Kao TNFD Report

It is crucial to understand the touchpoints between business activities and nature, assess risks and opportunities, and estimate future financial impacts to develop strategies and drive initiatives toward a nature-positive approach. Using detergents, one of Kao's key products, as an example, the touchpoints between business activities and nature across the entire supply chain were identified, and risks and opportunities were extracted. Based on double materiality, these were organized in consideration of both the impact on Kao's business and the effects on nature, society, and stakeholders. Furthermore, through scenario analysis, the projected financial impact on Kao in 2050 was estimated, and potential countermeasures were evaluated. These results have been structured in alignment with the Taskforce on Nature-related Financial Disclosures (TNFD) framework.

LEAP analysis for detergents

Kao operates its Consumer Products Business for consumers across four business areas: Hygiene and Living Care, Health and Beauty Care, Life Care, and Cosmetics. Additionally, through its Chemical Business, Kao provides a wide range of products tailored to the specific needs of various industries. Detergents are one of Kao's key products, spanning multiple business domains. This report presents the results of the analysis of detergents. Currently, similar analyses are being conducted for products beyond detergents.

LEAP analysis

<Locate>

We conducted additional research into the apparent and potential risks of the issues extracted from ENCORE (Exploring Natural Capital Opportunities, Risks, and Exposure), and analyzed them using various Geographic Information System (GIS) data. As a result, we identified hotspots, including the countries of origin for palm (kernel) oil (Indonesia and Malaysia), operational sites located in regions experiencing water stress or water pollution, and countries where sales take place.

<Evaluate>

We identified key dependencies and impact factors related to nature across the value chain, including upstream, direct operations, and downstream. These factors were organized along two axes: the degree of impact on the business activities, and the degree of impact on nature and society, as well as the degree of concern among stakeholders. The themes evaluated as being particularly important on both axes are as follows.

- Deforestation (upstream)
- Use of water resources and Discharge of wastewater into the environment (base and downstream)
- Waste discharge (mainly plastic packaging, downstream)

<Assess>

For the four risks that have significant impacts on both business activities and nature, society, and stakeholders, we created two scenarios, a "coexistence of nature and the economy scenario" and a "business as usual scenario," to estimate the projected financial impact in 2050.

<Prepare>

Kao's ESG Strategy, the Kirei Lifestyle Plan (KLP) include many themes strongly related to biodiversity. Following the mitigation hierarchy (avoidance, minimization, and Genba restoration/recovery), Kao is taking on the challenge of reducing and restoring biodiversity loss. It was confirmed that potential financial impact could be avoided or mitigated by promoting ongoing initiatives to address the identified risk factors. Additionally, as an example of new business opportunities, expansion in the agrochemicals sector—such as soil improvement technology—was identified as a potential area for development.

Disclosure in line with the TNFD framework

Governance

Matters concerning key themes related to biodiversity are reported and decided upon by the ESG Managing Committee, which is chaired by the President and CEO and is the highest ESG authority. Within the ESG Managing Committee, approvals are made for various policies related to biodiversity, along with reports on nature-related dependencies, impacts, and risks and opportunities. Additionally, scenario analysis is used to assess the effects on business activities and guide future actions and strategic direction. Four ESG Steering Committees—decarbonization, plastic packaging, human rights and DE&I, and chemical stewardship—are also discussing themes related to biodiversity, with directors, audit & supervisory board members, and executive officers serving as their owners. More specific activities are led by the ESG Division, which advances initiatives in collaboration with the relevant departments. Kao has also established the following policies as guidelines for daily operations and decision-making to implement its biodiversity strategy across the entire supply chain.

- **Basic Policy on Biodiversity:** We have formulated eight activity policies with the aim of realizing a future where we live in harmony with nature, conserve and restore biodiversity, and promote the regeneration of nature.

- **Action Policy on Biodiversity:** A more specific action plan based on the basic policy. Presenting our stance on international disclosure of information and setting goals for biodiversity.
- **Kao Human Rights Policy:** The declaration of our commitment to strive to fulfill our responsibility to respect human rights in all our corporate activities.
- **Policies for Procurement:** Commitment to fulfilling our social responsibility through procurement practices that are sustainable and respect human rights.
- **Kao Sustainable Product Development Policy:** Commitment to maximizing value for our diverse customer base, society, and the future while using technologies based on Essential Research to truly minimize the negative impacts on the global environment, biodiversity, and human rights.

- Basic Policy on Biodiversity
  https://www.kao.com/global/en/sustainability/nature/biodiversity/policy/
- Action Policy on Biodiversity
  https://www.kao.com/global/en/sustainability/nature/biodiversity/action-policy/
- Kao Human Rights Policy
  https://www.kao.com/global/en/sustainability/walking-the-right-path/humanrights/humanrights-policy/
- Policies for Procurement
  https://www.kao.com/global/en/sustainability/we/procurement/procurement-policy/
- Kao Sustainable Product Development Policy
  https://www.kao.com/global/en/sustainability/klp/policy/product-development-policy/

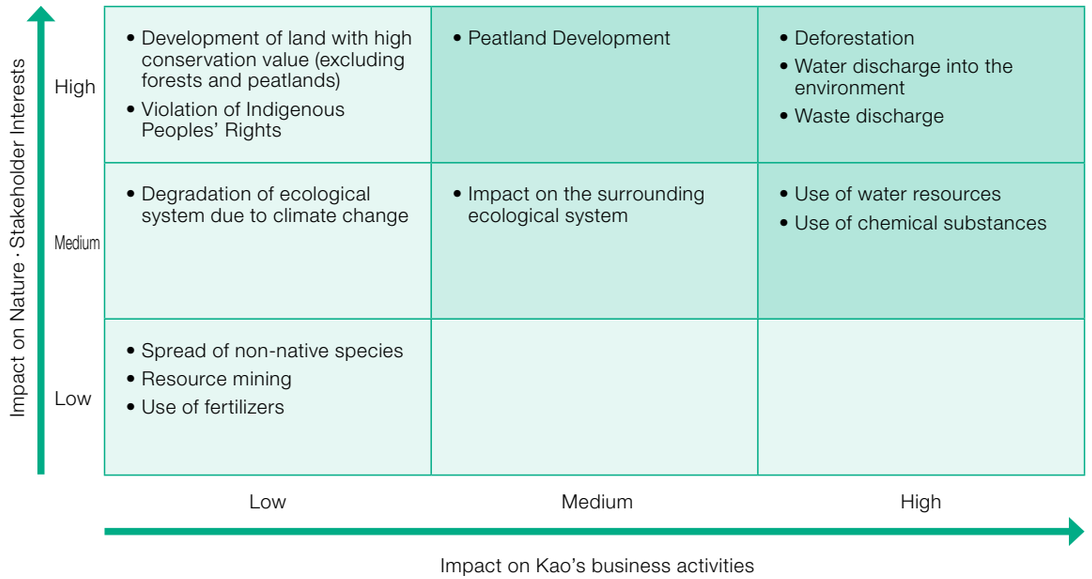
Strategy

As stated in our corporate philosophy, The Kao Way, Kao's purpose is "To Realize a Kirei World in Which All Life Lives in Harmony." This purpose explicitly reflects the concept of coexistence of nature and the economy. Through the promotion of biodiversity-related initiatives within KLP, Kao aims to achieve a nature-positive future. Among the KLP themes, those closely related to biodiversity include Responsibly Sourced Raw Materials, Decarbonization, Zero Waste, Water Conservation, Air & Water Pollution Prevention, Responsible Chemicals Management, and Respecting Human Rights.

The Kao Way (corporate philosophy)
https://www.kao.com/global/en/corporate/purpose/kaoway/

To refine existing initiatives and further strengthen its strategy, Kao conducted an analysis based on TNFD's LEAP approach. This involved identifying nature-related dependencies and impact factors across the value chain, including upstream, direct operations, and downstream activities. The findings were organized along two axes: the impact on business activities and the effects on nature, society, and stakeholders. The analysis utilized ENCORE, GIS data, publicly available frameworks, guidelines, reports, and case studies.

An example of materiality for biodiversity (vertical and horizontal axes are relative)



The particularly high-priority themes are as follows:

Deforestation: As global population growth, economic expansion, and Kao's business growth drive increased demand for palm oil, pulp, and paper, it is essential to secure raw materials without engaging in new developments that will contribute to deforestation.

Discharges into the environment: Depending on the amount and type of substances present in wastewater from households after product use may have adverse effects on the environment and ecological systems.

Use of water resources: Excessive water use at production sites and river basins may impact the surrounding region or watershed ecological systems. Additionally, water scarcity in the product usage phase may affect consumers' daily lives.

Waste discharge (mainly plastic packaging): Improper disposal of used packaging raises concerns about increasing plastic pollution.

For these items, we have developed two scenarios—a “coexistence of nature and the economy scenario” and a “business as usual scenario”—to estimate the projected financial impact of anticipated risks in 2050. The “coexistence of nature and the economy scenario” is the vision of the world and of Kao and is a world where nature and the economy coexist, although major social change is required. It is a world view that depicts a world where products and services that are environmentally friendly as well as high quality are concentrated, and where the supply chain is becoming more centralized. In this world, both the climate and ecosystems have recovered, regulations related to nature conservation have become stricter, and the necessary technological innovations have progressed. In addition, consumers will choose products that are environmentally friendly. In the “business as usual scenario,” the current approach is followed, and the natural environment continues to deteriorate. It is assumed that political and regulatory intervention is limited even if the natural environment deteriorates due to self-interest and that consumers’ environmental awareness does not improve much, and that mass consumption behavior that prioritizes price continues.

In order to estimate the impact of the business, we established a path for the realization of risk and estimated the impact of the business for those for which we were able to collect the parameters necessary for the estimate. It is difficult to collect parameters related to nature with a consistent time axis, but for those for which there is forecast data for 2050, we estimated the impact by aligning the values with those for 2050.

Projected financial impact in 2050 and Kao’s response status

Materiality		Risk factors and financial impact (unit: 100 million yen)			Examples of responses and effects (unit: 100 million yen)		
		Risk factor	Scenario: Coexistence with nature	Scenario: business as usual	Kao’s response status	Scenario: Coexistence with nature	Scenario: business as usual
Risks	Deforestation	Rising costs of palm oil procurement	-475	-416	• Natural resource-saving and high-value formulation • Development of alternative raw materials • Support for small farms (SMILE, increased yield)	Calculations currently not feasible	Calculations currently not feasible
		Rising costs of wood pulp procurement	-13	-11	Natural resource-saving and high-value formulation	Calculations currently not feasible	Calculations currently not feasible
		Surcharge payment due to EUDR violations	-620	-64	Fees for purchasing RSPO certified products	-400*	-400*
					Fees for ensuring traceability (Forest footprint, etc.)	-10*	-10*
					Avoidance of surcharges with the above responses	+620	+64
		Decrease in sales due to boycotts	-57	–	Fees for ensuring traceability (Implementation of forest footprint)	+57	–
	Use of water resources	Decrease in sales during operation suspension	-44	-84	Development of water-saving technologies	Calculations currently not feasible	Calculations currently not feasible
		Increase in water rates	–	-6	• Reduction of water used • Use of water recycling and cascade	–	+2
	Wastewater discharged into the environment	Accrual of compensation	-13	–	Wastewater management with standards stricter than laws and regulations	Calculations currently not feasible	Calculations currently not feasible
	Plastic pollution	Rising costs of plastic container procurement	-2	-54	Reduce innovations, refills	Calculations currently not feasible	Calculations currently not feasible
		Tax on plastics	-115	–	Recycle innovations • Incorporation of recycled plastics • Practical application of horizontal recycling	+104	–
		Decrease in sales due to boycotts	-57	–		+57	–
Opportunities		Regenerative agriculture Global market scale in 2030 105 trillion yen * 700 billion dollars, converted at 150 yen Source: WEF “The Future Of Nature And Business”			• Product R&D with advanced wetting technology > Smart agriculture, etc. • Product R&D with soil physics control technology > Soil conditioners, Bio Stimulants, etc.		

* Costs for response

One of the significant financial impacts, regardless of the scenario, is the expected fluctuation in palm oil and palm kernel oil prices. Meanwhile, in the “coexistence of nature and the economy scenario,” we identified additional risks, including potential penalties for non-compliance with EU Deforestation Regulation (EUDR) (under the assumption that similar regulations will expand globally) and taxation on plastic packaging.

These financial impacts can be mitigated or avoided through appropriate measures taken by Kao. We are prioritizing initiatives based on key themes and regions. For example, Kao is enhancing traceability down to oil palm landholders and using satellite-based forest footprint assessments to achieve deforestation free while ensuring compliance with EUDR. We are also working to reduce cost burdens associated with certifications and raw material price fluctuations by transitioning to alternative raw materials that do not rely on palm and promoting natural resource savings in product design. Furthermore, through Innovation for Reduction and Innovation for Recycling, Kao aims to minimize financial impacts related to plastics. The results of these risk-addressing efforts and activities will lead directly to an improvement in market competitiveness, an expansion of business opportunities, and greater profitability.

Risk and impact management

(1) Identifying dependencies, impacts, risks, and opportunities related to biodiversity in the value chain

Kao has applied the LEAP approach, as recommended by TNFD, using detergents as a case study to identify the touchpoints between its business and nature. Through this process, we have assessed our dependencies and impacts on biodiversity across the value chain as well as the associated risks and opportunities.

(2) Activities aligned with the mitigation hierarchy (avoidance, minimization, and Genba restoration/recovery)

By promoting KLP, Kao is committed to reducing and restoring biodiversity loss.

- Decarbonization https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-21.pdf
- Zero waste https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-22.pdf
- Water conservation https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-23.pdf
- Air & water pollution prevention https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-24.pdf
- Responsible chemicals management https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-33.pdf
- Responsibly sourced raw materials https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/sustainability2025-e-20.pdf

(3) Biodiversity conservation and restoration at our sites and surrounding areas

At each site of the Kao Group, we promote initiatives aimed at biodiversity conservation and restoration that are tailored to the characteristics of each country and region. Additionally, we provide opportunities for our employees to deepen their understanding of biodiversity by organizing related events and participating in external programs.

Biodiversity Actions of Each Location
https://www.kao.com/global/en/sustainability/nature/biodiversity/activities/

(4) Technology development and business creation contributing to a nature-positive future

As part of our efforts to create nature-positive business opportunities, we have conducted research into potential fields based on market potential, the competitive landscape, and synergies with our existing businesses. For example, biodiversity-friendly agriculture, represented by regenerative agriculture, has significant market potential and is one field in which Kao's agro-related technologies and businesses can be applied. Additionally, as a B2C company, we have identified opportunities to promote planet-friendly consumption and the building of circular and resource-efficient models.

Measurement indicators and targets

We conduct activities using the following indicators for the materialities identified through our LEAP analysis:

• Initiatives toward deforestation-free

Kao is engaged in a variety of initiatives with the commite to achieving deforestation free by 2025. According to TNFD's core disclosure indicator, disclosing the volume of high-risk commodities and their certified amounts is recommended. In the past, we have managed the KPI for responsible raw material procurement with the aim of purchasing 100% RSPO-certified oil by 2025. The amount of certified oil we purchased in the fiscal year ended December 31, 2024 (including Book & Claim) was 200,000 tons, and the certification ratio was 39%. With respect to other core disclosure indicators (areas of land we manage and changes in areas of land used for various purposes), we are proceeding with ensuring traceability to farms and have also started analyzing forest footprints using satellites (already underway in the Riau province of Indonesia) and will therefore be able to determine quantitative figures in the future. For information on Kao's initiatives for sustainable palm oil procurement, please refer to the Palm Oil Dashboard.

Palm Oil Dashboard
https://www.kao.com/global/en/sustainability/we/procurement/palm-dashboard/

• Use of water resources and wastewater discharged into the environment

For disclosure indicators relating to wastewater discharge (wastewater contamination), TNFD recommends disclosing the amount of wastewater discharged into the environment and the concentration of major contaminants in the discharged wastewater. As part of our efforts to manage the wastewater discharged into the environment at each site, we have established internal control standards that are stricter than the legally mandated regulatory limits. In 2024, we had no discharge of wastewater discharge that violated a law, regulation, or standard at any of our production sites. With the KLP water conservation initiative, we aim to reduce water usage by 10% (primary sales unit) compared to 2017 at all sites of the Kao Group throughout the entire product lifecycle by 2030. In addition, TNFD recommends that targets be set with regional characteristics reflected. We have finished identifying the production sites (direct operations) in drought-prone areas that are important from the perspective of water resource use. Moreover, we accumulate withdrawal data at each site. We are currently in the process of setting water management targets (related to water intake) that are tailored to the characteristics of each production process, and we plan to announce the targets in 2026.

• Waste discharge (mainly plastic packaging)

TNFD uses the amount of plastic packaging used and the amount of plastic recycled as indicators. Using the roadmap for Zero Waste as a KLP, we aim to reduce the total amount of plastic used for packaging and recycle 50% or more of the amount of plastic used by 2030 to achieve Zero Waste (the state where the amount of plastic in packaging used by Kao is equal to the amount of plastic recycled by Kao) by 2040 and become Waste Negative (the state where the amount of plastic in packaging containers used by Kao is less than the amount of plastic recycled by Kao) by 2050. In 2024, while the amount of plastic in packaging used by Kao was 86 thousand tons, the amount of recycled plastic used was 6.4 thousand tons.