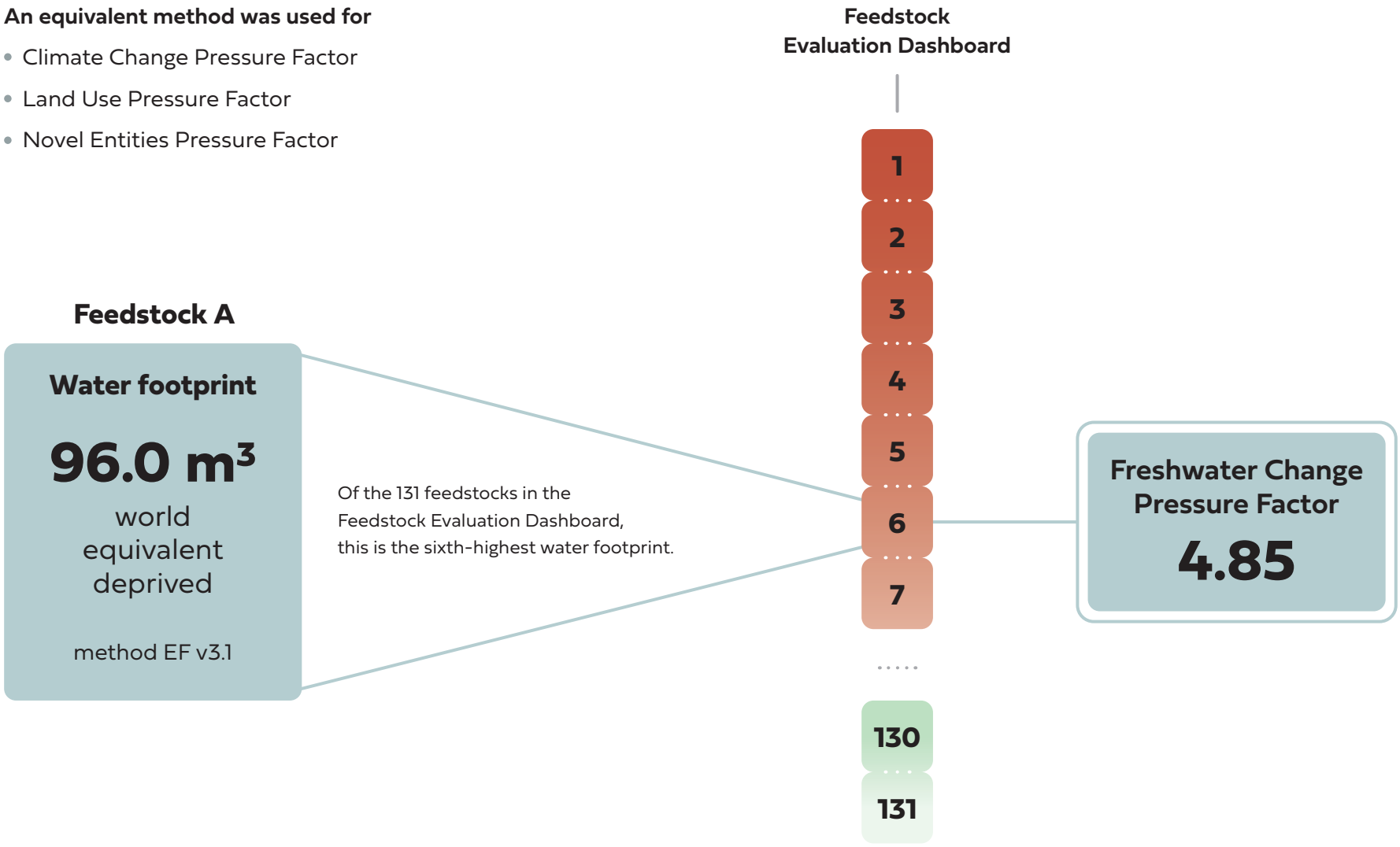
For country Z, the value of the Freshwater Change Influence Factor is 2.98. Analogous to that, the Climate Change Influence Factor of country Z is 2.67, the Land System Change Influence Factor is 2.06 and the Novel Entities Influence Factor 2.67.

To calculate the Freshwater Change impact factor, the Pressure Factor and Influence Factor are multiplied, leading to a Freshwater Impact Factor of Feedstock A in country Z of 14.4. Impact factors are calculated in the same way for the other three planetary boundaries. The average of the four impact factors results in the Nature Impact Factor of 10.6 for Feedstock A in country Z.

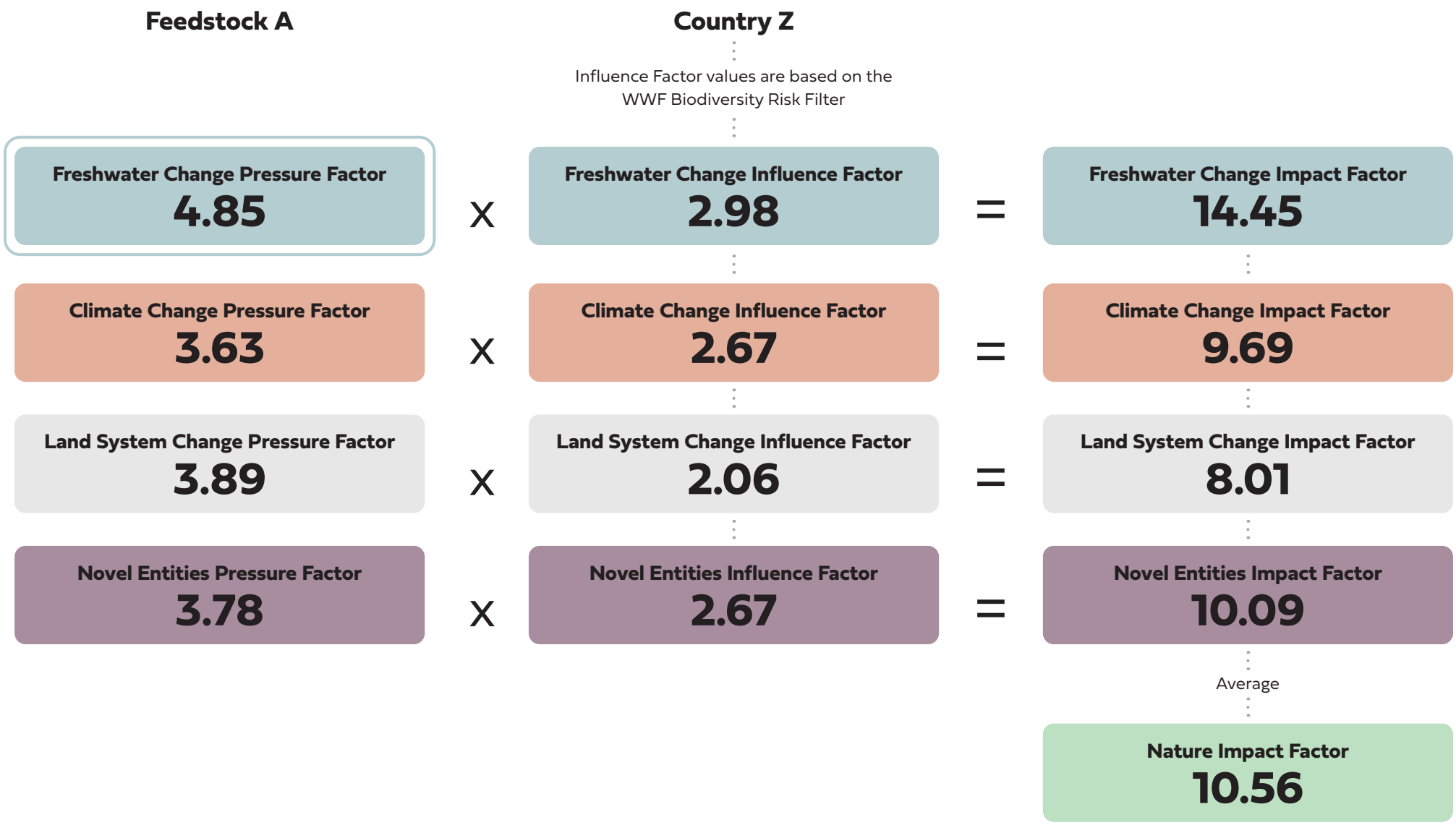
Method to calculate Pressure Factor

An equivalent method was used for

- Climate Change Pressure Factor
- Land Use Pressure Factor
- Novel Entities Pressure Factor



Method to calculate Impact Factor



Use of the results: This single factor can be used to quickly compare several feedstock–sourcing country combinations at a glance, to prioritise procurement actions based on impact and risk, and to align the sourcing strategy with the planetary boundaries and sustainability ambitions. These actions can include, for example, direct engagement with raw material suppliers of at-risk feedstocks to identify feasible risk mitigation strategies or alternative sourcing locations.

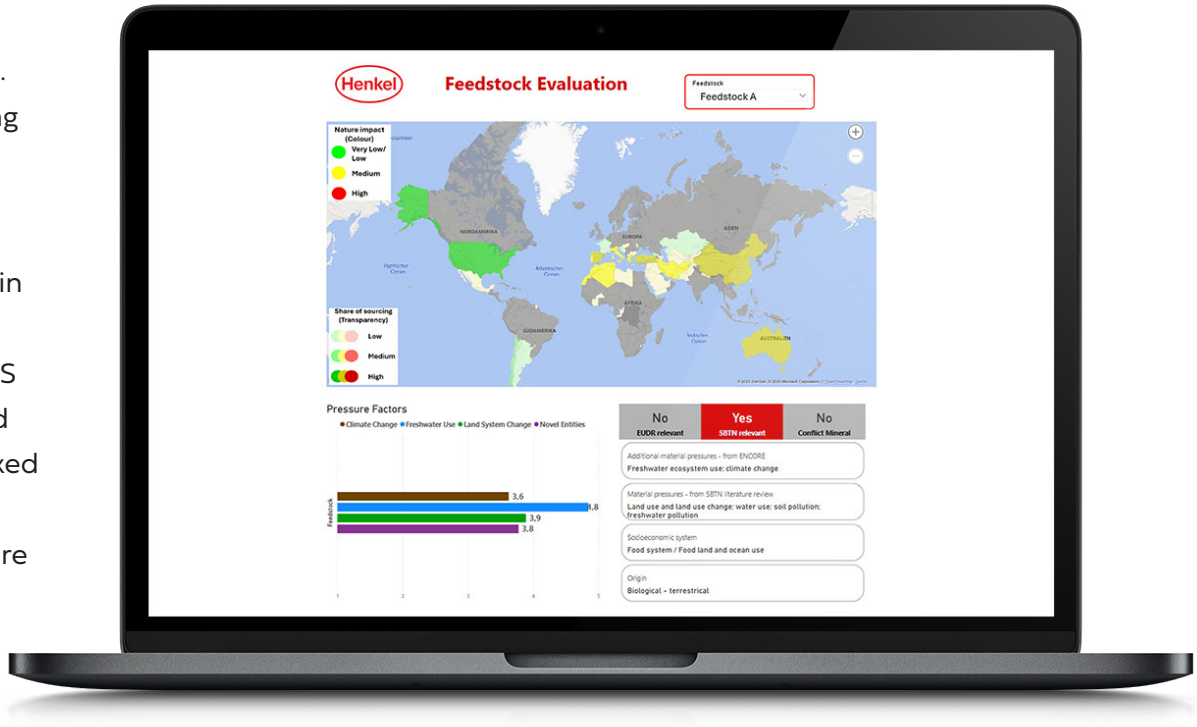
Insights for decision-making: The purchasing team can use this data to explore alternative sourcing locations with suppliers, prioritising countries with lower environmental impacts. The risk assessment team can identify feedstocks with limited sourcing locations, flagging them as higher risk for supply chain disruptions.

Using the Dashboard for initial feedstock impact and risk screening

Context: Henkel sources a raw material that contains Feedstock A. The Dashboard provides an initial assessment of the likely sourcing countries, potential environmental issues and key impact factors.

Application: The Dashboard *(Figure 1)* shows that Feedstock A is most likely sourced from the US, China, Australia, Türkiye and Spain (the probability is indicated by the shading intensity on the map). The environmental impact varies by location: sourcing from the US is associated with lower impacts compared to China, Australia and the other countries, indicated by the colour. The primary issue linked to Feedstock A is high water consumption, highlighted by the Pressure Factor. Several other environmental and social issues were detected in relation to Feedstock A, indicated in the text-boxes.

Figure 1: Henkel Feedstock A evaluation
Source: Henkel Feedstock Evaluation Dashboard



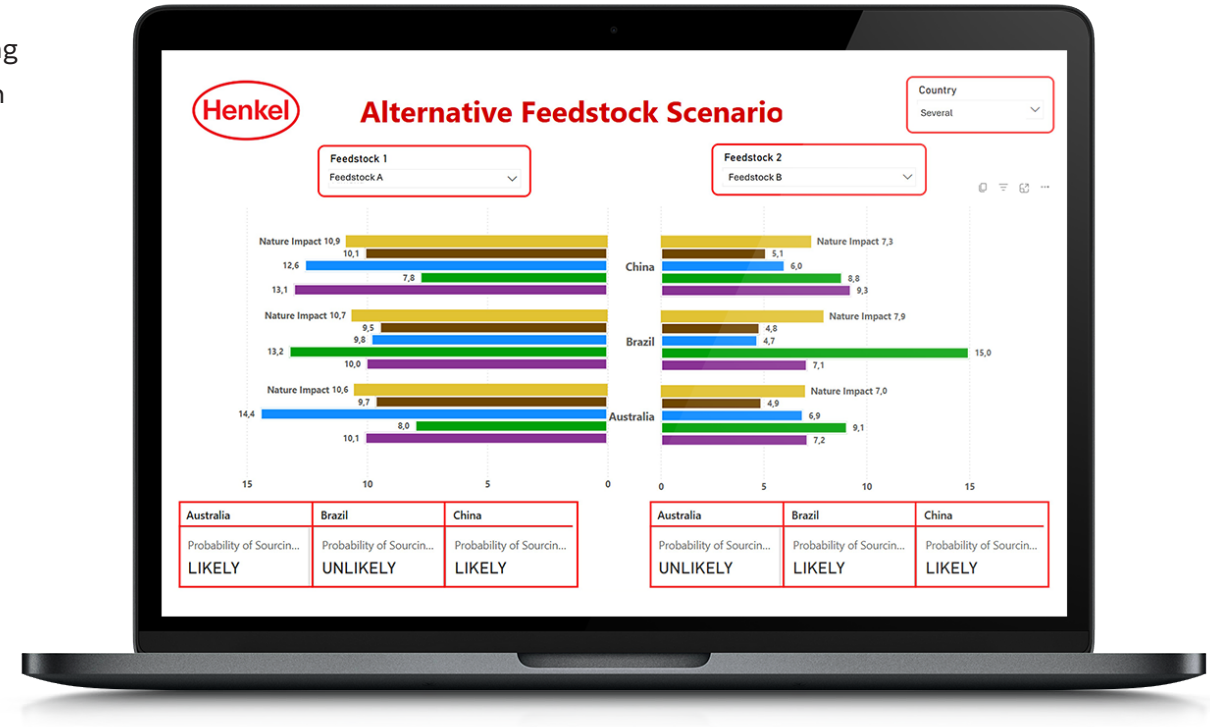
Using the Dashboard for alternative feedstock assessments

Context: Henkel noted that Feedstock A appears on the Science Based Targets Network's High Impact Commodity list and has medium environmental impacts depending on the sourcing country.

Application: The Dashboard allows a comparison of Feedstock A with alternative options. In this example, Feedstock A was compared to Feedstock B ***(Figure 2)***. Feedstock B shows a lower Nature Impact Factor in selected sourcing countries due to reduced impacts on water (blue), climate (brown) and pollution (purple). However, Feedstock B shows a higher potential impact on land system change (green), which highlights the need to ensure sourcing without contributing to deforestation. The Dashboard also reveals that the production of Feedstock B is unlikely in certain locations (e.g. Australia), which may influence logistics and supply chain decisions depending on the location of subsequent production steps.

Insights for decision-making: Product development teams can use these insights to evaluate and select alternative feedstocks with lower environmental impacts. Supply chain teams can factor in production locations to optimise logistics and minimise environmental impacts.

Figure 2: Henkel alternative feedstock scenario
Source: Henkel Feedstock Evaluation Dashboard



ACT-D in practice: A spotlight on Henkel's Feedstock Evaluation Dashboard

The Dashboard is used to complete the ***Assess*** step of the ACT-D framework approach, which supports organisations to assess, commit, transform and disclose their relationship with nature. It makes it possible to identify priority feedstocks based on their specific sourcing locations at a more granular level than tools like ENCORE or the Science Based Targets Network's High Impact Commodity list. This also helps prepare for the ***Transform*** step, as the hotspots identified through the Dashboard will serve as key areas for taking action on nature within and beyond the value chain.

Assess:

The Dashboard results enable Henkel to pinpoint priority feedstocks according to their specific sourcing locations. The tool provides a clear method for addressing several tasks related to the upstream value chain, helping Henkel prioritise areas with higher impacts on nature and develop solutions to mitigate the associated risks.

Commit:

While the Dashboard results do not necessarily directly lead to new commitments or targets, they support existing commitments to responsible sourcing and zero net deforestation associated with raw materials. In particular, the Responsible Sourcing Policy states that:

> **“Henkel has a long history of leadership in sustainability, and we are committed to constantly improving our environmental footprint in areas including energy, waste and wastewater, greenhouse gas (GHG) and air emissions, and water – while also driving progress toward a circular economy.”**

The tool helps identify more sustainable alternatives and reduce environmental impacts related to raw materials.

Transform:

The Dashboard supports the identification of critical feedstocks, enabling targeted measures to reduce their environmental footprint or to trigger alternative solutions in product design. It also serves as a preparatory tool in the ***Transform*** step, with the identified hotspots highlighting key areas for nature-related action both within and beyond the value chain. These actions may include supporting local smallholder farmers in adopting more resilient agricultural practices, implementing water replenishment initiatives to mitigate drought risk or introducing other nature-based approaches to reduce climate-related threats.
In an initial pilot, the Dashboard results were combined with actual purchase volumes of the relevant feedstocks to automatically generate a list of potential Beyond Value Chain Actions offering the greatest potential for impact reduction and risk mitigation. Further refinement of this approach is planned.

Disclose:

The method and results generated by the Dashboard are currently not disclosed externally. Internally, the Dashboard is available to colleagues in various teams and primarily serves as a foundation for more detailed risk assessments. The outcomes of these assessments are integrated into Henkel's internal Climate Risk Blueprint, which functions as a strategic plan for risk mitigation. In the future, a more aggregated version of the results that inform the risk assessment may be disclosed as part of the climate risk reporting under the Corporate Sustainability Reporting Directive.

Engaging functions

Teams engaged in the process

The process involved a variety of teams.

1. A consortium of experts from different teams initially developed the concept, including:
   - Environmental Data Management
   - Sustainability Procurement
   - Research & Open Innovation
2. The Climate and Nature Strategy and Governance team, which is part of the Global Sustainability Department, developed the methodology.
3. The internal Sustainability Analytics team carried out the technical development.
4. During the testing phase, the company improved the first version of the model based on feedback gathered from purchasing experts, sustainability strategy teams, risk assessment teams and product developers.
5. Members of the purchasing, product development and risk assessment teams use the Dashboard.

Areas for improvement to enhance engagement

The most crucial area for upskilling relates to understanding the background data. This includes gaining in-depth knowledge of the methodologies behind the WWF Risk Filter Suite and the calculated environmental footprints. While concepts like carbon footprint and water scarcity are widely understood within the company, additional training is needed, especially on how to quantify environmental pollution and risks related to land system change.

Success stories

Initially, the Dashboard's role in risk assessment was an unintended benefit. Today, risk assessment teams primarily use the Dashboard to identify and mitigate risks in the value chain. At Henkel, the social responsibility teams have also expressed interest in expanding the model's scope by integrating country-specific social risks, such as child labour, human rights violations and informal labour, and mapping them against commodities in the value chain known to face such challenges.

Decision outcomes and added value

The Dashboard's development and use had a clear impact in three particular areas:

1. **Purchasing:** The purchasing teams use the Dashboard to easily compare the environmental impacts of feedstocks based on their sourcing regions. By identifying high-impact feedstocks, Henkel initiates discussions with suppliers to determine exact sourcing locations and explore alternative sourcing options to reduce environmental impacts.

2. **Product development:** Research and development teams use the Dashboard to conduct an initial environmental impact assessment of feedstocks used in product formulations. These insights help guide product development towards lower impacts on nature.

3. **Risk assessment:** The risk assessment teams use the Dashboard to identify feedstocks with limited sourcing regions that also pose high environmental risks. For these cases, they developed risk mitigation plans to help secure the value chain.

The Dashboard has strengthened data-driven assessments of nature-related risks in the upstream value chain. While the tool is still being refined, its results are already supporting the development of mitigation measures. It is also being used as an initial assessment tool for projects exploring alternative feedstocks. The ongoing development of the methodology and the Dashboard now also includes the integration of social issues.

Challenges and bottlenecks

In some cases, limited data availability, either due to a lack of data or unsuitable formats for automation, remains a challenge. *This includes:*

- life cycle impact assessment data for specific, alternative feedstocks, such as special vegetable oils produced on a small scale
- deforestation statistics for certain inorganic metals and minerals
- up-to-date country-level global production data for niche feedstocks

Ongoing updates and research will continue to enhance the Dashboard.

Beyond data limitations, Henkel's approach provides strong estimates for prioritisation during the ***Assess*** step but does not capture the actual sourcing origin of level zero feedstocks. As a result, the Dashboard cannot replace further transparency efforts for materials identified as critical.

Final thoughts

Lessons learned

Henkel's experience demonstrates the limitations of using general lists or sector-wide tools, such as ENCORE, when managing large and complex raw material portfolios. These broad approaches often lack the specificity needed for detailed risk assessments and effective prioritisation. By developing its own Feedstock Evaluation Dashboard, Henkel was able to harness more comprehensive background data to enable precise, automated assessments of upstream value chain risks.

The tool also allows for faster updates and supports more timely, informed decision-making.

Key insight: Building customised, data-driven solutions helps companies achieve more detailed and actionable results in the ***Assess*** step (or the ***Locate*** step in the LEAP framework).

Key benefits for Henkel

- **Stronger risk awareness:** enables clearer identification of priority feedstocks and sourcing regions with significant environmental risks.
- **Better sourcing decisions:** creates a foundation for supplier engagement and more strategic sourcing aligned with nature-positive goals.
- **Support for alternatives:** helps product development teams assess and select lower-impact feedstock options.
- **Framework alignment:** supports alignment with frameworks such as the Taskforce on Nature-related Financial Disclosures, the Science Based Targets Network and other sustainability reporting standards.
- **Improved collaboration:** strengthened coordination between sustainability, procurement, product development and risk management teams.
- **Agile approach:** delivered a flexible tool that can adapt as more accurate data and additional indicators become available.

Key insights for other companies

- **Develop tailored tools:** Custom dashboards can address specific value chain risks more effectively than generic frameworks.
- **Use location-specific data:** Incorporating local environmental factors, such as water stress or deforestation risk, supports more informed sourcing decisions.
- **Commit to continuous improvement:** Update tools regularly as data quality and assessment methodologies evolve.
- **Promote cross-functional alignment:** Engaging multiple teams early on increases the tool's value and ensures it becomes part of decision-making processes.

A-Track

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CISL Cambridge Institute for Sustainability Leadership

ICAEW

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