

Executive Summary

KaO accenture

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Business Risk and Opportunity on Biodiversity **- TNFD case study with Location analysis -**

Preface

As it is clear from the planetary boundaries, the loss of biodiversity is an urgent societal challenge that, along with the climate crisis, will determine the future of humankind. At the international level, discussions are ongoing at the Conferences of the Parties (COP) to the Convention on Biological Diversity. As the loss of biodiversity progresses, the expectations for companies and the roles they should play are getting more significant.

The financial disclosure framework for biodiversity by “Taskforce for Nature-related Financial Disclosures” explains that its aim is to *support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes*. But from the perspective of corporate actions, this means nothing less than increasing resilience to biodiversity risks, discovering new business opportunities, and promoting innovation oriented toward corporate growth.

However, even companies that have already grappled with the climate crisis may be confused about biodiversity. While the climate crisis progresses globally and has the common “yardstick” of greenhouses gas emissions, biodiversity loss is a local challenge. Another reason is that the targets are wide-ranging, which means there simply is no common “yardstick.” From the perspective of human rights, Climate Justice is emphasized in the climate crisis. In the same way, the burdening of Global South on a worldwide scale needs to be viewed as a local issue in biodiversity, and the rights of people living in those regions should be respected and dealt with appropriately. Furthermore, when considering measures to address climate crisis and biodiversity, some specific actions may affect each other and result in trade-offs. This characteristic of biodiversity is thought to complicate substantial actions toward problem-solving.

This report presents multiple unique visions of the future, based on scenario analysis that shows different patterns of changes in biodiversity and climate crisis. It should serve as valuable guide in tackling biodiversity. We hope that backcasting approach from future scenarios will help to understand the gap between the business as usual and ideal future and be useful for the discussion in corporate strategy.

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This year is a crucial year for curbing the rapid degradation of biodiversity and aiming for a nature-positive world by 2030. The “Taskforce for Nature-related Financial Disclosures” (TNFD), a framework for financial disclosures that assesses the value of nature and seeks to show its impact on companies’ operations, will officially start in September 2023. The time where we can no longer say that we know nothing about biodiversity, is approaching.

To know about the relationship between nature and business gives many hints for business management. Understanding the relationship between nature and business, including the previously unknown business dependence on nature and business vulnerability, and changes in the competitive environment brought about by changes in the macro environment, including nature, clarifies the direction of future management. If many companies recognize the importance of nature and take measures, this will lead to healthy development of society and the economy as a whole.

However, many companies are unfamiliar with nature and biodiversity. Our desire to break out of this situation and accelerate biodiversity actions was in agreement with Kao Corporation, and this time, we have conducted a joint survey.

In this joint survey, we followed the risk and opportunity analysis framework advocated by TNFD to reveal the relationship between Kao business and nature, as well as the associated risks and opportunities. As the word suggests, the components of biodiversity are “diverse,” but by grasping the interactions between nature and business and depicting changes in the business environment, we have brought business risks down to a manageable level.

We hope that the approach to achieving compatibility between biodiversity and business proposed in this report will be useful to all stakeholders in society, including companies, and will lead you to take on new challenges. We are looking forward to working with you to take on challenges and discuss them.

Kao and Accenture Joint Survey Introduction

Objectives Of the report

- By conducting case study on biodiversity-related business risks/opportunity assessment and sharing the information obtained in that process, this report was designed and issued in order to promote biodiversity protection, restoration and regeneration efforts in the industrial world
- To that end, this report focuses on presumed difficult aspects when companies assess these risks and opportunities, and provides case study and suggestions for conducting assessments, based on Kao business

Overview of Analysis

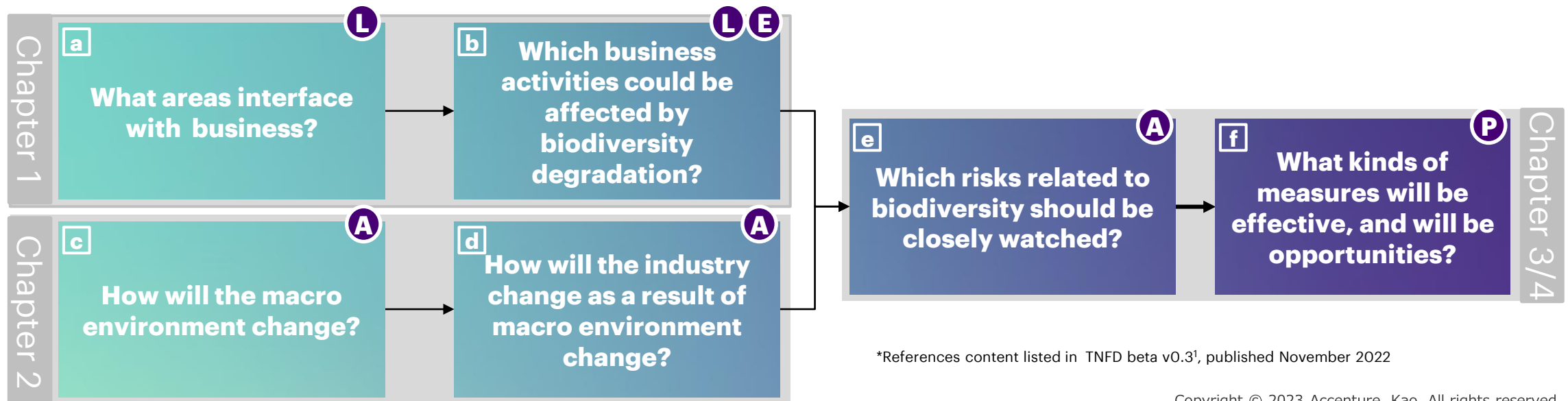
- Following the risk and opportunity study framework “LEAP” (**beta v0.3 guidance**¹ issued November 2022), proposed by the Taskforce on Nature-related Financial Disclosure, Accenture and Kao conducted business risk/opportunity case study regarding Kao businesses. The data used in the assessment was based on primary information held by Kao, and primary information that was difficult to specify was supplemented with public and analogical information
- Please refer to Kao Corporation Website* and “Kao Sustainability Report 2022”² for information on the company’s biodiversity-related measures and strategies



Key issues of case study

Kao and Acenture have conducted a case study on Kao business based on “LEAP*” framework (risk and opportunity analysis framework) proposed by TNFD

- In Chapter 1, we examined the relationship between the biodiversity crisis and business. We found out where upstream and downstream supply chain activities are located in the world (a. Locate), and assessed whether nature is tending toward degradation in those areas (b. Locate/Evaluate)
- In Chapter 2, we examined future changes that may affect biodiversity related risks. We set scenarios and analyzed how the macro environment including societal and economical aspect could change (c), and how this would bring changes to Kao business(d)
- In Chapter 3, we examined how to prepare for biodiversity related risks. We assessed the types of risks that may arise based on the business environment of each scenario (e), and which measures should be reinforced to reduce these risks (f) (c-f. Assess/Prepare)
- In Chapter 4, we examined business areas which could be business opportunities. We assessed the business areas which may contribute to both nature and the company.(f) (Prepare)



*References content listed in TNFD beta v0.3¹, published November 2022

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Biodiversity degradation greatly undermines business continuity. Kao and Accenture have evaluated the state of nature affecting Kao's business, and analyzed future business risks and opportunities that may emerge. The analysis was conducted following the LEAP (Locate/Evaluate/Assess/Prepare) framework proposed by TNFD, and we are disclosing the survey results with the purpose of accelerating biodiversity initiatives in the industrial world.

In the "Locate" step, we divided a map of the entire world into units of 0.5° longitude by 0.5° latitude and mapped the places where Kao's business activities are practiced in each component of the supply chain (raw material production, manufacturing, consumption). We then analyzed the overview of biodiversity in three different perspectives (biodiversity importance, ecosystem integrity, and water stress), and found areas that should be analyzed in detail later.

The result was, of the all areas in which Kao may be involved, 28% were higher in priority where the company's risks should be further reviewed.

In the "Evaluate" step, we analyzed areas detected in the Locate step, and found where nature are degrading. Then we estimated the potential impact on business in the case of nature degradation on those areas, based on the level of dependency (based on procurement volume, manufacturing volume, etc.), and identified the processes/areas where biodiversity degradation could lead to large business impact.

The results revealed that, forest coverage (which provides protections* against natural disaster) and effect on terrestrial ecosystem in raw material production, water and soil pollution in manufacturing and consumption, and GHG emission in all processes of supply chain are deviating largely from the safe zones** established in prior research and could lead to larger business impacts.

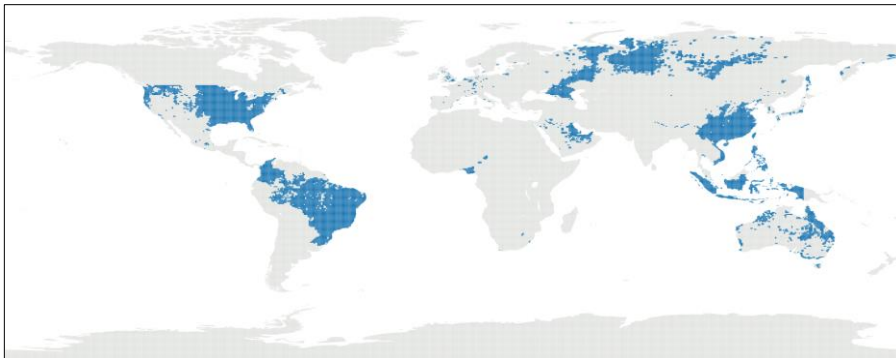


Figure 1: Potential areas of Kao business involvement worldwide

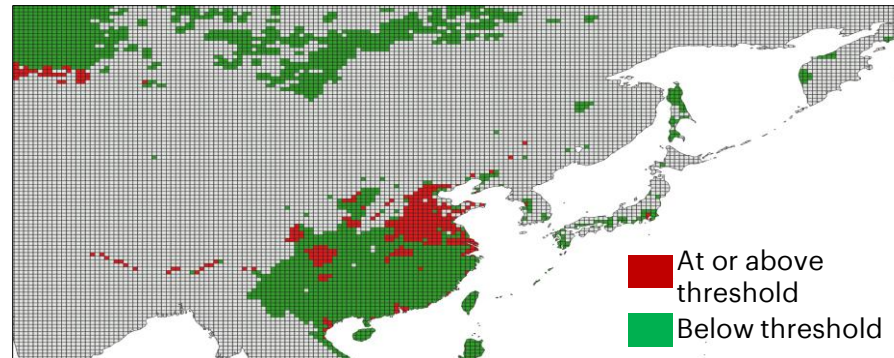
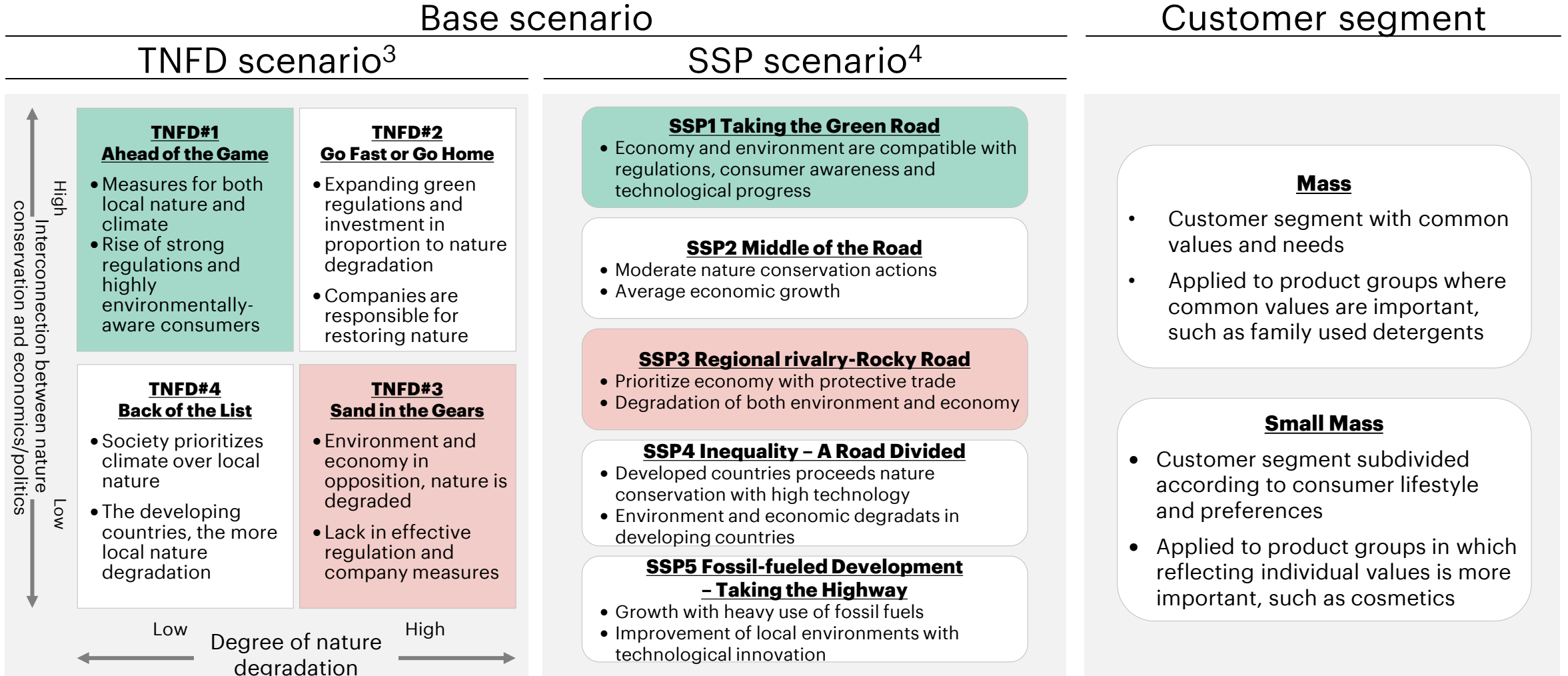


Figure 2: Assessment results for degree of nature degradation

*An ecosystem service provided by nature. Forests provide the function of protection against wind and rain
**"Planetary Boundary" indicators that establish permissible levels for the sustainability of the planet

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In “Assess” step, we prepared different types of future macro environmental scenarios and specified important changes which affect relationship between biodiversity and Kao’s business. 3 scenarios which differ from each other in terms of the state of macro environment and consumer segment(Mass and Small Mass) were prepared.



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The results found that the relationship between business and nature would differ by scenario, and that differences may lead to diversified products (origins of dependence and impact) and different degree of concentration or dispersion in the supply chain.

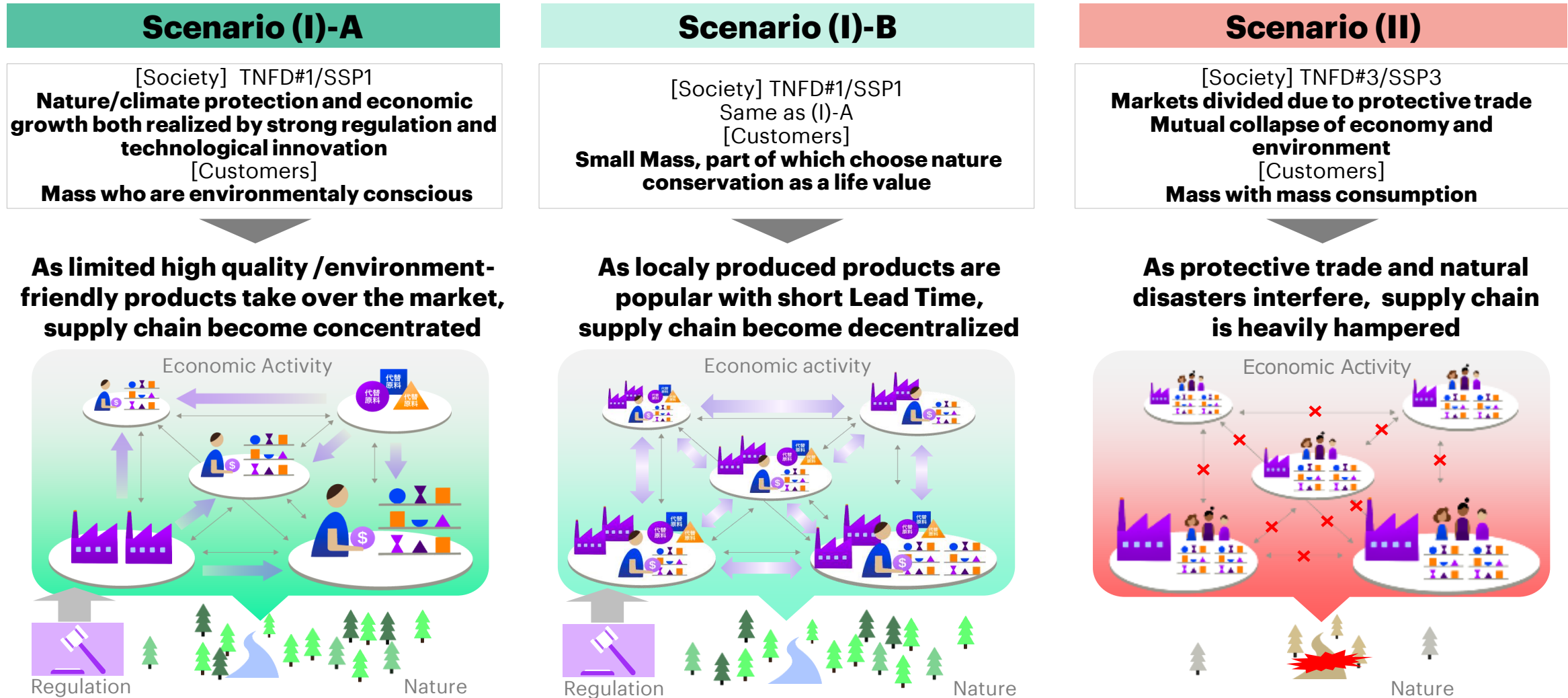
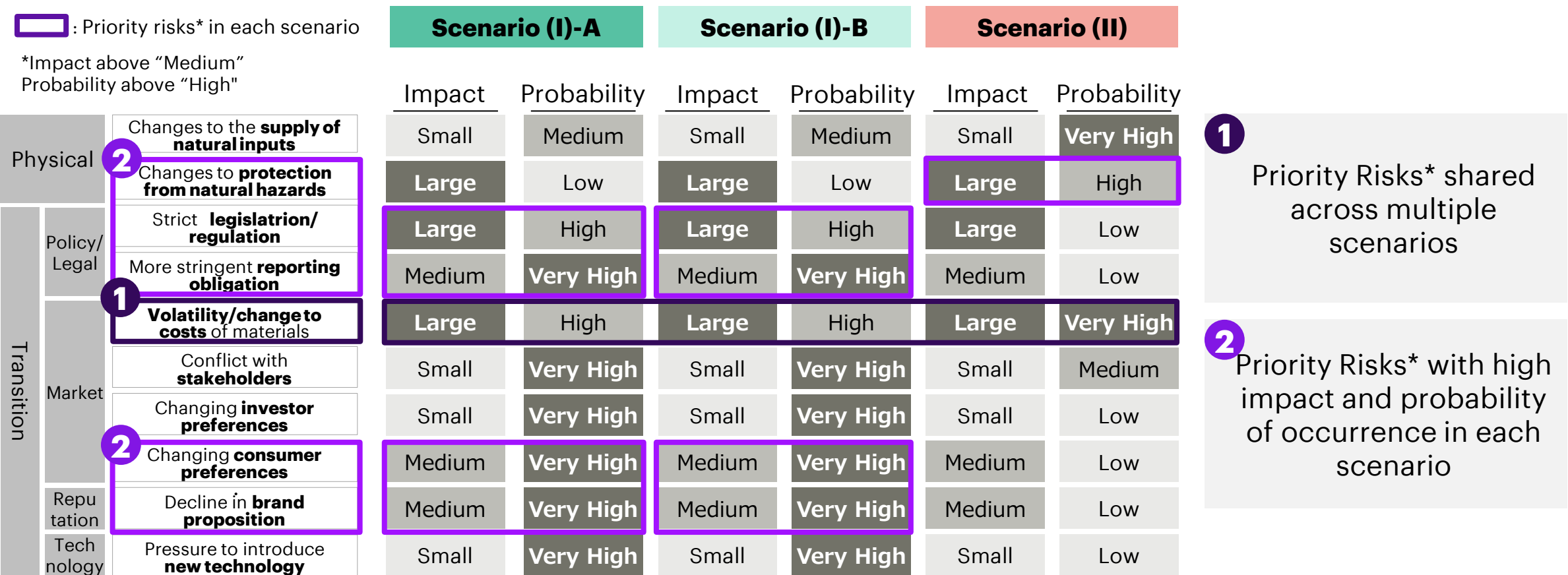


Figure 4: Three types of future scenarios surrounding biodiversity. The business environment may change depending on customer segments in addition to nature conservation or degradation trends

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For each biodiversity-related risk defined by TNFD, we assessed the (i)probability of occurrence based on the direction of macro environment changes, and (ii)scale of impact of each risks based on the state of nature degradation and dependence on nature, both of which were found in the Evaluate section, in order to identify higher priority risks in each scenario.

The results confirmed that for Scenario(I), stricter regulations for nature conservation and stakeholder negotiation risks such as brand damage and animosity from NGOs are important, and for Scenario(II), procurement of raw materials are exposed to risks including decreased protective functions, rising costs and destabilization, are high priority.



> Figure 5: High priority risks and their types in each scenario

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In “Prepare” step, how companies should approach biodiversity related risks, which varies greatly due to state of external environment, was considered.

First, given the recent unstable political and economic situation and the increasing trend of disasters, focusing only on the likely scenarios and risks will lead to major losses. By identifying the priority risks for each scenario, companies will be able to take risk mitigation measures immediately, when they face with changes in business environment. It is essential to prioritize, risks with higher impact or risks which are common between several scenarios.

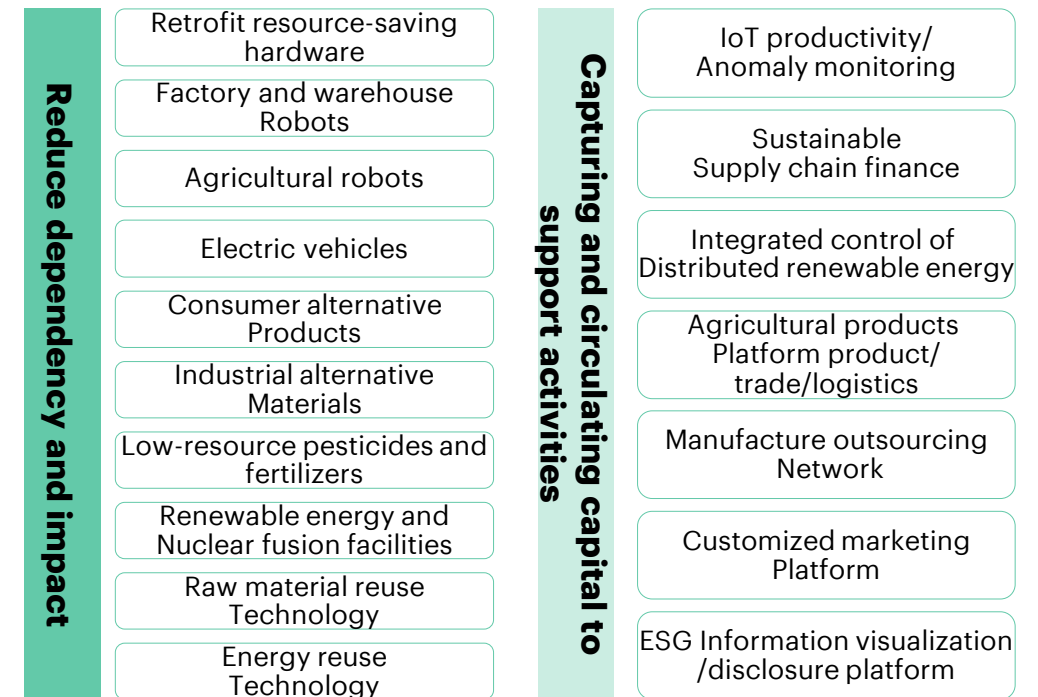
Risk mitigation measures can be organized into two categories: actions to reduce the dependency or impact towards nature (avoid, efficient, reuse, and regenerate), or efforts to acquire and circulate capital (human resources, finance, information, and relationships) to support such action. When considering effective measures these categories will be supportive for listing possible measures thoroughly.

Opportunities, on the other hand, are defined in the TNFD as “Activities that have a positive impact or reduce a negative impact on nature and are beneficial to the company and nature.” Which means cooperates are expected to step in further than just taking care of its own risk management, and to make broader effects.

In this study, “opportunities” are defined as those that improve existing operations and those bring greater environmental impact and risk reduction and generate new revenue by renovating operations.

Based on this definition, we examined new business opportunities which may emerge in near to medium term. As a result, identified 17 possible areas.

Figure 6: 17 business areas* that can contribute to reducing the impact on nature



*Above area has no relation to Kao's strategy or future action



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The study reveals that, given the biodiversity degradation that has already occurred, whether the international community follows the future where "active efforts are made to conserve, recover and restore" or "effective measures cannot be made in order to prevent degradation" will lead to significant impact on business activities.

It is not easy to fully prepare for these impacts, but to understand the contact point with nature and to evaluate how your business is dependent or has impact towards nature would be the very first step to take. And we believe it would lead to further significant steps to reduce society's impact on nature and generate opportunities for business.



Glossary of key terms

- **Biodiversity**
The variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.
- **Dependency**
Aspects of ecosystem services that an organisation or other actor relies on to function. Dependencies include ecosystems' ability to regulate water flow, water quality, and hazards like fires and floods; provide a suitable habitat for pollinators (who in turn provide a service directly to economies), and sequester carbon (in terrestrial, freshwater and marine realms).
- **Impact**
Changes in the state of nature, which may result in changes to the capacity of nature to provide social and economic functions. Impacts can be positive or negative. They can be the result of an organisation's or another party's actions and can be direct, indirect or cumulative.
- **Natural Capital**
The stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
- **Nature**
The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment.
- **Nature loss**
The loss and/or decline of the state of nature. This includes, but is not limited to, the reduction of any aspect of biological diversity e.g. diversity at the genetic, species and ecosystem levels in a particular area through death (including extinction), destruction or manual removal.
- **Nature-related Opportunities**
Activities that create positive outcomes for organisations and nature by creating positive impact on nature or mitigating negative impacts on nature.
- **Nature-related Risks**
Potential threats posed to an organisation linked to their and wider society's dependencies on nature and nature impacts. These can derive from physical, transition and systemic risks.
- **Physical Risk**
Risks arising when natural systems are compromised, due to the impact of climatic (i.e. extremes of weather) or geologic (i.e. seismic) events or changes in ecosystem equilibria, such as soil quality or marine ecology.⁷⁶ These can be event driven (acute), chronic, or both.
- **Transition risks**
Risks that result from a misalignment between an organisation's or investor's strategy and management and the changing regulatory and policy landscape in which it operates. Developments aimed at halting or reversing the damage to nature, such as government measures, technological breakthroughs, market changes, litigation and changing consumer preferences can all impact risks.



References

1. Taskforce on Nature-related Financial Disclosures. 2022. The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework: Beta v0.3.
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3. Taskforce on Nature-related Financial Disclosures. 2022. The TNFD's proposed approach to scenario analysis (Discussion paper A) November 2022
4. O'Neill, Brian & Kriegler, Elmar & Ebi, Kristie & Kemp-Benedict, Eric & Riahi, Keywan & Rothman, Dale & van Ruijven, Bas & Vuuren, Detlef & Birkmann, Joern & Kok, Kasper & Levy, Marc & Solecki, William. 2015. The roads ahead: Narratives for shared socioeconomic pathways describing world futures in the 21st century. *Global Environmental Change*. 42. 10.1016/j.gloenvcha.2015.01.004.
5. Taskforce on Nature-related Financial Disclosures. 2022. The TNFD Nature-Related Risk and Opportunity Management and Disclosure Framework Beta v0.1. (Annex 1 –Glossary of key terms)



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About Kao Corporation

Since its founding in 1897, Kao has been providing consumer products that support clean, comfortable and healthy daily life, as well as high-quality chemical products with environmentally friendly functions and performance, with the mission to contribute to people's lifestyle and culture and social sustainability.

In 2018, Kao declared that ESG should be at the core of its business, and in 2019, announced the new ESG strategy, the Kirei Lifestyle Plan.

With the corporate message of "Kirei-Making Life Beautiful," Kao will continue to contribute to the enrichment of people, society, and the planet, through "ESG-driven *Yoki-Monozukuri*" - now and in the future.

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