

Biodiversity

Our business is made possible throughout the entire product lifecycle by the various ecological systems that exist on the planet and the abundant natural bounty created from biodiversity.

Kao is diligent in procuring sustainable raw materials and developing new technologies that use resources effectively to aid in the recovery of environments that are already contaminated with garbage and waste, such as marine plastics, in order to minimize the impacts and dependence of our business activities on biodiversity. In addition, we have been conducting conservation activities for biodiversity in and around our business locations for many years. Kao will help to conserve and restore biodiversity and regenerate the natural environment by promoting engagement with consumers, suppliers, and other stakeholders and by providing suitable products and solutions.

Social issues

It is universally recognized that biodiversity and climate change are closely related issues and they must be resolved simultaneously.

In the ranking of global risks for the decade ahead*1 announced by the World Economic Forum, risks related to climate change and biodiversity dominate the top of the list from No. 1 to No. 4.

*1 Source: The Global Risks Report 2024 from the World Economic Forum
https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2024.pdf

The Glasgow Climate Pact agreed to at COP25, which focused on discussions on climate change issues, states that when addressing climate change, it is important to ensure the conservation of all ecological systems and biodiversity. It also states that the interlinked global crises of climate change and biodiversity loss, and the critical role of protecting, conserving, and restoring nature and ecological systems will play an important part in climate change adaptation and mitigation.

The Kunming-Montreal Global Biodiversity Framework, a new global goal by 2030, was decided at the 15th meeting of the Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity in December 2022. In order to achieve the 2050 vision of “a society that coexists in harmony with nature,” the new goals incorporate a number of

numerical targets and set targets that society as a whole, including companies and consumers, should work toward.

As for our mission for 2030, we have confirmed that we shall take urgent action to stop and reverse biodiversity loss.

People are now using the keyword “nature positive” everywhere around the world. It is also worth noting that companies are encouraged to assess and disclose information on biodiversity, and that a section on protecting the rights of indigenous peoples, women, and youth has been added to biodiversity-related decision-making.

As a member of international society, we will take action for the conservation and restoration of biodiversity and the regeneration of the natural environment with a strong sense of crisis, acknowledging that the targets set here must be met.

The demand for companies to disclose information on their businesses and biodiversity is becoming stronger by the day. An item regarding information disclosure has been added to Target 15 of the Kunming-Montreal Global Biodiversity Framework, and in September 2023, a framework for information disclosure that had been under development regarding nature was formally presented by the TNFD*2. This is how changes in nature and biodiversity that affect a company’s performance are to be assessed and disclosed.

*2 TNFD: Task Force on Nature-related Financial Disclosures

Policies

Efforts are now underway around the world to reduce negative impacts on nature and biodiversity, increase behavior that has positive impacts, and reverse biodiversity loss to achieve recovery.

The Kunming-Montreal Global Biodiversity Framework includes “a society living in harmony with nature” as its vision for 2050. This vision is the same as the mission of the Kao Way: “To realize a Kirei world in which all life lives in harmony.” We recognize that “living in harmony” in terms of biodiversity means minimizing our dependence and impact on nature and biodiversity, and by doing that to the utmost of our ability, we can maximize value for people, society, and the Earth. With the aim of conserving and recovering the biodiversity that is now being lost and promoting the regeneration of nature, we have formulated various policies related to biodiversity.

• 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.

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• Action Policy on Biodiversity

Based on our basic policies, we can more concretely express our actions and attitudes toward the international disclosure of information regarding biodiversity as well as 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.

We will live each day in spirit and make thoughtful choices for the benefit of society, thereby ensuring a healthy planet for the future. We aim to realize such a lifestyle (Kirei Lifestyle).



Basic Policy on Biodiversity
<https://www.kao.com/global/en/sustainability/klp/policy/biodiversity-policy/>

Action Policy on Biodiversity
<https://www.kao.com/global/en/sustainability/klp/policy/biodiversity-policy/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

Risks and opportunities

Risks

Kao conducts assessments of the relationship our business has with biodiversity throughout the entire value chain. We deem as highly important the following risks that we have identified using data obtained through the use of ENCORE (Exploring Natural Capital Opportunities, Risks, and Exposure), a risk assessment tool, and Geographic Information System (GIS)*1, a geographic information system tool, in addition to studies of other companies’ benchmarks, various guidelines, reports, and LEAP*2 analyses of TNFD.

*1 Geographic Information System (GIS): Technology that comprehensively manages, processes, and visually displays data with location-related information (spatial data) using geographic location as a guide, enabling advanced analysis and rapid decision-making.

*2 LEAP (Locate, Evaluate, Assess, Prepare) approach

Deforestation

Future population growth and economic development on a global scale may increase demand for detergents and hygiene products and result in even further growth in demand for palm oils, paper, and pulp — the core raw materials we require. Therefore, we need to estimate the necessary costs of activities for the procurement of sustainable raw materials while taking into account in advance biodiversity, human rights, and other issues. In addition, in June 2023, an EU regulation regarding mandatory due diligence to prevent deforestation came into force. This will apply to companies larger than a certain size from December 30, 2024. Possible risks to companies that do not comply with the regulation include surcharges and sales restrictions.

Wastewater discharged into the environment

We are concerned about the negative impact on the environment and ecosystem caused by the amount and types of substances contained in the wastewater discharged from manufacturing facilities or from general households that use our products.

Use of water resources

Water is required to manufacture Kao products. Overutilization of water at production sites may have an impact on the ecological system of the surrounding areas or river basins.

Approximately 90% of the total water used throughout the product lifecycle happens while the product is being used. Although some water-saving products are becoming more popular, if the amount of water used throughout the product lifecycle is not reduced in line with expectations, it will greatly affect consumers’ daily lives if faced with a water shortage.

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Waste discharge (mainly plastic packaging)

Inappropriate disposal of waste will lead to plastic pollution, one of today's serious social issues.

If we are not able to address these risks properly, nature and biodiversity may increasingly deteriorate, and it may become impossible to procure raw materials and resources in a stable manner. Accordingly, our manufacturing and sales activities will be negatively affected, and/or the harm done to our company's reputation will generate an adverse impact on our business.

Opportunities

We established the Basic Policies on Conservation of Biodiversity in 2011 and have been developing new technologies that can contribute to sustainable raw material procurement and the conservation of biodiversity. Then, in April 2022, we renewed these contents as our Basic Policy on Biodiversity and decided to move from biodiversity conservation to restoration and regeneration through realizing the Kirei Lifestyle. We believe that by practicing KLP and conducting activities in line with the Basic Policy on Biodiversity, we can minimize the loss of nature and biodiversity and the business risks associated with it, and furthermore, the products, technologies, and various activities born from these activities will lead to new business opportunities. Although various regulations have a tendency to be tightened in mainly Europe and the United States, such tendencies can create huge business opportunities for companies that can provide technologies, products, and services for responding to those regulations.

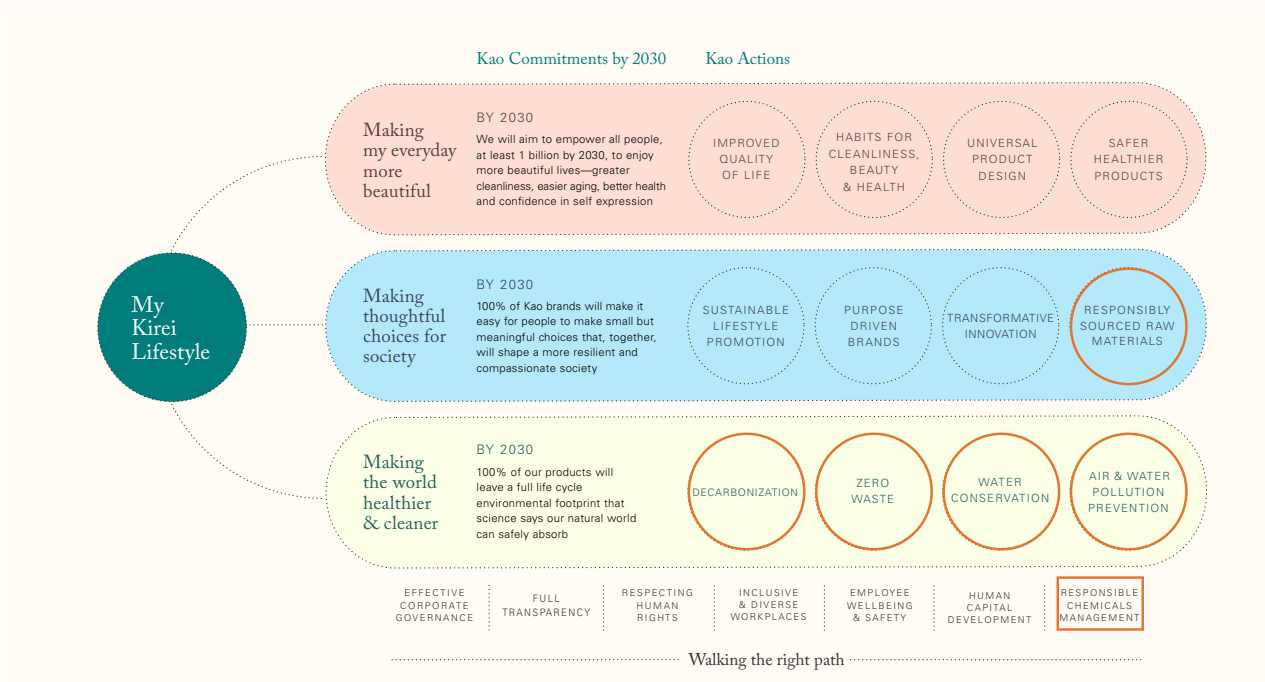
Based on the study of the potential of the nature-business market conducted in 2023, we have discovered a number of fields in which we can explore

creating synergistic relationships in a way that takes advantage of our assets. In light of this, we will continue to search for new business opportunities.

The ESG Promotion Activities with Suppliers, which were revised in June 2021, set targets for confirming zero deforestation in places of origin for palm oil, paper, and pulp, and we are increasing the likelihood of business continuity by taking specific initiatives with suppliers to achieve sustainable raw material procurement in the future.

In addition, Bio IOS, a surfactant we developed, is an entirely new surfactant that utilizes solid fats and oils whose usage has been limited. It avoids the issue of competition with food, a concern that aligns with the issue of global population growth. *Attack ZERO*, which contains Bio IOS, is a water-saving liquid laundry detergent that reduces the amount of water used for rinsing, which we believe will help conserve precious water resources not only in places at risk of drought, but also in regions with relatively abundant water.

Kirei Lifestyle Plan and Biodiversity



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Strategy

The world has now set the following three time-bound goals, with 2020 as the baseline, to fully restore nature in 2050.

- In 2020, start activities to achieve the goal of plus-minus zero.
- By 2030, ensure that positive impacts outweigh negative ones.
- By 2050, restore nature to a sustainable state.

We linked the activities of the Kirei Lifestyle Plan (KLP) to actions to reduce and restore the biodiversity losses that are described in Global Biodiversity Outlook 5. Within the KLP, we have determined that the following activities have an especially strong link to biodiversity:

- Decarbonization
- Zero waste
- Water conservation
- Air & water pollution prevention
- Responsible chemicals management
- Responsibly sourced raw materials

Kao is challenging itself to reduce biodiversity losses and regenerate nature by following the mitigation hierarchy (Avoid, Reduce, Restore, Compensate/Offset) and through the promotion of the KLP.

Kao thinks that in order to achieve a nature-positive economy, it will be effective not only to be committed to activities in our supply chain but also to expand our activities to other industrial fields outside of the supply chain. Approximately three quarters of Kao's business portfolio for the fiscal year ending December 31, 2023, were B-to-C businesses, and the remaining quarter comprised B-to-B businesses. We can say that we have a business that is able to help conserve biodiversity and regenerate nature in the industry in addition to activities

taken together with general consumers through daily necessities.

Ethical consumption, which is the consumption of products and services that take people, the global environment, and local communities into consideration, is becoming popular amongst consumers mainly in Western markets and especially among Millennials and Generation Z. ESG *Monozukuri* at Kao is a materialization of our employees' wish to use only minimum quantities of biodiversity-conscious raw materials that are absolutely necessary for maximum benefit. This mindset has been featured in the Kao Sustainable Product Development Policy released in August 2023. We think that bringing the biodiversity perspective to Kao products through the series of processes from raw material procurement to product design, utilization, and post-disposal will strengthen Kao's presence in the growing ethical consumption market. Our aim is to establish a world in which consumers will be able to live a biodiversity-conscious life through the selection and proper use of products, without needing to be especially conscious about it.

Examples of contributions to the industry are expected to come from the agricultural field. According to the newest planetary boundaries*1, nitrogen and phosphorus are shown to have already exceeded the planet's limits. This is said to be significantly affected by excess fertilizer use in the past within the agricultural sector. Likewise, excess pesticide spraying may have not only contaminated the natural environment including soil and freshwater systems, but it may have also negatively impacted agricultural workers and organisms that live in the vicinity. Through Kao applying our knowledge of interface science and developing technologies to reduce the quantity of pesticides used

while maintaining effectiveness, we contributed to the agricultural field.

Furthermore, palm substitution technologies, such as those described below, contribute to waste reduction and sustainable production for our in-house manufacturing, and can be expected to have an even greater positive impact if they are widely adopted around the world.

There is a tendency for Europe and the United States to tighten their various regulations, and if a company is incapable of responding to this tendency, the prospects of such a company will suffer. However, it is a huge business opportunity for companies that can provide products and services that are useful for biodiversity. By incorporating perspectives on biodiversity into our B2C business for housewares and contributing as a B2B business operator in industries other than housewares, we will aim to fulfill Kao's Purpose "to realize a Kirei world in which all life lives in harmony."

Going forward, we will continue our biodiversity conservation activities at and around our bases, together with the local communities.

*1 Katherine Richardson et al., Science Advances, 13 Sep 2023 Vol. 9, Issue 37.

Kao conducts assessments of the relationship our business has with biodiversity throughout the entire value chain. The purpose of these assessments is to understand the dependence and impact we have on biodiversity and identify risks and opportunities in our value chain as well as to reevaluate and improve our strategies in order to reflect our increased understanding in our current activities.

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Using Kao’s flagship products, detergents, as a model, we have been carrying out analyses following the LEAP approach by TNFD. In 2023, we identified risks based on this scenario and estimated their financial impact.

LEAP analysis for detergents

<Locate>

● Priority regions

With respect to the 13 issues identified by ENCORE, we examined the overt and potential risks and conducted an analysis using GIS data. As a result of our analysis, we have determined some countries of origin of palm (kernel) oil, sites that are experiencing water stress and water pollution, and countries where sales are conducted to be hot spots. For example, priority regions in terms of the procurement of palm oil, which is a major raw material for Kao, include Indonesia and Malaysia.

<Evaluate>

We extracted dependent and influential factors related to nature upstream, at the direct operation site, and downstream of the value chain. We then organized these factors using the axis of stakeholder interest and the axis of impact within Kao’s business activities to identify Kao’s materiality.

- Subjects for which both stakeholder interest and influence on Kao’s business activities are high
- Deforestation (upstream)
- Wastewater discharged into the environment (direct and downstream)
- Waste discharge (mainly plastic containers, downstream)
- Subjects for which either stakeholder interest or influence on Kao’s business activities is high

- Peatlands development (upstream)
- Use of water resources (direct and downstream)
- Use of chemicals (cleaning ingredient discharge from general households, downstream)

<Assess>

We estimated the financial impact of the following four issues, which should have high priority among the subjects mentioned above:

- Deforestation (upstream)
- Wastewater discharged into the environment (direct and downstream)
- Use of water resources (direct and downstream)
- Waste discharge (mainly plastic packaging, downstream)

We created a “coexistence with nature scenario” and a “business as usual scenario” for each risk and estimated an expected financial impact.

For risks that have a significant financial impact, changes in the price of palm oil and palm kernel oil regardless of the scenario is one example. Surcharges that will be required if we fail to respond sufficiently to EUDR regulations (assuming that regulations equivalent to EUDR regulations spread globally) and taxes on plastic containers arose as risks only in the “coexistence with nature scenario.”

<Prepare>

We are examining how to respond to these assumed risks. Through examination, we have successfully confirmed that the activities we are conducting or those we will conduct from now on are effective in avoiding or reducing financial impact.

Measures against the risk of deforestation, for example, include the introduction of forest footprints,

the realization of 100% RSPO-certified palm oil (kernel oil), and the completion of traceability confirmation for farms.

We researched potential markets for nature-positive business, and we found some fields that have a high affinity with Kao’s current business or technology development in progress. We expect that we will be able to obtain profits from business growth and aid the recovery of nature in the future by taking advantage of business opportunities in these fields.

Social impact

Forests stabilize global temperatures and climate, and play the role of breakwater systems to prevent disasters because they retain water. Ecosystems are responsible for various resources and bounties essential for our everyday lives, such as food and medicine, along with the normal circulation of water and air, and it is estimated to have an economic value worth thousands of trillions of yen.

In addition to promoting respect for human rights in local communities, sustainable raw-material procurement maintains forest environments and helps them recover.

From raw-material procurement to after the product is used, we will develop and sell products that take biodiversity into consideration and provide technologies to the industry to solve social problems. We will then create a society that can contribute to the recovery of biodiversity and the restoration of nature together with consumers.

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Contributions to the SDGs



Business impact

Activities for biodiversity conservation and regeneration should be promoted from an economic and business perspective as well, and not only implemented for social contribution. As stated in the SDGs wedding cake model, there is a need for the biosphere (biodiversity) foundation to be stable so it can support society and the economy.

Kao believes it is effective to expand activities not only in its supply chain but toward other industrial fields that lie outside of the supply chain to realize a nature-positive economy. In the supply chain, we hope to achieve Kao's purpose of "to realize a Kirei world in which all life lives in harmony" through incorporating biodiversity perspectives into the B-to-C business of household goods, and also as a B-to-B business contributing to industries outside of household goods.

Considerable costs are involved in procuring sustainable raw materials, but we consider these activities an indispensable investment to make our business sustainable and a part of our social responsibility.

As the trend toward ethical consumption is gaining traction in the European and American markets, as well as among Millennials and Generation Z, demand is growing for products using sustainable raw materials that take biodiversity into account. Our presence in the

rapidly expanding ethical consumption market is enhanced through the incorporation of a biodiversity approach in the products we offer from raw material procurement to product design and development, usage and disposal.

In proceeding with B-to-B businesses, there have been various regulatory developments being made in the leading Americas and EMEA markets. Although companies that are not able to respond to this will be forced to step down from the market, this is a major business opportunity for those that can provide products and services for biodiversity.

We expect the results of these activities not only to boost our reputation substantially, but also to be of financial and non-financial benefit.

Governance

Framework

Activities relating to biodiversity are managed by each ESG governance organization because such activities are connected to multiple KLP actions. The ESG Managing Committee, which is chaired by the President and is the highest decision-making body, not only reports the effects of the Kunming-Montreal Global Biodiversity Framework, the movements of information disclosure typified by TNFD, and Kao's activities but also holds discussions about the future direction of Kao's biodiversity activities with a special focus on palm (kernel) oil (forests) and water, which are materialities for our company.

The four ESG Steering Committees, which are headed by board-level executives, cover the biodiversity-related areas of decarbonization, plastic packaging,

chemical stewardship, and human rights and can provide suggestions to each division and group company. Activities on the supply chain relating to human rights are particularly implemented in accordance with the Kao Human Rights Policy, which was developed based on international norms. Such activities are also discussed in the Human Rights and DE&I Steering Committee. These committees create mechanisms and promote activities to understand risks, prevent and reduce negative effects, and provide appropriate aid if a problem arises. The introduction and operation of a grievance mechanism for oil palm smallholders in Indonesia is one example of such activities. Our activities are reported to the ESG Managing Committee once a year. The SAICM Promotion Meeting, a subordinate body of the Chemicals Management Committee, has been promoting discussions on the relationship between chemicals and biodiversity at three of its four meetings a year.

For environmental conservation, which is one of our Responsible Care (RC) activities, we have established policies, targets, and plans related to biodiversity and manage them while monitoring the progress of measures under the RC promotion framework. Regarding the progress of these activities, information is shared on an as-needed basis at the RC Promotion Committee Meeting, the Japan RC Meeting, and the Global RC Meeting, which are held once a year with the participation of the directors-in-charge.

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Our ESG Vision and Strategy > Governance

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Responsible Care Activities > Governance


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Education and promotion

We created opportunities to learn about the latest global trends regarding biodiversity and how they relate to our business activities, primarily through training sessions for *Genba* leaders in the Supply Chain Management (SCM) (with participants from within and outside Japan) and follow-up training sessions for new employees. For employees outside Japan, we are conducting information sharing and awareness-raising activities through such venues as the annual Global RC Meeting.

Collaboration with stakeholders

In June 2022 we reorganized our procurement policies and guidelines. In other words, we have reorganized and reviewed the contents of our “Partnership Requirements for Suppliers,” “ESG Promotion Activities with Suppliers,” and “High-Risk Supply Chain Management and Sourcing” under the Policies for Procurement. We collaborate with suppliers to contribute to ensuring traceability throughout the entire supply chain and solving social issues such as resource and environmental conservation, safety and human rights issues. In addition to complying with laws and regulations, we require our suppliers to consider social responsibility and the environment, and we prioritize procurement from suppliers who comply. Consideration for social responsibility and the environment includes issues that are deeply related to biodiversity, such as forest and water conservation.




Policies for Procurement
<https://www.kao.com/global/en/sustainability/we/procurement/procurement-policy/>

We consider biodiversity conservation and support zero deforestation when procuring raw materials including palm oil, palm kernel oil, paper, and pulp. We continue to procure palm oil and palm kernel oil, all of which can be traced back to their production area, and to only purchase pulp for which its wood material can be traced back to its production area.

We seek to create a sustainable supply chain for palm oil, and to improve and sustain the productivity of oil palm smallholders in Indonesia. We promote the Smallholder Inclusion for better Livelihood & Empowerment program (SMILE), which seeks to obtain certification for sustainable palm oil.

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Responsibly Sourced Raw Materials



Progress of the SMILE project and commencement of the grievance mechanism
<https://www.kao.com/global/en/newsroom/news/release/2022/20220413-001/>
<https://www.kao.com/global/en/newsroom/news/release/2022/20220831-001/>

We have been participating in the Japan Business Initiative for Biodiversity (JBIB) since its establishment in 2008. JBIB is a gathering of companies that take biodiversity efforts seriously and conduct concrete activities. These companies are divided according to subject into working groups and discuss how they can contribute to the conservation and recovery of biodiversity. After adopting the global goal of the Kunming-Montreal Global Biodiversity Framework, Japan has also crafted its own national strategy for biodiversity. At the same time, since publishing TNFD’s information disclosure framework, each company has been intensifying its activities relating to biodiversity.

These companies can become aware of international trends through JBIB activities and take advantage of this information in their own activities.

In addition, we have been members of the TNFD forum since April 2022 and have been gathering information and giving feedback on the beta version disclosed by TNFD. At the same time, we have also joined the TNFD Consulting Group (TNFD Japan Council) and have been monitoring the development status of TNFD and exchanging information with other companies.

The Kao Group has business sites around the world. Basic policies on biodiversity are formulated by the Head Office in Japan, but the status of and approaches to biodiversity vary in different countries and regions. We believe that creating opportunities for the active exchange of opinions with various relevant stakeholders in each country and region including governmental agencies, NGOs, NPOs and experts can facilitate the effective implementation of biodiversity conservation activities, and make recommendations to the responsible personnel in each country and area.


We undertake green space conservation activities at each business site in consideration of biodiversity, and arrange events in which employees can participate. We also encourage employees to volunteer for outdoor biodiversity conservation programs. Through their active participation in these activities, Kao employees have gained a deep understanding of biodiversity.

Biodiversity

Risk management

Among raw materials procured by Kao, palm oil and paper/pulp are identified as “high-risk supply chains” as supply chains with significant issues from the perspectives of business (purchase amount, etc.), ESG (biodiversity, etc.) and area (protected areas, human rights issues, etc.), and we are working on sustainable procurement based on “High-Risk” Supply Chain Management and Sourcing. We aim for zero deforestation at the source and support the NDPE^{*1}, and ask suppliers and supplier group companies to comply with the NDPE policy and HCSA^{*2}. Through *Genba* dialogue, we will identify risks, determine the nature of the issues, and work with suppliers and NGOs to resolve them. These Kao activities for sustainable palm oil procurement are disclosed on the Palm Oil Dashboard. This activity is related to “responsibly sourced raw materials” in the KLP. Procurement takes the lead in this activity and reports to the Directors through the Management Board.

*1 NDPE:
No Deforestation, No Peat and No Exploitation
*2 HCSA:
High Carbon Stock Approach



Palm Oil Dashboard

<https://www.kao.com/global/en/sustainability/we/procurement/palm-dashboard/>

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Responsibly Sourced Raw Materials

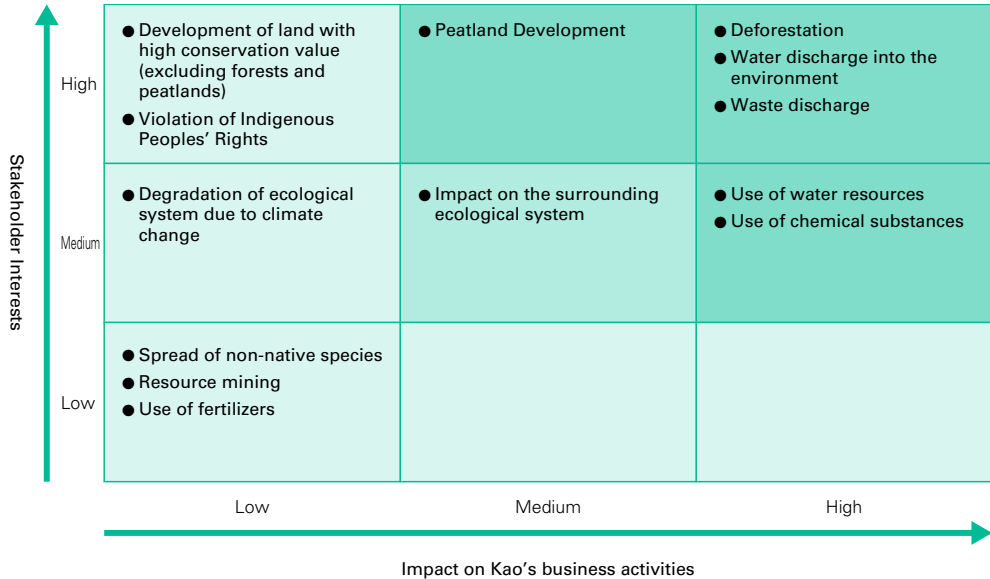
In the analysis based on the TNFD’s LEAP process in 2022 as well, palm oil and palm kernel oil were identified as important materialities (materialities related to deforestation and peatland development). Other identified significant risks include generation of waste (especially plastic packaging) and water resources (intake and wastewater).

We have established two types of scenarios for these items (a “coexistence with nature scenario” in which nature and economy coexist in harmony despite having greater social changes, and the “business as usual scenario,” in which the deterioration of nature

continues unchecked), and calculated the financial impact of the anticipated risks.

Although addressing these risks will be costly, we believe that the fruits of these efforts will directly result in a competitive edge within the market, which will create more business opportunities and may even bring about more profits. The ESG Managing Committee decides on these activities in connection with the governance structure regarding biodiversity, and the activities are incorporated into those of each division.

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



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Metrics and targets

Mid- to long-term targets and 2023 results

The Kao Way, our corporate philosophy, states that our purpose is to create a Kirei life for all, providing care and enrichment for the lives of all people and the planet. From the perspective of biodiversity, we believe that caring for all people and the planet means maximizing the value to people, society and the planet by minimizing reliance and impacts on nature without exceeding the capacity of natural production and regeneration. This is the Maximum with Minimum mindset described within the Basic Policy on Biodiversity released in 2022 and the Kao Sustainable Product Development Policy released in August 2023. In 2023, in order to establish a more concrete Basic Policy on Biodiversity, we planned to update the Action Policies on Conservation of Biodiversity set in 2011 as the Action Policy on Biodiversity.

Furthermore, to take TNFD's 2022 LEAP analysis one step further, we proceeded with a potential market study to estimate the financial impact of risks and the realization of nature-positive business. We will disclose the results of the study in this report as well in order to actively respond to the current flow of information disclosure in accordance with the actions of TNFD.

Development of a society that can continue to enjoy the benefits of biodiversity

With regard to palm oil, paper, and pulp, which are our main raw materials, we set targets to confirm that there is no deforestation in the places of origin and ensure traceability. We are carrying out specific measures to achieve targets such as mapping deforestation risks and investigating plants judged as posing high risks. In

2020, we completed the confirmation of traceability back to large plantations, and our object by 2025 is to complete the confirmation of traceability to oil palm smallholders.

We believe that expanding sustainable production of raw materials and establishing procurement systems that do not involve deforestation or human rights violations will help to form a sustainable society that permanently maintains the benefits of biodiversity for all stakeholders.

Minimizing the impact of products on biodiversity

We seek to minimize the impacts on biodiversity in all processes of our business activities including the impact on the environment from the procurement and use of raw materials, product development, and disposal.

Palm (kernel) oil is used in many of Kao's products, and the demand is expected to increase due to global population growth. As such, there are concerns about deforestation and raw material shortages. Kao therefore continues to develop technologies to use natural, inedible sources of fats and oils as an alternative to palm (kernel) oil. Kao has already developed Bio IOS, a surfactant that can be used as a surfactant from oil and fat materials, which have been difficult to utilize in the past, and is being applied in laundry detergents.

In addition, we are working to minimize the quantitative and qualitative impacts of components discharged into the environment along with water after product use, and to solve the problems of plastic packaging that have already been discarded, as well as ocean plastic pollution.

1. Promote the procurement of sustainable raw materials

To expand the sustainable production of raw materials, establish procurement systems that do not involve deforestation or human rights violations, and help to form a sustainable society that permanently maintains the benefits of biodiversity for all stakeholders, we have set targets to confirm that there is no deforestation in places of origin and ensure traceability with regard to palm oil, paper, and pulp, which are our main raw materials. We are carrying out specific measures to reach these targets, such as mapping deforestation risks and investigating plants judged as posing high risks. In 2020, we completed the confirmation of traceability back to large plantations, and our goal by 2025 is to confirm traceability to oil palm smallholders.

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Responsibly Sourced Raw Materials

2. Promote business and social contribution activities that consider local biodiversity

Based on the results of the biodiversity surveys of all Kao Group production sites conducted in 2018 and 2019, each site individually plans feasible biodiversity conservation activities in line with actual conditions.

3. Reduce use of copy paper

As an activity that all employees can participate in, we have started reducing the use of copy paper at the Kao Group in Japan. From 2021 onwards, our objectives are to promote this activity globally and print fewer pages per person than the previous year.

Our ESG Vision and Strategy	
Realization of the Kao Way	
Making My Everyday More Beautiful	
Making Thoughtful Choices for Society	
Making the World Healthier & Cleaner	
Walking the Right Path	
Our Foundations	
Appendix	

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4. Green Purchasing

We are promoting green purchasing, which places priority on purchasing products with the least possible environmental impact. We have been taking action in this area based on the Act on Promoting Green Purchasing. We have set our 2023 target green purchasing rate in Japan at 100%.

2023 results

A new attempt

Revising the Action Policy on Biodiversity

October 2023 saw the release of the updated Action Policies on Conservation of Biodiversity as the Action Policy on Biodiversity. In accordance with the Basic Policy on Biodiversity, the update reflected detailed actions regarding reversing trends in biodiversity back toward conservation, restoration, and regeneration, addressing both biodiversity and climate change, as well as our stance toward international information disclosure on biodiversity and target configuration. It also added a section entitled “We will aim for symbiosis between people, nature and chemicals,” expressing its commitment to addressing the impact of chemical substances on biodiversity.

Estimation of the financial impact of biodiversity at Kao

In the 2022 analysis, factors related to palm oil and palm kernel oil (deforestation and peatland development) were identified as important materiality for Kao’s biodiversity. Other identified significant risks include the generation of waste (especially plastic containers) and water resources (intake and wastewater).

We have established two types of scenarios for these items (a “coexistence with nature scenario” in

which nature, the climate and economy coexist in harmony, and the “business as usual scenario,” in which nature, the climate and economy collapse together), and calculated the financial impact of the anticipated risks.

Other factors thought to have a significant financial impact were price fluctuations of palm oil and palm kernel oil, the cost of switching to certified products, and EUDR factors (such as surcharges and sales restrictions in the event of failure to comply), along with financial impacts linked to water and plastics.

To eliminate or minimize these financial risks, we will purchase certified oil that targets zero deforestation and switch to palm-alternative raw materials and natural resource-saving designs while addressing issues regarding plastics.

Potential market research for the Nature Positive Initiative

We are investigating business opportunities related to Nature Positive along with the expected risks.

We can see a multitude of fields that are candidates for nature positive businesses in our world. Of these, we have organized them from the perspective of market potential, competitive environments, and synergies with our business. As a result, we have discovered agriculture, forestry, fisheries, and water-saving technologies that are biodiversity-friendly, and businesses that regenerate/restore degraded land, epidemic control, and biomass utilization.

Minimizing the impact of products on biodiversity

In May 2023, Kao set targets for Zero Waste by 2040, and for Negative Waste by 2050, in its long-term road

map regarding plastic packaging. We have been promoting Innovation in Reduction and Innovation in Recycling toward achieving these targets. This means we are striving to resolve plastic issues by reducing plastics used and promoting recycled materials. In FY2023, as a part of our Innovation in Recycling project, we collected used plastic packaging containers and launched refill packs that partly used recycled material from these containers.

As a B-to-B initiative, we developed a technology in 2023 that utilizes our expertise in enzyme production for detergents with microorganisms to produce the important industrial material gallic acid from glucose. We have started sales of this as “Bio Gallic Acid.” Gallic acid is used as a raw material for items such as semiconductors in electronic devices and anti-rust agents for boilers. It is a plant-derived polyphenol extracted from insect galls (gallnuts) of plants in the family *Anacardiaceae*, and has a limited production area because it comes from certain trees.

● Deforestation

According to TNFD’s core disclosure indicator, disclosure of 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 December 2023 (including Book & Claim) was 173,000 tons, and the certification ratio was 40%.

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 planning to introduce

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forest footprints through the use of satellites, and therefore, we will be able to determine quantitative figures in the future.



Palm Oil Dashboard

<https://www.kao.com/global/en/sustainability/we/procurement/palm-dashboard/>

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Responsibly Sourced Raw Materials > Metrics and targets

- Use of water resources and wastewater discharged into the environment
- TNFD recommends as disclosure indicators relating to wastewater discharge (contamination of wastewater) the disclosure of the amount of wastewater discharged to the environment and the concentration of major contaminants in the discharged wastewater. To manage wastewater discharged into the environment at each site, we not only comply with laws and regulations but also set control standards that are stricter than the regulation values. In 2023, we had no discharge of wastewater that violated any laws, regulations, or standards at any of our production sites. Moreover, we accumulate withdrawal data at each site. In terms of water conservation, we aim to reduce the KLP by 45% (primary sales unit) compared to 2005 at all sites of the Kao Group and by 10% (primary sales unit) compared to 2017 throughout the entire product lifecycle by 2030.
- We are also trying to minimize the influence (quantity and quality) of the components discharged into the environment with wastewater after the use of products and working to solve the issues of plastic packaging containers and marine plastics.

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Water Conservation > Metrics and targets

- Waste discharge (mainly plastic containers)
- TNFD uses the amount of plastic packaging used and the amount of plastic recycled as indicators. With the roadmap for Zero Waste as a KLP, we aim to reduce the total amount of plastic used for packaging containers 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 containers 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 2023, while the amount of plastic in packaging used by Kao was 91 thousand tons, the amount of recycled plastic used was 2.6 thousand tons.

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Zero Waste > Metrics and targets

- Continuing activities**
- 1. Promote procurement of sustainable raw materials**
- Traceability checks are underway for the procurement of palm oil, palm kernel oil, paper and pulp.
- In addition, we are continuing activities to increase the procurement ratio of RSPO-certified oil and to support oil palm smallholders in obtaining RSPO certification.

- 2. Promote business and social contribution activities that consider local biodiversity**
- We have been promoting the conservation of green areas at each manufacturing site within and outside Japan in our efforts toward biodiversity. For example, at the Wakayama Plant, which is one of our main sites, we have been endeavoring to conserve the black pine seawall forest (part of the Suiken Embankment national historic site) for the past 80 years. Through field surveys and observation of organisms that inhabit and use this green area, we have incorporated green area management methods that best suit the area’s characteristics. This activity was certified in 2023 as a “Green Hall of Fame” event under the Social and Environmental Green Evaluation System (SEGES), and also certified as a nature symbiosis site by the Ministry of the Environment. The Kashima, Kawasaki, and Odawara Plants have received ABINC*1 certification, which is a certification scheme related to corporate green spaces.
- Our business sites outside Japan also conduct biodiversity conservation activities according to the characteristics of the area.
- Pilipinas Kao, Inc. is undertaking a mangrove regeneration project to restore the mangroves in areas such as the coast around the plant. Kao Specialties Americas LLC, where various species including rare species can be found on the property, works to conserve the mixed forest of conifers and hardwoods that spread across their property, along with activities to increase the number of wildflowers growing in southeastern areas of the Americas.
- The Kao Penang Group (KPG) provides various programs, including its original program, “Foster Garden.” General environmental themes are offered, ranging from biodiversity to hand hygiene.

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Kao Corporation S.A. (KCSA) continues to advance its initiative to annually select the organism of the year and introduce its ecology in detail.

*1 Association for Business Innovation in Harmony with Nature and Community
An organization whose purpose is to create mechanisms that enable people to coexist with living organisms, scientifically and technically verify those mechanisms, and promote their commercialization

3. Reduce use of copy paper

The number of pages printed per person in Japan was 95% of the previous year (excluding data for October and November), and achieving the target (fewer pages than in the previous year).

4. Green Purchasing

The green purchasing ratio in Japan was 94.3%.

Reviews of 2023 results

Since 2021, Kao has been checking touchpoints for biodiversity in our supply chain and identifying materialities. We extracted potential key themes through ENCORE in 2021 and identified materialities in 2022 by conducting case studies in accordance with the TNFD beta version of the LEAP process. In 2023, we were able to estimate the financial impact per scenario and research the potential market for nature-positive businesses. By applying an information disclosure framework that has gradually been taking shape, we have been working to review Kao's biodiversity activities once more.

As a result, we could reconfirm the importance of various activities we have conducted up to date, along with reconfirming that there have been no grave oversights. Additionally, although this was based on

certain assumptions, we believe that being able to quantify the financial impact of risks provides valuable insights for strategic proposals and their incorporation into activities as we go forward.

We believe that these activities will enable us to address the increasing demand for information disclosure. Kao has been able to distinguish between indicators that are materialities and those that are not for the 14 core disclosure indicators seen in TNFD v1.0, which was released in September 2023.

For themes we believe are important, Kao has been configuring targets and making progress toward them based on the ESG Strategy ever since the 2019 release of the KLP and before the TNFD framework became concrete. Some themes are managed and activities promoted with indicators that differ from the core disclosure indicators established by the TNFD, and large quantities of data have already been accumulated. For this reason, when disclosing information, we will prioritize the assessment axes and values we have already adopted and gradually refer to the TNFD's core disclosure indicators for data to be acquired in the future.

Meanwhile, although we are able to see what direction the activities are heading in, there are still areas left in which we have not thoroughly developed our strategies, incorporated them into specific activities, and set various targets. Discovery and cultivation of promising nature-positive businesses are also yet to come.

The world around biodiversity is undergoing rapid changes. However, what we want to continue focusing on is business and social activities that take local biodiversity into consideration. These activities continue to be promoted at each of our global companies due to the powerful enthusiasm of participants, which include

employees in charge at each business site and local citizens in the vicinity. Since biodiversity activities are meaningful only if they are sustained, we believe it is necessary to build a system and foster a culture so that activities will not cease even if the person or organization in charge changes. Regarding the reduction of photocopying paper, although the number of employees returning to the office has increased, the amount of paper used has been steadily falling each year by users making an effort to cut their use of paper.

Regarding the promotion of green purchasing, although the target of 100% was not reached, the purchase ratio increased from the previous year. We will continue efforts to raise the environmental awareness of purchasers.

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Main initiatives

Estimate of financial impact of anticipated risks

Using Kao’s main product, detergent, as an example, the report analyzes ENCORE as well as the latest benchmarks, various guidelines, and reports from various companies. This was superimposed with geographical information and organized according to the axis of stakeholder interest and the axis of impact within Kao’s business activities to identify Kao’s materiality. The results are shown below.

In 2023, we estimated the financial impact in 2050 with scenario analysis on the categories shown below for which both stakeholder interest and influence on our business activities were significant. Estimating future financial impact under certain assumptions and taking necessary measures in advance will lead to an increase in company resilience.

Selected specific materialities:

- Deforestation (regarding palm oil, palm kernel oil, pulp)
- Use of water resources
- Wastewater discharged into the environment
- Waste discharge (mainly plastic containers).

For these items, we have estimated the financial impact of these anticipated risks through a “coexistence with nature scenario” and a “business as usual scenario.”



Business Risk and Opportunity on Biodiversity— TNFD case study with Location analysis—
<https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/biodiversity-tnfd.pdf>

The “coexistence with nature” scenario is an ideal world that companies around the world including Kao should seek to achieve and involves great social change. It is consolidated into quality environment-oriented products and services and shapes our view of a world in which the centralization of supply chains is accelerated. In this world, we assume that both the climate and ecosystems will be restored, laws and regulations relating to nature conservation will be tightened, and necessary technological innovation will advance. In addition, consumers will choose environmentally friendly products. In the “business as usual” scenario, on the other hand, we continue on as we are now. In this world, we assume that intervention via policies and regulations will be limited since each country will put its own interests ahead of nature conservation. Moreover, consumer environmental awareness will change very little, and consumers will continue their mass-consumption lifestyles focused on price.

To estimate business impacts, we created a risk exposure pathway and estimated business impacts for items whose necessary parameters could be collected. Although collecting parameters that are in time series is difficult for nature-related subjects, parameters for which 2050 forecasts exist were aligned with values for 2050.

As a risk with a large financial impact, we assumed changes in the price of palm oil and palm kernel oil regardless of the scenario. Surcharges that must be paid if we fail to respond sufficiently to EUDR regulations (assuming that regulations equivalent to EUDR regulations spread globally) and taxes on plastic containers arose as risks only in the “coexistence with nature scenario.” However, these financial impacts can be reduced or avoided by Kao responding appropriately.

For example, by using substitute raw materials instead of palm oil and promoting resource-saving designs, we can expect a reduction in costs related to rising raw materials costs and the cost of certifying raw materials. In addition to the 100% purchasing of certified oil, we will advance the verification of traceability to farms. Furthermore, as the technology for evaluating forest footprint using satellites evolves to confirm whether deforestation is actually occurring, we will promote activities in priority regions, and address EUDR regulations through these various activities. Similarly, we believe that we can minimize financial impacts related to plastics through our Innovation in Reduction and Innovation in Recycling. 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.

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Potential market research for nature
positiveness


Along with preparing for potential risks, we are also investigating nature-positive business opportunities. We studied candidate market fields from the perspective of market potential, competitive environment, and synergies with our businesses.

As a result, we have discovered agriculture, forestry, fisheries, and water-saving technologies that are biodiversity-friendly, and businesses that regenerate/restore degraded land, epidemic control, and biomass utilization. For example, biodiversity-friendly agriculture, represented by regenerative agriculture, has significant market potential, and this is one field that Kao's agro-related technologies and businesses can be applied.

In a report, "Future Of Nature And Business," by the World Economic Forum shows that initiatives for food and land use can have the greatest impact at the lowest cost, to establish a nature-positive future.

Furthermore, the importance of cooperation between sectors, which is key to change, has been discussed, and regarding sectors that handle consumer goods and chemicals such as Kao, examples of collaborations in fields of "productive and regenerative agriculture," "healthy and productive ocean," "planet-compatible consumption," "transparent and sustainable supply chains," and "circular and resource-efficient models for materials" were given. We will formulate strategies toward materializing nature-positive businesses with an eye on collaborations with other sectors.

Including initiatives already underway, we will prioritize our efforts to reduce and eliminate these financial impacts and create opportunities in potential markets by referencing concepts such as AR3T (Avoid, Reduce, Restore, Regenerate, and Transform) within the mitigation hierarchy and SBTN, with consideration toward currently existing and new timeline axes for Kao, customers, markets, and society.



World Economic Forum "The Future Of Nature And Business"
https://www3.weforum.org/docs/WEF_The_Future_Of_Nature_And_Business_2020.pdf

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Examples of responses to financial impact and estimates of effectiveness

Materiality		Risk factors and financial impact (unit: billion yen)			Examples of responses and effects (unit: billion 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	<div>• Natural resource-saving and high-value formulation</div> <div>• Development of alternative raw materials</div> <div>• Support for small farms (SMILE, increased yield)</div>	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	<div>• Reduction of water used</div> <div>• Use of water recycling and cascade</div>	–	+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	+104	–
		Decrease in sales due to boycotts	-57	–	<div>• Incorporation of recycled plastics</div> <div>• Practical application of horizontal recycling</div>	+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”			<div>• Product R&D with advanced wetting technology > Smart agriculture, etc.</div> <div>• Product R&D with soil physics control technology > Soil conditioners, Bio Stimulants, etc.</div>		

* Costs for response

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Minimizing the impact of business on biodiversity

We aim to minimize the impact that all of our business activity processes have on biodiversity, including effects on the environment caused by procurement and the use of raw materials, product development, and effects that continue after the disposal of products.

Palm (kernel) oil is used in many of Kao’s products, and demand is expected to increase due to global population growth. As such, there are concerns about deforestation and raw material shortages. Kao therefore continues to develop technologies to use natural, inedible sources of fats and oils as an alternative to palm (kernel) oil. Kao has already developed Bio IOS, a surfactant that can be used in the same way as a surfactant made from oil and fat materials, something which has been difficult to utilize in the past and is now being used in laundry detergents.

In addition, we are working to minimize the quantitative and qualitative impacts of components discharged into the environment along with water after the product is used and to solve the problems caused by plastic packaging that has already been discarded, as well as ocean plastic pollution. These measures are critical for Kao’s ESG Strategy, and they are listed in detail in this report.

Reduce the use of raw materials and switch to raw materials that can be sustainably procured and have lower environmental impact

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Responsibly Sourced Raw Materials

Reducing CO₂ emissions associated with business activities

P111

Decarbonization

Reduce the use of and impact on water resources

P145

Water Conservation

Promote responsible chemicals management

Through appropriate chemical management throughout the entire lifecycle of chemicals and using science-based risk assessments, we continue to create products to minimize the burden that chemicals place on the environment and ecological system.

Implement horizontal plastic recycling technology

According to the long-term roadmap relating to plastic packaging containers, Kao aims to achieve Zero Waste by 2040 and become Waste Negative by 2050. We are promoting Innovation in Reduction and Innovation in Recycling toward achieving these goals. As part of Innovation in Recycling, 2023 saw the launch of refill packs which partially utilized recycled materials made of used plastic packaging containers that we have collected.

Developing technology to minimize materials used and maximize utilization while cherishing the benefits of biodiversity

We initiated a demonstration study to produce non-edible bio-based nonionic surfactant from non-edible biomass using cassava residue, which is a biomass

waste product. Utilizing Kao’s enzymes and enzyme production technologies, cassava residue can now be efficiently broken down into sugars, the raw material for some chemicals. By conducting the saccharification process from enzyme production to saccharification at the same plant site, we also aim to reduce CO₂ emissions from transportation.

In 2023, we developed a technology that produces gallic acid, an important industrial material, from glucose. We have already begun selling this as “Bio Gallic Acid.” Gallic acid is used as a raw material for items such as semiconductors in electronic devices and anti-rust agents for boilers. It is a plant-derived polyphenol extracted from insect galls (gallnuts) found in plants in the family *Anacardiaceae* and has a limited production area since it is only found in certain trees.


Kao has also conducted research on RNA from organisms in the environment (environmental RNA) to establish a highly accurate ecological survey method for biodiversity assessment. As it uses RNA as an indicator, which degrades more easily than DNA, it is less likely to falsely detect organisms that are not present and is also less susceptible to the effects of domestic wastewater. In addition to a comprehensive method for analyzing fish RNA in river water, we have now developed methods for assessing arthropods (aquatic insects) and algae, which are indicators of water quality. This research has the potential to visualize the true state of ecosystems with high precision without the need to capture living organisms.

Through the use of these technologies, we aim to contribute to the sustainability of society and the environment by minimizing the loss of biodiversity due to human activities.

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Transformative Innovation

Web

Launch of Bio Aromatic Compound ‘Gallic Acid’ through Fermentation Production
Stable Supply of Industrial Essential Chemical Materials
<https://www.kao.com/global/en/newsroom/news/release/2024/20240111-001/>

Fish RNA, Abundant in River Water, Found to Be Useful for Ecological Research
<https://www.kao.com/jp/newsroom/news/release/2021/20210817-001/>

Strengthening information disclosure

TNFDv1.0 was publicly disclosed in September 2023. The identification of Kao material issues, LEAP analyses, and financial impacts in each scenario, which we have been working on in the past, are disclosed in this report. It does not necessarily mean that all of the TNFD-recommended items are listed in this report. We will improve its quantity and quality sequentially while undertaking the task of the conservation and restoration of biodiversity.

Initiatives related to palm oil

We are working to address key social and environmental issues related to palm oil (kernel oil), one of Kao’s most important natural resources.

In accordance with the TNFD LEAP process from 2022, we studied the entire Kao value chain from a biodiversity perspective and identified palm oil and palm kernel oil, the main raw materials of Kao products, as key materialities.

Kao is committed to its goal of zero deforestation toward the sustainable procurement of palm oil and palm kernel oil, and is aiming for the procurement of 100% RSPO-certified oil and complete traceability up until farms.

Furthermore, as we believe that improving the standard of living for smallholders is essential for the fundamental resolution of deforestation, we have been progressing with the SMILE project, which supports oil palm smallholders in Indonesia. Along with technical guidance to improve productivity and education for RSPO certification, the quantity of pesticides used is also reduced through Kao’s unique technologies in our attempt to maintain farmer health and minimize environmental impact. At the end of 2023, the number of farms supported was 3,083, the number of certified farms was 839, and the total area of new farms was 8,395 hectares. The quantity of certified credits purchased from farms supported by the SMILE program was 9,996 tons.

Excessive fertilizer application to the soil can also cause soil contamination, water pollution, and changes in the soil’s ecological system. Reducing the quantity of pesticides used will improve profit for farmers and reduce environmental impact. To this end, we provide free of charge the *Adjuvant* series, a series of chemicals that allows pesticides to spread evenly across plant surfaces (628 farms at the end of 2023), and provide guidance on how to use them.


In addition, one of the targets of The Kunming-Montreal Global Biodiversity Framework states that the views of local people should be taken into account in biodiversity-related decision-making. We expect that the Grievance Mechanism for oil palm smallholders in Indonesia, launched in September 2022, will also contribute. The number of farms subject to the

Grievance Mechanism was 212 at the end of December 2023, and the number of inquiries was 213 (from September 2022 to the end of December 2023).

These Kao activities toward sustainable palm oil procurement are disclosed in the Palm Oil Dashboard.

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Responsibly Sourced Raw Materials

Web

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

Progress of the SMILE project and commencement of the grievance mechanism
<https://www.kao.com/global/en/newsroom/news/release/2022/20220413-001/>
<https://www.kao.com/global/en/newsroom/news/release/2022/20220831-001/>

Business activities that consider the planet’s ecological system

We have been active in our own green spaces and conservation activities for local ecological systems that take biodiversity into account. Particularly in Japan, there are multiple certification systems for corporate green spaces, and we have received certification for the following plants and offices.

Wakayama Plant: SEGES^{*1} Excellent Stage 1 certification (2005), SEGES Superlative Stage certification (2017), SEGES “Green Hall of Fame” certification (2023), “Nature Symbiosis Site” certification (2023)

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Kao Wakayama Plant recognized as a “Green Hall of Fame” under the green certification system SEGES (Social and Environmental Green Evaluation System)
<https://www.kao.com/jp/newsroom/news/release/2023/20231207-001/>

Kao Wakayama Plant site certified as a Nature Symbiosis Site by the Ministry of the Environment in recognition of its biodiversity conservation initiatives
<https://www.kao.com/jp/newsroom/news/release/2023/20231027-001/>

Kashima Plant: ABINC^{*2} certification (acquired in 2015 and renewed in 2018 and 2021)
 Kawasaki Plant: ABINC certification (acquired in 2018 and renewed in 2021)
 Odawara Office: ABINC certification (acquired in 2020 and renewed in 2023)



The 10th Association for Business Innovation in Harmony with Nature and Community (ABINC)[®] certified facilities
<https://www3.abinc.or.jp/facility/10th-creature-facilites/>

The 13th Association for Business Innovation in Harmony with Nature and Community (ABINC)[®] certified facilities
https://www3.abinc.or.jp/facility/13th_creature_facilites/

*1 Social and Environmental Green Evaluation System
 A system that evaluates high-quality green spaces created by companies as well as their day-to-day activities and efforts and certifies well-maintained green spaces that contribute to society and the environment

*2 Association for Business Innovation in Harmony with Nature and Community
 An organization whose purpose is to create mechanisms that enable people to coexist with living organisms, scientifically and technically verify those mechanisms, and promote their commercialization

Implementing measures based on global biodiversity evaluation criteria

Biodiversity indicators were introduced in 2017 to determine quantitatively the extent to which local

biodiversity-conscious activities are being carried out at each location where we conduct business around the world, and in 2018 and 2019 we completed biodiversity evaluations at all production sites including those sites that we recently acquired. With these evaluations, we can clarify issues from a biodiversity perspective at each site and improve their scores by promoting activities, which will make checking their progress easier.

The primary objective of introducing these criteria is to help conserve the biodiversity of the local ecological systems whose benefits individual sites enjoy, by determining current conditions and actively undertaking biodiversity conservation at individual sites or in nearby green spaces with a clear understanding of targets by employees.

We believe that our thinking is communicated to many people involved, including local residents, in an expanding circle of activity, thereby helping to mainstream the concept of biodiversity.

Wakayama Plant
The black pine seawall forest has been certified as a nature symbiosis site
 There is a black pine seawall forest (maximum width approximately 100 m, length approximately 1 km) traversing the Wakayama Plant. This seawall forest belongs to the Suiken Embankment, a natural historic site. The Wakayama Plant has conducting black pine conservation efforts for more than 80 years, ever since its establishment in 1942. Kao’s formulation of the Basic Policies on Conservation of Biodiversity in 2011 was used as an opportunity to start reviewing conservation content from a biodiversity perspective. With this, areas were divided into one that prioritizes the conservation of black pine and another where management is left to natural change as much as possible. Furthermore,

methods of green area management were incorporated into each area according to their characteristics.

In particular, the Wakayama Plant has strived to allow more sunlight within the forest at the black pine conservation area, by cutting down as many trees that prevented the growth of black pines as possible. Weeding and removing fallen leaves have also been done periodically in an effort to improve the health of the black pines. In the area where trees have been cut down, volunteer employees planted resistant black pine saplings which have been steadily growing. Furthermore, in the past, chemicals have been sprayed four times a year to combat pine tree withering, but this has been gradually reduced to mitigate negative impacts on the ecological system, and currently, spraying is conducted only once a year or directly injected into the trunks of black pines in specific areas. As a result of these activities, the black pine forest has maintained its beautiful scenery, and employees use the walking trails created within the forest for relaxation.

In the insect ecological survey conducted in August 2023, the Wakayama Plant was able to confirm living *Scarites sulcatus* (designated as an Endangered Species Category I in Wakayama), and is experiencing the results of the conservation efforts made to this point.

In November 2023, the plant held an event to explore the possibilities of managing woodland within corporate grounds. This is being done through its first attempt at using thinned wood taken from ubame oak trees growing in the plant grounds as raw material for *Kishu binchotan* charcoal to be used locally. Employees and their families could also experience creating charcoal in kilns and making windchimes, as this event also helped to promote interaction with the local community and relaxation for employees. There were

Our ESG Vision and Strategy	
Realization of the Kao Way	
Making My Everyday More Beautiful	Our Priorities -Kirei Lifestyle Plan-
Making Thoughtful Choices for Society	
Making the World Healthier & Cleaner	
Walking the Right Path	
Our Foundations	
Appendix	

Biodiversity GRI 304-1, 304-3

some difficulties and issues such as preparing at least one ton of thinned wood within one week of being cut, but the event was received well by related parties and participants, and we plan to keep running it in the future.

In addition to conservation activities for the black pine forest, many employees also participate in actions outside of the company, such as Local Cleanup and Beautification Activities around the plant, cleanups at locations including Wakayama Castle, the Kinokawa River, and the Suikengawa River, “Enterprise Forest” activities, and conservation work along the Kumano Kodo pilgrimage routes.

These have been highly recognized overall. In fact, they were and certified as “Green Hall of Fame” activities by the Social and Environmental Green Evaluation System (SEGES) in April 2023, and the black



Trail in the black pine forest

Signage



Scarites sulcatus

Experiencing charcoal-making from thinned ubame oak trees

pine forest was officially certified as a nature symbiosis site by the national government in October 2023. The Wakayama Plant will continue its efforts to maintain a biodiversity-conscious site to support the achievement of the “30by30” international biodiversity goal.

PKI Mangrove planting and conservation activities

In 2010, Pilipinas Kao, Inc. (PKI) embarked on its Mangrove Regeneration Project along the shoreline of PKI’s plant and its vicinity by collaborating with the Department of Environment and Natural Resources and a local NGO to plant mangroves for World Wetlands Day. Since then, PKI has been planting mangroves every year, but had concerns with the low survival rate of mangroves, which did not take root easily. The major cause for this was the algae and other seaweed, along with plastics floating in the sea that would get caught on young trees and inhibit their growth and development.

To solve this problem, activities such as regular cleanups along the coast, reviewing the method of growing saplings (growing young trees in individual seed beds and transplanting them to the target location once their roots have grown sufficiently), and changing the timing of planting (avoid planting during the summer to the rainy season, when the waves are strong and algae proliferate) have been taken. There has been a significant improvement in mangrove forests in areas where PKI has been conducting mangrove maintenance and management activities, and we believe this is the result of these conservation activities.

In 2023, of the approximately 1,000 young trees carefully cultivated in seedbeds, 495 were transplanted to the coast. For transplanting on the coastline, which is especially affected by waves, test-planting the trees in

steel drums that were opened on the top and bottom was conducted as an attempt to prevent the soil from eroding due to wave action. There were 20 drums installed along the coastline, each with three saplings planted in them. Six months later, the status of the saplings was checked. Investigation showed that of the 60 trees, 45 successfully survived, showing a certain degree of effectiveness. PKI will continue its research on mangrove growth and planting activities into the future.



The mangrove forest in 2019



The mangrove forest in 2023

Biodiversity

GRI 304-1, 304-3, 304-4



Planting test using steel drums

KSA

Plans to expand the area for planting native wild plants

Kao Specialties Americas LLC (KSA) has a mixed forest of conifer and hardwood spread across its property. When a biodiversity evaluation was conducted in 2019, a variety of organisms, including endangered species, were found on the premises. Since then, KSA has been promoting biodiversity conservation activities in earnest, and employees are also actively participating. In 2021, in addition to ordinary biodiversity conservation initiatives, KSA set a target of planting 1,000 m² (10,764 ft²) with native wildflowers on the site by 2025 and launched action to achieve this target.

In November 2022, KSA employees sowed wildflower seeds from the southeastern United States obtained from a local seed farm. From August to September 2023, these flowers bloomed brightly to the delight of employees. Furthermore, to improve the property’s scenery and to provide a food source for pollinators, KSA employees planted the native Carolina Phlox in April 2023.

Additionally, in June 2023, KSA employees installed three flower beds (raised beds) on the property with

native plants and other native varieties purchased from a local landscaper, as a part of the Gazebo Project. The Gazebo Project was launched with the objective of creating a quiet space in nature for employees to enjoy lunch and break time. Raised beds are a ground-planting technique in which soil is piled up into small mounds, and was introduced for three reasons: (1) to retain moisture and inhibit weeds; (2) to prepare soil from scratch, as the KSA soil has a clayey texture; and (3) to protect the plants from mowing.



Native wildflowers that bloomed from seeds



The raised flower beds

KPG

Employee participation activities with the original “Foster Garden” program

Ever since 2009, the Kao Penang Group (KPG) has continued with its original “Foster Garden” program (excluding the years 2020 and 2021, when the program was cancelled due to the COVID-19 pandemic). The goal of this program is to educate students and local citizens about the importance of taking responsibility for creating an environment that is more considerate of the ecological system and fulfilling responsibilities to society.

The program began around KPG’s property and at schools in the same district as KPG. Before tree-planting started, hand hygiene programs (to explain hygiene to students) were conducted. The planted trees feature only plant species that are indigenous to Malaysia. Approximately 15 KPG employees participate in this program every year, and tree-planting activities have taken place at 11 schools. These actions have been recognized, receiving an RC Award from CICM/FMM (Chemical Industries Council of Malaysia).

Since 2022, the target of Foster Garden has shifted from schools to the community (Kampung Java village, which is adjacent to KPG). In February 2023, KPG held a community dialogue and ESG information-sharing program for citizens of the adjacent Kampung Java village to explain KPG’s company profile, environmental/safety activities, and measures for waste, hazardous materials and pollution. The event included Q&A session, and was well received.

In March 2023, a total of 200 KPG employees and their families (also participating were those from the ministries of the environment, forestry, and fishing, the Royal Malaysian Navy, the Fire and Rescue Department of Malaysia, and NGO officials) participated in Penang

Biodiversity GRI 304-1, 304-3

National Park’s jungle-trekking environmental biodiversity program. A nature tourist guide accompanied the participants on this trek to explain about the trees and wildflowers found in the forest reserve and the benefits (ecological system services) these plants provide. After around 90 minutes of trekking, some participants and their families joined activities at the sea turtle sanctuary at Kerachut Beach. Because it is said that 29% of Malaysia’s sea turtles are threatened with extinction, ambong-ambong trees were planted to provide important nesting sites for sea turtles to lay their eggs. To support the sanctuary, KPG donated four photovoltaic power panels.



Scene from the program held at Kampung Java village



Planting ambong-ambong saplings at Kerachut Beach

KCSA Elimination of invasive alien species from the corporate site

Kao Corporation S.A. (KCSA) recognizes the importance of biodiversity for the planet’s future development, so formulated Biodiversity Policies in 2018, which include a commitment to maintain and promote biodiversity. The company has since been promoting conservation activities based on this. Ongoing tree-planting in green areas on the sites, site tours for employees, and monitoring nest boxes installed on the premises are all part of KCSA’s conservation activities.

Furthermore, in 2021, KCSA launched an initiative to annually select the organism of the year from those that inhabit its sites and introduce their ecology in detail. The logic for this is that due to the immense amount of biodiversity-related information, KCSA believes that it would be effective to focus communications on explaining one species per year. The organism for 2021 was the sparrow, which is a species that is rapidly disappearing throughout the world, even though the bird is commonly seen at all three of KCSA’s sites.

The organism for 2022 to 2023 was “Cortaderia de la pampa” (a type of perennial of the Poaceae family), which is an invasive alien species in Spain. Various

media were used to provide information related to this plant to employees, including email, posters, and screensavers, to communicate facts such as the impact it has on eliminating native plant species. Because this species has especially taken root in wide areas of the Barbera Plant, a special contractor was brought in to remove it over three days. To prevent the area from being overrun by a new species once more, periodic monitoring is planned to continue into the future.



“Cortaderia de la pampa” growing within the grounds



Contractors removing the plant

Biodiversity

Employees’ opinions

Naoki Iizuka

Wakayama Plant/District SC
Environment



We promote conservation activities at our business sites within and outside Japan as one of our efforts to conserve and regenerate biodiversity.

The black pine seawall forest at the Wakayama Plant was created in the *Edo* period as a forest to protect salt fields and farmland from winds and tides. The forest mainly consists of black pine, which is scarcely seen in the southern part of Wakayama City nowadays.

Unlike broad-leaved trees, black pines do not produce tree sap or nuts that attract many insects and animals. Although there are few species found in black pine forests alone, it is home to species that are fussy eaters and dependent on the pines, such as the *Yezoterpnosia vacua*, and also the *Scarites sulcatus*,

which prefer the sandy ground of the seaside. Having locations like this existing as parts of other vegetative groups in the city creates overall biodiversity. I believe we can reap the benefits of ecological system services in a sustainable way by conserving this type of ecological system, which holds unique value, with as little environmental impact as possible.

Furthermore, saplings in green areas within the plant grounds, which include the black pine forest, have grown to become large trees over the years, so significant thinning has become necessary to ensure the safety of facilities and lines of flow. Since allowing the thinned wood from this to decompose naturally would be a waste, we launched the “Woodland Green Management” initiative. We hope this gives birth to various positive effects from our involvement with the green areas, such as contributing to the plant’s safe operation, promoting interactions with the local communities, and providing relaxation for employees.

In 2023 this was certified as a SEGES “Green Hall of Fame” activity, and as a nature symbiosis site promoted by the Ministry of the Environment.