NUS National University of Singapore
Centre for Governance and Sustainability
NUS Business School

CASES IN SUSTAINABILITY

SECTORAL STRATEGIES

Lawrence Loh (Editor)

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Editor and Instructor: Lawrence LOH
Editorial Manager: Arjun KANNAN
Project Manager: Verity THOI
Communications Manager: ANG Hui Min
Case Authors: As listed in the cases

This casebook arises from the case assignments submitted by students in the course "Strategic Sustainability".

The course is a requirement of the Master of Science in Strategic Analysis and Innovation programme at the National University of Singapore (NUS) Business School. In addition, the course is offered for the Master of Science Programmes Office by the School's Department of Strategy and Policy.

Published by the School's Centre for Governance and Sustainability (CGS), this casebook represents the culmination of students' work in applying strategic sustainability concepts to real-world scenarios.

February 2025

Preface

How should businesses walk the talk on sustainability? This casebook, a compilation of nine real-world cases, offers lessons in applying strategic sustainability concepts.

It stems from research by students enrolled in the “Strategic Sustainability” course, which is part of the Master of Science in Strategic Analysis and Innovation programme offered at the National University of Singapore (NUS) Business School. They delve into the business case for sustainability and examine how companies in different sectors integrate sustainability into their business. More than environmental, social and governance (ESG) aspects, business leaders need to consider the economic dimension as well as dynamic and global developments.

In the selection of cases, more focus was given to an Asian entity or a global entity with operations in Asia. This Asian flavour contributes to the literature on corporate sustainability in Asia, which is as large as it is diverse.

By way of synthesis, the cases are categorised along their economic sector, industry and activity type in a framework as follows:

<table>
<tr><th>Economic Sector</th><th>Industry</th><th>Activity Type</th><th>Company Analysed</th></tr>
<tr><td>Primary</td><td>Natural Resource</td><td>Extractive</td><td>China National Offshore Oil Corporation (CNOOC)</td></tr>
<tr><td rowspan="2">Secondary</td><td>Industrial Production</td><td rowspan="2">Productive</td><td>NIO
Toyota</td></tr>
<tr><td>Consumer Goods</td><td>McDonald’s
Meiji
MUJI
Patagonia
Vitasoy</td></tr>
<tr><td>Tertiary</td><td>Financial Services</td><td>Facilitative</td><td>Singlife</td></tr>
</table>

We can think about economic sectors in two main ways: product-focused and service-focused companies. This difference is important for understanding sustainability strategies and how businesses manage corporate responsibilities. For example, product-focused companies usually have a greater impact on the environment because of the extraction of raw materials and the product life cycle to consider, including disposal.

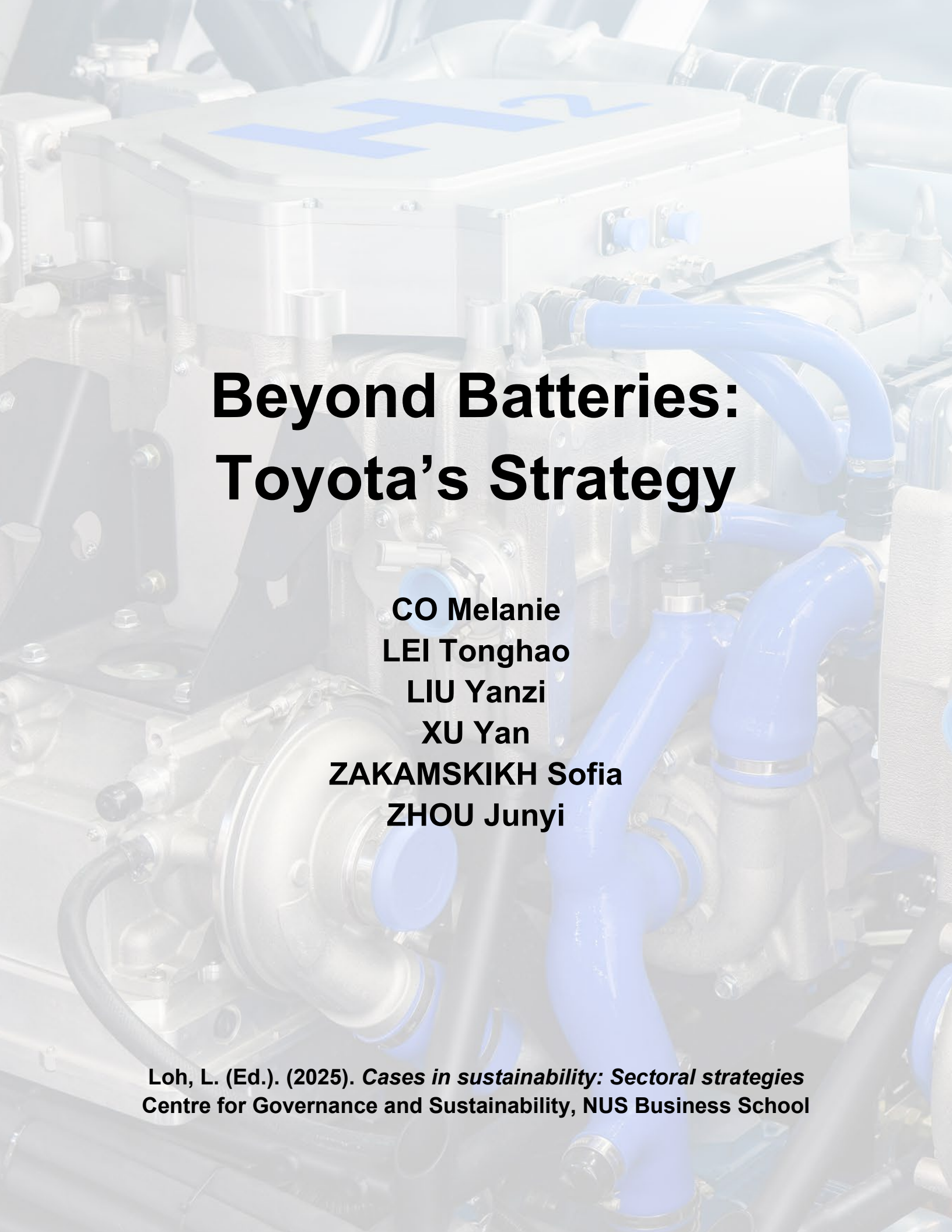
Service-focused companies, on the other hand, tend to affect society more because of the type of services they offer. Still, all businesses deal with ESG issues, including making profits sustainably.

Categorising companies by the resources they depend on allow us to draw different lessons. Some businesses rely on basic resources like raw materials or people's skills, while others use advanced technologies to operate. They have different edges in finding solutions for sustainability challenges. The cases show how various factors are considered in creating balanced and effective sustainability strategies.

The casebook is a reflection of businesses' sustainability strategies. It is also a reflection of the past, the present and the future. As we mark NUS Business School's 60th anniversary and the Centre for Governance and Sustainability's 15th anniversary in 2025, we are reminded of our continuing mission to teach and guide the next generation in preparing for a sustainable future. We have much to do, but the purpose is worth the journey.

Lawrence Loh
Director, Centre for Governance and Sustainability
Professor, Strategy & Policy
NUS Business School

Table of Contents



Beyond Batteries: Toyota's Strategy

CO Melanie
LEI Tonghao
LIU Yanzi
XU Yan
ZAKAMSKIKH Sofia
ZHOU Junyi

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Introduction

Toyota is known for its production that targets minimum waste and its technological advantages in hybrid vehicles. In recent years, the automotive industry has been transitioning to a sustainable future, with traditional fuel vehicles being challenged and new energy vehicles such as electric cars emerging.

However, Toyota opines that ordinary electric cars are not the optimal solution for sustainability. The company has decided to anchor its future in more energy-efficient hydrogen-powered electric vehicles. These vehicles generate electricity through a chemical reaction between hydrogen and oxygen in a fuel cell; water is the only by-product of their emissions. In this report, we will discuss in detail Toyota's efforts to advance this ambitious goal, the many challenges it has yet to overcome, and its efforts in becoming a socially responsible multinational corporation.

Company Background

Toyota Motor Corporation, one of the world's largest and most influential automobile manufacturers, has pioneered sustainability and innovation within the automotive industry. Founded in 1937, Toyota has grown into a global leader by consistently prioritising technological advancement, environmental responsibility and social contribution (Toyota Motor Corporation, n.d.). With current environmental concerns like climate change, resource depletion and pollution becoming increasingly imperative, Toyota has vowed to embed sustainability into its business practices and long-term strategy. Toyota’s commitment to sustainability is rooted in its guiding philosophy, known as the “Toyota Way”, which emphasises continuous improvement (kaizen) and respect for people (Liker, 2004).

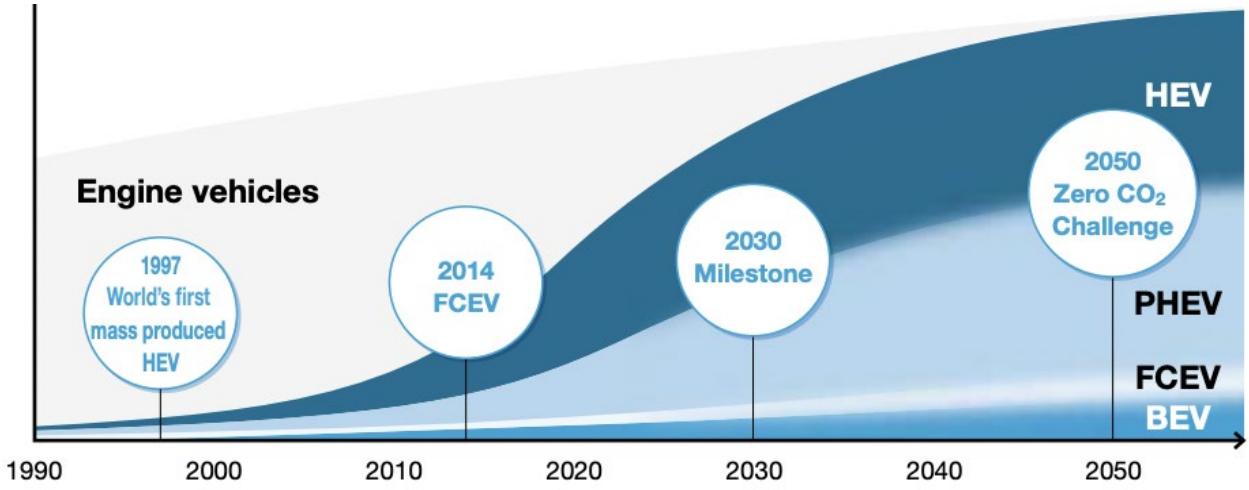
As early as the late 1990s, Toyota spearheaded the hybrid car market with the Toyota Prius, a car that introduced an entirely new generation of fuel efficiency and low emissions. The Prius combined an internal combustion engine with an electric motor; this shifted public perception of eco-friendly transportation and proved that low-emission vehicles could, in fact, work. Today, the commitment to sustainable mobility also passes through the varied portfolio of hybrid, plug-in hybrid, hydrogen fuel cell, and electric cars from Toyota. Each class of vehicle serves different markets and needs, which allows Toyota to serve varied geographic and infrastructural contexts with sustainable solutions (Toyota Motor Corporation, 2023).

In particular, Toyota has heavily focused on hydrogen and e-fuel technologies to complement other eco-friendly powering vehicles. Hydrogen fuel cells, as in the case of the Toyota Mirai, are zero-emission alternatives to conventional fuel since they emit nothing more than water vapour. Similarly, e-fuel is extracted from renewable resources and provides an option that is not only clean but also viable for regions where electric infrastructure might be hard to afford or implement. (Toyota Motor Corporation, n.d.).

Sustainability Plan

Toyota's sustainability programme prioritises a balance between electric vehicles and hydrogen and e-fuel technologies to meet different regional requirements. Toyota is working to expand its range of battery electric vehicles (BEVs) as consumer demand for electric vehicles grows. At the same time, however, Toyota does not close doors to other technologies, such as hydrogen and e-fuel, which are widely used in regions with low infrastructure for EVs. Hydrogen fuel cells—most notably in the Toyota Mirai—produce electricity with water vapour as the only emission. To understand further, e-fuels are synthetic fuels made from renewable resources that provide a carbon-neutral option for use with conventional fuel infrastructure (Dunn, 2020). These technologies enable Toyota to provide versatile transportation options for regions with varying energy needs.

Figure 1: Toyota Vehicle Electrification Milestones



Source: Toyota Motor Corporation, 2018

In Toyota’s Environmental Challenge 2050, these technologies are very important to attaining carbon neutrality and zero-emission goals. Through an all-encompassing strategy that involves BEVs, fuel cells and e-fuels, Toyota can address environmental issues associated with applications ranging from vehicle transport to public transport and

industrial vehicles. Although hydrogen and e-fuel technologies are still emerging, they are key elements of Toyota's long-term sustainability programme.

The sustainability plan by Toyota further trickles down to manufacturing processes through the integration of a circular economy in these processes: minimising waste, conserving resources, and enabling the recycling of materials. For instance, the introduction of renewable energy sources in Toyota's Tsutsumi Plant in Japan involves the use of solar panel systems to provide part of its energy needs and reduce overall emissions. In addition, the plant reuses treated wastewater, reducing water consumption and contributing to local water conservation.

At the company, products make use of recyclable materials to cut down on waste and reduce reliance on virgin materials. Toyota has also invested in recycling programmes to recover valued material, including rare metals from batteries and auto parts, and these decrease demand for new resource extraction (Toyota Motor Corporation, n.d.). Toyota also employs the circular economy approach in its supply chain, relating to each stage of the production and distribution chain. For instance, the company has worked with its partners to build energy-saving initiatives with reduced emissions associated with raw material production and transportation (Toyota Industries Corporation, 2012).

In terms of community, Toyota promotes employee engagement in sustainability and corporate social responsibility (CSR) efforts, building a culture where employees lead initiatives to encourage environmentally responsible practices within the organisation. Internal programmes such as waste reduction campaigns, green commuting options, and energy-saving practices all add up to a general culture of environmental consciousness, thus setting the right climate for sustainability (Liker, 2004).

Toyota's diversified approach is planned for evolving environmental and social challenges. Electric batteries, hydrogen, and e-fuels put Toyota in a versatile position concerning various market needs and different stages of infrastructure development globally. Hydrogen fuel cells have rapid refuelling times and a high energy density, serving as a feasible alternative in long-range applications and industrial uses. The exploration of e-fuels provides another layer of flexibility. All these measures further enhance the process of building a circular production model and creating long-term value.

Sustainability Progress

Comparison of Fuels

Traditional fuels, such as gasoline and diesel, are derived from crude oil and are extensively used due to their established infrastructure and high energy density. However, their combustion releases significant CO_2 emissions—approximately 2.31 kg per litre of gasoline—contributing to climate change and air pollution.

E-fuels, or synthetic fuels, are produced by combining captured CO_2 with green hydrogen generated through renewable energy-powered electrolysis. This process requires about 25 kWh of electricity per litre of e-fuel, making it energy-intensive. When produced using renewable energy, e-fuels can be carbon-neutral, emitting only the CO_2 previously captured during production. They also produce fewer air pollutants and can be utilised in existing internal combustion engines, offering a potential solution for sectors like aviation and shipping.

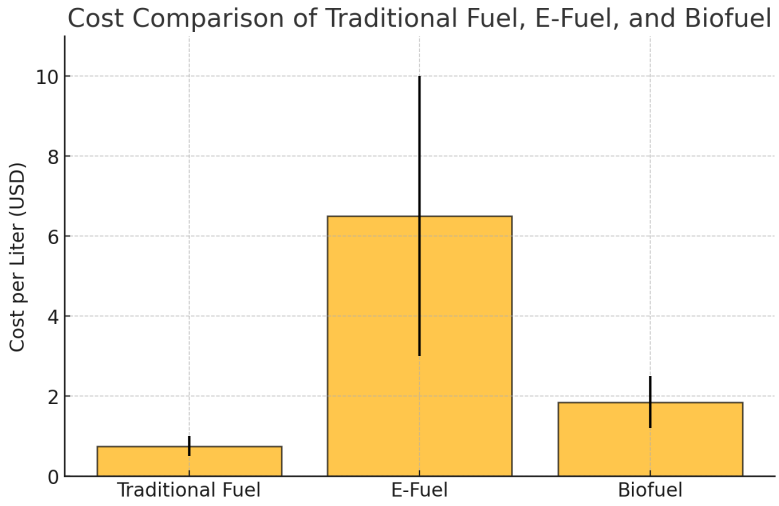
Biofuels, derived from organic biomass such as corn or sugarcane, present an alternative to fossil fuels. They can reduce CO_2 emissions by 50-70% compared to traditional fuels, depending on production methods. However, large-scale biofuel production raises concerns about land use, deforestation and water consumption, potentially offsetting environmental benefits. Second-generation biofuels, made from non-food biomass like agricultural waste, aim to address these issues but are still under development.

Toyota’s Efforts Across Fuel Technologies

Toyota pursues a diversified strategy across biofuels, e-fuels and hybrid technologies to achieve carbon neutrality. The company supports ethanol-compatible vehicles, particularly in regions like Latin America, where ethanol production is economically viable. To address the environmental impact of first-generation biofuels, Toyota is also investing in second-generation biofuels, which utilise non-food biomass like agricultural waste. These efforts aim to provide sustainable alternatives in markets where electric vehicles are not yet practical.

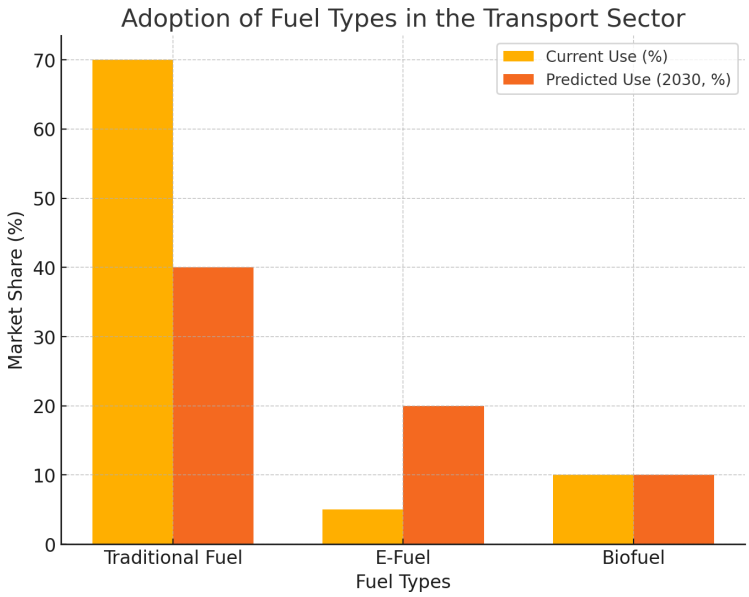
In parallel, Toyota is developing e-fuels, focusing on motorsports and heavy-duty transport. The company has partnered with energy firms to explore the scalability of e-fuels and has conducted performance tests in racing vehicles to demonstrate their viability. These initiatives highlight Toyota’s commitment to offering a range of solutions for sectors where full electrification is challenging. By integrating biofuels, e-fuels, and hybrid technology, Toyota aims to deliver practical, region-specific alternatives while advancing the global transition towards carbon neutrality.

Figure 2: Cost Comparison of Traditional Fuel, E-fuel, and Biofuel



Source: International Energy Agency, 2023

Figure 3: Adoption of Fuel Types in the Transport Sector



Why Total EV Adoption is Not the Way Forward for Toyota

Toyota Chairman Akio Toyoda has expressed scepticism about full electric vehicle (EV) adoption, predicting that EVs will likely cap at 30% market share, with the remaining demand fulfilled by hybrids, hydrogen fuel cells and combustion engines. This outlook reflects Toyota's belief in a multi-pronged approach to decarbonisation, promoting not just EVs but also other technologies like hybrids and hydrogen-powered engines. Toyoda

argues that focusing solely on EVs could be limiting, especially in regions with infrastructure challenges and for consumers who may not find EVs affordable or practical at present.

Toyota's strategy aligns with a focus on sustainability but diverges from the mainstream push for full electrification. By continuing to develop hybrids and explore hydrogen solutions, Toyota aims to reduce carbon emissions in various contexts—especially where EV adoption might face resistance or challenges, such as in emerging markets or rural areas. On the governance front, Toyota emphasises consumer choice, advocating that customers, not policies or regulations alone, should drive the transition to cleaner mobility solutions.

Toyota's efforts towards hybrid and hydrogen technologies highlight its commitment to environmental sustainability. These technologies also reflect social responsibility by catering to diverse markets with different needs and energy infrastructures.

The Fuel Cell Possibility

A fuel cell is an electrochemical device that converts the chemical energy of a fuel, typically hydrogen, directly into electricity through a reaction with oxygen, producing water and heat as byproducts. Unlike batteries, which store energy chemically within their cells, fuel cells generate electricity continuously as long as they are supplied with fuel and an oxidant.

Figure 4: Comparison Between Traditional EV Batteries and Fuel Cells

Aspect	Traditional EV Batteries	Fuel Cells (E-Fuel)
Technology	Lithium-ion/LFP batteries	Hydrogen fuel cells
Efficiency	80-90%	40-60% (with hydrogen losses)
Refueling/Charging	30 minutes to several hours	Under 5 minutes
Range	Limited to 300-500 km	Up to 700+ km
Infrastructure	Growing, but concentrated in urban areas	Sparse and expensive to build
Environmental Impact	Relies on renewable electricity	Water emissions if renewably powered
Best Use Cases	Passenger vehicles, urban areas	Long-distance travel, heavy-duty vehicles

Toyota's Progress on Fuel Cell Technology

Toyota has been at the forefront of hydrogen fuel cell technology, making significant advancements in recent years. In August 2024, the company, in collaboration with its partners, inaugurated a research and development centre and a production facility for fuel cells in Beijing. This facility is set to produce approximately 10,000 fuel cell units annually, primarily targeting commercial vehicles. The initiative underscores Toyota's commitment to establishing a comprehensive fuel cell production chain tailored for the Chinese market.

Expanding its global footprint, Toyota has also partnered with BMW to co-develop a third-generation fuel cell system. This collaboration aims to integrate the system into both companies' vehicle lineups, broadening the availability of fuel cell electric vehicles (FCEVs) to consumers. BMW plans to introduce its first mass-produced FCEV by 2028, marking a milestone in the automotive industry's shift towards hydrogen-based solutions.

These strategic initiatives highlight Toyota's dedication to advancing hydrogen fuel cell technology across various sectors and regions. By focusing on both commercial and passenger vehicle applications, as well as pioneering renewable energy solutions like the Tri-gen system, Toyota is working towards a sustainable, hydrogen-powered future.

Tri-gen System

In the United States, Toyota has achieved a notable milestone with the completion of the world's first Tri-gen production system at the Port of Long Beach, California. Developed in collaboration with the company FuelCell Energy, this innovative system converts renewable biogas into electricity, hydrogen and water through a highly efficient, combustion-free process.

The Tri-gen system generates 2.3 MW of renewable electricity, supplying power to Toyota's Logistics Services (TLS) facility at the port, which processes approximately 200,000 new Toyota and Lexus vehicles annually. This enables the facility to operate entirely on on-site generated renewable energy, reducing reliance on external power sources. Capable of producing up to 1,200 kg of hydrogen per day, the system meets the fuelling requirements for Toyota's light-duty FCEVs, such as the Mirai, and supports heavy-duty hydrogen refuelling stations for logistics and drayage operations at the port. By co-producing approximately 1,400 gallons of water daily, the Tri-gen system supplies water for vehicle washing and other operational needs, reducing dependence on local water supplies and promoting resource efficiency.

The system's carbon-neutral operations are expected to reduce more than 9,000 tons of CO_2 emissions annually from the power grid, contributing to improved air quality and supporting global climate change mitigation efforts. By adopting advanced clean energy

technologies, Toyota demonstrates leadership in corporate social responsibility, setting a precedent for sustainable practices within the automotive industry and fostering community health and well-being. Implementing the Tri-gen system reflects Toyota's commitment to robust governance practices, ensuring compliance with environmental regulations and aligning with stakeholder expectations for sustainable and ethical operations.

Figure 5: Tri-gen production system of Toyota

The Launch of "Mirai"

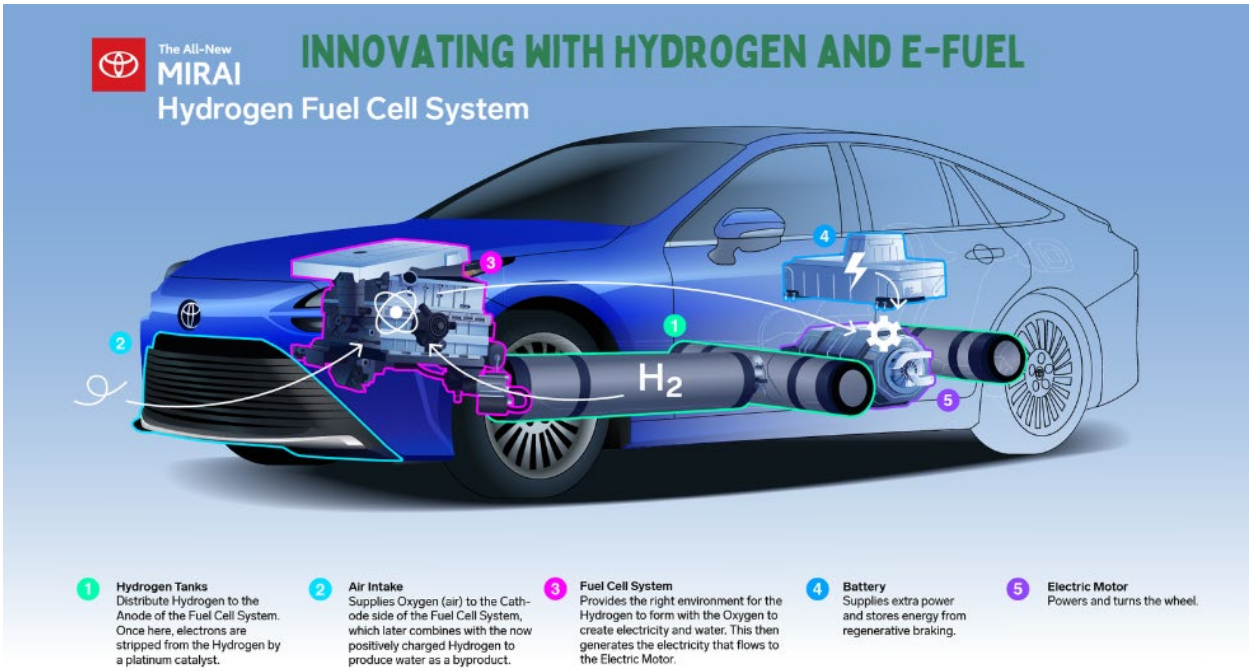
The Toyota Mirai, introduced in 2014, is one of the world's first mass-produced FCEVs. The name "Mirai", meaning "future" in Japanese, reflects Toyota's vision of sustainable transportation. Unlike traditional internal combustion engines, the Mirai utilises a fuel cell stack to convert hydrogen gas into electricity, emitting only water vapour as a byproduct, thereby producing zero tailpipe emissions.

In 2020, Toyota launched the second-generation Mirai, featuring significant advancements in performance and design. This model offers an extended driving range of approximately 650 km (about 400 miles) per refuelling, enhancing its practicality for long-distance travel. The refuelling process is comparable in duration to that of conventional gasoline vehicles, taking about three to five minutes. The second-generation Mirai adopts a more refined and aerodynamic design, which aims to appeal to a broader consumer base.

Toyota's development of the Mirai underscores a multi-faceted approach to achieving carbon neutrality. By investing in hydrogen fuel cell technology alongside battery electric

and hybrid systems, Toyota aims to provide diverse solutions to meet varying transportation needs and environmental goals.

Figure 6: Toyota Mirai (FCEV)



Source: Wired Insider

Effectiveness of Traditional and New Technologies in ESG Practices

The following section discusses the effectiveness of different technologies across the environmental, social and governance aspects.

Environment

Significant Carbon Neutral Potential

E-fuel and fuel cells demonstrate significant carbon-neutral potential in their operating principles, which are highly compatible with Toyota's sustainability strategy. E-fuel achieves full life-cycle carbon neutrality by absorbing CO_2 from the air during the production process. Compared to direct CO_2 emissions from traditional fuels, the use of e-fuel can effectively reduce greenhouse gas emissions. Fuel cells, on the other hand, convert hydrogen directly into electricity, thus avoiding the large energy loss during combustion in traditional fuel vehicles.

The application of such new technologies reduces the dependence on fossil energy and subsequent environmental problems, such as air pollution and water pollution.

Diversified Energy Supply Channels

In terms of energy supply, the hydrogen required for fuel cells can be obtained in a variety of ways, such as through water electrolysis, methane reforming and hydrogen production from biomass; the production of e-fuel can also rely on low-cost renewable energy sources, including wind power and solar photovoltaic (PV) power generation. Compared with fossil fuels that rely on extraction, these new energy technologies are more diverse in their acquisition methods, helping to maintain the security and stability of the energy supply chain. In addition, these new fuels are characterised by high energy density, ease of storage, ease of transportation, and combustibility (Ueckerdt et al., 2021), making them ideal alternatives to fossil fuels.

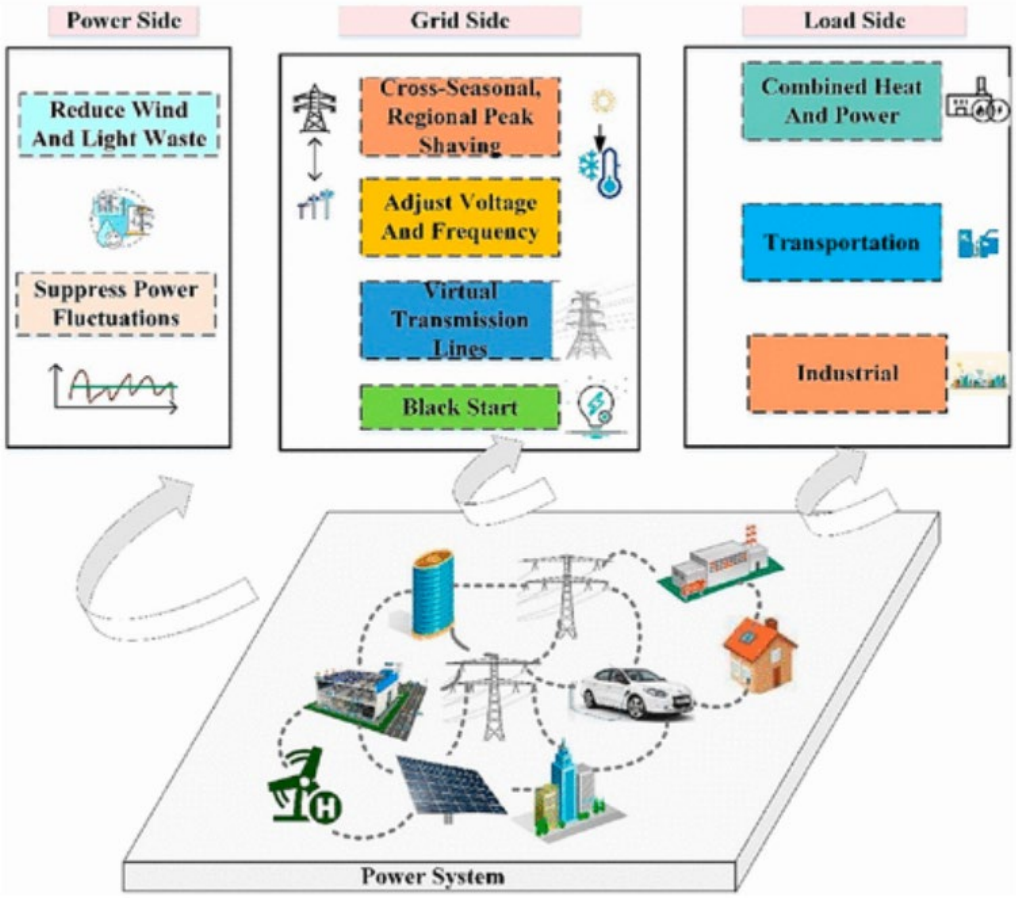
Social

Promotion of Related Green Industry

In terms of energy promotion, new energy is more widely applicable. Hydrogen fuel cell vehicles are similar to traditional fuel vehicles with regards to range and refuelling speed, and therefore have a greater advantage in scenarios such as long-distance transportation and heavy-duty freight transport, expanding the application scope of clean energy vehicles. E-fuels can also provide a boost in areas such as long-haul aviation, shipping, chemical feedstock production, high-temperature industrial processes and long-term energy storage.

Though in the short term, the diffusion of new fuel cells and e-fuel may not lead to immediate and significant reductions in CO_2 emissions, they play a key role in the transition to a low-carbon society (Karlstrom, 2005). Toyota's attempts in the field of new energy vehicles not only demonstrate the potential of fuel cell technology in terms of cost reduction and performance improvement, but also promote the widespread application of the technology in other fields, such as stationary fuel cell installations and the public transportation market. At the same time, these attempts can promote the development of upstream hydrogen production, storage and transportation and other related industries, creating new jobs and business opportunities, which fits the trend of global energy transition.

Figure 7: Examples of e-hydrogen applications in renewable energy systems



Source: Shi et al., 2024

Adapting to the Current Social Infrastructure and Developing Demand

Both e-fuel and hydrogen fuel cells do not require large-scale modifications to existing infrastructure such as gas stations and vehicle powertrains. The application of new energy sources bridges the gap between past and future technologies and significantly reduces demand-side transition pressures by incorporating combustion technologies and traditional fossil energy infrastructures as part of the climate solution. For consumers, the long experience of the internal combustion engine makes e-fuel a more palatable and environmentally friendly alternative, avoiding the psychological and cost barriers associated with a complete shift to electric vehicles, and results in a smoother transition to a low-carbon society and lower social adaptation costs. Meanwhile, for employees in the energy industry, e-fuel provides room for the traditional internal combustion engine to survive, helping to retain related positions such as automobile manufacturing

and maintenance, and reducing the industrial impact caused by the energy transition.

Governance

Strong Policy Adaptability

Due to the serious impact of carbon emissions, the European Union (EU) and Japan have issued strict “fuel bans” in 2023, aiming at a complete prohibition of the production or sale of internal combustion engine vehicles (ICEVs) using traditional fossil fuels by 2035, and plan to achieve carbon neutrality by 2050 (IEA Energy Roadmap, 2021). Therefore, E-fuel, fuel cells and other new technologies are not only in line with the increasingly stringent emission regulations, but also fit into the overall layout and roadmap of the carbon neutral strategy. At the same time, the promotion of these technologies allows governments to continue to utilise existing fiscal tools such as fuel taxes without the need for drastic policy changes, thus reducing the pressure on policymaking in the environmental transition.

Energy Autonomy Support and Energy Security

New energy production technologies that can be realised locally to avoid dependence on imported petroleum will help enhance the country's energy security. In addition, the government has provided strong support in terms of hydrogen fuel subsidies and construction incentives for hydrogen refuelling stations, providing a policy boost for the accelerating development of the fuel cell industry. Toyota enjoys tax incentives and subsidies through cooperation with the government, and the government, in turn, can help achieve emission reduction targets by guiding the market’s energy transition through such cooperation.

International Cooperation and Innovation

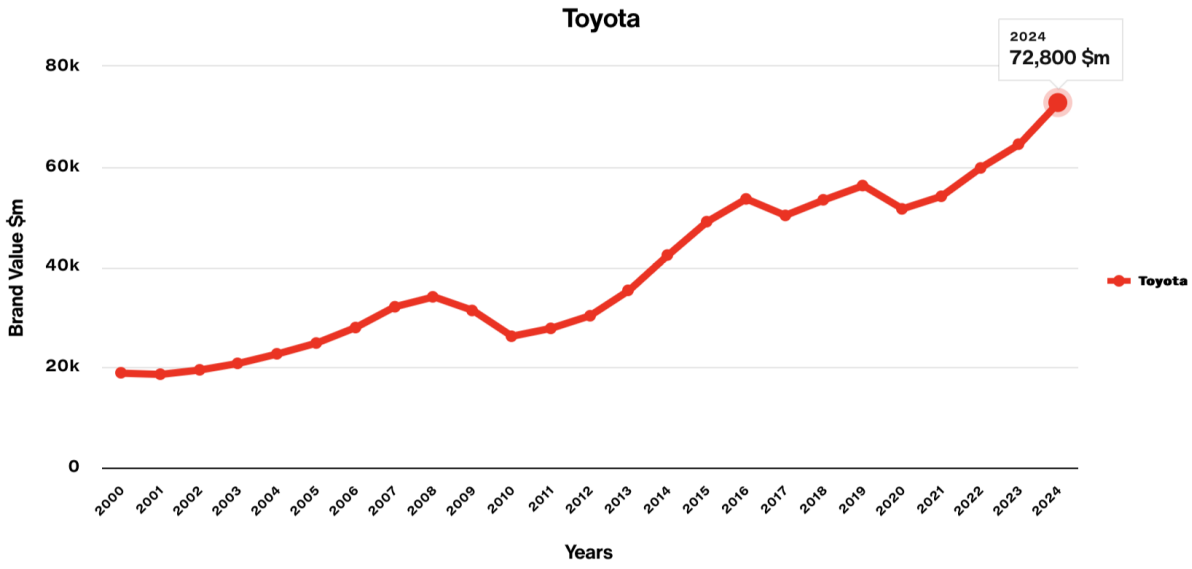
The development of e-fuel and fuel cell technologies also depends on international cooperation in the energy and environmental protection industries. As mentioned above, the Tri-gen production system developed by Toyota and FuelCell Energy in California is a good example. Through such cross-border cooperation, countries are able to share their technological experience and resources to accelerate the realisation of clean energy penetration and carbon emission reduction targets, thereby promoting global sustainable development.

Performance Assessment

Standards and Reporting

With ESG ratings, Toyota is ranked sixth on Interbrand's list of the 100 most valuable global brands in 2024, with a value of US$72.8 billion (see Figure 8). Its diversified strategy embraces hybrid, electric and hydrogen fuel cell technology, catering to the market needs and infrastructures in different regions. This is in contrast to pure electric vehicle companies that thrive on homogeneous energy solutions.

Figure 8: Toyota Brand Value



Source: Interbrand, 2024

There are numerous frameworks that review the sustainability performance of Toyota, including Sustainalytics, the Dow Jones Sustainability Index, and the Carbon Disclosure Project (CDP). Its sustainability disclosures are also accessible through Toyota's official global website, specifically on the sustainability webpage.

- **Sustainability Data Book:** This comprehensive document details Toyota's sustainability initiatives, performance metrics and future goals. It is updated biannually, in June and October, to provide timely information on the company's ESG activities.

- **Integrated Report:** This report combines financial and non-financial information, offering insights into Toyota's overall business strategy, governance, and

sustainability efforts. It is published annually to present a holistic view of the company's performance.

- **Corporate Governance Report:** Focusing on governance structures and practices, this report is released annually to ensure transparency and accountability in Toyota's corporate governance.

As of October 2024, Sustainalytics rated Toyota's ESG risk as Medium (with a risk rating of 28.3 points). This rating considers the company's exposure to industry-specific environmental challenges and what it has done to reduce emissions.

In 2022, global non-profit organisation CDP assessed the enterprise on efforts regarding climate and environmental topics and presented Toyota with an "A" rating. This suggested the company's leading position regarding climate transparency and action. Its "A-" ratings for climate change and "B" for water security, announced early in 2024, recognised efforts in emissions reduction and water conservation under its Environmental Challenge 2050 plan. The Toyota Environmental Challenge 2050 is a long-term global initiative formulated in 2015; it commits Toyota to reducing CO_2 emissions and achieving carbon neutrality globally by 2050. In the long term, this initiative targets carbon emission cuts across operations and supply chains.

Overall, Toyota decreased its CO_2 emissions intensity by 12%, showing a consistent effort in emission management. Consumption of renewable energy is on the rise as well– the company at present gets 20% of its power for global operations from renewable resources. Indeed, it is noticed that Toyota even has an ambitious target to reach 100% renewable energy by 2050, though the feasibility of this target will be deeply dependent on infrastructure development and renewable resource availability at regional levels. The other priorities that make up the sustainability strategy at Toyota include water conservation. For example, at the Tsutsumi plant in Japan, approximately 50% of the plant's water needs are supplied by Toyota through reutilised water from treated wastewater. This supports operating efficiency and local water conservation efforts. Specific actions like these represent resource-efficient advances at Toyota and align with its overall environmental goals.

Challenges

On Overall Sustainability Efforts

Toyota's overall sustainability plan still has some challenges, specifically its Environmental Challenge 2050 mentioned in the initial part of the paper.

Firstly, with a goal to achieve carbon neutrality by 2050, scaling advanced technologies such as hydrogen fuel cells and e-fuels is required. However, scaling these requires infrastructure which is not yet fully developed and available.

Second, a supply chain focused on sustainability is complex. According to a study by Hassan et al. (2023), producing hydrogen fuel cells involves materials like platinum, which are scarce and expensive. Securing a stable supply chain for these materials increases costs further.

Lastly, achieving success relies largely on the market adoption of its technologies. Hydrogen-powered vehicles are currently limited, and awareness is not widespread. Toyota's progress will be impeded by the market hesitancy towards unfamiliar technologies.

On Toyota's Fuel Cell Vehicle Strategy

Limited Infrastructure and Low Market Adoption

One of the main challenges of scaling the FCEV market would be the limited infrastructure for refuelling. Despite Toyota's Tri-gen hydrogen production system in California and fuel cell production facility in Beijing, the scarcity of these facilities and refuelling stations worldwide remains a barrier to widespread FCEV adoption. There is a lack of readiness for market adoption, especially outside China and the US.

Currently, the more popular option is the battery electric vehicle (BEV). There is rapid market expansion supported by stronger charging station infrastructure which lowers the cost of adoption. Consumer awareness and acceptance towards the overall safety, convenience and practicality of FCEVs remain low due to consumer scepticism.

Production and Maintenance Costs

With low market adoption, the production costs for hydrogen fuel cells will remain high. This is added to the fact that it involves complex manufacturing and expensive materials. In an effort to combat this challenge, Toyota is building specialised facilities such as the fuel cell research and production facility in Beijing. Despite this, costs will not be sustainable until economies of scale are achieved. Additionally, the cost of maintenance will remain high with only a few centres that have the resources to assist.

Environmental Issues

Toyota's hydrogen-powered cars were the official vehicles of the Paris Olympics 2024. The Paris Olympics organising committee has stated that these vehicles will play a key role in achieving their sustainability goals. However, this move gained a negative

response from scientists who pointed out that “hydrogen cars are not a viable net zero solution”. According to Professor David Cebon of the University of Cambridge, hydrogen cars are three times less efficient than BEVs. They argue that FCEVs demand more renewable energy compared to BEVs. Moreover, a big portion of hydrogen is still derived from fossil fuels, which create substantial carbon emissions. Toyota will have to build more facilities like the Tri-gen renewable hydrogen system.

Logistical Issues and Safety Concerns

According to a research article on hydrogen fuel cell vehicles, hydrogen storage and transportation are costly due to the need for high-pressure or cryogenic storage methods. This presents another challenge for building refuelling infrastructure and widespread adoption. Additionally, current fuel cell technologies have issues in lifespan and durability, which may impact vehicle performance and longevity. This must be overcome to increase market acceptance. Lastly, hydrogen’s high flammability raises safety concerns. Toyota will have to ensure proper and robust safety measures when it comes to storing and transporting hydrogen as it expands the FCEV market and production.

Regulatory Challenges

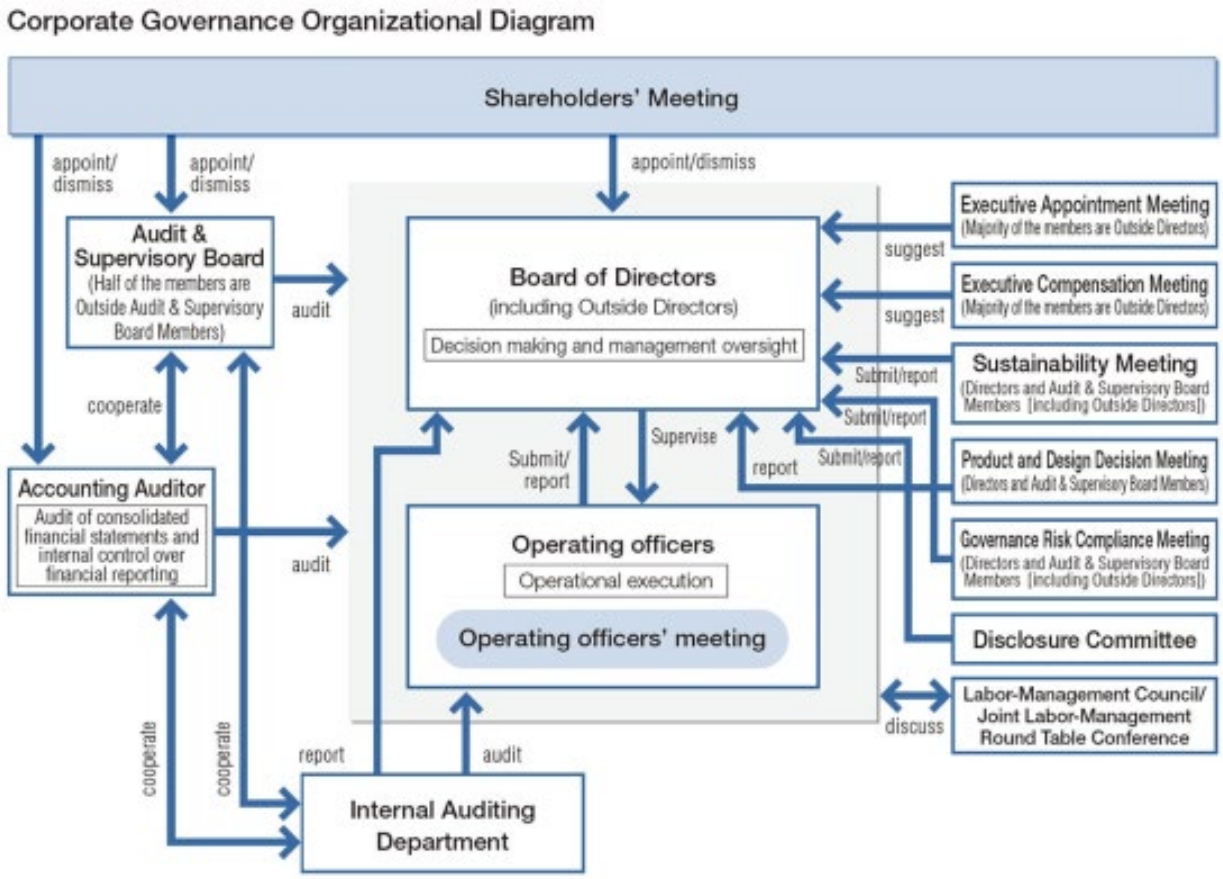
As with all new types of technology, especially ones that will be directly used by consumers, there will be stringent safety standards and regulations that Toyota will have to face. It needs to ensure compliance across regions with varying standards and regulations, which slows down expansion and increases costs.

Recommendations

Organisational Structure

In 2019, Toyota established a sustainability management unit, yet the composition of its board of directors remained largely unchanged. Regarding the present governance structure of Toyota, the company has established a Sustainability Meeting within the Board of Directors to discuss issues related to ESG matters regularly.

Figure 9: Toyota's Organisational Structure



Source: Toyota's Corporate Governance

However, from an academic point of view, it would be a better practice to establish a separate ESG committee within the board of directors, as the agenda of the board tends to be heavy, and a wide range of ESG issues requires the input of professionals. At the same time, members of the committee must also be trained in ESG-related knowledge, thereby ensuring that ESG matters are properly advanced. It is also important to strengthen cooperation with non-profit organisations. It is worth mentioning that Japan focuses more on internal promotion than Western countries, so directly introducing external directors to address the corresponding issues may not be a very effective move.

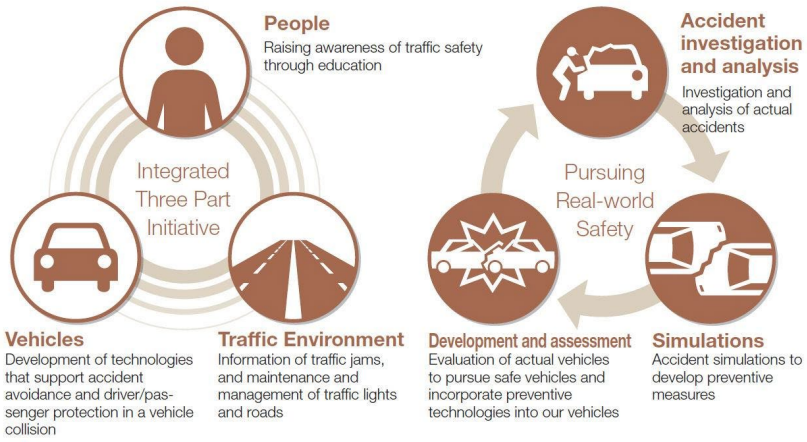
Social Responsibility

Vehicle Safety

As shown in Figure 10, Toyota plans to promote the integrated development of people, vehicles and the traffic environment, as well as develop accident prevention technologies.

Toyota has been promoting Toyota Safety Sense (TSS) since 2021, but it is not a unique Toyota vehicle feature, and it is difficult to get consumers to buy Toyota vehicles specifically for this purpose. The development of ESG is not only motivated by a sense of corporate social responsibility, but also by the need for lucrative economic reporting as an incentive, so the development of a more advanced and unique safety system to win over the relevant market segments may be a better choice.

Figure 10: Toyota's Vehicle Safety Plan



Source: Toyota's Corporate Governance

Employee Participation

In recent years, Toyota has aimed to create a positive work environment and encourage work-life balance. There are two corresponding development programmes to achieve this goal: first, encouraging workplace participation among female employees; and second, creating a maternity-friendly environment. From 2020-2025, it aims to maintain a certain female graduate recruitment rate (greater than or equal to 40% for administrative positions and greater than or equal to 10% for technical positions), to have the number of telecommuting system users at 50% or more of the entire company's headcount, and to promote the taking of maternity leave regardless of gender.

However, if we compare these three specific measures with other top companies in the same industry, we will get some interesting findings. As far as Japan is concerned, Honda has similarly emphasised the inclusiveness of the community but has not introduced relevant policies with clear digital metrics. Tesla released its first internal employee gender statistics in June 2023, with more than 70% of its executives being male. Meanwhile, in its diversity report released in 2024, there is a similar lack of development plans with precise digital metrics.

Overall, female participation within the automotive industry is much lower than that of men, especially in STEM positions. Toyota, a leading company in the automotive industry in Japan and Asia, may be able to do better in future.

Innovative Technology

As mentioned previously, Toyota's hydrogen fuel cell technology serves as an alternative to chemical batteries and physical energy storage in a low-carbon economy. The advantage is breaking free of limitations posed by battery raw materials and natural resources. Hydrogen can also be easily transported through pipelines, making it a promising energy option. Toyota has keenly seized on this trend in both energy development and product design and manufacturing but is still facing the problems of market acceptance and costs. In terms of developing the market, hydrogen fuel cell electric vehicles do not have an advantage in the long-distance transportation industry, which is an important pillar of the automotive market. To win this market, Toyota will need to persevere with research and development as well as invest in technology.

In terms of cost reduction, Toyota should not only continue to operate the Green Bond Programme, a unique fundraising method, but also seek more government financial support.

Conclusion

Overall, Toyota has clear plans for both energy and products. In terms of energy, Toyota plans to introduce e-fuels and biofuel to broaden its energy source and gradually reduce its dependence on traditional energy sources. In terms of product design, Toyota has stated that the company's primary objective is not the comprehensive development of EVs which are vulnerable to inadequate infrastructure. Instead, Toyota has indicated that its future strategy will be centred on hybrid vehicles and FCEVs which are regarded as innovative and revolutionary. Although the new products still face challenges in terms of low market acceptance, high costs and uncertainty regarding their safety and regulations, the future is still promising for Toyota.

Discussion Questions

1. How does Toyota plan to reduce emissions for its vehicles?
2. As a global company, it is important to ensure that Toyota's supply chain is in compliance with ESG standards. How should it do so with respect to environmental compliance and also human rights safeguards that involve its suppliers?
3. How can Toyota enhance market awareness and acceptance of its newer technologies?

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Bittersweet Tooth? How Meiji Navigates the Dark Side of the Chocolate Industry

HUANG Keyuan
Jijie Jerry LIU
Alethea NADINE
Simon Gomez ROSSELLI
Vidhi SARIN
SHEN Siyu
ZHANG Yizhu

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Introduction

Chocolate Industry

The chocolate industry is a thriving industry that encompasses a wide range of activities, from cultivating and harvesting cocoa beans to manufacturing, packaging and distributing a variety of chocolate products. It is consumed in various forms, including bars, candies, beverages and even desserts. This broad appeal has contributed to the steady growth of the chocolate market. Although chocolate was formerly popular only in Western markets, in recent years, its popularity has crossed age and geographical boundaries and cultural differences, with its appeal rapidly expanding in emerging economies (Fortune Business Insights, 2024).

Market Overview

The global chocolate market was valued at US$120 billion in 2023 and is expected to grow at a compound annual growth rate (CAGR) of 4.1% from 2024 to 2030. This growth trajectory is driven not only by the impact of strong demand in mature markets such as Europe, the Americas, and Japan but also by increased demand for chocolate from people in regions such as China, India, Indonesia, Mexico and Turkey.

The European region leads global chocolate consumption, accounting for around 50% of total cocoa production. This is closely followed by the Americas and Japan, where chocolate has a long-standing cultural appeal and established markets. However, Asia Pacific is a fast-growing chocolate market with consumers increasingly preferring indulgent confectionery products. Increasing disposable incomes and changing consumer tastes in countries such as China, India and South Korea are contributing significantly to this upward trend.

Figure 1: Chocolate Market by Region

Source: Grand View Research

The chocolate industry has experienced peak sales, especially in developed markets. For instance, US chocolate sales during Valentine's Day in 2022 reached US$4.1 billion, highlighting the high demand for chocolate during seasonal and cultural celebrations. This seasonal demand is complemented by a growing interest in organic and natural chocolate products.

Emerging Market Trends

Consumers are increasingly recognising the benefits of chocolate and cocoa in stress relief and mood improvement. Scientific studies have shown that moderate consumption of chocolate increases serotonin, which calms the brain and acts as an antidepressant. It also prompts the release of endorphins in the body, which rapidly improves mood.

In addition to this, research has revealed a link between dark chocolate and cardiovascular benefits and healthy ageing. Consuming dark chocolate in moderation can enhance blood circulation in the body, lower blood pressure, improve brain function, and reduce the risk of heart disease because it contains important minerals such as zinc, magnesium, phosphorus, copper and iron. As consumers become more aware of the benefits of chocolate, their demand for quality chocolate products will increase. This trend is not limited to developed markets; emerging markets such as Asia are also showing strong interest in sustainable and premium chocolate.

The Production of Cocoa

Cocoa is an invaluable commodity in several food products, such as cocoa powder, chocolate liquor, and blends of the two, which are used in bulk to flavour chocolate products such as syrups, toppings, chocolate milk and prepared cake mixes. It is also used in the pharmaceutical industry, such as in skin care.

About a third of the world's cocoa grows in West Africa. Unfortunately for chocolate lovers, the cultivation of this product is the leading cause of deforestation, as land is cleared to grow the crops. One of the biggest economies of West Africa, Côte d'Ivoire, commonly known as the Ivory Coast, lost 94% of its forest cover from 1990 to 2015, and at least a third of that was due to cocoa farming. The situation is similar in Ghana (WWF, 2023).

The Problem of the Industry

Most cocoa cultivation is carried out by as many as five to six million small-scale farmers. They are heavily relied on by the industry but earn little to no money for their labour. Like other industries such as fashion, the farmers are paid below a living wage (less than US$1) and live in extreme poverty. Further, the presence of intermediaries has led to further social injustice and exploitation of these farmers. This leads to a loss of profit for the actual cocoa producers, and the majority of profits are held by a few large corporations.

Gender and income inequalities are the common sources of unsustainable practices on the ground level. Gender disparity and inequalities in many areas of the business increase the risk of poverty, particularly for families that are headed by women. Small landholdings that produce minor amounts of cocoa at high operating costs are forced to cut costs in their labour wages. When the cocoa prices are too low, the farmers are pushed further into poverty since this is their only source of income. As a result, they are indirectly pushed into taking unethical actions, including but not limited to forced and child labour.

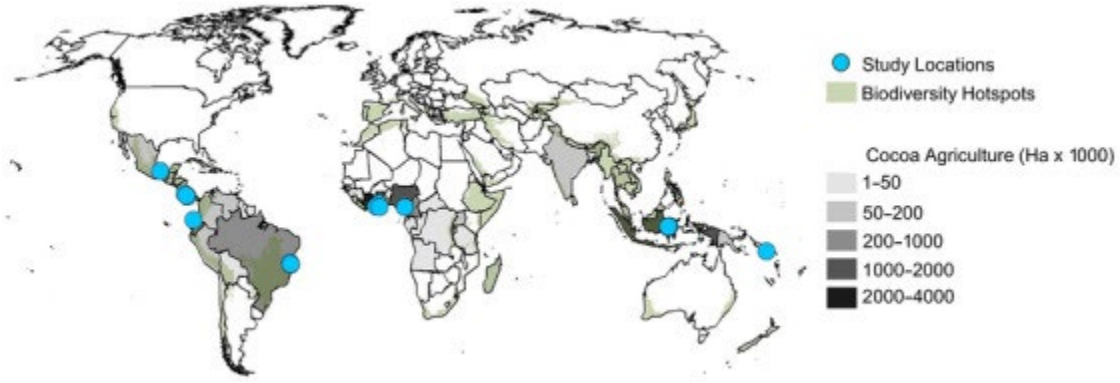
According to the International Labour Rights Forum, child labour and slavery are extreme in the chocolate production industry in regions such as West Africa and Brazil, where 70% of the world's cocoa is produced (More Gratitude, n.d.). In 2019, more than 1.56 million children formed child labour in the cocoa sector in Ghana and Côte d'Ivoire (WWF, 2023).

The working durations are as long as 14 hours, and most children are forced to work with dangerous machinery and tools such as chainsaws to clear forests and machetes to cut bean pods—all of which violate international labour laws and the United Nations Convention on eliminating the worst forms of child labour (ILO, 2021; ILO, 1999; Whoriskey, 2019). They are then forced to pack the pods into sacks that weigh over 100 pounds (about 45 kg)—each of which must be carried through the forest (Whoriskey, 2019). Aly Diabate, a former enslaved cocoa worker, said, "Some of the bags were taller

than me. It took two people to put the bag on my head. And when you didn't hurry, you were beaten." (Raghavan and Chatterjee, n.d.)

Social exploitation is not all; the cocoa industry also negatively impacts biodiversity and the environment. As of 2021, cacao (*Theobroma cacao*) is farmed on 11.8 million hectares of land, of which a vast majority is across biodiversity hotspots in West Africa, South America and Southeast Asia (Panahi et al., 2022).

Figure 1: Cocoa agriculture area by country overlaid, by biodiversity hotspots and study locations used in meta-analysis of cocoa impacts on bird diversity



Source: Bennett et al. (2022)

The resulting monoculture (growing only one crop) leads to diseases, pests and soil degradation, leaving behind impoverished land with poor biological stability for human settlements (Clough et al., 2011; Leakey, 2018).

Global Governance and Regulations

The challenges faced by the cocoa industry are complex and multifaceted. To mitigate and address these issues, several certification schemes, such as Fairtrade and Rainforest Alliance, have set standards for cocoa production and provided incentives for farmers to adopt sustainable practices.

Suppliers are key stakeholders in the sustainable production of cocoa cultivation. Suppliers, particularly in Asia, have been under increased scrutiny to uphold ethical processes and promote fair labour and environmental standards in their supply chain (Mijatovic, 2024). This awareness and demand for sustainable products come from consumers who are becoming more aware and conscious of transparency in their product consumption. Social media platforms and networks like TikTok and internet penetration have been crucial in increased activism. Brands like Tony's Chocolonely, Alter Eco and

Chocolate Concierge are gaining traction among Asian consumers (Kadence, n.d.), which is reflected in the price increase of up to 15% in the past year for premium chocolate brands and a 20% increase in the volume of ethically sourced cocoa imported into the continent (Mijatovic, 2024).

In 1973, the first International Cocoa Agreement (ICCO, 1972) was enacted at a United Nations International Cocoa Conference, where the International Cocoa Organisation (ICCO) was also established. The ICCO organises and overlooks cocoa development projects with member countries and development agencies from across the globe. This inter-governmental organisation, located in Abidjan, Ivory Coast, has since created and operated within the framework of successive International Cocoa Agreements (ICCO, n.d.)

The most important breakthroughs of the present International Cocoa Agreement are: 1) the establishment of an explicit mandate on a Sustainable World Cocoa Economy, and 2) the founding of the Consultative Board on the World Cocoa Economy (ICCO, n.d.).

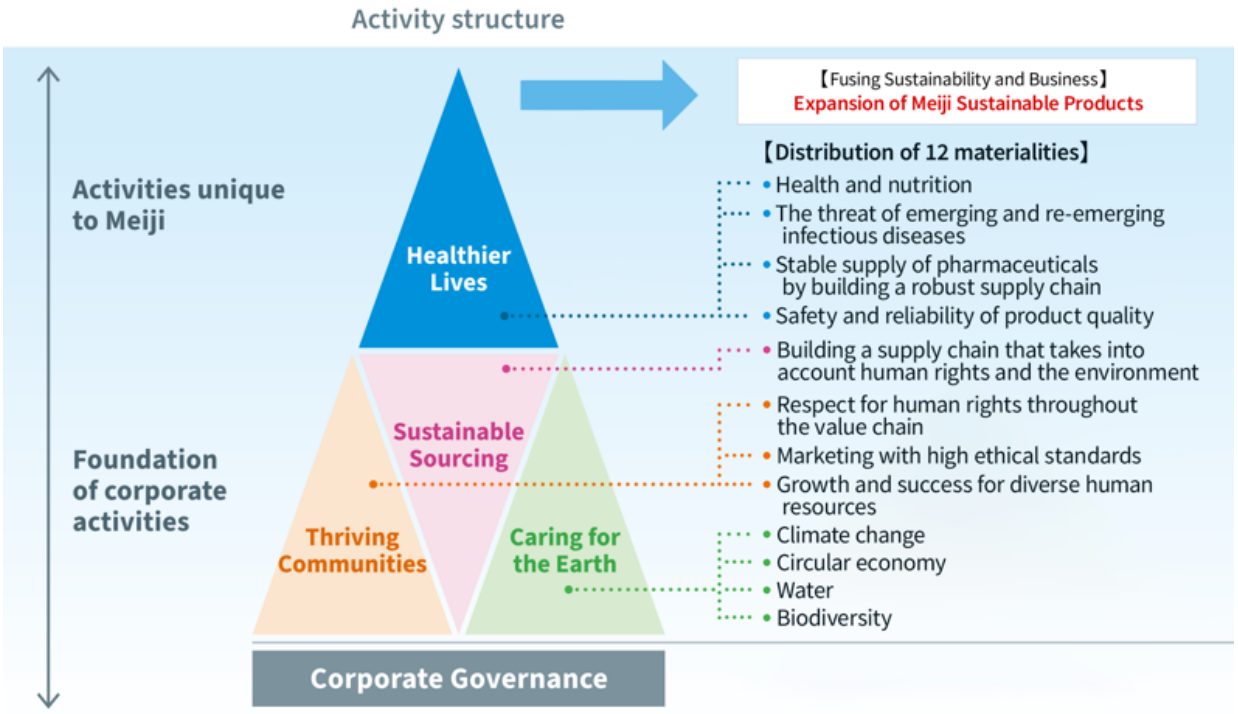
This report examines the chocolate brand Meiji and its efforts to be a sustainable cocoa-sourcing company in Asia.

Company Overview

Meiji Co., Ltd., established in 1916 and headquartered in Tokyo, Japan, is a renowned company in the food and pharmaceutical industries. Its product line spans chocolate, milk, ice cream, biscuits and nutritional supplements. As one of Japan's largest chocolate and dairy producers, Meiji's business continues to grow globally. As a global company dedicated to health, Meiji combines expertise in both food and pharmaceuticals to deliver health and wellness to people everywhere.

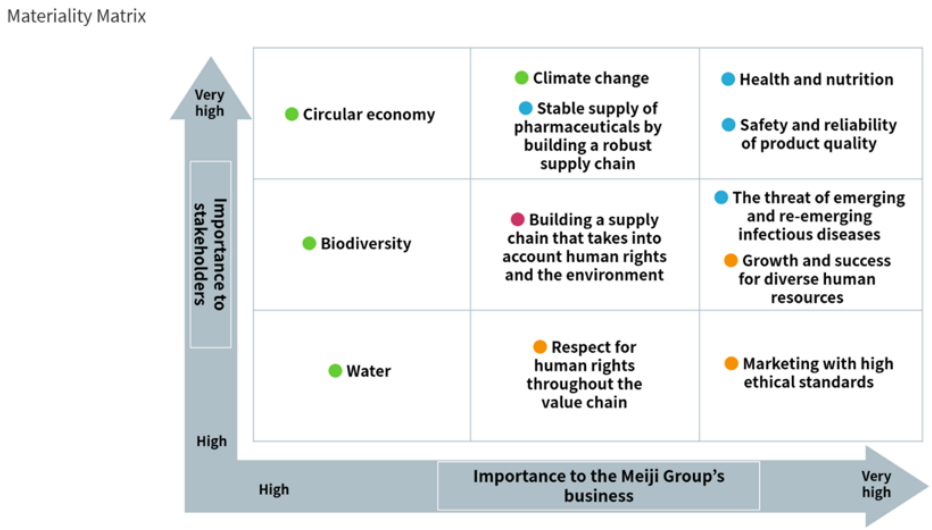
Meiji owns over 20 chocolate brands, with its first and iconic brand, Meiji Milk Chocolate, launched in 1926. Meiji holds 24.7% of the chocolate market share in Japan, making it the undisputed sales champion. Meiji's business footprint continues to expand across China and other Asian markets, as well as the US.

Figure 3: Meiji's Sustainability Activities



Source: Meiji's Company Website

Figure 4: Meiji's Materiality Matrix



Source: Meiji's Company Website

Sustainability Vision, Mission and Core Business Values

In 2021, Meiji adopted a new slogan “Now Ideas for Wellness”. The slogan reflects Meiji's aspiration to become a sustainable company that addresses global social issues through a health-focused perspective.

In its 2023 Medium-Term Business Plan, Meiji established “Meiji ROESG” as its top management goal to embody the slogan, implementing sustainability management by assessing the value created by the Group in terms of both economic and social value. According to Kazuo Kawamura, CEO, Meiji, they have raised employee awareness, which has allowed significant progress in sustainability activities. Meiji aims for sustainable business growth by integrating social issues into its business strategy and making sustainability a core strength.

To celebrate its 110th anniversary, Meiji created the Sustainability 2026 Vision that focuses on fusing sustainability and business by assessing a list of risks and opportunities and organising them in terms of importance. Activities are categorised into four distinct groups: Healthier Lives, Sustainable Sourcing, Thriving Communities, and Caring for Earth (see Figure 3). They have organised these activities in a matrix based on their sustainability materiality and business materiality as seen in Figure 4.

The 2026 Vision consists of three main themes: promoting employees’ physical and mental well-being, harmonising with the environment, and maintaining sustainable procurement to foster prosperous communities.

To improve employee well-being, Meiji has established a labour safety and hygiene policy to ensure employee health and workplace safety. These measures include setting relevant regulations, conducting workplace risk assessments and prevention, creating a comfortable work environment, managing employee health, and providing internal training to raise safety awareness.

In terms of environmental preservation, Meiji seeks to achieve a decarbonised society by encouraging energy saving, energy generation and the use of renewable energy to reduce CO_2 and other greenhouse gas emissions. Meiji also prioritises water source protection, recognising the importance of limited water resources. Meiji aims to manage pollutants generated by its business activities and encourage waste reduction, reuse, and recycling to create a circular economy.

For sustainable supply chain development, Meiji supports the NDPE policy, which means “No Deforestation, No Peat, and No Exploitation” for all raw material procurement. Meiji adheres to strict regulations to emphasise fairness, transparency and anti-corruption.

Collaborating with suppliers, Meiji has established detailed supply chain standards, including compliance with all applicable legal regulations, ensuring a safe and healthy work environment, protecting human rights, fair and transparent recruitment, prohibiting child and forced labour, reducing CO_2 emissions, conserving water resources, and preventing pollution.

When reviewing Meiji's materiality matrix, it is possible to see that problems under the Healthier Lives theme are concentrated in the upper right corner, which indicates its highest level of importance to the company. They have also characterised the Thriving Communities theme as an important sustainable issue for their business materiality. Finally, the Caring for Earth theme concentrates on the left part of the materiality matrix, which means Meiji does not consider this theme as having a very high impact on the economic aspect of their business.

Sustainability Highlights

Economic Sustainability: From Sustainability to Value

To achieve economic growth while also promoting social progress and protecting the environment, companies must try to realise responsible production and sustainable supply chain management. Meiji has achieved both environmental and economic progress by reducing its carbon footprint as well as pursuing sustainable business growth in the following ways.

Production Efficiency and Stable Supply Chains

To reach its environmental goals, Meiji has adopted the following methods to stabilise its supply chain:

Collaboration with cocoa farmers

Through Meiji Cocoa Support (MCS), Meiji purchases sustainable sourced cocoa beans at premium prices from certain regions (Meiji Group, 2023). This practice serves to improve the quality of cocoa beans, reduce farmer exploitation and support local environmental conservation.

Creating a global supply chain to achieve cost efficiency and stable purchasing

By evaluating suppliers through a sustainability questionnaire, Meiji selects and cooperates with suppliers who can stably provide high-quality cocoa, ensuring full traceability back to the farm. These efforts have enabled Meiji to reach 62% sustainable cocoa sourcing and are projected to achieve 100% by the end of 2027 (Meiji Group, 2024).

Sustainable Market Value

Global Business Expansion

Meiji considers global business expansion as the key to sustainable growth. By investing in human capital and other international resources, Meiji aims to cultivate a corporate culture that allows diverse values and knowledge sharing, becoming the driving force for entering new markets and global business expansion. By continuously improving operating profit margins led by sales growth and cost reduction. Meiji plans to increase the proportion of overseas sales to 30% by 2030, supporting investment risks in overseas markets by increasing the profitability of domestic businesses.

Meiji ROESG Management

To achieve both social and economic value as well as deliver Meiji's unique health value, Meiji integrates sustainability with an important business strategy: the ROESG management model (Meiji Group, 2021).

Two indicators are included in this model: ROE (Return on Equity) to measure departmental profitability and ESG goals to track sustainability progress. Based on these two indicators, Meiji also sets up relative Key Performance Indicators (KPIs) covering economic growth, efficiency and shareholder rights, including metrics like overseas sales, profit attributable to parent company owners, return on invested capital (ROIC) and total dividend payout ratio. External evaluations are also included, such as the MSCI ESG Ratings, Dow Jones Sustainability Index and FTSE4Good Index.

In the 2026 Medium-term Business Plan (Meiji Group. n.d.), Meiji aims to advance ROESG management for business structure optimisation and financial target growth. At the same time, by aligning its business strategy with social issues and creating social value through sustainable innovation, Meiji plans to realise the “trade-on” of economic and social value by 2026.

Although Meiji failed to fully achieve its ROESG target in 2023, it has met the target in all five ESG external indicators. In future, Meiji plans to enhance its ROIC through strategic investment and portfolio optimisation, while increasing shareholder returns through increased dividends and stock repurchases.

Integration of Social Issues and Business Growth

Meiji enhances its corporate sustainable value by providing a variety of products and useful information that contributes to health, providing a socially and environmentally friendly value chain (explained below).

Environmental Sustainability: Meiji's Efforts in Biodiversity Conservation and Combatting Deforestation

Meiji has been committed to addressing deforestation and biodiversity conservation in the chocolate industry through its supply chains. Following their Sustainability 2026 Vision, Meiji has adopted several initiatives, including sustainable sourcing, establishing key partnerships with non-governmental organisations (NGOs), actively participating as a member of the Cocoa and Forests Initiative (CFI) and contributing to the investment of climate-smart cocoa practices.

Environmental Initiatives for Sustainable Cocoa Production

Meiji's efforts towards sustainable cocoa bean production include efforts to stop deforestation. To reach its goals, Meiji actively participates in the CFI by the World Cocoa Foundation (WCF), a joint action between 33 WCF companies and the governments of the largest cocoa-producing countries to transform the chocolate industry.

Their primary aim is to stop and reverse deforestation and increase forest restoration in cocoa farm regions (World Cocoa Foundation, n.d.). One of Meiji's overall visions, as mentioned in their CFI Initial Action Plan Narrative for 2019-2022, is forest protection and restoration (Meiji Group, n.d.). The primary environmental actions that Meiji has taken in cocoa-producing areas include GPS mapping and farm monitoring, forest conservation, climate-smart cocoa and good agricultural practices (GAP) along agroforestry projects. Their actions for 2021 to 2023 are shown in Table 1.

GPS Mapping and Farm Monitoring

Apart from international collaborations, Meiji works closely with local partners for deforestation verification to monitor suppliers' farms. Through GPS mapping and on-site surveys, Meiji can monitor land use changes and detect suppliers' compliance to not interfere with protected forest areas. Meiji aims to achieve 100% traceability by 2026 in Ghana and by 2030 globally. As of 2023, Meiji has successfully mapped 5,356 farmers (54.9%) in Ghana, of which 54 were in protected areas, and thus were remediated or removed from the supply chain. By increasing coverage, Meiji can ensure that their supply chain aligns with their goals of stopping deforestation.

Forest Conservation

As part of their initiative, Meiji distributes tree seedlings to restore the forest environment and offset the impacts of cocoa farming on the biodiversity surrounding the cocoa farms. Meiji has cumulatively distributed 144,680 multipurpose trees, 243,563 cocoa seedlings, 100,000 vegetable seedlings and 25,500 shade trees, fulfilling the goals written in their action plan. Meiji's efforts in biodiversity conservation and ecosystem restoration have contributed to improving soil health and maintaining wildlife habitats (Cocoa and Forests Initiative, 2023).

Forest Education

Meiji provides training to local farmers on GAP and climate-smart cocoa practices, focusing on sustainable agricultural techniques and the restoration of ecosystems while improving yields. By equipping farmers with this knowledge, farmers can actively adopt sustainable methods that enhance crop resilience and minimise the carbon footprint of cocoa production. At the same time, they are raising awareness of the detrimental effects of deforestation and related forest policies.

Agroforestry Projects

Meiji has been actively promoting agroforestry since 2009, and more so as they included it as part of their CFI action plan. Agroforestry is the practice of deliberately including trees or woody vegetation in crop systems after deforestation to produce environmental and economic benefits through a land management system (Torralba et al., 2016). It has been practised for many centuries and has been proposed to be a solution for sustainable agricultural practice.

Its main benefits include climate change mitigation, conserving biodiversity and contributing to land productivity (Karaca and Ince, 2023; Muthuri et al., 2023). After deforestation, the land is cultivated and cocoa seedlings alongside other seeds are planted. These other seeds will grow into tall trees that shade cocoa trees. By doing this in parallel, farmers can sustainably produce cocoa in the same location while conserving the forest. Meiji's primary locations for agroforestry projects are in Brazil and Ghana, covering more than 1,400 hectares of land where they collaborate with local governments, NGOs and farmers for research and cultivation methods. In these areas, Meiji has successfully grown other crops alongside cocoa such as bananas, plantains and peppers. This method not only conserves biodiversity and protects the forest, but also provides additional income to farmers.

Table 1: Meiji's CFI actions from 2019 to 2023

Year	Meiji's CFI Action
2019	- Socialisation on Good Agricultural Practices (GAP) to 2548 farmers - Distributed 112,860 seedlings to restore forest through agroforestry - Set up 10 cocoa seedling centres and distributed 71,933 seedlings to farmers
2020	- Guided 191 farmers outside reserve areas on cocoa production adaptable to climate change - Established a cocoa seedling centre - Distributed 3525 productive seedlings to farmers - Built wells in five villages to water seedlings, cocoa farming and daily life
2021	- Provided guidance to farmers on GAP - Distributed 127,926 cocoa seedlings - Planted 10,000 multipurpose trees on cocoa farms and an additional 2,000 outside the farm - Established a nursery for cocoa seedlings - Donated a well to two villages
2022	- Training agroforestry and GAP for farmers - 17,000 shade tree seedlings were distributed to cocoa farms - Surveyed and mapped the status of more than 5,000 farms and promoted agroforestry at 1,032 farms
2023	- Providing 5,117 farmers with technical assistance to professionalise and optimise cocoa farming practices - 4,626 farmers received technical assistance to be more resilient to climate change and reduce and remove carbon emissions on farms such as Climate Smart Cocoa - Supporting 691 farmers to adopt and expand agroforestry - 1,011 hectares of new agroforestry farms have been started - Distributing 20,000 trees for off-farm planting and 11,879 multi-purpose trees for on-farm planting.

Source: Meiji's Website - Forest Protection

Sustainable Sourcing of Other Ingredients in Chocolate Products

Apart from its cocoa sourcing, Meiji also enforces sustainable sourcing policies for other ingredients used for chocolate production, such as palm oil and dairy products, along with their packaging. Similar to cocoa, palm oil plantations have detrimental impacts on the environment, especially deforestation and habitat loss. In 2016, Meiji joined the Roundtable on Sustainable Palm Oil (RSPO), an organisation that sets global standards and certifies sustainable palm oil production. As a member, Meiji has put in efforts to ensure the traceability of palm oil through mapping of its supply chain, and by 2023, had completely sourced all its palm oil from RSPO-certified companies (Sustainable Food Business, 2023). RSPO certification requires organisations to produce palm oil under strict guidelines and comply with RSPO sustainability requirements while minimising damage to the environment (Roundtable on Sustainable Palm Oil, n.d.).

Milk and dairy are also important ingredients in Meiji's chocolate production. The dairy industry also has its sustainability challenges like methane emissions and land use. Meiji has mapped out its actions towards sourcing sustainable dairy through several actions:

- **Collaboration with external partners:** Meiji is part of Pathways to Dairy Net Zero, an international collaboration consisting of organisations in the dairy sector to act against climate change and aims to reduce greenhouse gas emissions to net zero over the next 30 years.

- **Promotion of circular dairy farming:** Meiji supports and works with organic dairy farmers in Japan who use regenerative agriculture techniques such as repurposing manure for organic feed compost. This improves soil health, reduces carbon emissions and maintains cow welfare and health.

Lastly, Meiji has been expanding the use of eco-friendly packaging for their products by using Forest Stewardship Council (FSC)-certified paper, Programme for the Endorsement of Forest Certification (PEFC)-certified paper, and post-consumer paper; and has currently achieved a 100% usage rate in 2024. The FSC certification ensures that the paper is harvested responsibly from sustainable forests that include zero deforestation; it also supports change from preservation to conservation (Forest Stewardship Council, n.d.). In addition, Meiji is working towards continuously minimising the amount of packaging needed in their products, reducing the total number of papers needed.

By committing to these other parts of chocolate production, Meiji is reducing the environmental impact of its entire ingredient supply chain, which is critical for maintaining environmentally sustainable chocolate production.

Social Sustainability

In recent years, there has been an international demand for sustainable and responsible sourcing along the supply chain. In other words, for the consumers of today, fair treatment of workers is essential for the company as well as its suppliers (Villena and Gioia, 2020). Studies have shown that 60% of Americans say that they are drawn to sustainable Cacao messaging on the chocolate package (Smith, 2024). Although the trend is not as big in Southeast Asia, it has been shown to grow in recent years (Mijatovic, 2024; “How rising demand”, 2022). This has proved to be an issue for the cocoa industry, which has historically relied on cheap labour to keep chocolate prices low.

Cacao is produced in Africa, Asia and Latin America, with western African countries like Ghana and Ivory Coast contributing 70% of the world’s cacao supply (Wessel and Quist-Wessel, 2015). Considering the high poverty rates, infrastructure deficits, historically weak private sectors, high inflation rates and low purchasing power in these West African countries (Akinbami, 2024; Coface, 2024, Augus), it is not surprising that they face challenges in maintaining a consistent supply of sustainably sourced cocoa.

These regions have also reported numerous social sustainability issues, such as child labour and modern slavery (Food Empowerment Project, 2022). Meanwhile, Latin American countries encounter different issues, including social tensions, supply chain disruptions and food security concerns among others, which highlight the complexity of the situation and how it varies across regions (Rikolto, 2024). Although several international efforts, such as the establishment of the ICCO in 1973 and “The Sustainable Cocoa Initiative” in 2020, have aimed to address these issues (European Commission, n.d.), the problem persists in 2024.

Meiji Cocoa Support

Meiji sources their cocoa beans from Ghana, Venezuela and Ecuador. To address social sustainability issues, they launched an internal initiative Meiji Cocoa Support (MCS). Premium prices are paid for all purchased cacao beans to promote a better livelihood for their producers. The initiative aims to achieve the following goals: 100% traceability of their cacao beans by 2026, zero child labour in Ghana by 2027 and for all their suppliers by 2031.

MCS has two aspects associated with social sustainability. The first aspect is working with the International Cocoa Initiative, a non-profit organisation dedicated to eradicating child labour and forced labour in the cocoa industry. Particularly, they have worked to support the Child Labour Monitor and Remediation Systems (CLMRS), which visits farms to verify family structure and raise awareness of child labour. Meiji published that as of September of 2023, these systems have been implemented with 36.7% of their suppliers,

with 650 cases of child labour identified and all reported cases remediated (Meiji Group, n.d.a). Additionally, For the second initiative within MCS, Meiji is offering support to cocoa farmers across different regions, providing knowledge, healthcare, education and farm equipment, among many others. They design a strategy based on the needs of each community and align those to the United Nations Sustainable Development Goals (SDGs) (Meiji Group, n.d.b).

Japan International Cooperation Agency

Meiji joined the Platform for Sustainable Cocoa in Developing Countries, created by the governmental agency Japan International Cooperation Agency (JICA) in 2022. Through this platform, they participate in forums and committees with different stakeholders to share experiences and knowledge. Industry-wide problems like traceability and child labour are discussed, as well as issues particular to each country that produces cocoa. Feasible solutions are suggested (Japan International Cooperation Agency, n.d.).

Governance Sustainability

To achieve corporative governance sustainability, Meiji implemented its internal and external sustainability strategy in the following ways.

Internal Governance Sustainability

Corporate Governance in ESG

To implement its sustainability strategy internally while also fostering engagement with external stakeholders, Meiji established the Group Sustainability Committee and Chief Sustainability Officer (CSO) position (Figure 5). It aims to enhance the group's financial performance as well as sustainability reputation (Meiji Group, 2023).

Figure 5: Meiji's Sustainability Committee

Source: Meiji's Sustainability Management Website

Chief Sustainability Officer (CSO)

The CSO is responsible for monitoring the company's overall sustainable business strategy and enhancing ESG performance, especially driving the implementation of ROESG management. The CSO also communicates with external stakeholders, including investors and regulators, regarding Meiji's performance and perceived sustainability.

Group Sustainability Committee

The Group Sustainability Committee is a group-level committee reporting directly to the board of directors. Focusing on material issues critical to the company's business targets, the committee annually discusses the materiality and KPIs set in the next mid-term business plan, identifying and evaluating sustainability risks and opportunities related to the group's business and formulating corresponding countermeasures. In addition, the ESG Advisory Board will provide advice from external experts and exchange views with the CEO, CSO and other internal members to ensure sustainable development work.

Corporate Governance in Shareholder Relationship

Meiji aims to provide honesty, resilience, responsibility and transparency to ensure shareholders' rights. It classifies stakeholders into several categories, including customers, employees, shareholders, investors, business partners, government agencies, non-profit orgnanisations, NGOs, local communities, nature and future generations. Meiji conveys shared value by providing valuable products and

information that meet stakeholder needs while solving social issues. It also strives to increase transparency in information disclosure and communicate with stakeholders through various channels, including annual reports, websites, investor relations activities etc.

Corporate Governance in Risk Management

Meiji has managed its risk strategy based on its business vision, sustainability vision, and business foundation vision. From the perspective of the company's business management, Meiji minimises risks and develops countermeasures to achieve sustainable growth. To support this, each operating department within the company has dedicated committees focused on strengthening information security. In the case of significant information security incidents, the risk management executive promptly reports to the CEO. Meiji has identified some key risk areas, including information leakage, unstable product supply, environmental issues and compliance risks etc.

On employee education, Meiji emphasises information security through regular training, e-learning and orientation for new hires. Essential skills include not responding to suspicious emails and strengthening awareness of security protocols.

External Sustainability – Social Cooperation

Meiji has established strategic partnerships with local governments, NGOs and local and international organisations to address challenges faced by cocoa-growing communities (Meiji Group, 2024). By supporting fair labour practices, community development, and educational programmes for farmers and their families, Meiji has achieved the goal of promoting local sustainable agriculture, reflecting SDG 17 (global partnership for sustainable development).

Cooperation with International Agencies

To achieve sustainable development partnerships, Meiji is looking into international cooperation (Meiji Group, 2021). It pays much attention to the sustainable production of cocoa beans and joined the World Cocoa Foundation (WCF) in 2006. Through WCF, Meiji joined several initiatives led by WCF:

- **Cocoa and Forest Initiative (CFI):** Established in 2017, this initiative aims to reduce deforestation and protect forests by producing cocoa in the Republic of Ghana and the Republic of Côte d'Ivoire.

- **International Cocoa Initiative (ICI):** This aims to eliminate child labour and forced labour in cocoa cultivation in West Africa. As the first Japanese company to join ICI in 2021, Meiji seeks to eliminate child labour and forced labour on cocoa farms.

  Meiji actively participates in various organisations to promote international sustainable production. For example, Meiji signed the United Nations Global Compact in April 2019 and has adopted initiatives aligned with the Compact's principles on human rights, labour, environment and anti-corruption. In addition, Meiji is also a member of the Consumer Goods Forum and the Roundtable on Sustainable Palm Oil, which helps minimise environmental impact and bring economic benefits to communities in palm oil-producing areas.

  In addition, Meiji has adopted frameworks relating to the Task Force on Climate-related Financial Disclosures (TCFD), the Science Based Targets initiative (SBTi) and the global corporate renewable energy initiative RE100 to reduce greenhouse gas emissions and help achieve the goals of the Paris Agreement.

Cooperation with Local Agencies

Meiji also works with local organisations such as universities and social organisations. By doing so, Meiji supports local biodiversity and farming. For example, Meiji's Osaka factory collaborates with Osaka Prefecture in the "Adopt a Forest Programme", helping to transform abandoned forests into broad-leaved forests to prevent global warming and protect biodiversity. Meiji is also actively involved in scientific and technological innovation. For example, partnerships with Vietnamese research institutions and farms have led to the successful breakthrough of cocoa flavanol extracts, positioning Vietnam as a new cocoa bean planting location. This breaks the geographical limits in producing cheap and high-quality cocoa.

Meiji attaches great importance to cooperative activities in Japan as well, making great contributions to climate and social production welfare. Since 2019, Meiji has participated in the Japan Climate Initiative, the Japan Climate Leaders Partnership (JCLP), the Japan Hydrogen Association (JA2A) and the Japan Migrant Workers Towards a Responsible and Inclusive Society Platform (JP-MIRAI), etc.

Challenges

Balancing Sustainable Sourcing with Cocoa Supply Needs

One of Meiji's primary challenges will be to maintain a steady flow of ethically sourced cocoa supply while balancing costs, minimising deforestation and ensuring a fair wage to its farmers. Meiji still needs to create a profitable margin for its economic sustainability in the long run, and most of their sustainability actions require big investments and a substantial amount of time for implementation.

Despite the commitments that Meiji made under the CFI, achieving 100% traceability is still a challenge due to the nature of cocoa farms and the high cost of GPS mapping and farm monitoring systems. An increase in cocoa demand can put pressure on suppliers to increase production on new lands in a short period of time, thus reversing the reforestation progress. Moreover, the chocolate industry spans multiple countries with differing environmental and social policies, making it difficult for Meiji to set a uniform standard across all its sourcing regions.

Another aspect to be considered is the labour. An increase in cocoa demand means more labour is needed to pick up production. To remain sustainable and fair, Meiji has to pay a fair wage to workers and a fair price for the cocoa beans. All these costs certainly accumulate higher than unsustainable practices and can affect Meiji's profit margin. Thus, solving the rising supply chain price while maintaining all aspects of sustainability remains a big challenge that Meiji has to work on.

Limitations of Technological Innovation

Despite active research in sustainable cocoa production and turning to hydrogen and ammonia fuels instead of fossil fuels, it is still difficult for Meiji to overcome current technological barriers in bringing further innovations to sustainable development. For example, the application of clean energy and resource recycling innovations to improve production efficiency and reduce carbon emissions are still unfulfilled goals.

Real Impact or Greenwashing

While Meiji actively collaborates with social NGOs, it still lacks further third-party endorsement for their chocolate production. Most of Meiji's sustainability information is from their own claims, accessible through their website or sustainability reports. While its press releases and ESG outlines indicate sustainability commitment, a third-party review of its social responsibility indicates otherwise. According to Chocolate Scorecard, an initiative from the non-profit Be Slavery Free, Meiji is in the bottom 20% of chocolate companies in terms of traceability and transparency and farmers' living income, as well

as ranking below the median for child labour. Furthermore, its score decreased from the previous review, leaving questions unanswered about the values it presents publicly (Be Slavery Free, n.d.).

Future Approach and Direction

Certifications from Third Parties

To further cement its purpose-driven commitment to sustainability, Meiji can pursue a sustainability certification recognised worldwide by industry leaders, such as Rainforest Alliance, Fairtrade and B Corp. Although Meiji established its cocoa farmer support programme—Meiji Cocoa Support (MCS)—in 2006 to help push for more sustainable sourcing, having an official certification would lend credence to those claims and enhance Meiji brand trust in consumers' minds (World Cocoa Foundation, n.d.). These external certifications provide a public, third-party stamp of approval showing that a company adheres to ESG criteria. A certification from Rainforest Alliance may help Meiji to achieve its goal as it has rules encompassing fair trade, the environment, and labour standards focusing on the cocoa supply chain.

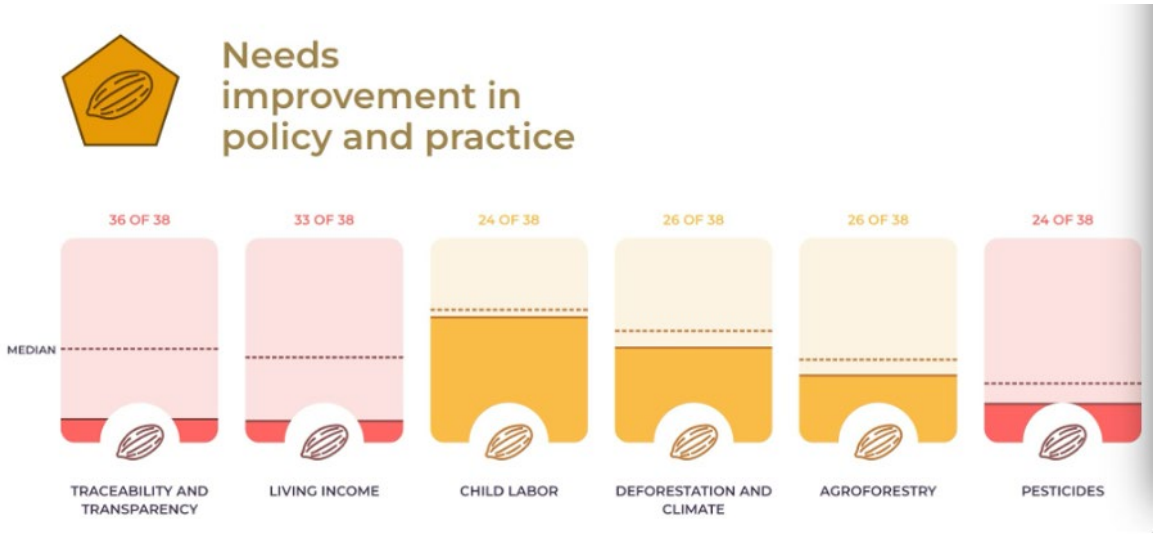
Having such certifications would also provide a point of differentiation in markets where consumers are increasingly seeking brands with proven ethical practices. By broadening such certifications, Meiji may cater to the needs of ethical shoppers throughout Asia Pacific. The efforts will also solidify its commitment to the "Now Ideas for Wellness" sustainability strategy through an approach encompassing its entire value chain.

Addressing Supply Chain Traceability and Transparency

Although Meiji is making efforts to tackle sustainability, supply chain transparency is still a challenge. In fact, for the Chocolate Scorecard, Meiji was in the bottom quartile when it comes to transparency and traceability, indicating that they still have a long way to go when it comes to verifying ethical cocoa sourcing (Chocolate Scorecard, 2023). Getting certified, however, would compel Meiji to practise even greater transparency—perhaps through unveiling real-time traceability tools like blockchain.

Blockchain enables secure and immutable records of every step along the supply chain, providing traceability of cocoa from farm to finished products for customers and stakeholders. In industries like food and textiles, the utilisation of blockchain is becoming more popular in terms of improving transparency. Meiji could use blockchain technology in cocoa sourcing to address ongoing concerns about child labour, deforestation and other environmental impacts.

Figure 6: Meiji's Position in Chocolate Scoreboard



Source: Chocolate Scorecard

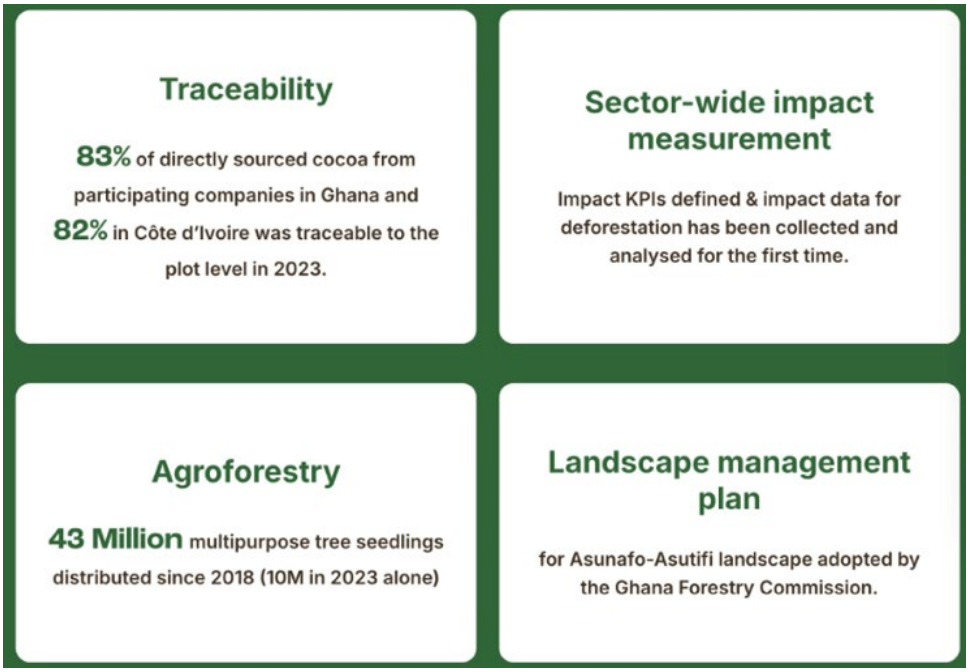
Expansion of the Meiji Cocoa Support (MCS) Programme

In Ghana and Ecuador, the MCS programme has been successful in providing good livelihood income for cocoa farmers and supporting sustainable practices (Meiji Holdings, 2022). Widening this programme for new cocoa-producing areas would solve Meiji's challenges of securing a sustainable cocoa supply whilst mitigating environmental and social risks.

Through the MCS programme, Meiji aims to put a stop to any associated child labour in Ghana by the year 2027 and in all its sourcing regions by 2031, a challenging but necessary goal. A wider rollout of this initiative can tackle localised challenges in farming observed within regions. Introducing additional environmental education resources will also promote sustainable farming practices. These initiatives can be scaled more effectively if Meiji partners with local NGOs and governments since the company is moving to new geographical regions.

Furthermore, Meiji may also try to run incentive programmes that would assist farmers with education or financial support in sustainable practices. These practices include agroforestry and planting multiple types of crops, which will benefit the soil as well as provide diversified income streams for farmers. Not only does this make agriculture more sustainable, but it also gives farmers greater economic robustness, which is essential for many, if not most of the smaller cocoa producers.

Figure 7: The Impact of Sustainable Practices on Cocoa-Producing Regions



Source: World Cocoa Foundation

Conclusion and Recommendations

Overall, in alignment with the overriding ROESG management model that connects economic and social value, Meiji is undertaking a wide range of initiatives towards sustainability throughout its operations. Meiji shows its proactive measures in sustainable development with responsible cocoa sourcing practices and health- and wellness-oriented product lines. It showcases its commitment to long-term environmental and social sustainability through sustainability targets, including 100% sustainable cocoa sourcing by 2027 and the development of region-specific social programmes.

But there are also several gaps around transparency in supply chains, certification and the impacts of climate change. As this report has pointed out, these gaps may prevent Meiji from transitioning towards becoming an industry leader in sustainability. The food and beverage industry has never been so exposed, and with consumers now more sensitive towards environmental or social issues, it is important that Meiji act now. Putting more finish to these efforts will bolster Meiji in matching up with global standards, changing market expectations and the management of supply chain risks.

To strengthen Meiji's achievements so far and to improve and expand its sustainable mission, the following recommendations are suggested:

- **Seek out broad sustainability certifications:** Even with Meiji's current efforts, supporting documentation such as a Rainforest Alliance certification or a B Corp score would provide strong third-party validation. Certification would lend some credibility to Meiji's pledges and make its efforts in this regard more believable to consumers and stakeholders. Such transparency not only enhances brand trust but also attracts sustainability-conscious consumers and strengthens Meiji's competitive advantage.

- **Enhance Supply Chain Transparency:** Meiji has already identified a lack of traceability in its supply chain as an issue relevant to the findings on its cocoa in the Chocolate Scorecard. It could work to resolve this by establishing blockchain tracking of cocoa and other raw materials from farm to finished products. Embracing blockchain would be a win-win for Meiji, its stakeholders and trading partners along its cocoa supply chain: the company could offer near real-time visibility into the source and processing steps of its cocoa so that concerns over child labour, deforestation and other supply chain-related risks could be traced and resolved in a timely manner. This action would cement Meiji's image as an open and principled chocolate manufacturer.

- **Expand the Scope and Impact of the Meiji Cocoa Support (MCS) Programme:** The MCS Programme has benefited many cocoa-growing communities in Ghana and Ecuador, and expanding this programme to additional regions could help seed exponential impact. Meiji might then consider more tailored sustainability targets and programmes that address local needs. Agroforestry and climate-smart agriculture can boost sustainable crop productivity, helping farmers earn more while ensuring they have options to earn a supplementary income. These types of initiatives would both fortify Meiji's supply chain as well as further its positive environmental footprint.

- **Implement Renewable Energy and Resource Conservation Programmes:** Meiji may also advance the integration of renewable energy within its manufacturing sites, which will further assist the company in meeting its decarbonisation efforts. Investments in solar, wind and other renewables would come in line with international efforts to contain the climate crisis and solidify Meiji's pledge to carbon neutrality. In addition, policies should also promote practices around the conservation of resources, such as more water recycling and waste material disposal, by making the production processes more circular.

- **Strengthen Governance for Stakeholder Engagement**: Sustainability is challenging due to the interconnectedness of global food systems. Governance for

stakeholder engagement for sustainable practices can be improved. Through regular forums with stakeholders and expanding the existing Group Sustainability Committee, Meiji could create mechanisms for timely receipt and consideration of advice and feedback from environmental experts, local leaders and sustainability organisations, both local and global. If Meiji actively performs stakeholder engagement, it might be possible to better understand the social and environmental needs in certain areas and encourage a more integrated approach to sustainability.

- **Greater Community Initiative on Cocoa-Growing Areas:** Meiji should also strengthen its community support initiatives by supplementing economic measures with health, education and infrastructure improvements in cocoa-growing areas. If Meiji would build partnerships with NGOs and local governments in West Africa and Latin America, it would be able to establish sustainable community support programmes beyond its sourcing regions. Such an investment would benefit cocoa farmers and lead to greater collaboration and responsibility among the actors in Meiji's supply chain (International Cocoa Initiative, n.d.).

Discussion Questions

1. What are the potential trade-offs that Meiji has to evaluate when trying to balance between fulfilling its Sustainability 2026 Vision and ensuring cost-effective production whilst operating in the chocolate industry?
2. How does Meiji's approach to sustainability reflect broader trends towards sustainability in the global chocolate market?
3. How does Meiji ensure transparency and fairness in its raw material procurement? Are there best practices that Meiji can implement in its system?
4. In what ways could Meiji enhance its sustainability impact reporting to better communicate its progress and challenges to stakeholders?

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China National Offshore Oil Corporation: From Resource Extraction to Sustainable Practices

HUANG Yaqing Jasmine
LUO Botao
MO Hanzhe
SONG Zijin
ZHEN Ru

Loh, L. (Ed.). (2025). *Cases in sustainability: Sectoral strategies*
Centre for Governance and Sustainability, NUS Business School

Introduction

The China National Offshore Oil Corporation (CNOOC) is one of the largest energy enterprises in China, playing an important role in the exploration and extraction of oil and natural gas outside China, both nearby and further afield. Established with support from the Chinese government which looks to become energy independent, CNOOC gradually increases its business scope to cover international operations, where it turns into a leading energy operator in the global industry. The corporation is based in Beijing, and its operations are spread across the globe, symbolising its significance in the energy sector.

CNOOC's success and expansion are often associated with the intricacies of environmental, social and governance (ESG) aspects. The state-owned company has a mission in China that is driven by the national sustainable development agenda, particularly the 2060 carbon neutrality vision and "The 14th Five-Year Plan", which aims for clean energy development, emissions reduction and environmental protection. CNOOC integrates sustainability concepts into its corporate strategy that runs through all levels of management, from the governance structures down to environmental procedures and societal engagement.

Sustainability Challenges for CNOOC

CNOOC's offshore oil and gas production business is inherently complicated from a sustainability viewpoint due to various concerns. In addition to the amount of greenhouse gas (GHG) emissions it adds to the environment, CNOOC faces a sustainability challenge while it tries to reach China's carbon neutrality aims. This situation is brought about by the operations that involve risks to the environment, such as oil spills, pollution, and habitat destruction.

CNOOC has one significant environmental challenge, CO_2 emissions. The oil and gas sector, largely when it comes to offshore production, is energy-intensive and in turn has high GHG emissions. In addition, CNOOC also faces more rigorous Chinese regulations regarding carbon reduction as well as environmental protection.

Its state-owned status makes it under the radar of the Chinese central government, and ethical business practices becoming even more vital. Measures for anti-bribery, regulatory compliance and stakeholder engagement are essential to preserve credibility. This is especially so given that CNOOC has started international operations and performance under the Belt and Road Initiative is under scrutiny. For CNOOC, operating across borders means adhering to regional differences in ESG standards.

Sustainability Opportunities for CNOOC

Despite these complex problems, CNOOC has an opportunity in the renewable energy sector. As an offshore operations expert, CNOOC can venture into offshore wind projects that are in line with China's ambitious renewable energy goals. Environmental projects such as the CNOOC Guanlan floating wind platform and its expansion into offshore renewables demonstrate the company's strategy in diversifying beyond conventional fuel sources. The new efforts offer a way for CNOOC's infrastructure and marine operating service to transition to a low-carbon energy sector.

Moreover, the technological capabilities and investments in solutions, such as Carbon Capture, Utilisation and Storage (CCUS), will spearhead emissions reduction without compromising production efficiency. CNOOC is committed to reducing its carbon footprint through the 15-1 Offshore Carbon Storage Initiative (detailed below as Enping 15-1), China's first offshore carbon capture demonstration project. CCUS technology offers CNOOC a pathway to cleaner operations while supporting national and international climate objectives, especially with the growing market demand for carbon-neutral solutions.

The social responsibility programmes also substantially improve CNOOC's ESG performance index. Through various targeted programmes, CNOOC strengthens the communities where it operates by supporting development projects, establishing health centres, and providing educational programmes. These initiatives do more than just support local communities—they reflect CNOOC's commitment to being a socially responsible organisation that genuinely cares about the people where it operates. CNOOC builds trust and a positive reputation, especially in countries that value industries that put their citizens first.

CNOOC's ESG management approach comprises a structured set of governance procedures that are ensured by board oversight and employee training. By embedding transparency and accountability in its corporate framework, CNOOC creates an awareness of its corporate objectives. Comprehensive ESG training is provided for employees to establish the habit of sustainable practices in the whole firm. It sets out to create a culture that prioritises ESG, which will poise the company to meet the growing expectations of investors, regulators and stakeholders.

Despite facing significant environmental and governance challenges, CNOOC can invest in renewable energy, carbon capture technology and initiatives focused on social responsibility to ensure its growth. These efforts demonstrate CNOOC's commitment to being a leading energy provider while also prioritising environmental stewardship and social progress.

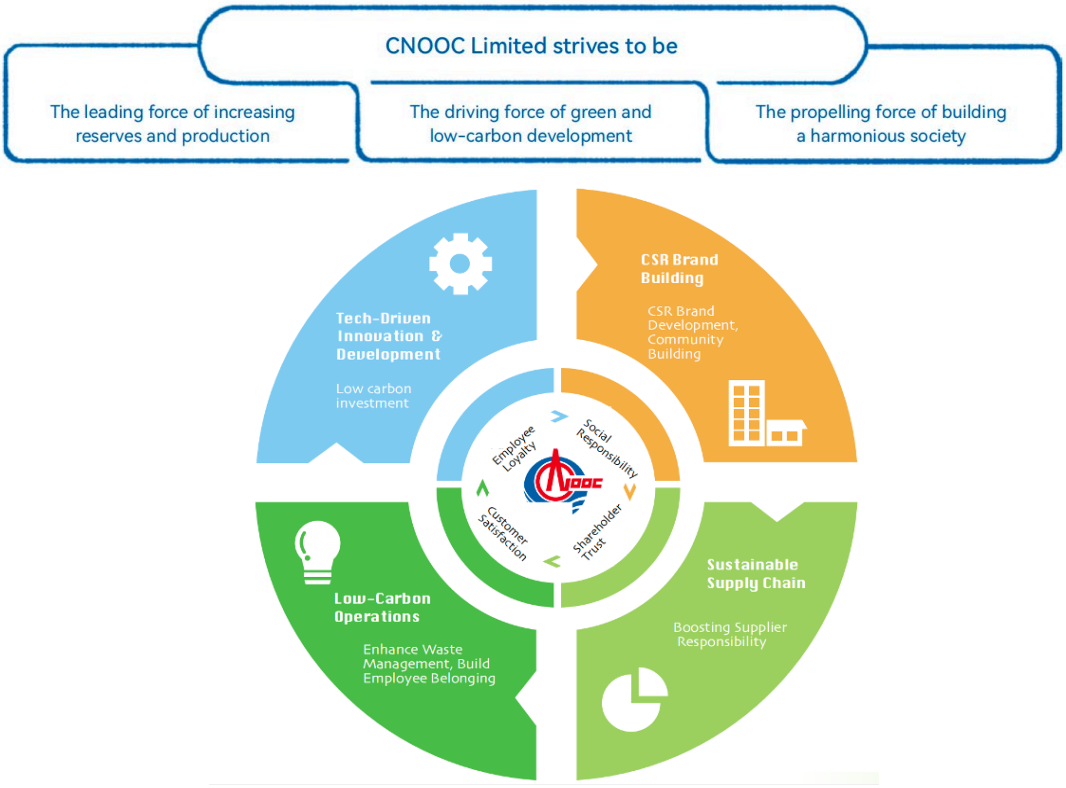
ESG Strategy Formulation

Corporate Social Responsibility (CSR) Strategy

CNOOC's CSR strategy focuses on sustainable development through technology and innovation. By adopting a low-carbon, resource-efficient business model, the organisation develops renewable energy, new materials and advanced technologies to offer safe, eco-friendly solutions in the energy sector. This aims to support industry sustainability, maximise stakeholder value, and enhance global competitiveness.

Led by the Board, the company integrates CSR into its mission, values and vision, shifting from a shareholder-centric model to a stakeholder-focused approach. This strategy prioritises balanced ESG value. CSR efforts extend beyond the company to include external stakeholders, society and the environment. Through strong leadership, clear communication and strategic responsibility integration, the company strives to align CSR with operations and international standards, creating a unique, sustainable path for CSR implementation.

Figure 1: ESG Vision and Strategy



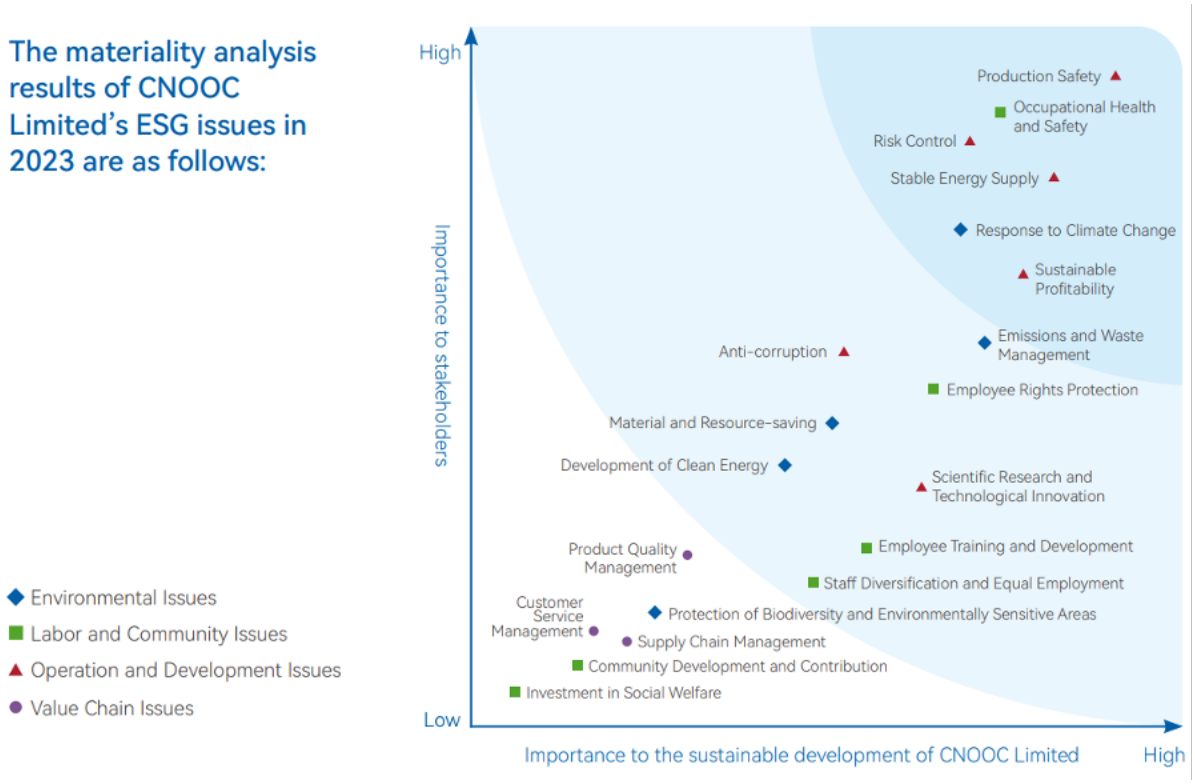
Source: CNOOC Environmental, Social and Governance Report 2023

Materiality Analysis

The materiality analysis identifies and prioritises key ESG issues that are critical to CNOOC and its stakeholders. This process aligns with the Shanghai Stock Exchange's (SSE) “Social Responsibility” guidelines and the State-owned Assets Supervision and Administration Commission of the State Council’s (SASAC) Work Plan for Improving the Quality of Listed Companies (CNOOC, 2023).

To determine these material topics, CNOOC collected stakeholder concerns through questionnaires, business reviews and internal interviews. These topics were analysed and prioritised based on their importance levels, guiding CNOOC’s strategic focus and resource allocation in ESG efforts.

Figure 2: Materiality Analysis



Source: CNOOC Environmental, Social and Governance Report 2023

Environmental

Carbon Reduction and Energy Efficiency

Carbon reduction and energy efficiency are two key concerns of energy companies, which CNOOC has prioritised by committing significant technology usage and development to cut emissions across its operations. For instance, it engages in research and development of offshore wind turbines and CCUS. CNOOC leverages its expertise in offshore platforms to enhance carbon reduction efforts.

- **Enping 15-1 Carbon Capture and Storage (CCS) Project:** CCS is a major focus for CNOOC, particularly with the Enping 15-1 central platform, which plays a significant role in capturing and storing carbon from offshore oil fields. Located in the Pearl River Mouth Basin, the project aims to store up to 300,000 metric tons of CO_2 annually. This effort in carbon reduction is equivalent to the impact of planting 14 million trees each year, helping to mitigate substantial financial losses.

- **Flare Gas Recovery Initiatives:** Flare gas recovery captures and reuses the natural gas that would be burned with no utility, reducing GHG emissions which were considered side effects of oil and gas extraction. This implementation helps CNOOC to minimise methane emissions and improve its operational efficiency. Other initiatives, such as ship rotary sail systems, contribute to an estimated 12% fuel savings for vessels. These help CNOOC strengthen its portfolio in carbon reduction and maintain its leading position as one of the “Top 50 Carbon Neutrality Listed Companies in China”.

- **Energy Efficiency Enhancements in Onshore Platforms:** CNOOC has implemented energy efficiency upgrades at its onshore platforms by installing advanced energy management systems. These upgrades have resulted in reduced energy consumption and lower carbon emissions. The onshore power projects for Qinhuangdao and Caofeidian serve as notable examples of turning traditional oilfields into “greener oilfields” and “greener factories”. Consequently, CNOOC saves an estimated 64,700 tons of coal annually (CNOOC, 2021).

- **Carbon Credit Trading:** Meanwhile, CNOOC has actively engaged in the carbon credit trading market and completed its first transaction under the China Certified Emission Reduction (CCER) scheme, acquiring 250,000 tonnes of credits to offset its emissions. CCER expects to play a vital role in China’s goal of carbon neutrality in 2060. Under the Emissions Trading System (ETS), companies are given free emission allowances with certain quotas. When its emissions exceed the limits,

companies are asked to procure allowances from the ETS or CCER markets to offset the impact they made, with a hard cap of 5% (Niu, 2024).

Renewable Energy Projects

In line with the trends in renewable energy development, CNOOC plans to invest approximately 100 billion yuan by 2025 (Shunsuke, 2023). CNOOC places an emphasis on offshore floating wind turbines and solar energy, which helps to diversify its energy production.

- **Animal Husbandry-Solar Complementary Project:** From 2022 to 2024, CNOOC has invested in several major solar power projects, with the “Animal Husbandry-Solar Complementary Project” in Hezuo city being particularly highlighted for its substantial environmental contribution. This 40 MW installation in Hezuo, supported by a 12 MW energy storage facility, integrates solar power with animal husbandry. The surrounding residents and local farmers have benefited from this facility, saving approximately 20,000 tons of coal annually (CNOOC, 2023).

- **Weizhou Island Solar Farm:** CNOOC reached a milestone with its completion of the solar farm in the Beibu Gulf, which integrates solar power with offshore production needs. Having a 4.5 MW photovoltaic station, Weizhou Island Solar Farm supports both oil extraction and local communities with a 5.17 million kWh output. This facility has reduced carbon emissions by over 85,000 tons and 1.72 million cubic metres of natural gas usage (Xu, 2022).

Figure 3: CNOOC’s offshore photovoltaic power station at Weizhou oil complex

Source: News Releases, 2023

- **Zhuhai Solar-Power Storage-Charging Project:** CNOOC's efforts not only focus on industry-related energy but also on community projects. The partnership between CNOOC and China Southern Power Grid (CSG) has initiated the project in Zhuhai that has over 42,000 square metres of photovoltaic panels —equivalent to the size of six football fields. This is designed to support the EV charging network in the Guangdong-Hong Kong-Macao Greater Bay Area. By coupling solar panels with battery storage that has a capacity of 6.5 MW, this project aims to reduce local grid dependency and promote the transition to renewable energy (Liu, 2023).

- **Wenchang Floating Semi-Submersible Wind Turbine:** CNOOC's world's first floating semi-submersible wind turbine is located in Wenchang, Hainan province. "CNOOC's Guanlan" has achieved breakthroughs resulting in 13 key technologies, applied for seven patents, formulated six standards, reached 200 million kW annually, and reduced CO_2 emissions by 22,000 metric tons. It directly powers nearby offshore oil fields through undersea cables, helping those sites with synergy effects (Zhu, 2024).

Ecological Protection

Considering CNOOC's offshore activities, the marine ecosystem has always been a concern. CNOOC has implemented comprehensive strategies to encounter the potential hazards its activities may bring, which aims to protect the marine ecosystem and aid biodiversity.

- **Artificial Propagation and Release Programmes:** To mitigate the damage done to the region's marine species, CNOOC uses artificial propagation to enhance marine ecosystems. It seeks to replenish certain marine species populations and maintain ecological balance through breeding and releasing various species. For instance, CNOOC has invested RMB18 million in environmental management research, the release of sea turtles and other aquatic species, species monitoring, etc (CNOOC, 2023c).

Figure 4: CNOOC's Seal Protection Publicity Day

Source: Ecological Protection, 2023

- **Environmental Impact Assessments (EIAs):** CNOOC has leveraged EIAs in its project planning when considering ecological impacts. Before launching any new projects, the company will consider EIAs to help identify the risks to local ecosystems and establish plans to mitigate potential impacts. It seeks to adhere to the principle of ecological protection in all stages of the project life cycle. Through the platform of the CNOOC Marine Environmental and Ecological Protection Public Welfare Foundation, CNOOC has made a commitment to local ecological systems and the promotion of resource restoration where their projects are located (CNOOC, 2024).

- **Ocean Environment Online Monitoring System:** CNOOC has made various innovations in the construction of offshore oilfields. In parallel with its offshore power facility, CNOOC has built IT facilities to enable monitoring of the marine environment as well as those species in its region. One example is the Ocean Environment Online Monitoring System in the Qinhuangdao 32-6 Operating region, which supports marine ecological monitoring and management, making the operating region more transparent, measurable, and predictable (CNOOC, 2024a).

Economic

We will stay focused on our annual production and operation goals, continue to pursue increase of reserves and production, strengthen lean management, and consolidate the high-quality development of the company.

—Xinhuai Zhou, Vice President, CEO, CNOOC Limited

CNOOC has published its 2024 economic strategy oriented towards sustainable growth by clearly stating three key imperatives.

- **Increase Reserves and Production:** CNOOC targets 700 to 720 million Barrels of Oil Equivalent (BOE) and aims to reach 830 million BOE by 2026 to satisfy the demand of the world. This strong growth impulse is provided by a rich project pipeline in the Bohai Sea and South China Sea, as well as at an international level with the Mero3 project in Brazil.

- **Investment Efficiency:** CNOOC prioritises efficient deployment of capital. In 2024, it has allocated RMB125-135 billion with strategic division into exploration, development and production. This will minimise the all-in cost to $27.59 per BOE and ensure long-term financial stability.

- **Integration of New Energy:** CNOOC has been promoting green energy through carbon capture (CCUS/CCS) extension and offshore wind projects, with more than 700 million kWh of green electricity targeted in 2024. The company is committed to a transition towards a low-carbon future.

Besides, CNOOC has kept a good record of at least a 40% dividend payout, thereby maintaining a good shareholder returns record. In addition, it has made worthy economic contributions to the local communities through employment and substantial tax payments.

Social

In the framework of sustainable development, the social dimension focuses on the impact of business on people, communities, and society. Its core objective is to ensure that corporations not only deliver economic benefits but also contribute to the well-being and equality of society.

Employee Well-being and Labour Practices

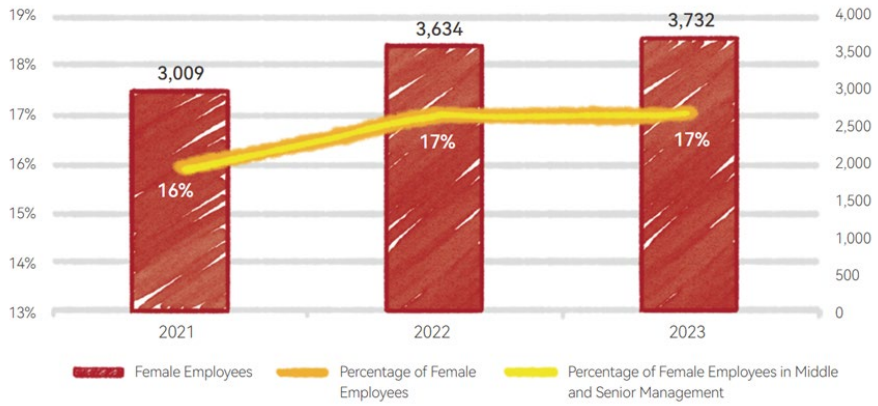
Employees are the most precious resource and asset in a company, as their growth is a major driving force for development. If human resources and the quantity and quality of international talents cannot match or adapt to the requirements of business development, the corporation will be adversely affected, and the development goals will be faced with challenges. CNOOC demonstrates concern for its employees from three perspectives: protection of rights and interests, emphasis on development and employee care.

Human Rights Protection

CNOOC seeks to implement fair and equal treatment in their recruitment, training, promotion and compensation, regardless of characteristics like race, nationality, religion, gender and marital status.

There is often gender imbalance in the energy sector. This industry is traditionally regarded as a “heavy industry” and often requires relatively harsh working conditions in remote or difficult environments, such as offshore platforms. There are often high physical and technical demands on employees. As a result, the proportion of female employees is relatively low. However, CNOOC aims to increase the percentage of women in its workforce and employ more talented female candidates. By the end of 2023, the company had 3,732 female employees, accounting for 17% of total employees; the female managers accounted for 17% of middle and senior management.

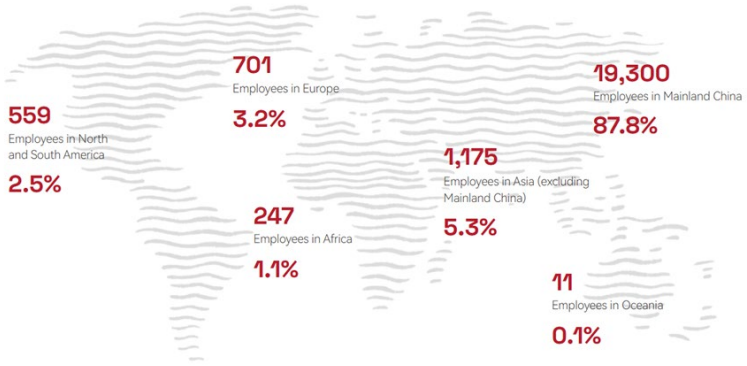
Figure 5: Number and proportion of female employees



Source: Environmental, Social and Governance Report, 2023

In addition, the company advocates inclusiveness, cultural diversity, mutual understanding and communication among employees of different nationalities, regions, and cultures. It aims to build a more vibrant working environment.

Figure 6: Number of employees by region



Source: Environmental, Social and Governance Report, 2023

For its compensation and incentive mechanisms, CNOOC applies the position-based performance payroll system to implement the concept of remuneration based on "position value + competence level + performance contribution". It strengthens compensation incentives for frontline offshore operation positions and promotes compensation distribution to favour talents who have made outstanding contributions, as well as those who work in the production frontline, enhancing key employees' sense of gain.

Employee Development

CNOOC has established a multi-level employee training system. In 2023, it continued implementing talent development and essential training plans, focusing on crucial specialties and critical roles. The company stepped up its efforts on the "Haixue" online learning platform, added 7,736 new courses, and organised 308 online courses on special topics. Such an approach promoted the coordination and integration of online and offline training, improved employees' professional competence, and created a good learning atmosphere. In 2023, there were 55,493 participation times in training, while offline and online training hours per person reached 162 and 139, respectively.

Care for Employees

By providing extra paid annual and family visit leave, offering temporary housing and other living assistance, as well as transitional apartments for single employees, CNOOC took various actions to show care for employees, helping them find a better balance between life and work.

In addition to hardware support, the company carries out psychological counselling and sets up a 24-hour psychological counselling hotline, making wellness information more accessible. By undertaking activities such as "Women's Contribution", it stimulates female employees' sense of professional pride and happiness.

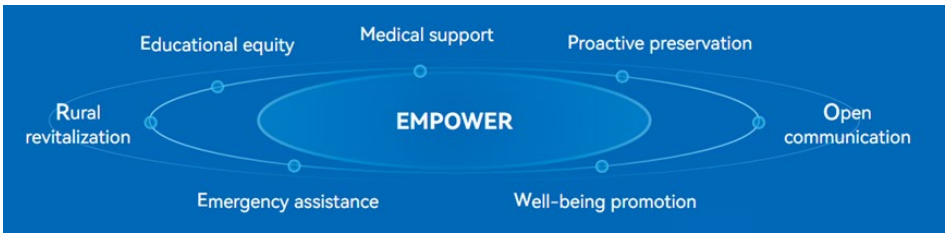
CNOOC's commitment to employee care extends beyond employees. It recognises the unique challenges posed by long-term assignments away from home, which may limit employees' ability to regularly visit family members, especially elderly parents. In response, the company helps employees in dire need, documenting their situation and periodically visiting their families.

CNOOC's support for its workforce's well-being results in outstanding employees who could realise its corporate value and take on social responsibilities. This investment in employees in turn promotes positive development of the company, forming a virtuous cycle of sustainable development.

Public Welfare and Social Contributions

In 2023, CNOOC invested RMB158.14 million in external donations and public welfare projects. It has implemented the "EMPOWER-Empowering communities, limitless acts of kindness" approach for community co-development. This approach is centred on supporting educational equity, improving medical support, protecting the natural ecosystem, fostering open communication, promoting people's well-being, supporting emergency assistance efforts and contributing to rural revitalisation.

Figure 7: CNOOC's EMPOWER approach for communities



Source: Environmental, Social and Governance Report, 2023

Main tasks in the EMPOWER strategy:

- **Educational Equity:** The company strives to enhance residents' professional skills and knowledge levels through various initiatives such as sponsoring education, improving school facilities, and skill development plans, thereby supporting the improvement of learning conditions and educational quality in underdeveloped areas. As of 2023, the Shenzhen Branch has sponsored over 2,000 students and constructed a 960 m^2 teaching building, effectively improving local teaching conditions and enhancing educational standards.

- **Medical Support:** The company aims to improve local medical standards by supporting the community through various means, thereby improving local public health conditions. In 2023, CNOOC Uganda established a temporary medical camp in the Buhuka area to conduct medical consultations, serving 655 patients.

- **Emergency Assistance:** Maritime rescue requires specialised equipment and technology. As an offshore oil and gas exploration company, CNOOC has rich experience in offshore operations and high-end offshore facilities, which gives it a natural advantage in carrying out rescue missions. In 2023, the company participated in maritime rescues 46 times, rescuing 24 ships and 206 people in distress. By actively participating in rescue operations, CNOOC Limited can transform the technical advantages it has accumulated in offshore oil operations into social services, demonstrating its professional strength.

CNOOC strives to expand social welfare globally. Uganda and Iraq are both rich in oil and gas resources. In these resource-rich but relatively underdeveloped regions, social and environmental issues can pose challenges to normal business operations. By supporting local medical care, environmental protection and emergency relief, CNOOC can minimise potential social conflicts and environmental risks, maintaining a harmonious operating environment for the company's business development.

Governance and Ethical Business Practices

To balance and regulate their ESG goals with standard business practices, CNOOC has established a rigorous governance structure and management system. The governance aspect is divided into two main parts:

Board-level ESG Governance Management and Oversight

Board-level Governance

CNOOC’s Board of Directors is the ultimate decision-making body for all ESG affairs. Its responsibilities include establishing ESG strategies, reporting, and regularly reviewing reports on safety, health, environmental protection, internal control, risk management and compliance management. It also plays a crucial role in shaping and reviewing ESG strategies, ensuring the company has an appropriate and effective risk management and internal control system (CNOOC, 2023, p.1).

Diversity and Independence

CNOOC has taken two initiatives to achieve board diversity and board independence. Firstly, a Board Diversity Policy is incorporated during the selection of non-executive

director candidates, as non-professional factors like gender, cultural background and diversified vision are also considered in the process. Secondly, the company actively involves both non-executive directors and independent non-executive directors in the reporting process to maximise the objectiveness and independence of all decisions made (CNOOC, 2023, p.23).

Strategy and Sustainability Committee

The Board has also established a Strategy and Sustainability Committee, which monitors CNOOC's commitment and performance regarding ESG-related affairs, such as climate change, and provides recommendations accordingly. The committee is tasked with developing the company's strategy, long-term planning, business plans, investment decisions and sustainable development initiatives (CNOOC, 2023, p.1).

Annual Briefings and Performance Targets

To actively participate in ESG governance, the Board receives annual briefings on health, safety and environmental protection. Using the annual targets set for the effectiveness of the health and safety system, environmental pollution, and green and low-carbon development strategy, the Board then evaluates the progress towards those objectives accordingly (CNOOC, 2023, p.3).

ESG Integration and Stakeholder Engagement

CNOOC's ESG management is integrated into its daily management system. Through both internal and external ESG rating reports and reviews, the company ranks the matters and manages them according to the level of priority (CNOOC, 2023, p.1).

Director Training and Continuous Learning

All newly appointed Board Directors are provided with a systematic set of instructions and training. The content of the training includes the development of the company's operations, laws and regulations, and governance responsibilities. All directors are provided with annual training to keep up with updated regulations to achieve continuous learning and sustainable company growth (CNOOC, 2023, p.24).

Ethical Practices, Compliance, and Anti-Corruption Measures

Transparency and Information Disclosure Standards

CNOOC believes that transparent governance is important for shareholder confidence and stable and effective operation of the company. It aims to base all its decisions on the "legal, fair, accurate, complete and punctual" (CNOOC, 2023, p.24) principles of

information disclosure. CNOOC was rated A (excellent) in the Shanghai Stock Exchange annual information disclosure assessment in 2023.

Code of Ethics and Anti-Corruption

CNOOC's commitment to integrity and anti-corruption is illustrated through the following reporting or prevention mechanisms:

Compliance programme

CNOOC has implemented compliance management policies, a compliance manual for entities and employees, and a code of ethics. These policies and procedures outline the company's expectations for ethical conduct and guide employees and directors on how to comply with anti-corruption laws (CNOOC, 2023, p.21). All staff members are required to sign a Letter of Commitment on Compliance. The company also provides compliance training to all employees, including special training on international anti-corruption practices for directors (CNOOC, 2023, p.27).

Code of Ethics for Directors and Senior Executives

The Code of Ethics outlines requirements related to regulatory rules, insider trading and improper market conduct. It provides guidance to the company's leadership on how to conduct themselves ethically and in compliance with the law. The Board reviews and amends the Code of Ethics annually to ensure its relevance and effectiveness (CNOOC, 2023, p.28).

Dedicated Complaint Channel

This channel is provided on the CNOOC website for reporting violations. The company encourages employees and other stakeholders to report any suspected instances of corruption or unethical conduct. A mechanism for punishing and preventing fraud, which includes whistleblower protection measures to ensure that individuals who report wrongdoing are protected from retaliation (CNOOC, 2023, p.28).

Zero-tolerance approach to corruption

Senior executives and departmental general managers are responsible for promoting governance in their management scope. Department leaders are required to sign a letter of responsibility for combating corruption and upholding integrity annually. CNOOC emphasises the practice of integrity on certain occasions such as new employee orientation and employee promotion (CNOOC, 2023, p.27). In March 2023, the company held a conference to share its work plan for the year and provide specialised education on anti-corruption. In October 2023,

> CNOOC organised a trip to the Tianjin Liyuan Prison to provide precautionary education for newly appointed department leaders, division leaders and discipline inspection committee members (CNOOC, 2023, p.28).

Going forward, CNOOC aims to realise national goals through innovative development and engaging stakeholders for a greener and sustainable future.

Vision for a Collaborative and Sustainable Future

A Quality-Driven Strategy

CNOOC's commitment to quality is reflected in its "Quality-driven Enterprise" strategy, which integrates quality management across all operations. This approach has led to the establishment of a national welding laboratory, a key resource in advancing material and welding technology standards. Through these initiatives, CNOOC ensures that engineering excellence remains at the forefront of its growth.

Optimising the Fundamentals of Safety Management

CNOOC emphasises creating a safe work environment by refining safety protocols and investing in employee health. Enhanced occupational safety systems and health resources, such as medical check-ups and safety training, are part of CNOOC's approach to safeguarding its workforce. The efforts also contribute to resource efficiency and promote a safety culture across the organisation.

Accelerating Green Development for a Low-Carbon Future

CNOOC intends to reduce its environmental footprint through green production methods across the supply chain. By promoting eco-design, process innovation, and sustainable practices, the company aims to develop products with minimised environmental impact, supporting the global transition to a low-carbon economy and a sustainable lifecycle for its offerings.

Talent Development and Structured Growth

CNOOC's talent development strategy integrates theoretical learning with hands-on experience, supporting structured succession planning. By fostering the growth of its workforce, CNOOC ensures continuity and prepares future leaders, reinforcing its commitment to organisational excellence and strategic longevity.

Enhancing Partnerships and Innovating the Supply Chain

CNOOC strengthens its value chain through collaboration, digital transformation and enhanced client engagement. By fostering partnerships, improving processes, and adopting innovative practices, CNOOC aims to lead the industry in sustainable engineering and efficient operations, setting a standard for best practices in responsible energy production.

Synthesis

CNOOC stands at a critical juncture in the dilemma between energy production and sustainability. Besides these complexities, CNOOC must balance its international operations with the increased call for environmental sustainability. Commitments by CNOOC to adhere to China's goals on environmental protection, particularly the 2060 carbon neutrality target, reflect its efforts to responsible ESG management. Through its innovative strategies, including the "Quality-driven Enterprise" approach and investments in employee health and safety, CNOOC strives to improve operational efficiency and inject a sustainability tradition into its corporate culture. Embracing green practices and developing talent, CNOOC is positioned to drive the energy industry towards sustainability while securing its economic growth.

Discussion Questions

1. How does CNOOCs integration of ESG strategies impact its long-term sustainability and competitiveness in the energy sector?
2. In what ways can CNOOC enhance its stakeholder engagement and communication to further align its CSR initiatives with community needs?
3. What challenges does CNOOC face in balancing carbon reduction and operational efficiency?

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MUJI: A Consistent Commitment to ESG since Day One

JIANG Shanghong
LI Leying
Michelle Steffanny SUBAGYO
XI Shutong
YANG Chun Kit Christopher
ZHANG Wenpan

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Centre for Governance and Sustainability, NUS Business School

We intend to continue building our envisioned consumer society by returning to the concept that defined MUJI when it started out, and evolving and deepening it.

——Masaaki Kanai, Chairman and Representative Director, MUJI

Company Overview

MUJI, founded in 1980, is known for its minimalist design and focus on sustainability. As a global brand with over 1,200 stores, MUJI integrates environmental, ethical and social responsibility across its operations. Offering a wide range of products, including household goods, apparel and food items, MUJI's philosophy emphasises simplicity, sustainability and the elimination of waste in both production and packaging. By focusing on the selection of quality materials, streamlining manufacturing processes, and simplifying packaging, the brand aims to provide affordable and high-quality products that meet the needs of daily life.

MUJI's strategy to enhance corporate value includes establishing a store network and new channels and dedicating itself to making ESG the core of its businesses. Reflecting on its long-term vision, MUJI aims to meet financial targets by increasing operating income, profits and store numbers by 2030, ensuring sustainable growth aligned with its values.

Executive Summary

MUJI aims to commit to sustainability through circularity, resource efficiency, and local engagement. In FY2022/8, its initiatives such as ReMUJI have managed to recycle about 49.1 tons of textiles, with the number increasing to 52 tons in 2023. Since September 2021, the growth of ReMUJI sales at MUJI Shinjuku has increased to 28,623 in FY2022/8 and 30,433 in FY2023/8. Being a member of Japan's Sustainable Palm Oil Network (JaSPON), MUJI also implemented water refill stations in all 357 stores to reduce plastic consumption, and committed to using 100% sustainable palm oil, cotton, and wood by 2030.

MUJI has long engaged in activities for sustainability and continuously commits itself to environmental care and community involvement. Here are three examples showing MUJI’s constant effort in sustainability:

- **The ReMUJI initiative:** Achieves circularity through reutilising waste fabrics in new goods production, with less material waste and emphasis on resource efficiency.

- **The Shokoku Ryohin effort:** Supports local economies through direct linkages between regional producers and consumers by fostering interest in regional specialties.

- **The Irregular Baumkuchen series:** Supplements the efforts by reducing food waste through the use of imperfect cakes, indicating its minimalisation of waste inside all business operations and promotion of sustainable consumption practices.

In 2023, MUJI increased recycling activities by adding Mottainai Market, a place where slightly damaged items can be brought back into the store for reuse. It expanded MUJI circularity beyond textiles, and such democratisation of sustainability made eco-friendly products more accessible and further expanded their reach.

Another significant move of MUJI is its support of the climate recommendations by the Task Force on Climate-Related Financial Disclosures (TCFD), reiterating its pledge for climate action. MUJI has integrated renewable energy across all its store operations, with solar installations at selected points. This is further complemented by the use of 100% recycled nylon in apparel lines, developing circularity within the product itself. Its efforts echo across regional revitalisation projects such as MUJI Yoshizuya Kani which converts unused real estate in rural areas into community hubs. These combined efforts underline MUJI's commitment to supporting sustainable living while fostering community development.

MUJI 2030 vision aspires “to be part of people's daily necessities” and “to take root in local society” by embedding the brand into daily life and local communities. The newly issued “Second Founding” has also built a solid basis for circularity in local resources.

Strategic Challenges

MUJI’s global expansion poses several strategic challenges as it starts expanding sustainability initiatives. Included herein is a trade-off between affordability and sustainability when MUJI scales up those programmes that would make “green” products available at no additional consumer cost. To that end, MUJI invests heavily in the improvement of logistics efficiencies and customer participation across diversified regional markets.

MUJI strives to attain ambitious Key Performance Indicators (KPIs) while tackling sustainability goals. It has set a target to increase its return on assets (ROA) and return on equity (ROE) by 2030, which requires efficient operations and profitable store

expansions. MUJI is now promoting its objectives through twin strategies: linking governance to integrate with public interest; and people-centred management, enabling its workforce for leadership in ethical business management using the ESG-guided framework.

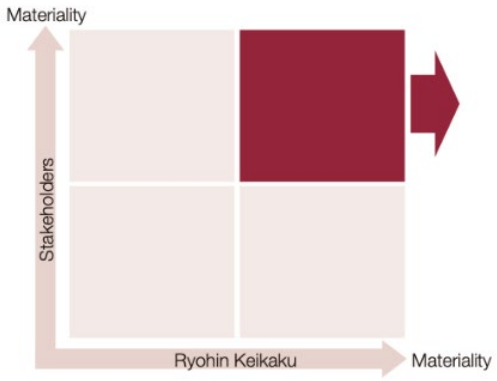
One of MUJI's biggest challenges is reducing its impact on the environment. Indeed, CO_2 emissions have grown from 1.02 million t-CO_2 in 2022 to 1.23 million t-CO_2 in 2023. While it incorporates renewable energy projects into its operating system, the question of controlling the carbon footprint while expanding the business remains. Further, MUJI wants its supply chain to be sustainable by sourcing 100% sustainable palm oil, cotton and wood by 2030. However, it is hard to keep consistency on a global level.

Internal operational opportunities: Internally, MUJI engages in efforts to increase employee engagement and achieve its diversity goals, such as 50% female representation in managerial positions. Through vehicles such as the employee stock ownership plan (ESOP) and flexible work arrangements, it speaks to a holistic approach to sustainability in both environmental and social alignment. MUJI will need innovation and adaptation to realise broader sustainability goals on a continuing basis.

Strategic Initiatives

MUJI claims to be dedicated "to contribute to society and people". Its three commitments are: the selection of materials; streamlining of processes; and simplification of packaging. These potentially makes MUJI a pioneer in sustainability. MUJI initiated "Second Funding" in 2021 with the goal of creating a better world in the next 100 years as well as becoming the "front runner of ESG management".

Figure 1: MUJI's Process for Identifying ESG Strategy



Source: Muji Report 2022, p. 57

MUJI expects to complete its ESG strategy by 2030. This strategy covers three different approaches: business activities, communities and products. Methods involve identifying social issues, interviewing the company's management, and implementing a scoring system that is unique to MUJI's operating styles. The four main material issues covered are as follows:

Build a sustainable society while achieving circularity and coexisting with nature

Environmental Management
By reducing waste from their operations and the whole supply chain, efficiently using and recycling resources, conserving energy, and avoiding pollution, MUJI sets up their business to be sustainable.

Resource Recycling
In terms of fostering a circular economy, MUJI promotes activities to reduce, reuse, replace, and recycle with a goal of 100% plastic-free packaging and materials by 2030. For the fall/winter of 2022–2023, MUJI sold 69 goods made from recycled materials. Instead of using plastic bags, MUJI used display hooks made of recycled paper. The straws used in the Café Meal MUJI restaurant are made entirely of biodegradable bamboo fiber.

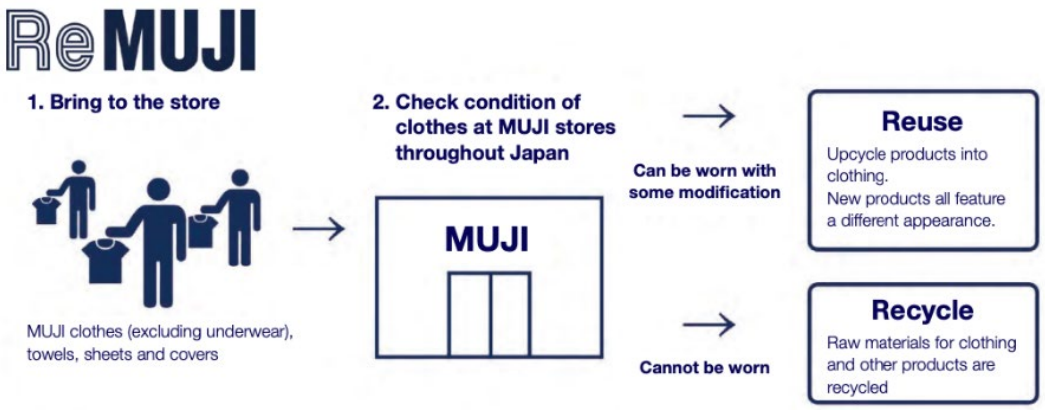
Figure 2: MUJI's Bamboo Fiber Straws and Recycled Paper Hangers

Source: MUJI Report 2022, p. 60

Additionally, MUJI sells a range of items manufactured in Bishu, Japan, using recycled wool, against the background that the practice of recycling wool is already ingrained in Bishu culture. Adopting cutting-edge technology in transforming old or used clothing into new clothing, MUJI upholds Japan's long-standing thrift culture and promotes sustainable manufacturing.

This programme of recycling discarded clothing, towels and outgrown children's apparel was first started by Ryohin Keikaku in 2010. To create new, valuable products that will be marketed under the ReMUJI brand, the clothing will be gathered, sorted, cleaned, re-dyed, and remade in other ways. Recycled clothing that does not belong to the ReMUJI brand is used as raw material for other projects.

Figure 3: ReMUJI Cycle



Source: MUJI Report 2022, p. 61

Water Resources

The demand for clean water has skyrocketed mainly because of the increase in the world's population. Issues such as water scarcity and floods also put water resources at high risk. MUJI expressed its concern for these various water-related issues and began its work in preserving sustainable water resources within the company and supply chain, thus benefiting the local communities and the surrounding environment.

Biodiversity

MUJI seeks to reduce deforestation brought on by resource exploitation from legally protected areas. By 2025, for all domestically sold items made by MUJI, the company aims to switch the materials from palm oil, lumber and cotton to sustainably derived resources. This is in an effort to preserve biodiversity conservation. Internally, MUJI continues to survey its employees in manufacturing roles to guarantee the traceability of its products from the place of origin. For wool, MUJI emphasises the gentle breeding of sheep and the use of non-mulesed wool.

Chemical Management

MUJI prohibits numerous harmful chemicals and conducts in its production process to prevent and reduce global environmental pollution. It is also a requirement for its contract manufacturing partners to safely manage chemical substances that may pollute the

environment. It establishes a Code of Conduct for Production Partners to prevent and reduce water and air pollution.

Climate Change

Through collaboration with several stakeholders, MUJI aims to align its operations with the global objectives outlined in the Paris Agreement. From the standpoint of governance, Ryohin Keikaku has put in place a framework that is based on the Board of Directors and the ESG Promotion Committee exercising control. The Board of Directors receives reports on ESG-related initiatives from the ESG Promotion Committee and Management Executive Meeting. In this way, it supervises the progress and achievement of targets; and discusses ways of guiding policies and initiatives. (MUJI 2022 Report)

Figure 4: MUJI's ESG Promotion Organisation

Source: MUJI Report 2022, p. 58

This committee was launched to address MUJI's material issues and accelerate ESG management. They will be responsible for 19 projects initiated, which include topics such as the environment, creating social values, and human capital. All those projects target objectives to be achieved by 2030: reducing GHG emissions by adopting renewable energy at each of its stores and installing solar panels at independent store buildings.

Figure 5: Goals and Progress of MUJI's ESG Promotion Organisation

Index	Goals for Fiscal Year Ending August 31, 2030	Status as of Fiscal Year Ended August 31, 2021	Status as of Fiscal Year Ended August 31, 2022
GHG Emissions (Scope 1 and 2)[1]	50% reduction compared with fiscal year ended August 31, 2021	30,839 t-CO_2e[2]	34,874 t-CO_2e[2]
Use Renewable Energy at Stores[3]	100%	In use at the Hatoyama Distribution Center[4]	Installed at select stores Initiating the use of renewable energy will reduce CO_2 emissions by 394 t
Install Solar Panels at Independent Store Buildings[5]	100%	Installed at the Hatoyama Distribution Center (installation completed in 2014)	Installed and began operation at several stores in the fiscal year ending August 31, 2023

Source: MUJI Report 2022, p. 66

Revitalise communities and resolve their issues through localisation activities

Health Centres

The goal of MUJI's Healthcare Centre Project is to address social concerns related to preserving physical and mental well-being, extending a healthy life expectancy, and avoiding social isolation. These medical facilities, which are housed within MUJI shops, offer goods and services for illness prevention and health maintenance. Throughout Japan, they serve as clubs and neighbourhood hubs, collaborating with nearby hospitals to offer health advice.

Figure 6: MUJI's Healthcare Centres

Source: MUJI Report 2022, p. 67

Putting Vacant Housing and Idle Real Estate to Use

As Japan's population declines, idle real estate and vacant housing rise. They are transformed by MUJI into destinations that attract tourists and residents. MUJI and Airbnb Japan Co., Ltd. teamed up together in September 2022 to renovate vacant places and allow visitors to experience Shimizu-cho living. Furniture from MUJI is used to equip the

rooms. Both in Japan and abroad, MUJI seeks to develop local communities and raise the utility value of vacant real estate.

Figure 7: MUJI's Projects on Idle Real Estate

Source: MUJI Report 2022, p. 67

The Shokoku Ryohin Programme

This programme comes from MUJI's aspiration of creating lasting agricultural systems. MUJI links producers and consumers with regionally specific specialised foods and traditional vegetables. This programme is an online store that offers direct delivery of food and everyday essentials that are either scarce or not easily accessible due to the local way of life.

Promote High Employee Engagement and Acquisition of Problem-Solving Skills

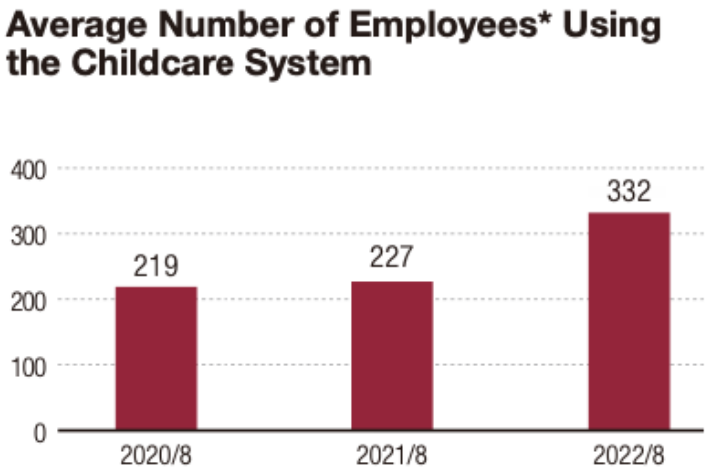
Diversity and Inclusion

All firm employment rules are documented in the MUJI Employee Handbook, informing workers of its practices that are in line with local laws, customs, and regulations. Beyond mental and physical comfort, the firm wants all its workers to experience long-lasting satisfaction and gain from professional development and enrichment. It advocates human rights and diversity while disapproving of harassment and discrimination.

Work-Life Balance Proposals

Under the MUJI system, workers can pick from a range of work arrangements to balance work and life events, including delivery, childcare and nursing care leave. Since May 2021, MUJI has further provided a balanced four-day weekly schedule. This system is being adopted by a growing number of employees every year.

Figure 8: Number of MUJI Employees Who Use Its Childcare System over the Years



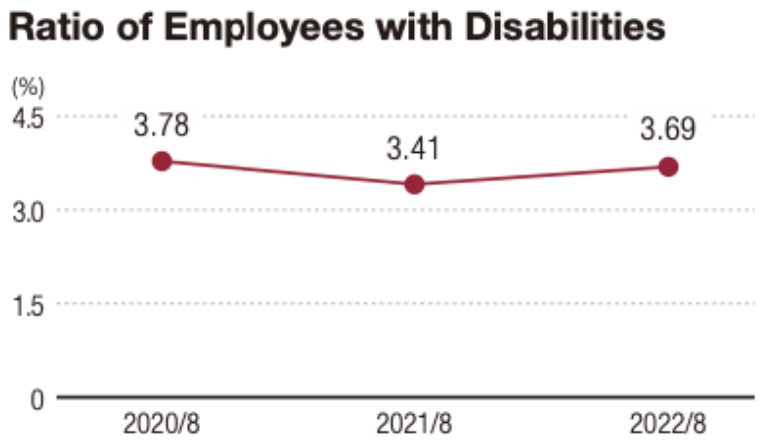
Source: MUJI Report 2022, p. 69

In 2016, MUJI expanded its daycare programme, allowing workers with children of specific ages to work fewer hours. This is a component of MUJI's endeavour to provide a workplace where workers may work with tranquillity. By offering utilities and communication allowances, MUJI further enhanced their assistance for those who work from home in September 2020.

Employment of people with disabilities

In Japan, MUJI started employing disabled workers around 2000. The Heartful Project officially started in 2009 to increase and stabilise employment for people with disabilities, promote self-development through mutual trust and cooperation, and promote sustainable happiness.

Figure 9: MUJI's Ratio of Employees with Disabilities



Source: MUJI Report 2022, p. 69

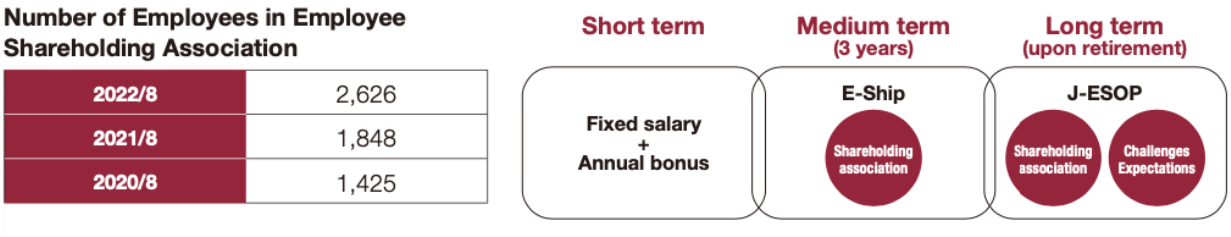
Diversity, Equity and Inclusion (DEI) Committee
Ryohan Keikaku launched the Diversity, Equity and Inclusion (DEI) Committee in August 2022. This committee aims to create a multicultural society within the company by inviting external experts to hold seminars and workshops about global trends in diversity. The committee also conducts employee surveys and holds Diversity Week to provide an inclusive environment.

In prioritising female participation in its workforce, MUJI is working on action plans such as nursing care, medical treatment and childcare.

E-Ship (Trust-type Employee Stock Ownership Plan)
E-Ship is designed for its employees to improve corporate value and spread inclusiveness. It serves to enhance constant development through increased employee motivation that results from equity participation as shareholders. The number of employee shareholders is increasing every year. MUJI wants to foster ownership in each employee.

J-ESOP (Employee Stock Ownership Plan)
J-ESOP is designed to strengthen employee commitment and long-term growth within the company. Employees will be awarded incentive points based on their contributions to the employee shareholding association. Those points will be distributed as shares when the employee retires. This plan aims to increase a sense of ownership among employees and encourage them to stay engaged in supporting the company's growth.

Figure 10: MUJI's J-ESOP Scheme



Source: MUJI Report 2022, p. 69

Stakeholder Engagement

MUJI also maintains constructive communication with its stakeholders: local communities, customers, employees, investors and shareholders. MUJI utilises the MUJI passport app to communicate with its customers; inform investors and shareholders about the "Ordinary General Meeting of Shareholders"; engage employees regarding its half-yearly "Good Meeting"; and engage local communities regarding its regional cooperation agreements.

Implications

MUJI's 2030 vision is "to be part of people's daily necessities and to take root in local society". Its 2023 annual report reported efforts to foster a company-wide awareness of the firm's ESG management. The organisation has publicised its material issues, targets and initiatives on online forums that include, but are not limited to, MUJI Dialogue and employee meetings. Moreover, in July 2023, MUJI launched its Team ESG which comprised some volunteers who were interested in inducing sustainability in organisational practices (MUJI, 2024). The developments indicate that ESG practices form the foundation of MUJI's functionalities, which may lead to the positive effect of sustainability being integrated well into the organisation.

Participatory governance practices, where there is collaboration among employees, customers, partners and external experts, can have notable real-life benefits. This is because participatory governance acts as an open platform for idea sharing. Various stakeholders could contribute to product development when they suggest how products can improve in quality or ask for additional features. These contributions ensure that products are designed to best cater for the needs and expectations of the targeted customers, which can generate higher profitability and revenues (Kumar et al., 2018).

MUJI has a unique product development process catered to a sustainable and circular

society. In this cyclic plan, the steps include product planning, raw material procurement, production, distribution, sales/services, feedback collection, recovery of resources, and the recycling and efficient use of resources. After the last step, the process begins with product planning again (Figure 11: Ryohin Keikaku's Unique Product Development).

Moreover, participatory governance creates an inclusive working environment that motivates employees to invest their best efforts and voice ideas for the betterment of their organisation. Employees also feel valued when their organisations ask for their views and suggestions, which fosters employee satisfaction and enhances the employee retention rate (Johennesse and Chou, 2017). Moreover, it has been noted that MUJI offers its employees a variety of work styles to choose from so that they can attain a work-life balance. For instance, MUJI introduced the Childcare System.

Overall, ESG-centred practices and participatory governance have real-life benefits. They ensure that products are designed as per the needs of the customers and that employees feel valued and motivated.

Figure 11: Ryohin Keikaku's Unique Product Development

Source: MUJI Report 2023, p. 39

Since its inception, MUJI has been focused on carrying out its business practices and operations with ESG considerations. In this regard, MUJI has been developing products that are better for the environment and society while also establishing governance

structures that consistently improve existing corporate frameworks (MUJI, 2023). These practices are further detailed by MUJI in its 2023 annual report with the depiction of a ESG management structure (see Figure 4: MUJI's ESG Promotion Organisation). This structure would be chaired by the Board of Directors which will oversee the practices and decisions of a ESG Management Committee. This committee would be supported by dedicated departments known as Administrative Support for the Corporate Planning Division.

The 2023 annual report indicated that the dedicated ESG management structure has identified key material issues related to its products and has listed practices to mitigate those issues. Mitigation practices are building sustainable and circular societies (see Figure 1: MUJI's Process for Identifying ESG Strategy), which can coexist with environmental sustainability and societal development; addressing local challenges with revitalising regions of functionalities; practising business activities in which every employee can play a diversified leading role; and implementing governance practices that align with public interest and people-centred management (MUJI, 2024). These findings imply that MUJI has dedicated its internal resources and human resources to ensure the adequacy and effectiveness of its ESG practices.

MUJI's 2022 annual report also showed that it is investing in the commercialisation of practices in healthcare (see Figure 6: MUJI's Healthcare Centres), real estate (see Figure 7: MUJI's Projects on Idle Real Estate), food and agriculture sectors for efficient and effective utilisation of unused local resources. With an ESG perspective, Muji could rethink and refurbish its products, creating a substantive evolution of its product offerings and practices (MUJI, 2023). The ESG-driven commercialisation practices would help in enhancing brand reputation, improving operational efficiency and increasing competitive advantages.

This is because such practices are perceived as dedicated efforts of the organisations to be sustainable, which resonates with environmentally conscious customers. Such customers develop loyalty to ESG-driven brands, which further boosts the market share of the organisations (Cabaleiro-Cerviño and Mendi, 2024). With its focus on ESG commercialisation, MUJI would enjoy positive implications with a better brand image, higher customer loyalty, and increased market share.

MUJI aspires to be an organisation that supports society and individuals through daily essential products. With this aspiration, MUJI has been working to become a chain of specialty stores where each product line leads in its market due to its ESG advantage. For the environmental aspect, MUJI aims to resolve environmental issues by providing customers with products that can either reduce negative environmental impacts or create

positive impacts (MUJI, 2024).

Additionally, MUJI has considered its duty to fulfil the daily needs of its customers as one of the foundations for its “second founding”, along with working as a community-based business, developing a work culture promoting independent growth, and building infrastructure to support independent store management (see Figure 12: Creation of the Foundation for Our “Second Founding”).

With such practices, MUJI offers real-life benefits to its shareholders. This is because organisations that align product offerings with their environmental goals tend to enjoy the benefits of enhanced brand image and engagement with environment-conscious customers, both of which expand market share and profitability. These would increase return on investment for the shareholders of an organisation (Varadarajan, 2017).

Figure 12: Creation of the Foundation for Our “Second Founding”

Source: MUJI Report 2023, p. 25

MUJI also uses environmental-friendly materials for production development and has been minimising energy consumption by not being reliant on fossil fuels. Its products supports the social aspect of ESG through enriching local lifestyles, supporting traditions, safeguarding local culture, and promoting the local wisdom of each region of its functionality.

Lastly, for governance, MUJI promotes direct and open participation of their stakeholders to contribute ideas to improve its product development practices. MUJI evaluates these ideas, and if they are deemed incongruous, products are developed accordingly to support the lifestyles of targeted customers (MUJI, 2023). This reflects that MUJI has been using ESG perspectives for improving its products so that they can serve the purposes of their real-life applications and usability for its customers. For instance, MUJI's reduced reliance on fossil fuels would have real-world implications for the company itself and the environment. This is because organisations that use environmental-friendly materials and minimise their energy consumption are deemed environmentally responsible brands with their reduced carbon footprint (Schanes et al., 2016). Thus, it can be stated that with its ESG practices, MUJI can position itself as a responsible brand which would attract eco-conscious customers who seek brands offering sustainable products.

Being a responsible brand safeguards organisations from potential regulatory risk because governmental entities around the world are imposing stricter environmental standards for businesses to function in an ethical and sustainable manner. Therefore, organisations that are already functioning in a sustainable manner need not make changes to their operational practices and functionalities to align with regulatory requirements related to environmental standards (Sroufe, 2017). Moreover, when customers know that a company is prioritising control over their environmental impact and taking real actions, they grow a deeper sense of trust and engagement with the brand, making customers not only purchase from the brand but also spread word-of-mouth publicity for the same (Sulkowski et al., 2018). All these aspects would generate a positive real-life impact for MUJI by increasing its brand value and strengthening its market position with higher customer trust and word-of-mouth promotions.

Comparison to Similar Industries

This section will compare and contrast MUJI's sustainability strategies with those of similar companies, such as Fast Retailing and NITORI. By analysing the companies' strategies regarding raw material use, supply chain transparency, and community involvement, we will gain a comprehensive understanding of MUJI's overall performance

and uniqueness within the industry.

Benchmark Company Selection

Fast Retailing (FR)
As a globally recognised apparel retailing giant, Fast Retailing operates in many countries and regions around the world, offering a wide range of products from basic apparel to high-performance technical fabrics. The well-known clothing brand Uniqlo is one of its many sub-brands. In terms of sustainable development, FR not only emphasises the use of renewable materials but also establishes cooperative projects with international organisations to support marine environmental protection and the popularisation of social welfare education.

NITORI
NITORI is a well-known furniture retailer in Japan, offering cost-effective home furnishing products that are popular among consumers. As part of its sustainability strategy, NITORI focuses on the use of eco-friendly packaging and efficient management of the supply chain to minimise carbon emissions. In addition, it often supports the development and advancement of education, arts, culture and sports through campus partnerships and community activities.

Comparison Areas

Management of Carbon Emission Targets
To achieve the goal of gradually reducing greenhouse gas emissions by 2030, MUJI has incorporated carbon management considerations throughout its daily operations and has focused on carbon management throughout the entire process. For example, MUJI has promoted the concept of “no unnecessary product labels on the exterior of products” since its founding. Also, in 2023, MUJI set up a project called ReMUJI in Shanghai, which allows consumers to return used plastic bottles to stores for recycling. This practice reduces carbon emissions from the production and design of products through the recycling of plastic products.

Figure 13: ReMUJI Shanghai

Source: MUJI Report 2023, p. 37

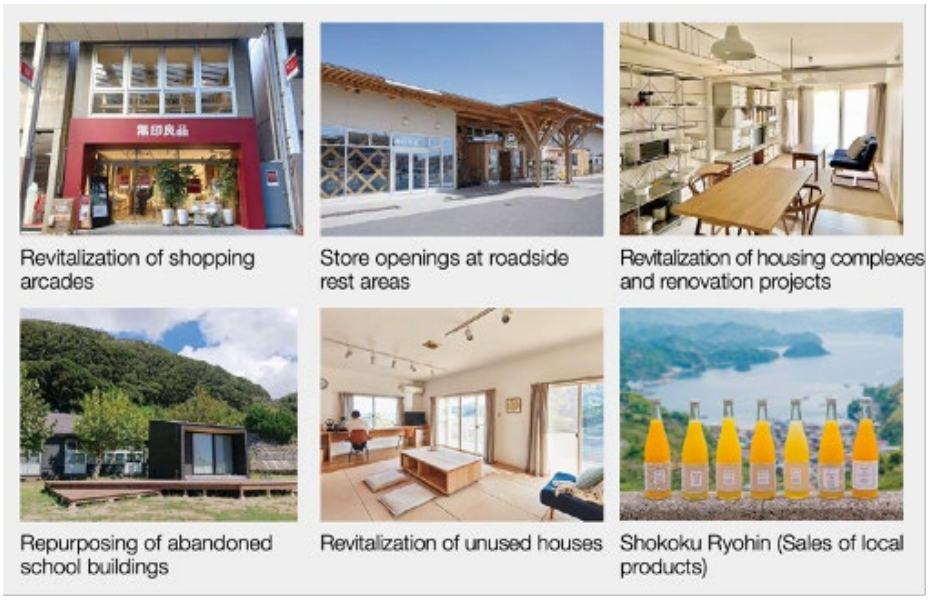
Fast Retailing (FR) aims to reduce carbon emissions from its supply chain by 50% by 2030. Unlike MUJI's approach, FR focuses on production technology innovation. It has adopted more efficient supply chain management techniques and has refined its targets for each relevant department to ensure that carbon emission targets are easy to assess.

NITORI, on the other hand, focuses its carbon target management on introducing the use of green technologies. Since the company specialises in furniture production, which involves numerous product processes, NITORI plans to gradually increase the use of renewable energy.

Local Community Engagement Strategies

Over the past few years, more companies have chosen to increase the promotion of sustainability concepts. But as public awareness grows, more and more companies are realising the importance of connecting with society. MUJI places emphasis on the concept of "connectivity" in its sustainability practices. For example, through the Shokoku Ryohin Project, MUJI utilises its brand influence to support and promote local agricultural products, which indirectly supports the economic development of the community. At the same time, MUJI also transforms vacant houses into new residential or commercial spaces, which reduces the vacancy and waste of resources, and improves the living environment of residents.

Figure 14: MUJI's Shokoku Ryohin Project



Source: MUJI Report 2023, p. 8

The Power of Clothing Project, jointly launched by FR and the United Nations Refugee Agency (UNHCR), is aimed at local elementary and secondary school students in Japan, encouraging them to donate unused clothing to refugees. 744 schools participated in 2023, showing FR's positive contribution to promoting social responsibility and environmental awareness on a global scale.

NITORI is particularly focused on social engagement in its CSR strategy. Not only has it partnered with universities and government to establish the "Human Resources for the Future" programme to address issues related to local communities, it has also promoted the comprehensive development of culture, education, sports and the arts in society through the establishment of foundations and financial support.

Raw Material Selection and Supply Chain Transparency

Transparency in the supply chain is one of the trends in implementing sustainability strategies in the three companies. In its ESG report, MUJI emphasises its use of sustainable certified raw materials. In Vietnam, where the logging of natural trees is prohibited, MUJI has chosen to replace the raw material with rubberwood, which is more economical and environmental-friendly, to comply with local regulations while reducing the burden on the environment. Also, to better regulate the use of chemical substances, MUJI joined Apparel and Footwear International RSL Management (AFIRM) Group in June 2023, which aims to reduce the use and impact of hazardous substances in the global supply chain.

Uniqlo (under FR) launched its “Doraemon Sustainable Mode” line of clothing in spring 2023 with its 100% recycled fabrics, with a portion going to ACCU to reduce marine debris,

Meanwhile, NITORI has chosen to introduce eco-friendly concepts into its product packaging. By recommending replaceable delivery containers and promoting compression-packed products, NITORI reduced CO_2 emissions from its logistics.

Overall Comparison
Overall, MUJI is strong in its sustainability strategy implementation. It not only focuses on both the economic and social benefits of the use of sustainable materials but also takes action to reach out to the community. MUJI has shown commitment for working with the public, the government and society to address environmental risks, setting a sustainable benchmark for the industry.

Conclusion

In brief, MUJI implemented sustainable strategies in different fields and aspects, creating a positive impact for itself and the environment. From an environmental perspective, MUJI aims to achieve a circular economy and coexist with nature. As a result, MUJI includes the following initiatives: resource recycling, reduction of carbon emissions and plastic waste, sustainable raw material sourcing, renewable energy, chemical management and biodiversity protection etc. From a social perspective, MUJI creates a sustainable community through localised activities, such as transforming vacant properties into community centres, setting up health care centres and collaborating with educational institutions. From a governance perspective, MUJI not only establishes an ESG management committee, but it also facilitates employee ownership through the E-Ship and J-ESOP programmes.

Under these comprehensive sustainable strategies, MUJI contributes to the mitigation of climate change, at the same time securing benefits for itself. As for positive environmental effects, MUJI’s sustainable strategies reduce resource consumption and waste, as well as decrease carbon emissions, thus protecting the ecosystem. With a view to balancing sustainability with the company’s long-term development, MUJI launched initiatives such as the commercialisation of sustainable products. These initiatives not only increase employee engagement but also enhance brand value and consumer loyalty. Through consistent efforts, MUJI is now approaching its 2030 vision of “being part of people’s necessities and taking root in local society”.

Despite systematic sustainable strategies, MUJI still has several differences from its

benchmarked companies (i.e. Fast Retailing and NITORI) in the field of carbon emission management, local community engagement, raw material selection and supply chain transparency. In general, MUJI focuses more on product design and community connections, while Fast Retailing attaches importance to technological innovation, and NITORI emphasises supply chain efficiency and culture preservation.

Future Recommendations

Enhance Digital Transformation

In light of Fast Retailing and NITORI responding to the trend of technology and AI, MUJI can utilise digital tools to empower its sustainable strategies. Internally, AI-driven supply chain management improves efficiency by minimising waste and tracking resource usage. Externally, integrating and analysing big data also collects consumers' real-time feedback on sustainable products.

Expand Sustainable Product Lines

MUJI can increase the variety of sustainable products by including more recycled and biodegradable materials. For example, MUJI can use ocean-bound plastics in its products, hence reducing the plastic waste hazards that would otherwise pollute the seas and marine life. The diversity of sustainable products will attract environmentally conscious consumers, further adding value to its brand image.

Strengthen Certifications for Sustainable Sourcing

MUJI can cooperate with professional third-party organisations to certify its sustainable raw materials. This approach will make its MUJI's sustainable sourcing process more transparent and accountable, hence boosting consumer trust.

Develop a Low-Carbon Logistics System

In order to achieve the goal of reducing carbon emissions, MUJI can cut down its carbon footprint in the process of delivering products. To be specific, MUJI can use electric or hybrid vehicles, regulate optimal delivery routes, implement environmental-friendly packaging and collaborate with low-carbon logistics partners.

Introduce Carbon Footprint Labels on Products

Asian countries such as China, Japan and South Korea are proactively making policies regarding carbon footprint labelling. For MUJI, introducing carbon footprint labels is not only an initiative to disclose carbon activities as a part of the company's sustainable strategies, it is also a positive response to governments' call for sustainability.

Strengthen Consumer Education

On one hand, MUJI could organise community events such as eco-workshops, recycling drives and sustainable living fairs. On the other hand, MUJI can establish a reward system (e.g. discounts for using reusable bags, loyalty points for returning used products) that incentivises consumers to form sustainable habits.

Discussion Questions

1. Why is it necessary for MUJI to adopt sustainable strategies?
2. Besides the challenges that are mentioned above, what are some other challenges that MUJI might face in the future in terms of sustainability?
3. How can MUJI control CO_2 emissions, while also maintaining business growth?
4. How can MUJI's sustainable strategies be adapted to different regional markets?
5. Are there any potential risks for MUJI to rely on suppliers for sustainable raw materials?
6. Why does MUJI intend to strengthen deeper connections with local communities?
7. Are all MUJI's initiatives successful? Is there any disadvantage of MUJI's strategies?
8. How could MUJI innovate and improve efficiency? (You can refer to the examples of Fast Retailing and NITORI)
9. How do MUJI's sustainable strategies align with its brand image?
10. Do you hold a positive attitude towards MUJI's sustainable future? Why?

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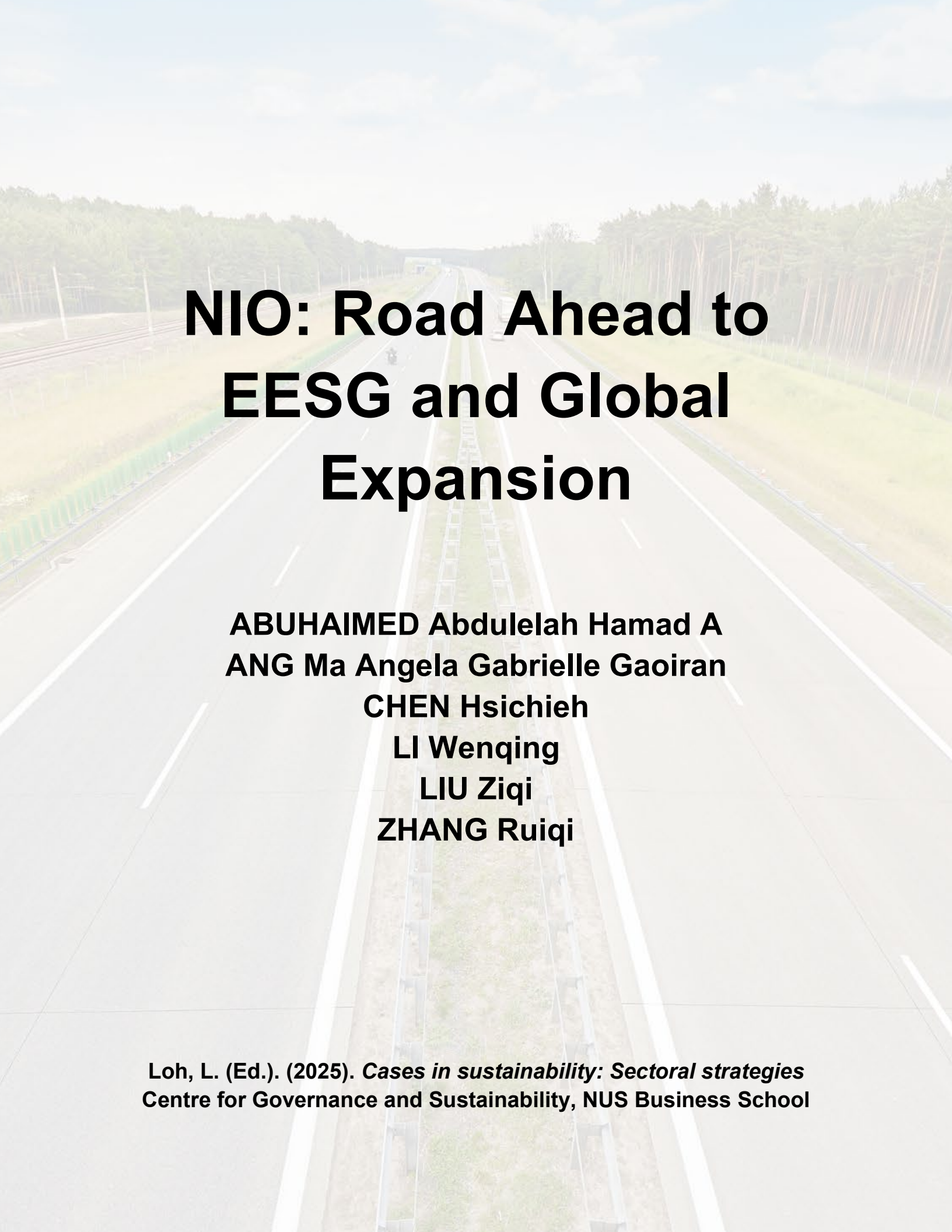

NIO: Road Ahead to EESG and Global Expansion

ABUHAIMED Abdulelah Hamad A
ANG Ma Angela Gabrielle Gaoiran
CHEN Hsichieh
LI Wenqing
LIU Ziqi
ZHANG Ruiqi

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Introduction

Founded in 2014, NIO is a leading global electric vehicle (EV) company based in Shanghai, China. The company's mission is to inspire a joyful lifestyle: " NIO Inc. aims to build a community starting with smart electric vehicles to share joy and grow together with users" (NIO Inc., n.d.). Innovations in technologies, such as Battery-as-a-Service (BaaS) technology, differentiate NIO from its competitors.

For NIO, these technologies are also critical to achieving its sustainability goals which include:

- Minimising the company's carbon footprint
- Optimising resources including the selection of raw materials
- Safeguarding the environment
- Supporting social responsibility

Currently, NIO is in the process of expanding its operations on a global scale, particularly in Europe. However, Europe and China have different profiles in terms of regulations and cultures; therefore, this expansion sees NIO facing hurdles in achieving its sustainability and expansion goals. These hurdles revolve around balancing economics, environmental, social and governance (EESG) growth with business growth. This case study report delves into NIO's EESG efforts and investigates how the global expansion endeavour has the potential to hinder NIO from achieving its sustainability targets.

The Economics Dimension

Innovation and Research and Development

NIO is known for its high-performance electric vehicles and battery-swapping stations. To achieve this, NIO invests in research and development (R&D), with the amount reaching RMB13.43 billion in 2023. In addition, the company focuses on autonomous driving technology and battery recycling. NIO's prioritisation of R&D aligns with the economic dimension of EESG—it pushes for profitability while balancing it with environmental sustainability at the same time.

The NIO Assisted and Intelligent Driving (NAD) system allows users to drive through intersections and make fewer changes due to the use of autonomous driving. In addition, NIO has independently manufactured electronic driving systems (EDS). This system also achieved the ISO 26262 Functional Safety Management Process certification and ASIL D, which indicates the highest level of automotive functional safety. User feedback is also

vital to NIO's innovative process. Insights from customers are gathered to inform delivery targets and R&D initiatives.

Through its heavy investment in the aforementioned innovative technologies and R&D, NIO propels growth in the green technology sector. By doing so, it effectively attracts investors and creates employment opportunities. In effect, NIO generates social good while remaining profitable, which integrates the economic aspect of EESG.

Battery Safety and Sustainability

To implement battery recycling across different points in China, NIO has partnered with various enterprises approved by China's Ministry of Industry and Information Technology. This initiative is monitored using an internal battery management system that tracks each battery to ensure they are recycled and repurposed properly. In doing so, NIO aims to lower its environmental impact while enhancing efficiency and profitability.

Sustainability is at the core of NIO's mission. NIO's battery swap technology extends battery life and reduces waste, contributing to sustainability goals. By managing the entire lifecycle of the batteries from production to recycling, NIO reduces its environmental impact and provides more eco-friendly charging solutions. On September 26, 2023, the 2023 Paulson Prize for Sustainability awards ceremony, co-hosted by the Paulson Institute and Tsinghua University, took place in Beijing. NIO won the annual award in the "Green Innovation" category for its "Key Technologies for Electric Vehicle Battery Swapping, Creating a Low-Carbon and Sustainable New Industrial Ecosystem".

In response to challenges faced by the new energy vehicle industry in the context of "dual carbon" goals—such as subpar energy replenishment experiences, increasing battery safety risks, and low recycling efficiency—NIO proposed a battery-swapping approach for electric vehicles. This approach includes the development of key technologies for efficient and safe battery swapping, such as the pioneering battery-body decoupling technology, fully automated intelligent battery swapping technology coordinated across stations, and multi-network battery swapping integration. NIO has obtained 223 patents for these innovations and has established 22 national, industry, local and group standards.

With the delivery of multiple NIO models and the deployment of its battery-swapping network, NIO's battery-swapping technology has achieved wide-spread industrial application. NIO has successfully achieved a systematic breakthrough from concept to large-scale industry adoption, creating the world's largest ecosystem for electric vehicle battery swapping.

As of September 26, NIO has established 1,879 battery-swapping stations across China, including 546 along highways, as well as 3,158 charging stations and 18,562 charging piles. Additionally, NIO has integrated over 890,000 third-party charging piles. This extensive network is continuously expanding to make battery charging more convenient than re-fueling. This network could potentially attract more green investors, adding to the economic dimension of NIO's long-term sustainability goal as a company (NIO wins Paulson Sustainability Award, 2023).

The Environmental Dimension

NIO sees climate action as one of the key forces behind the new electric vehicle industry and has made this a central element of its sustainability strategy. NIO embraces climate risk transparency and supports the Task Force on Climate-Related Financial Disclosures (TCFD), aligning its governance, climate strategy, and risk management to TCFD. Furthermore, NIO became a member of the United Nations Global Compact (UNGC) in 2016 and joined the Science Based Targets initiative (SBTi) in March 2023; as part of the SBTi, NIO has submitted its targets in line with the decarbonisation goal of limiting global warming to 1.5°C by 2025 (NIO ESG Report, 2023). NIO's governance structure for addressing ESG and climate-related risks comprises its Board, the Nominating and ESG Committee, and the ESG Steering Team, further highlighting NIO's allegiance to providing best practices in leading a sustainable transformation.

To meet its sustainability goals, NIO is establishing a circular economy. Currently, a linear economy relies on extracting raw materials, producing goods, and discarding them as waste, with only 7.2% of materials re-entering the economy after use (United Nations Development Programme, 2023). This approach burdens the environment and aggravates climate change, biodiversity loss and pollution crises. In contrast, a circular economy seeks to reduce waste and sustainably manage natural resources by designing products more thoughtfully, extending their use, and promoting recycling, all while supporting natural regeneration. Moreover, beyond reducing pollution, the circular economy offers solutions to broader issues like climate change and biodiversity loss.

Therefore, by taking a comprehensive, cycles-based approach to sustainability, NIO creates a fully integrated "recyclable and traceable" vehicle lifecycle. This stretches over the entire ecosystem from design to manufacturing to end-of-life disposal, contributing to a stronger circular economy.

"Car to Car" Model and "Blue Sky Lab" Project

An example of NIO's circular economy practices is the one car for another (car to car) resource reuse model. Using this model, NIO recovers copper, aluminium, magnetic steel

and other materials from decommissioned vehicles and then returns them to the production process of new vehicles. Recycling reduces the demand for new materials, minimises waste, and cuts down the carbon footprint of sourcing and manufacturing.

For instance, NIO has initiated a closed-loop pilot programme specifically for the recycling of aluminium, which would take materials from end-of-life vehicles and process them to produce new components (NIO ESG Report, 2023). This method is environmentally sustainable and energy-efficient compared to the traditional route of producing aluminum from ores.

NIO also created the Blue Sky Lab project in 2021, which collaborates with designers and artists to convert automotive manufacturing waste materials into fashion and lifestyle products such as bags, clothing, and furniture (Wang, 2024). This contributes to waste reduction in a creative way while raising awareness of sustainable development.

Figure 1: A Blue Sky Lab Project Photo

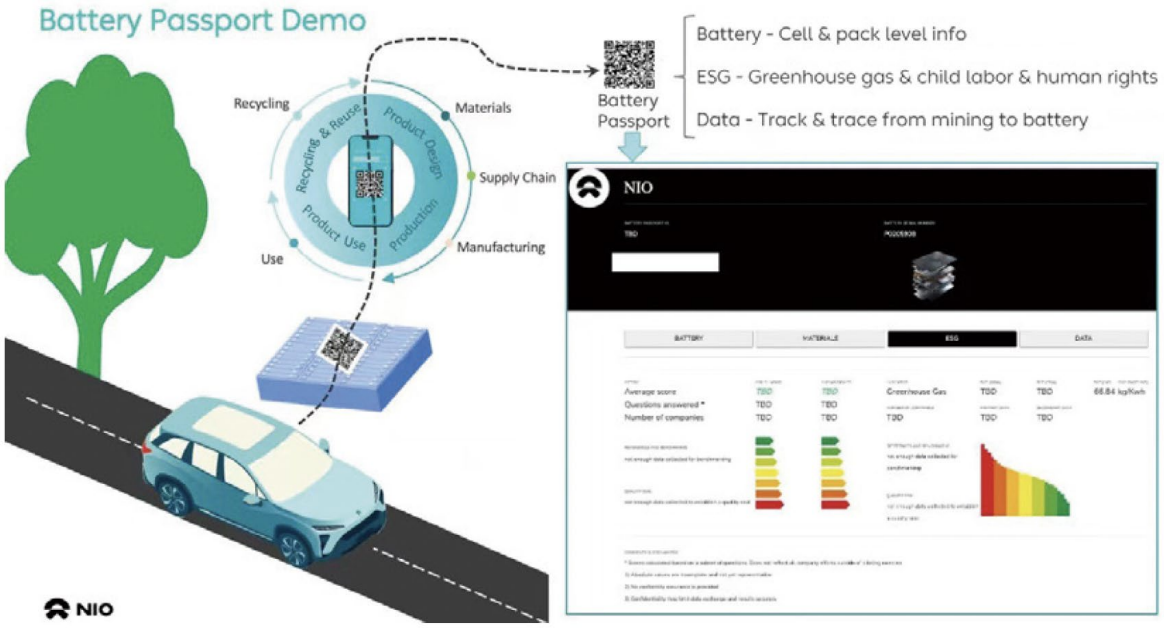
Source: NIO Life

Battery Pack Recycling

The circular car concept of NIO includes not only the vehicle but also sustainable practices relating to components, such as the battery. NIO's battery products are focused on a low-carbon lifecycle and are made of recycled aluminium, lithium, and copper and are safe and reliable. Half of the aluminium alloy employed comes from green-powered industrial space linked to the site of the plant, reducing GHG emissions. To keep battery packs safe, NIO opts for high-strength, low-carbon steel as bottom plates, bringing an even lower product carbon footprint.

NIO's Battery Safety Evaluation Index (BSEI) system evaluates aging batteries to determine whether they can continuously be used or need to be directed for secondary applications such as energy storage and logistics; this involves recycling the metal parts of batteries that are no longer usable. Meanwhile, recent breakthrough technologies enabling non-destructive battery dismantling and recycling of cell materials would facilitate the high-recovery reuse of retired batteries. In the future, NIO will use advanced technology to provide users with maximum regenerative value for these batteries, committing to the circular economy that NIO has been striving for.

Figure 2: NIO's Battery Passport Demonstration



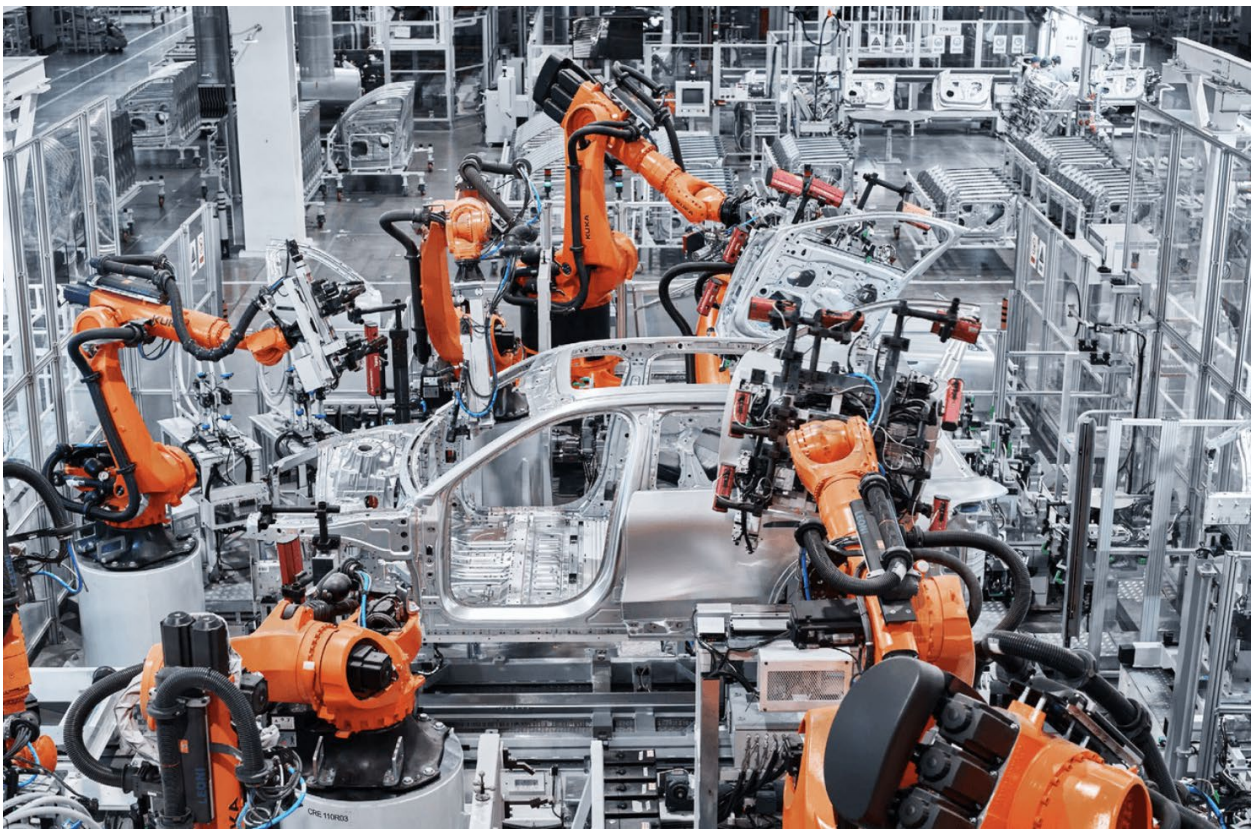
Source: NIO 2023 ESG Report

Moreover, to extend the lifecycle management of the batteries, NIO developed its NIO Battery Passport Platform in-house (initially for 100kWh battery packs) and has

conducted an internal demonstration. It maintains great transparency in the battery supply chain with data on cells, shells, modules and electrode materials. This supports transparency and also provides a basis for tracking the recycling and recovery of materials, further demonstrating NIO's dedication to the circular economy.

Green Manufacturing, Warehousing and Transportation

Figure 3: NIO's Green Manufacturing



Source: NIO 2023 ESG Report

NIO prioritises lean, intelligent and efficient production to create green, sustainable products. To reduce carbon emissions and enhance vehicle lifecycle sustainability, NIO continuously advances automation and intelligence in its manufacturing centres, optimising operational efficiency. NIO also implements energy management systems, undertakes energy-saving upgrades, and increases the use of renewable energy, with over 17% of its energy consumption sourced from renewables during the reporting period (NIO ESG Report, 2023). NIO is also committed to green warehousing and is implementing proactive environmental measures to optimise resource and energy use in

its storage facilities. NIO is trying out the LSE paperless system which streamlines operations such as receiving, warehousing and picking.

As part of NIO's inbound logistics, the "NIO Milk Run (MR) Self-Pickup" project utilises NIO vehicles for circular pickups instead of relying on traditional partner transportation. This initiative led to a reduction of approximately 28,278 km in transportation mileage, resulting in a decrease of 3.15 tons of carbon emissions (NIO ESG Report, 2023). For vehicle exports, NIO prioritises minimising transportation distances to meet the company's carbon reduction goals. Since April 2022, NIO established a direct route to Norway, successfully transporting 423 vehicles by the end of the reporting period. NIO is also increasing the use of sea-rail transportation in their international logistics operations; during this period, 26 vehicles were exported via the China-Europe Railway Express, and an additional 297 vehicles were transported through multimodal methods, avoiding approximately 327 tons of carbon emissions compared to conventional air transport (NIO ESG Report, 2023).

Figure 4: NIO's Unmanned Smart Automated Guided Vehicle (AGV)

Source: NIO 2023 ESG Report

For both inbound and in-factory logistics, NIO is introducing new energy trucks and large unmanned smart electric Automated Guided Vehicles (AGVs), with plans to further expand its fleet of clean energy-powered transportation equipment.

Water Resource Management and Water/Discharge Compliance

NIO recognises the critical importance of water resource protection and adheres to China's Water Law and other relevant regulations in its areas of operation. Each major manufacturing centre has set annual water consumption limits per unit of product, with ongoing efforts to improve water efficiency through equipment upgrades and process optimisation.

In factories, NIO has also improved process water circulation, achieving reuse rates of 90.36% and 99.12%, respectively, with over 46 million tons of water recycled in total. Additionally, NIO implemented rainwater systems that use low-impact development (LID) features such as rainwater channels, greenbelts and permeable paving, achieving a 63.8% pollution-removal rate and a 75.1% runoff control rate, exceeding Hefei's Sponge City Plan standards (NIO ESG Report, 2023). Furthermore, NIO adheres to local environmental laws and regulations to ensure its emissions and waste are managed properly.

Summary

Through its environmental efforts, NIO aims to lower its carbon footprint as well as set an industry standard for integrating sustainability into all aspects of operations, adhering to its circular economy obligation.

The Social Dimension

Industry-University Research Collaboration

NIO has participated actively in industry-university research collaboration. NIO works closely with academics and researchers to carry out forward-looking projects, partnering with 32 universities in China to implement employment and technology programmes to develop future industry leaders. Programmes such as NIO's "Second Classroom on Smart Electric Vehicles" and "NIO Elite Class" at the University of Science and Technology of China indicate its attentiveness to talent cultivation.

Supply Chain Management

Raw materials and suppliers are the two most important parts of the supply chain that NIO aims to align closely with its sustainability strategy. NIO has expressed commitment to the responsible selection of all raw materials. To avoid using minerals from conflict-affected and high-risk countries and regions, a critical minerals project has been carried

out. This initiative in supplier management helps to ensure that ethical standards are maintained throughout the whole process.

Attention is paid to partnership selection and life-cycle audit processes. NIO requires all partners to provide Environmental Impact Assessment (EIA) reports and verify that their production processes comply with environmental protection requirements, which is a comprehensive sustainability assessment. If a supplier is found to use child labour, underage labour or other violations of ethics, NIO conducts a one-vote veto to terminate the cooperation.

In daily partner management, NIO has also implemented the NIO Partner Quality System (NPQS), which assigns partners A, B, or C ratings based on their compliance with quality and sustainability requirements. This hierarchical management will help NIO to strategically allocate resources to top-tier partners.

Figure 5: NIO Partner Quality System

Rating	Compliance Level	Description
A	≥90%	Pass
B	≥80% and <90%	Pass with conditions
C	<80%	Fail

Source: NIO 2023 ESG Report

NIO also supports partners' development through initiatives like Partner Empowerment Days and digital empowerment programmes, providing professional training courses, certification and cooperation opportunities in innovation. For example, NIO has partnered with ClearMotion, an automotive technology startup, to jointly launch a new system that has been implemented in their new product, which improves the overall benefits of the entire supply chain.

In a nutshell, this rigorous partner management system, combined with both strict selection and lifecycle audits and comprehensive partner empowerment initiatives, not only corroborates the ESG compliance of NIO's supply chain but also sets a responsible model for the entire industry.

User Engagement

Offering considerate customer service and building a user community for a community experience are core parts of NIO's sustainable value chain. NIO offers test drives before sales and personalised after-sales support services, such as the "Warm Winter Campaign". In the northern part of China, where the weather is freezing during wintertime, NIO provides free tyre replacement services for users. To maintain high user satisfaction, NIO monitors service quality through user surveys and a five-star rating system. Through the NIO App, 47 new NIO Houses and 131 NIO Spaces, the company has created a lifestyle community for its users. NIO encourages community interaction through feedback channels, offline salons, and live events to confirm a seamless connection with users and amplify NIO's social responsibility to customers.

Through these efforts, NIO has established a sustainable value chain that not only improves technological innovation in the whole industry but also implements responsible practices to foster lasting relationships with all shareholders such as partners, suppliers and customers.

Inclusivity, Diversity and Equal Opportunities

As one of the key players in the electric vehicle industry, NIO is dedicated to building a highly skilled team that values inclusivity, diversity and equal opportunities. NIO also invests in its talent by implementing multiple recruitment channels and providing continuous support for talent development and training. Based on the ESG 2023 report, its current pool of talent comes from 20 different countries along with 1,168 ethnic minorities; it also employs over 300 individuals with disabilities.

NIO has also implemented measures to make sure that its employees are protected, provided with leisure time outside work, and given resources to advance their skills. NIO's pro-employee policies and benefits include fair compensation, company shares, insurance plans, annual leave, free health services and more. In addition, NIO takes a step forward by complying with declarations from entities such as the United Nations and the International Labour Organisation on individuals' rights at work.

Based on the latest 2023 ESG report, NIO organised more than 1,000 events for its employees to provide them with activities for leisure. These events include traditional Lantern festivals, Daddy's Day Out, and other themed events. William Li, NIO's founder, also actively builds on his relationship with his employees by conducting "Will I Am" forums where employees are allowed to have in-person discussions with him. To assess their overall status and well-being, NIO also regularly conducts satisfaction surveys.

Figure 6: Example of Employee Activities (Parent-Child)

Source: NIO 2023 ESG Report

The Learning Development Centre and NIO Academy are two key sources NIO has put in place to strengthen its pool of talent. Within these institutions, employees are given access to valuable materials such as courses and workshops where they can leverage the expertise of their instructors and enhance their skills. As such, NIO effectively upholds the social dimension of EESG by crafting a corporate environment where its diverse labour force is protected, compensated, and given opportunities to advance.

Occupational Health and Safety

NIO establishes its extensive occupational health protection system, which begins with the identification of workplace hazards and risks. This is followed by the implementation of safety policies to reduce occupational hazards and the use of third-party agencies to conduct hazard evaluation. On top of this, NIO follows the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases and regularly conducts safety training and drills to improve employee awareness of occupational health and safety (NIO ESG Report, 2023). Through these measures, NIO upholds the social pillar of EESG principles, promoting an ethical, inclusive and supportive workplace culture.

Charitable Actions

NIO launches a range of charitable activities with its user communities, focusing on environmental conservation and social welfare initiatives. For example, NIO initiated Weibei and Qingwei Charity Communities to organise tree planting and beach cleanups

in areas like Beijing and Qingdao (NIO ESG Report, 2023). These activities encourage environmental awareness among volunteers, who participate in actions such as protecting trees, removing marine litter, and spreading awareness on sustainability topics. Through these efforts, NIO fosters a culture of environmental responsibility among its users while contributing to the preservation of natural ecosystems.

In social welfare, NIO supports vulnerable groups through its NIO Users Trust. For example, on NIO Day, a charity bazaar event raised significant funds for providing meals for the elderly. The event also rallied the donation of festival supplies for low-income workers. Additionally, NIO collaborates with Operation Smile to assist children with cleft lip and palate, funding surgeries and offering volunteer support and companionship (NIO ESG Report, 2023). These charitable actions demonstrate NIO's commitment to making a positive social impact beyond its business operations, leveraging its community network to drive meaningful change.

The Governance Dimension

Governance Structure

Under ESG, NIO's governance structure is important for ensuring compliance with local regulations and accomplishing its sustainability goals. The company's ESG organisational structure has clear definitions of functional areas, roles and responsibilities, detailed in Figure 7, to support achieving long- and short-term sustainability targets.

Figure 7: NIO's ESG Governance Structure, Responsibilities and Roles

Source: NIO 2023 ESG Report

The Decision-Making Layer, Planning Layer, and Execution Layer in NIO's governance structure formulate, plan, and execute sustainability strategies.

Decision-Making Layer
In the decision-making layer, NIO's Board of Directors provides high-level decision-making and strategic oversight, ensuring the sustainability initiatives align with NIO's overall business goals. The Nominating and ESG Committee develops ESG initiatives, ensures that sustainability goals are integrated into NIO's governance, and positions ESG projects with regulatory bodies and stakeholder expectations.

Planning Layer
The ESG Steering Team translates high-level sustainability strategies set in the decision-making layer into actionable strategies. The Steering Team plans, coordinates, and aligns ESG strategies from the decision-making layer to the execution layer.

Execution Layer
The execution layer is where the sustainability strategies are executed at the operational level. This layer includes the ESG and Sustainability Department and ESG and Sustainability Taskforce. The department is responsible for executing the initiatives. On the other hand, the task force oversees the day-to-day tasks and makes sure that NIO's ESG goals are implemented in practice.

Risk Management

NIO's risk management process revolves around four stages as seen in Figure 8.

Figure 8: NIO's Risk Management Process

Source: NIO 2023 ESG Report

The risk identification stage aims to pinpoint risks with the potential to impact NIO's operations, strategy and compliance. These risks could be from both internal and external sources, such as regulatory changes and supply chains. The risks are then assessed based on their occurrence probability and impact, which allows NIO to optimise their resources in critical areas. After the risk assessment, NIO continuously monitors the risks to detect potential issues as early as possible to mitigate their impact. The risk response is the last stage of the risk management process, which is designed to reduce the impact of risks to ensure business continuity.

The risk management process is supported by NIO's risk management framework with three lines of defence. The three lines of the defence model aim to increase accountability and oversight, support risk mitigation, and help achieve NIO's sustainability goals. The first line of defence revolves around business departments managing risks within their departments through internal controlling and the monitoring of their operations. The second line of defence focuses on supporting the business departments and providing oversight of the risk management system through the internal control department. In the

last line of defence, periodic audits evaluating and auditing the risk management system are conducted by the internal audit department.

Periodic Audits

NIO's Internal Audit Department maintains compliance and continuous improvement efforts of sustainability standards within the company's internal operations. NIO holds regular internal audits across its business units and processes to evaluate and identify gaps in business operations. These internal audits provide valuable insights and data that support the company's governance structure, particularly to the Board of Directors, Nominating and ESG Committee, and ESG Steering Team.

In addition to internal audits, NIO conducts periodic external audits on its suppliers to establish compliance with local regulations and company standards. The external audits evaluate suppliers' practices and operations to identify, assess, monitor, and mitigate risks across their supply chain. These external audits hold suppliers accountable for conducting ethical and responsible practices across their operations.

Challenges and Outlook

NIO's Global Expansion

NIO initiated its global expansion in 2021 by opening its first European NIO House, located on Karl Johans Gate in Oslo, Norway's capital, which spans 1,700 square metres. Across Europe, NIO has opened 7 NIO Houses; currently, NIO operates 173 NIO Houses across the world. However, NIO's global expansion business strategy faces obstacles that may prevent it from reaching its sustainability goals, and they will be discussed in the following sections.

Localisation of Suppliers and Manufacturers

NIO's efforts to build infrastructure in Europe face challenges due to local regulations and costs. The overall environment for entering the European market is becoming increasingly challenging, posing difficulties for many Chinese car manufacturers attempting to establish their presence in the European market.

In early October 2023, the European Union announced the initiation of an anti-subsidy investigation on electric vehicles imported from China. In June 2024, the European Commission declared that additional tariffs of up to 38.1% would be imposed on EV imports from China. The EU has also introduced the Batteries and Waste Batteries Regulation, requiring that from 2027, all traction batteries exported to Europe carry a

compliant “battery passport”, recording data on the manufacturer, material composition, carbon footprint, and supply chain information.

According to data from market research firm Dataforce, NIO sold a total of 2,404 cars in the European market in 2023, a figure far below its domestic sales. The same year, NIO sold 160,000 units in China. Thus, this shows that NIO will have to adjust its strategies to further expand in the European market.

Employee Rights and Labour Laws

In its efforts to globalise, NIO will have to adjust to different labour laws. European countries, where several NIO houses were built, have varying and unique labour regulations that oversee working hours, wages, benefits and layoffs. These countries have strict regulations that protect the rights of their employees. For instance, employers in European countries must ensure that their staff do not work more than 48 hours a week, including overtime. Employees are also entitled to at least 11 consecutive hours of daily rest (Your Europe, 2024). As NIO enters different global markets, it must comply with different regulations or risk legal consequences.

In November 2023, NIO underwent a restructuring of its organisation as it reduced its workforce by 10%; this decision was made to reduce costs and improve NIO’s operational efficiency (Reuters, 2023a). A few weeks later, reports announced that the organisation was planning to increase the dismissal to 20-30%, with non-core businesses being the most affected (Reuters, 2023b). If NIO wants to enter different regions, its history of layoffs could create complications in countries with stringent employee protections. In the Netherlands, where one of the NIO Houses was constructed, employers must follow a dismissal procedure. In some cases, employers cannot proceed with the redundancy if the Employee Insurance Agency or the sub-district court does not approve it. To manage the workforce and minimise legal risks, NIO should adopt appropriate actions such as establishing local HR teams to assure compliance with labour laws and regularly engaging with workers’ representatives.

Balancing Corporate Vision with Local Market Realities

With globalisation, NIO must manage a diverse workforce across different regions, which entails differences in skills, backgrounds, and, most importantly, corporate cultures. An example of the impact of cultural differences on workforce management was highlighted when Lenovo acquired IBM’s PC division in 2004. This move led to a strained decision-making process between the two parties because IBM’s American team, accustomed to a more decentralised approach, did not align with Lenovo’s Chinese team, which had a hierarchical and centralised style (Abdulai and Ibrahim, 2016).

In a similar light, NIO's corporate team, headquartered in China, will have to understand and adjust to the local market's unique characteristics. The NIO House in Amsterdam is managed by NIO Netherlands, with General Manager Ruben Keuter, a Dutch national, in charge of operations (Hai, 2024). Having a local manager is crucial in allowing NIO, as a brand, to navigate the Dutch consumer preferences. However, NIO's headquarters in China remains in charge of major strategies and key decisions such as corporate branding, service standards, and customer engagement strategies. To reduce constraints, NIO's Chinese headquarters must embrace a corporate culture that provides autonomy to its local managers, allowing the integration of local values while maintaining NIO's overall brand identity and core values.

Battery Management

NIO is focused on expanding its market presence, particularly in Europe, where demand for sustainable transportation is high. They plan to launch not only electric vehicles but also an entire ecosystem, including NIO's battery-as-a-service (BaaS) model (Meng, 2023). This strategic approach to market expansion includes localised infrastructure development and a strong focus on building communities around the brand, enabling them to meet the needs of different geographies, including potential future expansion into North America.

However, NIO's management for the battery life cycle still has a long journey to go. The regulation for EU batteries, especially for waste batteries, has put significant compliance and management pressure on NIO. The regulation requires battery and vehicle manufacturers to manage the environmental impact throughout the product's life cycle, from production to utilisation and final disposal. For NIO, the challenge goes completely beyond compliance. To expand, it is crucial to gain a foothold in the European market. The regulations emphasise carbon footprint disclosure and material recycling, requiring companies to provide transparent, quantifiable emissions data and make sure that core battery materials such as lithium and nickel are recycled. To achieve this goal, NIO must establish a comprehensive green management framework in its supply chain and products to meet these requirements. In addition, NIO will need to invest in the necessary technology and process improvements to certify that materials can be recycled to comply with EU standards. This battery life cycle management strategy not only meets environmental needs but also positions NIO as an important player in the clean energy transition, which is an important factor in enhancing its brand image and satisfying the high standards of the international market.

The rapid development of battery technology has brought numerous opportunities and challenges to NIO. It must catch up with cutting-edge developments in battery technology to remain competitive in fields such as range, energy utilisation efficiency, and charging

speed. At the same time, NIO's BaaS model will require a huge amount of investment in infrastructure, such as expanding charging and battery exchange stations and optimising battery storage and maintenance facilities. As NIO expands globally, these investments could affect the company's financial resources in other crucial areas. Further, the rapid development of battery technology has shortened the life cycle of existing infrastructure, which may force NIO to quickly retire certain hardware as new technologies emerge (Meng, 2023).

In conclusion, striking a balance between R&D and infrastructure investment for battery technology while optimising resource allocation is a long-term challenge for NIO.

Robust Sustainability Audit

NIO conducts regular sustainability audits throughout its supply chain to verify that suppliers and partners align with the company's ESG standards (NIO, 2023). These audits cover a range of critical factors, including water usage, waste and carbon emissions management practices. By carefully examining these areas, NIO can monitor and reduce the environmental impact of its supply chain, contributing to its broader goals of carbon neutrality and resource efficiency. This focus on environmental standards guarantees that all aspects of NIO's operations, from production to distribution, are in line with sustainable practices, which is crucial for its business strategy to expand globally.

In addition to environmental factors, NIO's audits also emphasise ethical labour practices (Si, 2022). The audits assess labour conditions to prevent issues such as forced labour, child labour, and workplace discrimination, holding suppliers accountable to NIO's high standards for human rights and fair treatment. Through detailed audits and strict oversight, NIO can identify and mitigate potential sustainability risks, verifying that its supply chain partners uphold global ESG expectations. This robust approach to auditing not only reinforces NIO's commitment to ethical business but also strengthens its reputation as a leader in responsible and sustainable manufacturing.

While NIO's sustainability audits are comprehensive, there are several ways the company could further improve its approach to reinforce sustainability across its supply chain. First, NIO could publish more detailed reports on the results of its audits and the corrective actions taken with suppliers. By sharing information on sustainability performance publicly, NIO can increase accountability and provide stakeholders, including customers and investors, with greater transparency regarding its ESG efforts. This could also encourage suppliers to prioritise compliance, knowing that their performance is being monitored and reported.

Next, instead of relying solely on periodic audits, NIO could introduce real-time monitoring technologies within its supply chain to continuously track carbon emissions, water usage and waste. Advanced technology, such as Internet-of-Things (IoT) sensors and blockchain for data transparency, could provide up-to-date insights into sustainability metrics and flag any deviations immediately. This would enable quicker responses to sustainability risks and offer more consistent oversight.

While audits identify areas for improvement, NIO could support suppliers more proactively by offering training programmes focused on sustainable practices. Workshops on energy efficiency, water conservation and ethical labour standards could empower suppliers to improve their sustainability performance. This investment in capacity building would foster a culture of sustainability across the supply chain and make compliance less reliant on external enforcement.

NIO could also partner with local non-governmental organisations (NGOs) and environmental experts who understand the regional challenges that suppliers face. These partnerships could help NIO address specific sustainability issues, such as water scarcity or labour rights, more effectively. Local organisations can offer insights into cultural and logistical nuances that NIO might not be fully aware of, thereby improving the effectiveness of its sustainability initiatives.

To encourage suppliers to go beyond minimum compliance, NIO could implement a reward system for those that exceed ESG targets. For example, suppliers that demonstrate outstanding performance in carbon reduction or ethical labour practices could receive preferred status, financial incentives or long-term contracts. Such incentives create a positive reinforcement loop, motivating suppliers to prioritise sustainable practices and innovate within their operations.

Conclusion

Across the dimensions of Economics, Environmental, Social and Governance (EESG), NIO has implemented policies and processes in their strategies and operations to achieve its sustainability goals. For example, NIO's governance structure, risk management processes and regular audits ensure compliance with local regulations. In the environmental dimension, NIO implements circular economy and carbon minimisation processes in their operations as seen in their initiatives such as the "Car to Car" model and integrating renewable energy in manufacturing operations. On the social aspect, NIO supports community and employee development, diversity and ethical practices across their supply chain, including raw material selection. Lastly, on the economic dimension,

NIO invests in technological innovations and R&D, such as the BaaS model, to grow its operations while maintaining its sustainability standards.

NIO's global expansion leads to challenges in maintaining its ESG standards, especially in regions with different regulatory standards and cultural norms. Such challenges include navigating regulatory hurdles and tariffs, adjusting to different labour laws, and implementing their ecosystem. For NIO to succeed in maintaining its sustainability principle through its growing operations, the company must continue to invest in transparency, form partnerships with local stakeholders, and continue to technologically innovate. These efforts will support NIO's global ambitions of growing to become a leader in the global electric vehicle industry.

Discussion Questions

1. NIO states that battery swapping is a sustainable solution for EVs. However, the environmental impact of producing and maintaining batteries and the required infrastructure remains contentious. Compared to traditional charging methods, is battery swapping better and more sustainable?
2. Given NIO's focus on community-driven charitable activities, how can the company leverage its user base to amplify its environmental and social impact in new international markets?
3. How can NIO effectively balance the need for centralised oversight in its governance structure with the flexibility to adapt to local ESG regulations and cultural norms in different global markets?

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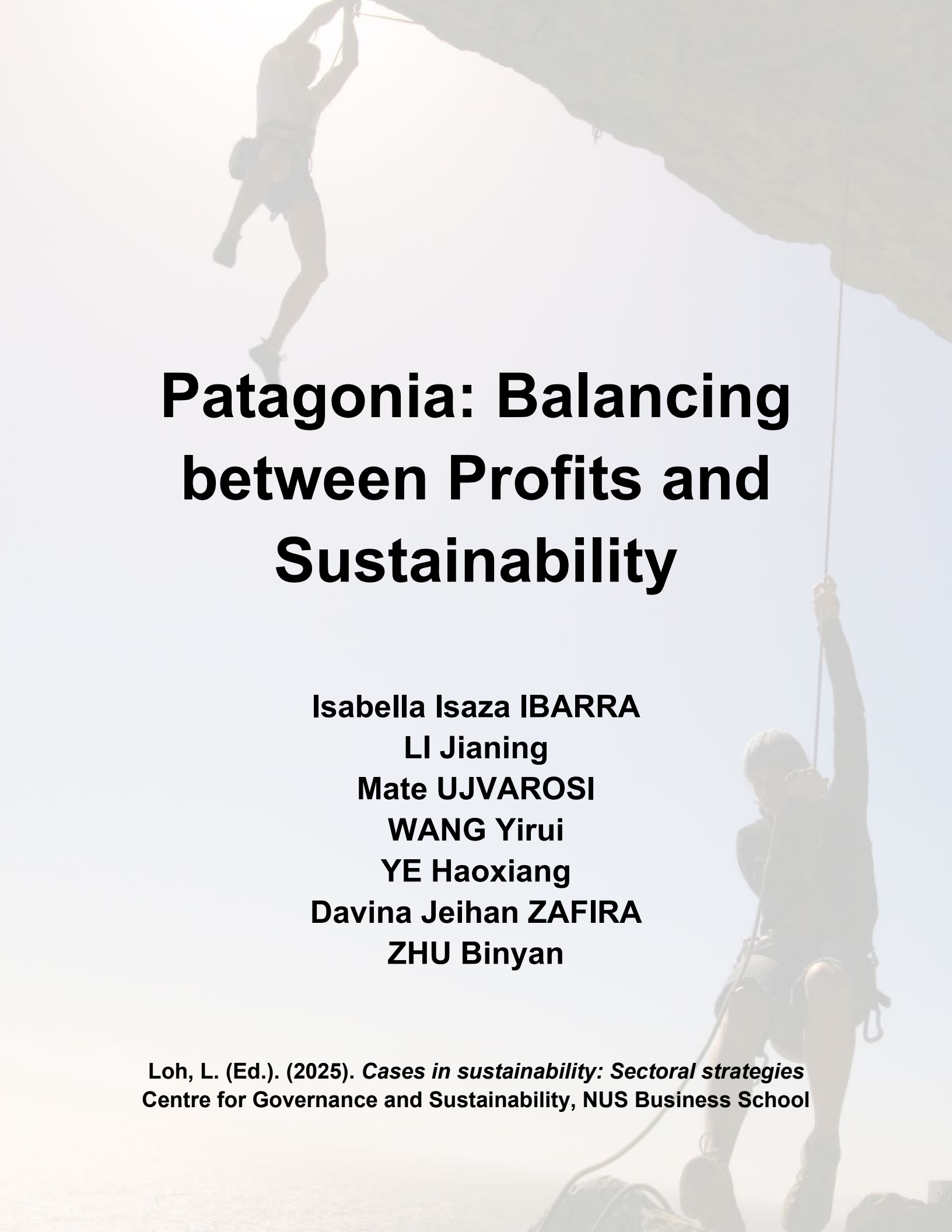

Patagonia: Balancing between Profits and Sustainability

Isabella Isaza IBARRA
LI Jianing
Mate UJVAROSI
WANG Yirui
YE Haoxiang
Davina Jeihan ZAFIRA
ZHU Binyan

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Centre for Governance and Sustainability, NUS Business School

Introduction

Company Overview

Patagonia just celebrated its 50th anniversary in 2023, meanwhile ranking as the most reputable brand in the United States (Sundheim, 2024). This brand is famous for its wide range of outdoor and lifestyle products that are well-designed, sustainable and durable. Patagonia has been known as a responsible, eco-friendly, ethically sourced and socially responsible brand. As a result, it has become a leader not only in outdoor retail but also in corporate activism (Chang, 2021).

History

Patagonia was founded in 1973 by Yvon Chouinard, who was passionate about rock climbing. First, his company sold climbing tools and equipment as he saw a large market gap in this segment, and he wanted to use better hardware for his beloved sport (Pagnucco, 2023). Later, Chouinard wanted to increase the profitability of its business, since at the time he was only earning a 1% margin. Thus, he expanded its product portfolio to outdoor clothing and gear by 1973 (Sundheim, 2024).

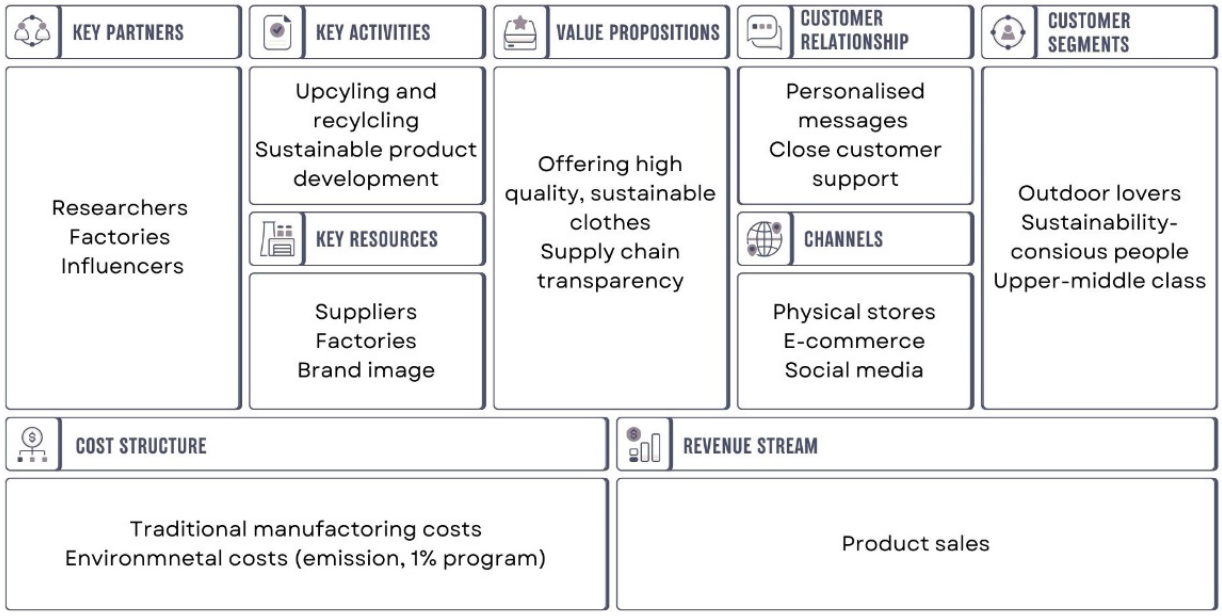
As a climber and nature-lover, the founder knew the importance of sustainability. This was in the 1970s and Patagonia was fighting for environmental causes. The turning point in their environmental agenda came by 1988: an accident changed their view on their footprint. One day, the ventilation system of the factory malfunctioned, and a toxic material, formaldehyde, which was used to prevent cotton shrinkage, spread and made many employees sick. This event—later known as “the cotton lesson”—showed the company the environmental impact of cotton-based products, which led to their subsequent use of organic cotton. This strategy was very risky at the time since organic cotton was more expensive and the supply was limited, but after a while, Patagonia managed to produce and sell those products at a profit.

Now, Patagonia is famous for its organic products, reaching US$1 billion dollar in yearly revenue and an estimated US$100 million in profit.

Business Model

To understand the business model of Patagonia, it is imperative to understand its core values. Those are quality, integrity, environmentalism, justice and not being bound by convention (Patagonia, n.d.).

Figure 1: Business Model of Patagonia



Source: Business Models Inc, n.d. and McKinsey and Company, 2023 and Stanley, 2021

From the business model, it is crucial to elaborate a little more on the customer segment, which is needed for understanding the rest of the case study. According to Pagnucco (2023), there are three main customer segments of Patagonia:

- **Outdoor enthusiasts:** Likely to spend their free time hiking and climbing, prioritising durability and sustainability.

- **Eco-conscious consumers:** Look for brands aligned with their environmental values.

- **Socially engaged activists:** Resonate with Patagonia's activism and campaigns.

For these segments, the environmental activity of Patagonia is very appealing and ensures profitable operations.

Environmental Activities

In this section, a short summary is given on how Patagonia is operating sustainably. More details will follow in another section.

Firstly, Patagonia is a leader in marketing the material innovation for outdoor apparel. Secondly, Patagonia has impactful campaigns: it advocates against fast fashion and consumerism to its social media followers, and also plays as a political activist if it identifies a leader who is not sustainable. Furthermore, Patagonia is trying to build communities by sharing the stories of its customers' sustainable activities. Finally, Patagonia is famous for its generous "1% for the Planet" programme—they donate 1% of their sales to non-governmental organisations (NGOs) working towards a more sustainable planet.

Patagonia's Efforts

Economic Dimension

Patagonia, as a top-tier outdoor sports brand with an eco-friendly tag, balances well between its profits and ESG goals. There are three main parts, which make it not only the top-tier outdoor sport brand but also the representative of ESG leadership for most companies. Firstly, it's about the core value of their business. Patagonia holds "Long-Term Value Creation Over Short-Term Gains" and emphasises that "Earth is the only owner of Patagonia".

Secondly, the correlation between profitability and environmental investment behind Patagonia's business model plays a key role in its brand development. Lastly, transparent reporting and accountability also benefit its economic sustainability, which includes supply chain management and final reporting to the public.

In 2022, the founder of Patagonia decided to transfer the corporate ownership to Patagonia Purpose Trust and Holdfast Collective, which means all the future profits will be used for environmental protection and social problem solving. This behaviour supports strong financial aid for climate change matters, abiding by the slogan "Earth is the only owner of Patagonia" through concrete actions.

Before that slogan became mainstream, Chouinard, Y., and Stanley, V. (2018) stated that Patagonia strives to uphold the concept of sustainable development of their business. Compared with most profit-oriented companies, Patagonia holds a different business core value, which focuses more on long-term sustainability over short-term non-sustainable profits. For example, as mentioned by Patagonia, Inc. (2015), Patagonia avoids expanding its product line blindly to maintain the quality and durability of the products. Patagonia stopped its production of unguaranteed products to enhance the brand's sustainability reputation and customer loyalty, leading to a more stable market position.

Balanced Business Profits and Sustainability

As a private company, Patagonia's annual reports are not open to the public. However, based on restricted data resources, as estimated by Statista, Patagonia's annual revenue ranges between US$209 million and US$1.3 billion. Even though the numbers are vague, it still shows a strong market position and capacity to generate revenue. On the other hand, it also shows Patagonia as a great model in balancing profit results and ESG responsibilities.

Besides its past achievements, Patagonia is continuing to enhance its business model to support a circular economy. For example, the "Worn Wear Programme" released by Patagonia aims to do second-hand cloth recycling, refurbishment and resale to extend product lifecycles and reduce waste. Through the "Worn Wear Programme", Patagonia expanded its product line whilst remaining aligned with its sustainability mission, earning consumer loyalty to the brand. Besides second-hand items, the firm's product design concepts also focus on the practicality of design and recyclability of materials (Fletcher, K. and Tham, M., 2019). During its product line expansion, Patagonia keeps its eyes on outdoor gear and avoids chasing after fashion trends, which helps its products to maintain a professional and qualitative feel. In raw material selection, it looks at refreshing, recycled and low-carbon-release materials to make sure items are recyclable.

Transparent Reporting and Accountability

To conduct its recycled product design, every party in its whole supply chain needs to oversee each process, from raw material procurement to end-product manufacturing. To achieve its aims, Patagonia sets standards for its supply chain partners and ensures that the supply chain's traceability and transparency are visible, which can enhance the customers' understanding of the product's sustainability and Patagonia's moral standards, eventually boosting the trust of the brand. Meanwhile, traceability and transparency of the supply chain also provide visibility to Patagonia about its supply chain partners, enabling it to select suppliers that meet environmental standards and sustainable materials that align with their environmental commitments. Eventually, Patagonia publishes its environmental impact reports and supply chain details to build the confidence and trust of investors and customers.

Environment Dimension

Patagonia's environmental behaviours are embedded deeply within its business model. Three main sections will be covered to give more detailed analysis about Patagonia's environmental efforts. The first one is about materials recycled and its further usage. The second is committing to carbon neutrality by 2025. The third section is mainly about consumer environmentalism education. All those efforts put forth by Patagonia lead to the development of its ESG protocols.

Material Recycled and Further Usage

Due to its market positioning, Patagonia focuses primarily on the outdoor sports sector, which helps to some extent in avoiding the feeding of fast fashion. To reduce unnecessary material usage, Patagonia prioritises the use of recycled materials in its products and employs manufacturing techniques that enhance the durability of its clothing. On one hand, recycled materials help lower power and water consumption compared to newly produced materials; on the other hand, durable products reduce the frequency of customer purchases, thereby minimising unnecessary waste. In contrast, fast fashion brands, while offering trendy designs, often use lower-quality materials and production methods. This encourages customers to shop frequently, ultimately generating significant amounts of waste.

Committing to Carbon Neutrality

Patagonia targets to achieve carbon neutrality by 2025, which requires a reduction in its carbon emissions from operations and supply chain management. Due to the traceability and transparency of its current supply chain, the supply chain management is still under control, only requiring efforts to keep supply chain partners regulated on emission reductions, energy efficiency and sustainable practices. Renewable energy usage also contributes to carbon emissions reduction, and Patagonia aims to power all operations using clean energy. On the parallel, for those unfeasible areas, Patagonia tries to use renewable energy projects to offset emissions to control net emissions.

Consumer environmentalism education

Patagonia commits to creating an eco-friendly community where consumers advocate for mindful consumption and purchase only when needed. Through the “Worn Wear Programme”, more consumers are encouraged to repair and reuse their existing products instead of disposing of them, which dramatically reduces the reliance on new resources and minimises landfill waste.

Social Dimension

Patagonia has built a socially responsible brand image through fair labour practices, community involvement and stakeholder interests. Committed to fair wages, safe working conditions and long-term supplier partnerships, Patagonia works with the Fair Labour Association (FLA) to ensure that its supply chain, which includes numerous factories in Asia, meets international labour standards. In countries such as Vietnam and China, Patagonia has implemented programmes to empower workers through education and skills development. These initiatives are designed to improve the quality of life for workers and their families.

Patagonia Action Works supports local communities through projects such as the “1% for the Planet programme” and financial support and resources to grassroots environmental organisations. In Asia, this includes efforts to conserve natural habitats and support sustainable agriculture. Concurrently, Patagonia is engaged in initiatives, such as “Don’t Buy This Jacket” on Black Friday, to encourage slow fashion and anti-consumerism. Patagonia utilises its platform to educate consumers about the impact of their purchasing decisions and encourages them to buy less and buy better. Meanwhile, to guarantee product transparency, Patagonia provides comprehensive data regarding the sourcing and manufacturing of its products, thus enabling consumers to make well-informed decisions (Cahill, 2022). Such transparency serves to foster trust and reinforce the company’s commitment to ethical practices.

Governance Dimension

Patagonia’s approach to governance is predicated on ethical leadership and accountability to its mission. In 2018, the company underwent a reorganisation as a benefit corporation, thereby reinforcing its dedication to environmental and social objectives. In 2022, Yvon Chouinard and his family transferred ownership of Patagonia to the newly established Patagonia Purpose Trust and the nonprofit Holdfast Collective. Together, these entities ensure that all of Patagonia’s profits support efforts to combat climate change and protect undeveloped land worldwide (Hansen, 2023).

The Patagonia Board of Directors comprises socially conscious leaders and has established oversight systems to ensure that financial decisions are aligned with the company’s core mission of environmental protection. Patagonia also seeks to employ individuals who already share their values. Furthermore, Patagonia has incorporated comprehensive sustainability metrics into its executive evaluations, linking compensation to social and environmental impact, not just financial performance. Patagonia also regularly publishes detailed reports on its ESG performance, which are independently verified, ensuring transparency and accountability. This management framework allows Patagonia to maintain independence in decision-making, adhere to its values, and navigate the complexities of ethical business practices in an industry traditionally centred on profitability.

Consumer Scepticism and Awareness

Role of Consumers in identifying and challenging bluewashing

My advice to consumers, in this case, would be to be cynical.

—Keith Morrison, Regional Marketing Director, Black and Veatch

Though famous for its planet-friendly, ethical outerwear, Patagonia removed itself from the “sustainable” label in 2022, announcing that despite its best efforts towards reducing carbon emissions, it still adds to the climate crisis. Its main problem comes from its supply chain—by its admission, 95% of its current emissions come from the manufacturing process, which is a dilemma often shared with other big brands (Stanley, 2021).

Supply chain issues can be complex. Environmental emissions are just one of the issues tainting them; several others, like allegations of human rights abuse, workers plight and forced labour, have far-reaching tentacles. Bluewashing is a deceptive marketing technique used to cover these social problems, making one believe that a company is more ethical than it is, without actually backing it up with a purposeful action or making any real changes (Davis, 2022).

There are barometers for measuring green claims, but that is not the case in bluewashing. Nobody can tell whether a handbag was made by forced labour or by labour with respected human rights. In other words, what customers can do in identifying and challenging bluewashing is quite limited.

However, the effect that they may impose on producers can be significant. A confirmed bluewashing scandal can shake the company’s reputation, followed by falling sales and stock prices, fines and costs for adjusting its current manufacturing process.

Customers could research and verify companies’ claims at the very beginning; a “mistrial” may cause heavy loss to the financial performance of an ethical company and hinder the cause against bluewashing. Customers could investigate a company’s sustainability and social responsibility claims through concrete data, certifications and third-party auditing services. Supply chain transparency, emissions data and the labour force’s working conditions are major indicators of whether a company is making genuine efforts.

Customers can support ethical brands by choosing to buy from companies that act in a socially responsible way. Supporting such businesses will prove that being ethical can be profitable, urging companies to replace bluewashing with tangible action.

Channels for consumers to verify bluewashing

Theoretically, there is no lack of verification channels. The tricky part is the access: customers have limited access to companies' relevant insider reporting, qualified third-party assessment and supply chain-related audit results etc (McClimon, 2022). After all, in real life, checking whether a company is engaged in bluewashing through complex searching (and some channels may not be free to use) before buying is an arduous task. Fortunately, as the awareness beyond market performance rises, customers do have some reliable, practical channels.

Certification from non-profitable ESG reporting organisations

For example, in the UK, B Corporation Certification is awarded by B Lab to companies that meet "high standards of verified performance, accountability, and transparency on factors from employee benefits and charitable giving to supply chain practices and input materials" (B Corporation, 2023). B Lab offers a website called the B Corporation Directory, through which customers can easily check if a company is certified, which indicates transparency and commitment to ethical social practices. Another example is Fair Trade Certification in the United States.

Consumer advocacy apps

One iconic example of this channel is Buycott, an app scanning products and presenting the producer's ethical record, including sustainability practices and controversies. But this channel is not widely used: having over 1 million users, Buycott's latest update was on 21 October 2016. Its latest social media posts on Facebook, Instagram and Twitter were all before the end of 2016. To be brief, Buycott is already an inactive app, indicating that consumer advocacy apps are far from being mainstream. But for customers willing to prioritise social responsibility, apps do have the potential to help.

Governmental and UN resources

Governmental declaration of sanctions against certain companies, official reports of business-society interactions, and United Nations Global Compact Reporting are all recommendable sources of reference information. Still, customers must check these resources with a critical mind, as political reasons might influence governments' positions and their reports.

Examples of consumer-led initiatives and movements

Activists have tried to tackle bluewashing many years ago. This section highlights some key examples and give a typology to these activities.

Firstly, activists and NGOs started to file lawsuits against companies that used sustainability as a marketing tool when their operations did not represent those values. In 1998, Australian Mark Kasky wanted to bring Nike to the courtroom for false advertising related to the working conditions in their South Asian factories (Allens, n.d.). Later, the case reached the US Supreme Court before it was settled. Many NGOs have fought and won bluewashing lawsuits. In 2023, a German NGO, Climate Action Germany, took action against TotalEnergies, one of the largest energy companies globally. According to the NGO, the French company had falsely stated that their heating oil is carbon neutral or CO_2-compensated. As a result, one of the German courts found them guilty (Energy Wire, 2023). These two examples highlight that consumers and NGOs can actively and successfully participate in the fight against bluewashing.

Social media is influencing the normal lives of consumers as people share their thoughts and opinions on the platforms. These platforms also give opportunities to consumers to draw attention to possible bluewashing. NGOs also realised the existence of this opportunity: in 2010 Greenpeace started a social media campaign against Nestlé because of their bluewashing marketing in the case of the KitKat chocolate (Financial Times, n.d.). Nestlé was accused of using way more palm oil in their chocolate than advertised. The campaign led Nestlé to review its palm oil suppliers and also seek external verification of these suppliers' sustainability profiles. This example showcases the utilisation of social media and the bluewashing risk of corporations.

Consumers try to help other sustainability-conscious people to buy responsibly. Besides the many social media groups and pages, Ivan Pardo in 2012 started the webpage Buycott.com. This webpage allows customers to key in product barcodes to check for greenwashing or bluewashing claims against the companies. This idea creates an easy and efficient solution for many customers.

All in all, consumers are using the power of law and social media to create an environment where sustainable products thrive.

Regulatory Bodies and Industry Standards

Overview of Regulatory Bodies and Their Role

Greenwashing and Bluewashing in Patagonia's Context

Just as greenwashing refers to exaggerating environmental efforts, the definition of bluewashing is that companies advertise social claims that would mislead customers.

Patagonia gave up the word “sustainability” in 2021, claiming that purchasing carbon offsets and sharing factories with big brands will never fulfil its sustainability goals. It does not want to use greenwashing or bluewashing to make false commitments to the world. However, Patagonia once faced allegations related to labour abuse (Gillian, 2015), and as an apparel company, it is inevitable for it to encounter emission problems from supply chains.

To state its efforts in ESG with honesty, Patagonia needs to follow the instructions of regulatory bodies and comply with industry standards in its reporting.

Regulatory Bodies at National Levels

Governments have their legislation and regulatory bodies for deceptive ESG marketing, such as greenwashing and bluewashing.

The Federal Trade Commission (FTC) is an independent agency of the US government. Its mission is to promote consumer protection and eliminate anti-competitive business practices. To regulate ESG marketing, the FTC provides Green Guides and punishes companies that make deceptive ESG claims.

FTC also collaborated with the US Department of Labour (DOL). They signed a memorandum of understanding to protect labour rights by regulating unfair, deceptive and other illegal acts and practices that harm workers (Federal Trade Commission, 2023).

Patagonia is headquartered in America, and it has two factories within the country. It is subject to the regulatory standards set by the FTC and the DOL. As it expands internationally, Patagonia must also comply with the regulations established by other countries and regions’ regulatory bodies.

These regulatory bodies ensure companies' statements about environmental and social promise are true and accurate.

Voluntary Regulatory Bodies at the Global Level

In addition to government-mandated policies, there are also voluntary regulatory programmes. Companies can choose to participate in these programmes and use their standards to self-regulate.

The United Nations Global Compact (UNGC) is a UN initiative that encourages businesses worldwide to adopt sustainable, socially responsible policies and report on their progress. It develops ten principles to indicate the protection of human rights, labour, the environment and anti-corruption in business operations.

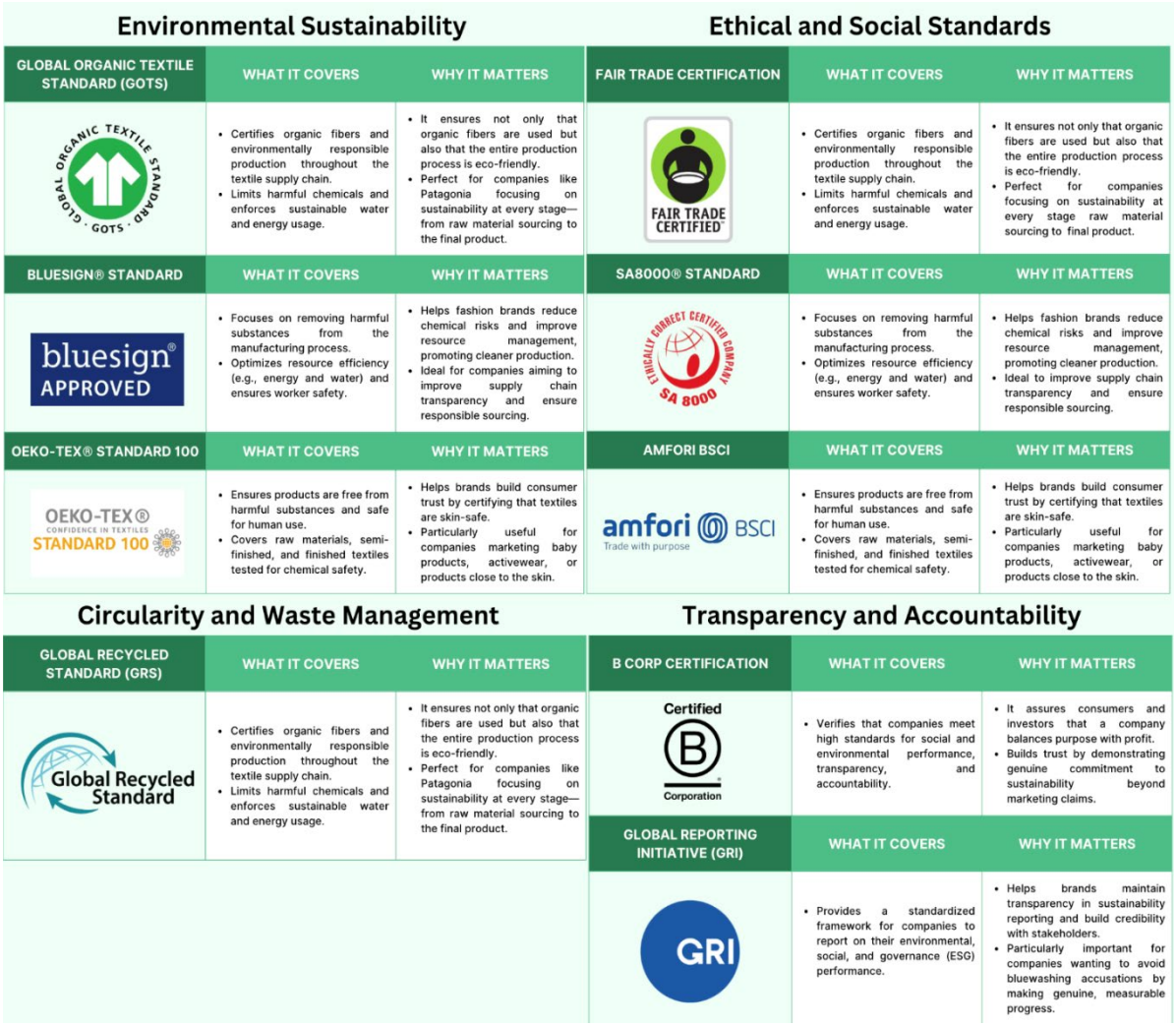
In addition to UN initiatives, there are also many organisations in the private sector that provide voluntary regulatory programmes and standards. The B Lab is a non-profit organisation that measures a company's entire social and environmental impact. Companies that meet its high standards of social and environmental performance, transparency and accountability in their community and labour commitments can earn B Corp Certification. Patagonia signed up for the B certificate in 2011. It currently has a 166 overall B impact score, with 23.7 in the worker category and 79.2 in the community category, which is impressive compared to other companies.

However, voluntary regulatory bodies lack the authority to enforce ESG principles or penalise practices like bluewashing. Companies would join the programmes from these regulatory bodies to gain a good reputation, but they may not have a strong motivation to comply with the rules and regulations (Berliner and Prakash, 2015).

Industry Standards and Certifications for Genuine Sustainability (Fashion and Fabrics)

The multidimensional aspects of bluewashing make it quite complex to ascertain that companies do not indulge in such activities. To avoid bluewashing, companies must have a selection of the most compatible standards and frameworks put in place. These could relate to key areas such as false environmental claims, unethical labour practices, token sustainability efforts, misleading circularity claims, and lack of transparency (Figure 2). The selection critieria is also based on several key aspects of the business, such as product lifecycle, values and supply chain. This entails that the scope of bluewashing in each industry may differ from one another.

Figure 2: Fashion Industry Frameworks and Certifications



Source: Various sources, including amfori (2023), B Corporation (2023), Bluesign (2024), Fairtrade (2019), Global Reporting Initiative (2019), OEKO-TEX (2023), Seitenwerkstatt, D. (2023), Social Accountability International (2023), and Textile Exchange (2024)

Certifications for Environmental Sustainability

For a company in the fashion industry to alleviate false environmental claims, such as exaggerated eco-friendly products and the use of vague terms that indicate sustainability, such as “green” or “eco-friendly”, companies should adopt certifications for environmental sustainability.

Circularity and Waste Management Standards

Many consumers can fall into the trap of companies who highlight small initiatives (e.g., capsule collections) and yet still have most of their products and production processes unsustainable. Fashion companies within the industry can ascertain their compliance in

waste management through tackling textile waste, encouraging responsible production, and other recycling initiatives.

Ethical and Social Standards
Unethical labour practices, including labour exploitation within a company's supply chains has been a global issue for centuries. Companies who would like to accurately claim that they provide fair wages and safe working conditions for their workers throughout their supply chain need to adopt the appropriate frameworks and certifications as a means of third-party verification.

Transparency and Accountability
Some consumers would want to verify information published by companies regarding their internal sustainable practices. To prevent bluewashing, companies within the fashion industry should promote public sustainability disclosures, which can in turn make them into trusted industry leaders.

Conclusions and Recommendations

While analysing Patagonia's approach to ESG, it is clear that the company sets a high bar in sustainability and corporate accountability, positioning itself as a model for transparency in the fashion and sports industry. Patagonia ensures that its profits directly support ecological and social causes, emphasising long-term value creation. However, the company still faces challenges, notably in reducing supply chain emissions, which shows just how complex achieving real sustainability can be.

Patagonia could enhance supply chain monitoring and invest in innovative, low-impact production methods while also expanding consumer education to clarify the limitations of ethical consumption. For consumers, leveraging third-party certifications, sustainability apps and social media can help them stay informed to make impactful choices. Meanwhile, regulatory bodies play an essential role in combating bluewashing by enforcing uniform ESG reporting standards and providing accessible consumer information platforms. These efforts can elevate industry standards, support the mission of brands like Patagonia, and drive real progress in sustainable practices.

Discussion Questions

1. Patagonia does not expand its product line extensively to enhance the brand's reputation as a sustainability leader. In contrast, similar brands have swiftly launched "sustainable" product offerings. Discuss their rationales.
2. Patagonia oversees the entire procurement process to ensure that standards are met. Should this be the norm for similar clothing companies?
3. Are there logistical challenges to the "Worn Wear Programme"? If so, how would you identify and rectify them?
4. When Patagonia gave up the word "sustainability" in 2021, it opined that purchasing offsets as a mechanism would not work. Was this due to an issue with the offset mechanism or due to pricing-related issues? Discuss the pros and cons of carbon offsets.

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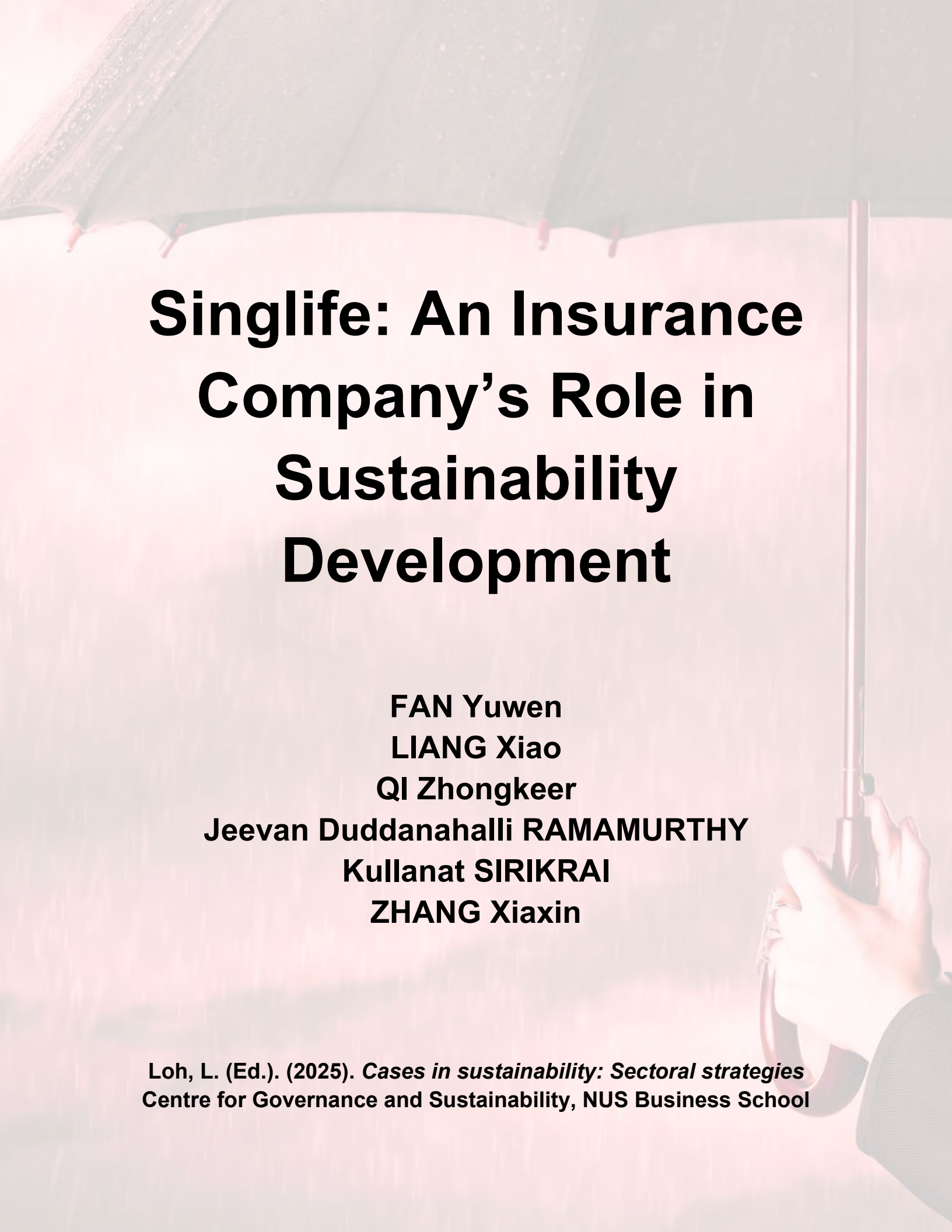


Singlife: An Insurance Company's Role in Sustainability Development

FAN Yuwen
LIANG Xiao
QI Zhongkeer
Jeevan Duddanahalli RAMAMURTHY
Kullanat SIRIKRAI
ZHANG Xiaxin

Loh, L. (Ed.). (2025). *Cases in sustainability: Sectoral strategies*
Centre for Governance and Sustainability, NUS Business School

Introduction

The importance of professional service sectors like the insurance industry in promoting sustainability is often overlooked, as their direct operational emissions are considerably lower than those of manufacturing and heavy industries (UNEP 2015). However, professional services like insurers can actively contribute to sustainability through measures such as sustainable investment practices (UNEP, 2017).

This case study will use Singlife, a prominent financial service firm in Singapore, as a research subject. The aim of this study is to explore the roles insurance companies can play in contributing to sustainable development. The study relies on secondary sources such as industry publications and sustainability reports from Singlife, along with academic articles focusing on sustainable insurance practices. Singlife's dedication to sustainability will be evaluated using Loh's (2024a) EESG model that considers factors alongside environmental and social responsibilities. Furthermore, the report delves into ways Singlife can enhance its climate resilience insurance offerings to establish itself as a forward-thinking pioneer in promoting sustainability in Asia.

About Singlife

Singlife, or Singapore Life Ltd, is a leading financial and insurance company in Singapore, dedicated to offering consumers an innovative approach to achieving financial freedom (Singlife, n.d.). Through a broad array of technology-enabled solutions, Singlife provides customers with a comprehensive suite of insurance products, investment opportunities and financial advisory services, empowering individuals to manage their financial well-being at every stage of their lives.

Singlife's offerings extend beyond traditional insurance plans. It delivers a diverse portfolio that includes life and medical insurance, employee benefits and bancassurance partnerships. Through its "GROW with Singlife" platform, Singlife also provides investment and advisory services tailored to different risk profiles, helping clients accumulate wealth and meet their financial objectives. Notably, the Singlife Account—a mobile-first insurance savings plan—demonstrates Singlife's commitment to accessible, technology-driven financial solutions.

Vision, Mission, and Values

Singlife's vision is to be a technology-empowered financial services company that offers a better way to financial freedom for its community in Asia (Singlife, n.d.). The Group's mission is centred on giving individuals control over their financial well-being,

emphasising a customer-centric approach throughout its services.

Primarily guided by values of agility, collaboration and empathy, Singlife operates with the flexibility and responsiveness of a startup, leveraging its strengths to support customers through life's financial changes. The organisation prioritises the understanding of its customers' needs, ensuring that its solutions are relevant, innovative and customer-focused.

With the values as the footstone, Singlife incorporates sustainable practices as one of its strategy pillars, together with customer-centric, next-generation, disability-enabled, and future-ready talent (see Figure 1).

Figure 1: Singlife's Strategy

Source: Singlife Sustainability Report 2023

Singlife's Sustainability Strategy

This section elaborates on Singlife's approach to sustainable development. To provide a comprehensive understanding, Singlife's guiding frameworks, sustainability initiatives and reporting standards will be analysed. Together, these elements reflect Singlife's structured and committed path towards achieving net zero by 2050.

RAISE

Singlife's sustainability ambition is to achieve net zero by 2050 (Singlife, 2023a). Its net zero transition is planned with two primary focuses:

- **Collaboration:** Singlife emphasises the importance of collaboration, recognising the magnitude of the climate challenge and the necessity of collective efforts. They work closely with various industry partners to drive the net zero plan forward collectively.

- **Awareness:** Singlife also emphasises the importance of education and awareness in ensuring the success of their net zero plan. They are dedicated to empowering and involving their employees, customers and communities by providing them with the knowledge and tools to adopt sustainable transformation.

Guided by its sustainability ambition and two primary focuses, Singlife developed an overarching framework – RAISE, to direct its sustainability strategy design (see Figure 2). RAISE means "RAISE the Bar for a Better Way to Sustainability", an abbreviation of five sustainability elements—Responsible Investor; Accelerator of Net Zero; Innovator for Green and Good; Sustainability-embedded Culture; and Effective Governance and Risk Management. These elements clearly illustrate how an insurance company can contribute to the world's sustainable development.

Figure 2: Singlife's RAISE Framework

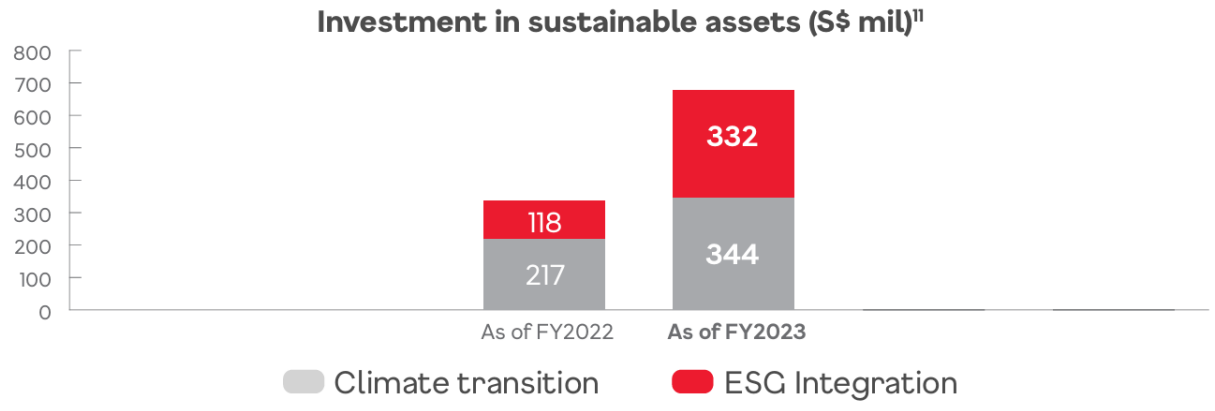
Source: Singlife Sustainability Report 2023

R – Responsible Investors

Singlife commits to sustainable investment to address the global sustainable financing gap. This gap represents the substantial shortfall between the current investment levels and the estimated funds required to achieve the United Nations Sustainable Development Goals (UN SDGs) by 2030. According to the UN Conference on Trade and Development (UNCTAD), developing countries alone face an annual investment gap of about US$2.5 trillion in key sustainable development sectors such as infrastructure, clean energy, water and sanitation, and agriculture (UNCTAD, 2014). The private sector's participation is crucial in bridging this gap. By integrating ESG factors into their investment decisions, financial institutions like Singlife mobilise capital towards sustainable projects, thereby contributing significantly to global efforts in combating climate change, promoting social inclusion, and fostering economic development.

Singlife demonstrates its commitment as a responsible investor through several significant initiatives. As the first Southeast Asian insurer to join the UN-supported Principles for Responsible Investment (PRI), Singlife has taken a leading role in integrating environmental, social and governance (ESG) considerations into its investment practices (Singapore Business Review, 2023). Collaborating with other industry-leading institutional investors, Singlife has invested over S$670 million into climate transition and ESG integration projects, with the amount increasing year by year (see Figure 3). Climate transition projects support decarbonisation and the shift to a low-carbon economy, while ESG integration projects embody ESG characteristics within business operations. Additionally, Singlife co-seeded with BlackRock to formulate the largest equity Climate Action Exchange Traded Fund (ETF), engaging investors to drive climate action. Moreover, Singlife has introduced 56 ESG funds to its customers, providing opportunities for them to participate in sustainable development initiatives.

Figure 3: Singlife's Responsible Investment

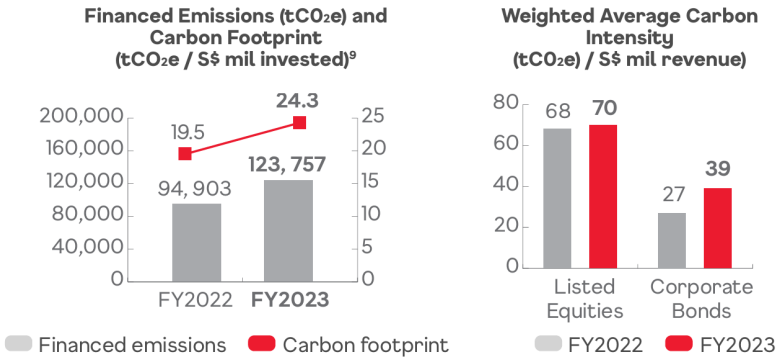


Source: Singlife Sustainability Report 2023

Furthermore, Singlife integrates environmental assessment into the commercial underwriting due diligence process. Specifically, Singlife conducts a comprehensive analysis of its financed emissions with the support of an independent consultant to guarantee transparency.

As can be seen from the graph, Singlife monitors the financed emissions and weighted average carbon intensity from invested projects and reports this information openly to the public (see Figure 4).

Figure 4: Carbon Emissions from Invested Projects

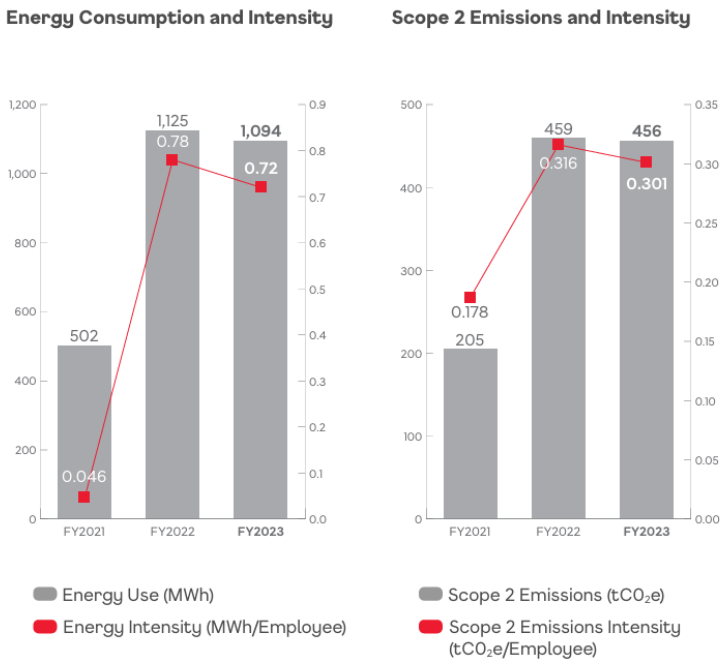


Source: Singlife Sustainability Report 2023

A – Accelerator of Net Zero

Singlife aims to reduce its carbon footprint in accordance with its goal of achieving net-zero emissions by 2050. During 2023, Singlife has completed an organisation-wide greenhouse gas emissions (GHG) assessment which encompassed Scope 3 operational emissions (Insurance Business Asia, 2023). Specifically, Singlife has implemented several measures to cut down their operational emissions. For example, it installed new LED lighting systems, replaced around 30,000 pieces of paper cheques with digital payment adoption, and enabled the adoption of digital policy documents for 93% of its customers. As a result, Singlife has reduced 4.7% in its Scope 2 emissions intensity (see Figure 5).

Figure 5: Singlife's Operational Emissions



Source: Singlife Sustainability Report 2023

To further intensify the contribution to decarbonisation, Singlife has collaborated with Cloop, a Singapore circular fashion enterprise, to recycle used clothes and textiles. They have set up a textile donation point at the Singlife customer service centre to motivate both employees and customers to contribute their textile items.

I – Innovator for Green and Good

An insurance company like Singlife can innovate product portfolios to help people develop climate resilience. Singlife has been closely observing and innovating for the opportunities to contribute to green transformation and social wellness. It is one of the few companies that conduct ESG surveys to gather voices from society. Based on these voices, Singlife has developed several product lines to address environmental and social risks for different circumstances.

For example, based on the insights from a social study on gig workers (Singlife, 2023b) such as food delivery riders, Singlife has introduced Gig Connect, which is an insurance for protecting short-term employment. Besides, in response to the rising frequency and intensity of heatwaves due to climate change, Singlife has launched heatstroke insurance for customers, covering death and hospitalisation resulting from heatstroke. In addition, Singlife was the first in the market to design the Rainfall Protection insurance, covering for heavy rainfall within a travel insurance plan, responding to the challenges posed by

increasingly unpredictable weather patterns resulting from climate change.

S – Sustainability-Embedded Culture

Singlife has been actively engaging its employees in sustainability by embedding ESG responsibilities into its corporate culture. Partnering with various nonprofit communities, such as the World Wide Fund (WWF) for Nature Singapore, Singlife has encouraged its employees to foster environmental consciousness and social responsibility (Singlife, 2023a). In addition, Singlife has formed an employee-led Sustainability Interest Group, involving employees to take ownership of sustainability discussions and promotions as group members. Lastly, Singlife provides up to three days of volunteering leave to employees, allowing them to have the opportunity to participate in contributing to the environment and society. This initiative led to a 283% increase in total volunteering hours by employees in 2023 compared to the previous year.

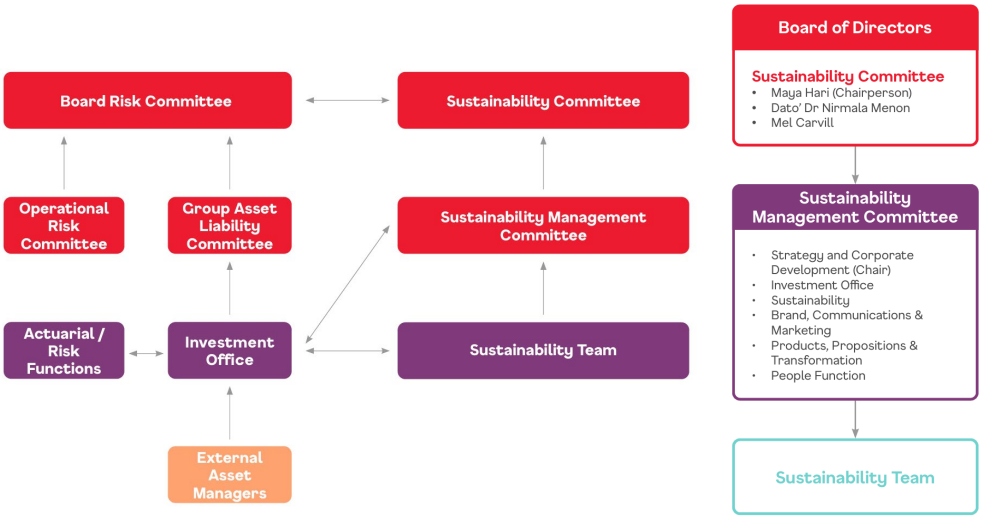
E – Effective Governance and Risk Management

Strong corporate governance and risk management are foundations for Singlife's achievements in the business realm. At Singlife's core is a commitment to crafting and supervising the strategic direction and governance structures. To enhance objectivity and diversity in governance processes, Singlife's selection of board directors is based on a blend of abilities, industry knowledge, technical expertise, age diversity and gender representation. At the time of research, Singlife's board comprises 11 executive members, seven independent members, and three female members (Singlife, 2023).

To embed sustainability consideration into governance, Singlife integrates sustainability teams both horizontally and vertically into its organisational structure. Specifically, a dedicated Sustainability Committee (SC) was established in 2022 to assist the Board in overseeing risks and providing strategic direction on Singlife's development (see Figure 6). SC's responsibilities include disclosing and assessing ESG risks and evaluating key project progress and outcomes.

Reporting to the SC, the Sustainability Management Committee formulates and executes sustainability strategy and reviews all sustainability initiatives. Its members consist of representatives from different committee groups across the organisation to collectively ensure the holistic and consistent implementation of sustainability strategies. At the working level, the Sustainability Team works closely with various entities and departments to deliver the assigned tasks.

Figure 6: Singlife Governance Structure



Source: Singlife Sustainability Report 2023

On the other hand, as Loh's (2024b) Steering, Accelerator and Brake (SAB) model suggests, effective sustainability in corporate governance is akin to driving a vehicle; it must balance strategic direction (Steering), performance (Accelerator), and ethical oversight (Brake) to operate effectively. For Singlife, its "Brake" system for addressing ethical issues is through its whistleblowing channel managed independently by Ernst and Young (EY), a reputable auditing third party. Employees are encouraged to raise any concerns regarding potential misconduct in the workplace with EY through this confidential and secure channel. This channel also welcomes external stakeholders, such as customers and vendors, to participate.

Singlife's Reporting Methods

Singlife's sustainability reporting follows several reputable standards.

Global Reporting Initiative (GRI) Standards 2021

The GRI Standards provide a comprehensive framework for organisations to report on their ESG impacts. These standards emphasise stakeholder inclusiveness and materiality assessment. Singlife incorporates GRI principles to gain stakeholder input regarding their sustainability topics of concern. Insights and ideas of stakeholders will be incorporated when Singlife discloses its material topics.

International Sustainability Standards Board (ISSB) Standards

The ISSB Standards focus on cross-industry comparability. It aims to provide investors with consistent and comparable information from companies' disclosures. By adopting

ISSB's principles, Singlife can streamline its reporting to deliver clear insights on material sustainability matters and financial impacts. Singlife's adherence to ISSB standards reinforces the accountability and transparency of its ESG commitments.

Task Force on Climate-Related Financial Disclosures (TCFD)

The TCFD framework emphasises climate-related risks and opportunities and their financial implications. TCFD focuses on governance, strategy, risk management and metrics/targets related to climate change. Singlife's alignment with TCFD demonstrates its commitment to addressing climate risks in its financial planning and operational resilience. By integrating TCFD's principles, Singlife provides disclosures on how climate risks, such as extreme weather events or regulatory changes related to carbon emissions, are integrated into its risk management processes. This approach enhances Singlife's strategic planning against future climate uncertainties.

Double Materiality and Stakeholder Engagement

Double materiality is a central concept in the GRI Standards. It emphasises the importance of assessing sustainability concerns not just in terms of financial impacts but also considering their wider societal and environmental consequences. This method aims to capture a complete picture of an organisation's material issues by assessing both financial risks to the organisation and its broader environmental and social impacts.

Singlife's decision to embrace double materiality assessment signals a move towards aligning with GRI standards while also emphasising its dedication to transparency and responsibility. This process allows Singlife to assess both how external sustainability issues might affect its financial performance and how its own activities impact society and the environment. This dual perspective is essential for comprehensive reporting as it recognises that sustainability issues can be significant for reasons beyond immediate financial returns. By considering both financial and non-financial materiality, Singlife develops itself as a forward-thinking entity that prioritises both economic and environmental value.

Stakeholder engagement is a critical component of the double materiality assessment. In line with GRI principles, Singlife actively engages stakeholders to find out issues material to them. Thus, its reporting could address different stakeholder needs and also enhances the trust and credibility of its sustainability initiatives. Input from stakeholders provides insights into environmental and social topics, which guides Singlife to focus on areas that hold significance beyond financial metrics.

Overview: Insurer's Role in Sustainability Development

From the observation of Singlife's sustainability strategy, insurers can play significant roles in sustainability advancement in different ways:

- **Responsible Investors:** Bridge the sustainable financing gap by funding responsible and sustainable projects.

- **Accelerator of Net Zero:** Cut down carbon emissions by optimising energy use and engaging stakeholders in decarbonisation initiatives.

- **Innovator for Green and Good:** Innovate product portfolios that build climate resilience and address emerging environmental challenges.

- **Sustainability-embedded Culture:** Guide employees in sustainability practices to foster a company-wide commitment to environmental and social goals.

- **Effective Governance and Risk Management:** Ensure high standards in sustainability practices through well-designed governance and robust risk management frameworks.

- **Reporting:** Enhance stakeholder awareness and foster collective action towards sustainability through transparent reporting on sustainability progress.

Framing Singlife's Sustainability Efforts in Loh's EESG Model

This section applies Loh's EESG framework in evaluating Singlife's sustainability performance. The EESG model, introduced by Loh (2024a), expands on the traditional Environmental, Social, and Governance (ESG) framework by adding an economic component. This addition addresses the often-overlooked financial implications of sustainability initiatives, ensuring that these efforts are not only environmentally and socially beneficial but also economically sustainable.

Loh's (2024a) EESG Model

Traditional ESG frameworks aim to guide companies in managing their environmental, social, and governance responsibilities. However, Loh (2024a) argues that these frameworks typically fail to consider the economic dimension, especially the financial costs and returns associated with sustainability practices. This overlook can result in conflicting objectives between investors, who prioritise economic returns, and other

stakeholders, who may advocate for costly sustainability commitments. Such conflicts could dampen a company's motivation to maintain long-term sustainability practices if they are perceived by shareholders as economically burdensome.

In this case, Loh proposes the EESG model, which integrates economic considerations into the framework. By accounting for the economic value generated by sustainable practices, companies can align ESG objectives with financial performance, fostering a model of sustainability that is both socially responsible and financially viable. This integrated approach incentivises companies to adopt sustainability initiatives that not only benefit the environment and society but also support their economic bottom line.

Singlife in EESG

Economic

The economic component of the EESG framework prioritises the alignment of financial outcomes with sustainable practices, promoting a model where economic growth and sustainability goals are mutually reinforcing. Singlife's approach to economic sustainability is evident through its investment strategies, product innovation and risk assessment practices.

- **Product Innovation for Climate and Social Resilience:** Singlife has developed insurance products, such as heatstroke insurance and rainfall protection insurance, that provide financial protection against unpredictable weather patterns that have intensified with climate change.

- **Responsible Investing for Long-term Viability:** Singlife's investments directly link financial returns with sustainable outcomes. Investments in climate transition and ESG-focused funds support both profitability and environmental goals.

Environmental

Singlife's environmental initiatives focus on reducing its carbon footprint, promoting sustainable resource use, and actively participating in the transition towards a low-carbon economy. The company's efforts reflect a commitment to responsible environmental stewardship, which is both impactful and economically viable.

- **Accelerator of Net Zero:** Singlife has committed to achieving net-zero emissions by 2050, with structured initiatives to reduce GHG emissions.

- **Cross-industry Partnership:** Singlife partnered with Cloop to facilitate textile recycling, address resource conservation, and promote a circular economy.

Social

The social component of Singlife's sustainability strategy fosters a sense of community and enhances the welfare of employees, customers, and society.

- **Innovative Insurance Products for Social Welfare:** Singlife's product portfolio includes insurance options tailored to the needs of specific societal groups (e.g., Gig Connect Insurance).

- **Employee and Community Engagement:** Singlife fosters a culture of sustainability and social responsibility through internal programmes and community involvement.

    - Collaborations with organisations like WWF for Nature Singapore raise environmental and social awareness among employees.

    - An employee-led Sustainability Interest Group encourages employees to engage with sustainability topics, fostering a culture of shared responsibility.

    - Singlife's provision of three days of volunteer leave per year has significantly increased employee volunteer hours, enhancing the company's social impact.

Governance

Singlife's governance framework focuses on integrating sustainability at the highest levels of decision-making and establishing structures to monitor ESG risks.

- **Effective Governance Structures:** Singlife has established dedicated sustainability committees to oversee and implement its sustainability strategies.

- **Board Composition and Diversity:** Singlife's board includes a balanced representation of independent and non-executive directors, as well as gender diversity, which fosters diverse perspectives and reduces bias in discussions.

- **Ethics and Whistleblowing Mechanism:** Singlife's whistleblowing channel managed by EY encourages the reporting of unethical behaviors by employees and external parties, thereby upholding integrity within the organisation.

- **Risk Management and Transparency:**
  To maintain transparency, Singlife aligns its reporting with globally recognised standards, including the GRI, ISSB, the Monetary Authority of Singapore's (MAS)

Environmental Risk Management (ERM) guidelines, and TCFD. This alignment reflects a commitment to consistent and credible sustainability disclosures, meeting regulatory and stakeholder expectations.

The EESG analysis highlights Singlife's balanced approach to sustainability, integrating economic viability with environmental responsibility, social inclusivity and strong governance. Initiatives like climate resilience insurance and the Accelerator of Net Zero underscore Singlife's commitment to societal needs alongside financial resilience.

Through robust governance and transparent reporting, Singlife ensures accountability and ethical standards across its sustainability efforts. While Singlife's strategy effectively combines sustainability with economic returns, there is further potential to enhance economic viability by expanding its role in climate resilience insurance. The following section will explore climate resilience insurance as an opportunity to strengthen the sustainability value chain—an area that Singlife has yet to fully tap into.

Sustainability Opportunities for Insurance Companies

Insurance providers in Asia are evolving their roles beyond mere financial guardianship to become active contributors in enhancing robustness and aiding in climatic adjustments (Kousky, 2019). As climate-related disasters become more frequent and severe, insurers such as Singlife can innovate in this domain by developing products that address the specific regional risks faced by businesses exposed to high climate risks, such as those in manufacturing and telecommunications. These sectors are particularly vulnerable to disruptions from extreme weather events, and tailored climate resilience insurance products could provide them with critical financial support to recover from such events.

Climate risk insurance acts as a crucial mechanism for enhancing resilience by enabling businesses to recover efficiently from climate-related damages. Studies indicate that insurance coverage not only facilitates recovery through distributed risk funds but also encourages proactive risk reduction measures (Kousky, 2019). Given Asia's pronounced vulnerability to climate change, insurers have the potential to develop tailored solutions that address unique regional risks. For instance, parametric insurance, which triggers payouts based on predefined weather metrics, can provide timely assistance to affected stakeholders, which minimises delays in support and promotes resilience among businesses (Michel-Kerjan and Kunreuther, 2011). Such products may align with Singlife's EESG economic viability by generating revenue while supporting community resilience.

Furthermore, climate resilience insurance can support broader sustainability initiatives.

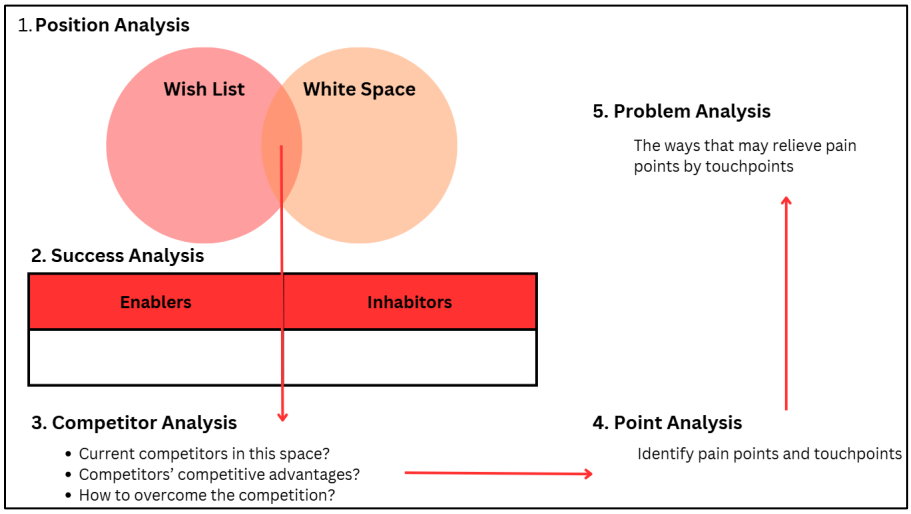
As urbanisation intensifies across developing countries in Asia, there is an increasing need for flood-resilient infrastructure to mitigate the impacts of climate disasters, such as urban floods. Innovative insurance products that incentivise resilience investments could foster collaboration among insurers, governments and urban planners to collectively confront climate impacts. Zevenbergen et al. (2010) emphasised that collaborative approaches are crucial to managing urban flood risks, and insurers can play an integral role in facilitating these partnerships. By providing insurance solutions that support climate-smart infrastructure development, Singlife can address both economic and environmental aspects of the EESG model.

Beyond risk management, climate resilience insurance aligns with sustainability reporting and corporate accountability. Asian insurers have shown an increasing commitment to transparency and accountability, which Dissanayake et al. (2019) identified as influencing sustainability reporting trends among companies in Sri Lanka. By contributing to these practices, Singlife can enhance its reputation and strengthen stakeholder trust. Engaging in sustainability reporting not only positions Singlife as a responsible entity but also reinforces its role in promoting sustainable practices across industries.

Venture for Singlife: Climate Resilience Insurance

Singlife is well-positioned to address the climate resilience need by developing insurance portfolios specifically designed for sectors like telecommunications and manufacturing, which are highly vulnerable to climate-related disruptions. Applying Loh's 5-Analysis Model (Loh, 2024c), this section explores the development and implementation of this venture in detail (see Figure 7).

Figure 7: Loh's 5-Analysis Model



Source: Adapted from Loh's Sustainability for Entrepreneurship Slides

Position Analysis

Position analysis identifies the ultimate goals of the venture, including both Singlife's ideal outcomes (wish lists) and the unmet needs (white spaces) in the market. This step ensures that the venture's vision aligns with both internal aspirations and external opportunities for innovation.

- **Wish List:** Singlife's vision is to become a sustainability leader in the Asia-Pacific insurance industry by expanding its role in supporting industries vulnerable to climate risks. In an ideal scenario, Singlife would offer tailored insurance products that not only provide rapid financial support but also help businesses proactively manage and reduce climate-related risks.

  From the customer's perspective, the demand is for accessible, fast-acting insurance solutions that quickly address operational disruptions, helping companies resume normal operations with minimal downtime. Over time, customers would also value additional features, such as predictive insights and industry-specific risk management tools, which would enable them to prepare more effectively for future climate events.

- **White Space:** The current market lacks insurance solutions specifically designed to address the immediate recovery needs of high-risk sectors in Asia. This gap represents an opportunity for Singlife to offer targeted, quick-response insurance for sectors like telecommunications, where rapid recovery is crucial. As climate risks continue to increase, the need for comprehensive, proactive solutions will grow, although this white space could eventually diminish as competitors recognise the opportunity.

Success Analysis

Success analysis identifies overlapping areas between Singlife's wish list and the market's white space to determine if the venture aligns with both internal goals and external demand. It also assesses enablers (supporting factors) and inhibitors (challenges) to evaluate the venture's feasibility.

- **Critical Overlapping Areas:** The overlap between Singlife's aspirations and the unfulfilled market need lies in delivering fast-response, industry-specific insurance products for high-risk sectors. This commonality represents a substantial opportunity for Singlife to introduce unique, value-driven solutions.

- **Enablers:** Singlife's strong brand reputation, digital expertise and regional presence support the development of specialised climate resilience insurance.

Partnerships with climate research organisations and government support for resilience initiatives can also help.

- **Inhibitors:** Regulatory differences across Asia-Pacific and potential customer unfamiliarity with climate-focused insurance present challenges. However, by building relationships with regulators and educating clients on the benefits of climate resilience insurance, Singlife can address these inhibitors.

Competitor Analysis

Competitor analysis examines existing players in the overlapping market space, assessing their strengths and identifying ways Singlife can differentiate itself to gain a competitive advantage.

- **Competitors:** In the Asia-Pacific region, insurers offering climate risk insurance products are leveraging their global reach, advanced data analytics and established industry expertise to meet the increasing demand for climate resilience. Key competitors include Swiss Re and Allianz, each providing solutions to help businesses mitigate and recover from climate-related events.

- **Competitive Advantages:**

  - **Swiss Re** offers climate risk insurance that focuses on managing extreme weather impacts. Their Climate Risk Solutions for Corporates in Asia Pacific assesses physical climate risks and helps businesses incorporate these risks into their resilience planning. Swiss Re's global network and access to advanced climate data analytics enhance their capacity to deliver accurate risk assessments and robust insurance coverage (Swiss Re, 2023).

  - **Allianz** offers comprehensive climate risk insurance products aimed at both corporate and individual clients in Asia-Pacific. Their approach integrates sustainability across all operations, focusing on risk assessment and resilience strategies. Allianz's established reputation and commitment to sustainability provide them with a competitive edge in gaining customer trust, particularly with corporates seeking reliable, long-term partnerships (Allianz, 2023).

- **Overcoming Competition:** Singlife's partnerships with technology leaders like Microsoft in applying artificial intelligence (AI) to insurance offerings can be a key differentiator that allows it to develop advanced, data-driven climate resilience products (Singlife, 2023c). The AI-driven insights would allow Singlife to analyse real-time climate data, anticipate potential risks, and offer faster claims processing. This proactive approach not only addresses the immediate needs of high-risk

industries but also positions Singlife as a partner in resilience planning, which many traditional insurers do not offer.

Point Analysis

Point analysis identifies the main challenges or pain points faced by target customers and examines how Singlife's solutions can alleviate these issues effectively.

- **Pain Points:** High-risk industries, such as telecommunications and manufacturing, often face operational and financial difficulties due to delayed claims processing and limited access to specialised insurance coverage. This leads to prolonged recovery times and increased financial strain.

- **Touchpoints to Relieve Pain Points:**

  - **Rapid Response Coverage:** Offering insurance with fast payouts following climate events helps companies minimise downtime and resume operations quickly.

  - **Tailored Policies:** Industry-specific insurance ensures that critical assets and functions are covered, making clients feel more secure and valued.

  - **Educational Initiatives:** Run information sessions and workshops to help clients understand the benefits of distributing climate risk through a resilience funding pool.

Problem Analysis

Problem analysis defines the central problem the venture seeks to address, identifies affected stakeholders, examines the problem's impact, and provides a recommended solution. This analysis ensures that the venture is well-targeted and impactful.

- **Problem Statement:** Climate-related disruptions pose substantial risks for industries in Asia Pacific, particularly telecommunications and manufacturing. The absence of rapid, industry-specific insurance options leads to longer recovery times, greater financial losses and reduced trust in traditional insurance solutions.

- **Solution:** Singlife can develop climate resilience insurance products that deliver fast, tailored financial support to affected sectors. Collaborating with climate data providers and local regulatory bodies, Singlife can offer accurate, compliant solutions that address specific climate risks, supporting clients' recovery and enhancing its role as a sustainability-focused insurer in Asia Pacific.

Future Research

Despite the evident benefits, the implementation of climate resilience insurance is not without challenges, and knowledge gaps remain in this area. There is a pressing need for empirical studies that quantify the impact of climate risk insurance on community resilience and economic recovery, particularly in Asian contexts where such insurance is relatively new.

Future research could explore case studies assessing the effectiveness of different insurance models and their role in fostering climate resilience. Additionally, as researchers like Lipper et al. (2018) highlight, there is a need to understand how climate-smart practices can be integrated into insurance offerings. By investigating barriers to adoption and exploring how insurance products can promote climate-smart agriculture, insurers can better support the agricultural sector, which is often significantly impacted by climate change.

The relationship between insurance offerings and urban planning also requires further exploration. Collaborative models between insurance companies, governments, and urban planners could yield insights into creating sustainable urban environments resilient to climate change. Such collaborations could foster innovations in flood management, for instance, or the design of infrastructure better suited to withstand climate extremes (Zevenbergen et al., 2010). If Singlife considers expanding into climate resilience insurance, addressing these knowledge gaps and pursuing future research directions will be essential for maximising its impact on sustainability and resilience.

Above all, climate resilience insurance can offer Singlife an opportunity to further contribute to sustainable development. By innovating insurance products tailored to high-risk industries, engaging in collaborative resilience initiatives, and supporting climate adaptation strategies, Singlife can enhance its economic role within the EESG framework while making substantial contributions to community resilience and climate sustainability.

Discussion Questions

1. What other roles can insurance companies play to contribute to the sustainability value chain?
2. Could climate resilience insurance create unintended consequences, such as encouraging risky behaviour or delaying essential climate adaptation measures?
3. How might Singlife inspire industries to see climate resilience insurance not just as protection but as an investment in sustainability that drives long-term value?

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Towards Responsible Growth: McDonald's ESG Actions, Challenges and Future Pathways

Hetvi Ketanbhai GANDHI
JIN Mengya
Felix Oliver ROWLAND
WANG Xinyu
WANG Yihao
ZHOU Wenqi

Loh, L. (Ed.). (2025). ***Cases in sustainability: Sectoral strategies***
Centre for Governance and Sustainability, NUS Business School

Introduction

Founded in 1940 as a small drive-in in San Bernardino, California, McDonald's has grown to become the world's largest food service retailer, with over 40,000 restaurants in more than 100 countries. McDonald's has a global presence and serves millions of customers everyday, with a focus on quality, service, cleanliness, and value—a legacy instilled by Ray Kroc, who turned McDonald's into an American icon. The company's presence in Asia reflects its massive footprint in the region and alignment with local cultures and consumer preferences. Asia is a big market with increasing urbanisation, changing food habits, and growing demand for fast food restaurants, making sustainability an important part of its long-term growth in the region.

This report looks at McDonald's sustainability initiatives which are in line with its overall goal of operating responsibly and creating long-term value. Sustainability is core to McDonald's strategy as it balances profitability with social and environmental responsibility. This means addressing key environmental, social and governance (ESG) issues that are at the heart of stakeholder expectations. McDonald's sustainability strategy has a focus on climate action, responsible sourcing, waste reduction and social inclusion. Its approach to sustainability has four pillars: Our Planet; Food Quality and Sourcing; Employment, Inclusion and Empowerment; and Community Connections. Each pillar reflects McDonald's commitment to reducing environmental impacts, advancing responsible sourcing, employee inclusion and local community support. By operating in line with these principles, McDonald's aims to make positive, lasting impacts and make sustainability part of the vision of a globally responsible and community-focused brand.

McDonald's ESG Actions

Environment

McDonald's puts immense importance on protecting the planet. Natural resources are depleting, with the environment being harmed by human activities. Beyond replenishing the natural resources, more needs to be done to sustain the planet for the long term. A circular economy can help.

Over the years, McDonald's has devised a strategy that centres on environmental protection and related United Nations goals. This strategy leans on matters like climate action, the protection of global natural resources, increased use of renewable energy resources, waste management and reduction, sustainable packaging and toy materials.

Climate Action

We are taking action on climate and transforming our food systems to be more resilient for the future ahead.

—McDonald's

McDonald's, being a global company, works across many regions and diverse cultures. By tapping into this global network, it has the opportunity to make a more prominent impact on climate action. The company, franchisees, suppliers and producers could all be included in the action to catalyse change. McDonald's has embedded its climate strategy in all its operations to add value beyond mere reporting. Due to its large scale, it might not be possible to have one result-optimising strategy that works across all regions. The climate strategy for McDonald's is hence subjective to the region and mainly based on how carbon-intensive the area is.

The Net Zero Pledge

McDonald's has been working towards the reduction of greenhouse gas (GHG) emissions for many years. Since 2018, their climate targets have been approved by the Science Based Targets initiative (SBTi). These targets aim to reduce GHG emissions to limit global warming to well below 2°C above pre-industrial levels and ideally, to 1.5°C, as outlined in the Paris Agreement. In 2018, the company pledged to reduce their emissions from their offices and restaurants by 36% by 2030, taking 2015 as the base year. They are also targeting a 31% reduction in emissions intensity (per metric ton of food and packaging) across the supply chain. In 2021, McDonald's joined the UN for the Race to Zero campaign, committing to net zero emissions by 2050.

The results showed significant reductions in GHG emissions from company-owned offices and restaurants. From 2015 to 2021, direct emissions dropped approximately 30.5%, from 162,958 metric tons to 113,286 metric tons, which represented just 0.18% of the company's total emissions. Indirect emissions also saw substantial progress, with a 63.8% decrease from 1,295,064 metric tons to 469,236 metric tons.

However, emissions related to franchisee-owned restaurants, waste, supply chain and logistics increased by 14.1% over the same period, reaching 56,803,958 metric tons, accounting for 99.02% of total emissions.

Collaborations and Partnerships for Better Impact

McDonald's builds partnerships of mutual benefit that have a net positive value to the environment by collaborating with industries, governments, franchisees, suppliers, consumers and local communities.

In 2021, the brand was a part of the **SBTi Forest, Land, Agriculture (FLAG)** project consultative group. The FLAG project aims to provide companies in sectors related to forestry, land use and agriculture with clear guidelines for setting targets that are aligned with the Paris Agreement. These targets focus on reducing GHG emissions while also addressing the unique challenges posed by land use changes, deforestation and agricultural practices. The consultative group provides constructive feedback and insights, expert advice and direction to ensure that the FLAG framework is robust, scientifically sound, and feasible for businesses to implement.

McDonald's has also been a partner in the **C-Sequ Working Group**. C-Sequ is working to create a transparent and consistent process applied globally, aligning with standards like SBTi and GHG Protocol. The methodology being developed addresses challenges specific to agriculture and seeks to encourage practices that increase soil carbon retention. Guidelines are made more generic for application to sectors like dairy and beef as well.

McDonald's has closely worked with the **Global Warming Potential (GWP) group** to research the impact and harm of methane. GWP helps quantify the impact of gasses like methane (CH_4) by converting their emissions into CO_2-equivalents, allowing for better comparison and management of their effect on climate change.

Designing Restaurants Better with Renewable Energy

A drive-thru restaurant in Shougang Park, China, which opened in 2022, is McDonald's first restaurant to receive the LEED (Leadership in Energy and Environmental Design) Zero Carbon and LEED Zero Energy certification, which recognise net zero carbon emissions and net zero energy use. The site's daily operational power needs are generated fully by solar energy. More than 2,000 m^2 of on-site solar panels are expected to generate approximately 330,000 kWh of energy annually. This makes the restaurant the first in the catering industry to meet both LEED certification in China and the wider Asia-Pacific region.

The brand has also developed an action plan to promote more sustainable restaurants in China. A total of 1,800 restaurants meeting LEED certification standards for interior design and construction were opened by the end of 2022.

To influence the United Kingdom and Ireland markets, McDonald's opened its first LEED Net Zero standards restaurant in Drayton as a base for future restaurants. McDonald's targets zero emissions for all restaurants and offices in this region by 2040. A test for sustainable buildings, McDonald's Drayton restaurant was the first restaurant built to the UK Green Building Council Net Zero Standard for operational energy and embodied carbon construction. A similar test restaurant was opened in Chicago. This restaurant has now received the LEED Platinum certificate, after more than two years of operations finessing and bettering itself.

Near-future Climate Action for the Brand

The company is trying to be more robust as it moves closer to achieving net zero emissions worldwide by 2050, aligning with the Paris Agreement. One significant development is the initiative for increased renewable energy in the system by adding two sizable US Virtual Power Purchase Agreements (VPPAs) in 2022. Over the next few years, the projects will continue to materialise. The energy produced is anticipated to be enough to power over 11,700 restaurants and will help reduce GHG emissions by 33% compared to the 2015 baseline.

Packaging, Toys and Waste

We are accelerating solutions that help reduce waste while also transitioning to more sustainable packaging and toy materials.

—McDonald's

The bigger aim is to make sure that McDonald's packaging materials do not end up as waste in the neighborhood but are recycled or reused fully.

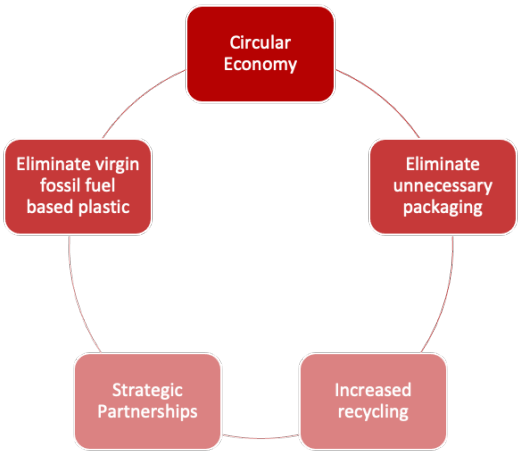
Packaging

A fundamental aspect of the packaging strategy has been to minimise the materials used by optimising the packaging. This involves decreasing the use of packaging materials across its range of food and toy products. To achieve this, constant innovation and redesign for the product range are needed to make improvements.

Overview of Packaging Strategy

Adopting a circular economy approach, McDonald's tries to reuse, reduce and recycle its packaging materials rather than produce new materials. A circular economy minimises waste and leads to increased positive impacts on the environment. The concept is part of the core strategy of McDonald's for sustainable packaging.

Figure 1: Concept of Circular Economy



McDonald's has acknowledged that the core of the environmental degradation problem is the excessive use of virgin fossil-fuel-based plastics. Hence, eliminating its use by 100% is a part of the core strategy. It targets 100% renewable, recycled or certified sources in its packaging by 2025, and results as of 2024 showed that it is quite close to the target. Increasing the use of recycled materials and encouraging reusing also helps the company move towards its goal of advancing a circular economy. The company understands that these goals cannot be achieved alone due to its global scale and interactions with internal and external stakeholders. McDonald's engages in strategic partnerships to ensure that its sustainability goals are best met.

Impact of Strategy

The company runs an in-depth analysis of customer preferences and available infrastructure of each local market and plans out its efforts accordingly. Each McDonald's supplier and restaurant is expected to maintain a report of contribution and progress. Such reports cover matters like resource usage, packaging composition, and waste management. More data collected helps McDonald's draw better and more effective strategies.

Before replacing materials, the company tries to reduce the overall use of packaging. Products have been redesigned to bring this into effect. Introducing beverage lids that eliminate the use of straws, McFlurry without lids, and salad boxes made of renewable fiber form examples. As an attempt to reduce the use of virgin fossil fuel-based plastic, the company has adopted numerous replacements. Its restaurants in major global markets have adopted wooden-based and fiber-based cutlery. Those in relatively smaller markets have yet to transition, but fiber-based cutlery is expected to globally replace plastic cutlery by 100%. McDonald's

restaurants in the UK and Ireland markets have adopted pressed paper cutlery instead of the fiber-based options. All these new cutlery replacements can be disposed of in the paper-recycling bins. The use of paper-pressed cutlery in selected markets has contributed to a reduction of 250 metric tons of plastic annually.

Wooden cutlery has had a significant contribution. The ultimate impact of this initiative is the reduction of consumption of approximately 90 million pieces of plastic per year. This has led to a reduction of over 4,000 metric tons of plastic annually. The impact is immense as compared to the scale, since these replacements are not made globally but only in selected markets.

There have been changes adopted in the raw material-related packaging as well. McDonald's restaurants in Netherlands and Germany have adopted fiber wraps as a replacement for cardboard boxes, which has allowed the company to save 500 metric tons of packaging. Another change in this area is using paper wraps instead of plastic clamshell-shaped containers, which has allowed the company to save 7000 metric tons of packaging as a combined effect of both practices.

Happy Meals toys are one aspect where the full elimination of plastic use has been a challenge to the company. The next best option is to use better quality plastic. By the end of 2022, they reduced virgin fossil-fuel-based plastic in Happy Meal toys by 47.8%, an improvement from the 24.4% achieved in 2021. The company invests heavily in research and development to constantly innovate and strives to increase the inclusion of more reusable and recyclable materials in the making of toys. Achieving this goal is expected to result in an approximately 90% reduction in virgin fossil-fuel-based plastics used to make Happy Meal toys. They have also been increasing the use of more sustainable plastics, decreasing their dependence on virgin resources.

Waste Management

The waste management processes and infrastructure differ in every region. Recycling is developed in certain nations, while in others, it is still a developing concept. McDonald's has engaged in strategic partnerships over time to lay down efficient waste management and recycling infrastructure in such nations. The recycling of cooking oil, packaging cardboard and food waste from the kitchen is an everyday company-wide protocol. McDonald's designs the system for reducing the supply chain food waste by adapting the US Environmental Protection Agency's Food Recovery Hierarchy. Such an approach is supported through McDonald's Global Food Disposition policy which targets food waste reduction in

restaurants and supply chains. In 2022, all of McDonald's restaurants and suppliers in the US donated more than 1.6 million pounds of food and paper combined from suppliers and distribution centres, worth more than $3.4 million, to support local US food banks and communities. More than 85.1% of restaurants in developed infrastructure markets offered guests the ability to recycle packaging items. In these restaurants, guest packaging is collected through recycling bins and then sorted and recycled using the existing local waste infrastructure.

Along with increased use of recyclable and reusable materials to support a circular economy, McDonald's is trying to incorporate reusability in its strategy. This is at a nascent stage and ideas are tested in various markets to understand the effects and ways of optimisation. A complete transition is a heavy investment for the company, and hence McDonald's is taking its time in implementing it.

Nature

The approach towards nature can be broadly categorised into healthy soils, water management, forest protection and afforestation and developing lush grasslands etc. Based on the data collected, McDonald's has divided its global regions into high-priority and low-priority segments, based on the extent of environmental degradation, to develop strategies.

Strategy for Nature Outline

The strategy is designed to help prevent forest clearances, protect biodiversity, reduce carbon footprint, and respect human rights. Sustainable food production and conservation have been a part of McDonald's strategy for over three decades.

McDonald's has deployed the **climate impact tracking system** to consider estimated emissions from land use change, such as deforestation for farmland. This helps the company to divide the regions into low and high priorities and set accurate climate-related targets.

The processes of McDonald's, from acquiring raw materials to delivering final products, contain excessive use of water. Hence, water stewardship is a major factor in this strategy. Water efficiency pilots ran across 19 restaurants in Southern California in 2021, resulting in roughly a 30% reduction in water use and annualised savings of 3.7 million gallons of water. Building on the success, in 2022, an additional 34 stores were surveyed. EcoProgress, a sustainability management platform, includes 15 practices focusing on water management, such as improving flush efficiency and waterless urinals. Restaurants are encouraged to report and

analyse water consumption, and then create action plans to improve consumption using the dashboard provided.

McDonald’s is catalysing industry action at scale through participation in collaborative groups, especially through external forums like the Consumer Goods Forum (CGF), the Forest Positive Coalition, the WWF Climate Business Network, and the GHG Protocol Land-based Accounting Group, as well as initiatives like the Global Roundtable for Sustainable Beef and initiatives at the local level. These actions enhance the resilience of food systems and communities while steering towards a more sustainable global economy. Such participation encourages their industry counterparts to follow suit and create a positive impact.

A deforestation-free supply chain means commodities are sourced either from high-priority regions in a sustainable manner or from low-priority regions as outlined above. McDonald’s has targeted to eliminate deforestation from its global supply chain by the end of 2030. To achieve this, the company has partnered with WWF, Proforest and other industry groups to multiply positive impact. This commitment was set in 2015, with public milestones set for 2020 for products used in the greatest volumes and which could exert a large impact on forests. For example, McDonald’s is looking at deforestation-free supply chains for their primary commodities such as beef, soy (for chicken feed), palm oil, coffee and fibre (used in guest packaging).

In 2022, McDonald’s became a member of the CGF's Forest Positive Coalition. As part of this membership, McDonald's publicly reports on a mutually agreed-upon set of key performance indicators, which ensure transparency and accountability. In early 2022, they launched a regenerative agriculture programme that aims to involve 60 wheat farmers in France, with the goal of planting 230,000 trees within 150 km of hedges by the end of 2030.

Social

Food Quality and Sourcing

Food Safety

McDonald’s has implemented rigorous food safety and sourcing protocols at the core of its ESG strategy, focusing on sustainably sourced ingredients and stringent standards to ensure quality worldwide. Partnering with GLOBALG.A.P., it trains thousands of farmers and suppliers on safe farming practices. McDonald’s also launched a digital food safety platform in 96% of locations to streamline safety

tasks and introduced a remote temperature system in 27% of restaurants for improved cold storage monitoring. Regular audits keep supplier compliance above 90%.

To ensure safety across the supply chain, McDonald's emphasises product traceability, conducting annual withdrawal exercises to quickly address any concerns. A strong food safety culture is reinforced through events like Food Safety Week, ongoing training for employees and franchisees, and partnerships with the International Food Information Council (IFIC) and major universities to share research and best practices. These partnerships help McDonald's maintain transparency, continuously adapt to evolving safety risks, and foster trust among stakeholders globally.

Nutrition Practices

McDonald's nutrition strategy aims to provide balanced, healthier meals for children, especially through Happy Meal options. In 2023, 61% of Happy Meal Bundles met McDonald's Global Happy Meal Nutrition Criteria, focusing on meals under 600 calories with limited saturated fat, sodium and added sugars. Artificial flavours, colours and preservatives were removed from Happy Meals in 20 targeted markets. By early 2024, nutritional information was accessible on all participating market websites and apps, while 99% of ads for Happy Meals promoted beverages like water, milk or juice and included fruits, vegetables or dairy items as sides.

Responsible Sourcing

While sourcing its priority commodities, McDonald's takes responsibility for related supply chains, with a focus on beef, soy for chicken feed, fiber, palm oil, fish and coffee. According to the annual report in 2023, 98.8% of beef sourced for restaurants supported deforestation-free supply chains; 93.8% of fish sourced for McDonald's Filet-O-Fish sandwich was from more sustainably managed wild-caught fisheries, which is assessed and verified annually against the McDonald's Sustainability Fisheries Standard by the Sustainable Fisheries Partnership; 100% of the palm oil used in McDonald's restaurants and as an ingredient in McDonald's products supported the production of more sustainable palm oil; 100% of soy sourced for the feed of chicken used in McDonald's products supported deforestation-free supply chains globally; 99.9% of ground and whole bean coffee was sustainably sourced; 97.9% of primary fibre-based packaging was sourced from recycled or certified sources.

Advancing Regenerative Agriculture Principles

McDonald's embraces regenerative agriculture as a strategy to address pressing environmental challenges. This approach prioritises soil health, carbon sequestration, biodiversity and reduced chemical input reliance, which together contribute to a resilient and sustainable food system. As part of its long-term strategy, McDonald's aims to embed these principles across its supply chain, recognising that regenerative agriculture not only enhances environmental health but also strengthens the sustainability and economic viability of global food production.

The **Flagship Farmers Programme** is McDonald's initiative to highlight and share best practices in sustainable farming. By creating a collaborative platform for farmers within its supply chain, McDonald's enables these producers to exchange techniques on soil health, sustainable grazing and biodiversity conservation. This programme serves as a valuable resource for the global farming community, as it amplifies the voices of farmers implementing regenerative agriculture, inspiring others to adopt similar practices and contribute to a more resilient agricultural system. Flagship Farmers help other farmers share experiences and spread innovative new practices around the Three Es of Responsibility: environmental safeguarding, ethical practices, and economic viability in the long term.

Supporting Deforestation-Free Supply Chains

- **Coffee**: The **McCafé Sustainability Improvement Platform (SIP)** was launched in 2016 by McDonald's and its partners as an approach to support responsible sourcing and transform key commodity supply chains. It provides visibility to coffee farms, enabling all participating roasters to invest in activities that meet the unique needs of each coffee-growing community in its supply chain.

- **Palm Oil**: Palm oil produced for McDonald's use as restaurant cooking oil or as an ingredient in McDonald's global core products must be certified by the Roundtable on Sustainable Palm Oil. Agribusiness group Wilmar and McDonald's share a commitment to sustainably-sourced palm oil and NDPE (no deforestation, no expansion on peat and no exploitation) in palm oil production. Both have been engaged in the development of the NDPE Implementation Reporting Framework through their participation in the Palm Oil Collaboration Group. In Indonesia, McDonald's engages with Sustain Kutim, a palm oil sustainable landscape initiative, together with strategic partners such as Proforest and GIZ. The initiative aims to help reduce forestry and land-use

emissions in Kutai Timur while supporting local communities, primary producers, palm oil and rubber plantation workers, and the East Kutai district government.

Advancing Animal Welfare

Commitments and Antibiotic Stewardship

Since 2003, McDonald's has promoted antibiotic stewardship, working to reduce its use across its supply chain. By late 2023, 96% of pork in the US came from suppliers that had transitioned away from gestation stalls for pregnant sows. McDonald's USA has also reached its goal of sourcing only cage-free eggs by 2025—two years ahead of schedule. Additionally, the company is on track to fulfil its Broiler Welfare Commitments in key markets by the end of 2024.

Chicken Sustainability Advisory Council (CSAC)

Founded in 2018, McDonald's CSAC collaborates with welfare experts, researchers, NGOs and suppliers to drive animal welfare advancements, particularly for chickens. The council includes members from Farm Animal Initiative (FAI) Farms, WWF and renowned figures like American scientist Dr Temple Grandin, who offer expertise to guide welfare practices and sustainability in broiler production.

Implementing Key Welfare Indicators (KWIs)

In 2019, McDonald's developed 15 KWIs to standardise welfare measurement at the farm level. In partnership with suppliers, McDonald's conducted two years of commercial trials assessing how parameters such as breed and stocking density impact animal welfare, the environment and economics. By 2023, data from over 6.8 billion birds informed systemwide improvements in welfare outcomes. Suppliers are ranked to promote continuous improvement.

Jobs, Inclusion and Empowerment

Human Rights

In line with its commitment to uphold human rights across its global operations, McDonald's prioritises ethical recruitment practices and fair labour standards. A significant part of its human rights strategy involves membership in the Leadership Group for Responsible Recruitment, where the company collaborates with others to enhance recruitment policies and eliminate recruitment fees for migrant workers, ensuring they are not unfairly charged to secure employment.

Furthermore, McDonald's Supplier Workplace Accountability programme promotes compliance with human rights standards by evaluating suppliers based on their labour practices, working conditions and worker treatment. This programme's assessments reached over 5,000 supplier facilities in 2022, including 537 new facilities, reinforcing a systemwide commitment to ethical practices and workforce well-being. This proactive approach demonstrates McDonald's broader mission to maintain respectful, safe, and inclusive workplaces throughout its supply chain, aligning with internationally-recognised human rights principles.

Diversity, Equity and Inclusion

In 2022, McDonald's conducted a pay gap analysis that demonstrated a strong commitment to pay equity, with nearly all gender-based pay disparities addressed by early 2023. Results indicated that globally, women employed in company-owned markets earned US$0.9991 for every dollar men earned for comparable roles, virtually closing the gender pay gap. Furthermore, McDonald's found no base pay discrepancies against underrepresented groups within its US workforce. By year-end of 2022, 43% of McDonald's global leadership roles (Senior Director and above) were occupied by women, and in the US, 28% of leadership positions were held by individuals from underrepresented groups. McDonald's also achieved its diversity procurement goal for the second consecutive year, with 25% of its US systemwide supplier spend directed to diverse-owned businesses. The company remains committed to supporting diverse supplier engagement and sustaining the level of diversity spend.

Employee Well-being and Empowerment

Programmes such as Archways to Opportunity have provided educational access to over 82,500 McDonald's employees and franchisee employees from 2015 to 2022, with over US$185 million invested in tuition assistance. Over 60,000 individuals completed leadership and skills development programmes, which support their career advancement within the organisation.

Community Connection

McDonald's contributes significantly to community development and support at the local and global levels. Since mid-2018, McDonald's training programmes and employment opportunities have positively impacted approximately 1.7 million young people, providing them with valuable career skills and experience working in McDonald's restaurants around the world. In 2022, the company expanded its community support efforts by investing US$3.5 million in 40 non-profit organisations in Chicago as part of a locally-focused programme.

McDonald's also launched its first Global Volunteer Month in 2022, with more than 8,500 employees participating in 120 volunteer activities and contributing approximately 16,700 hours to a variety of community causes. A significant portion of McDonald's community engagement is through the Ronald McDonald House Charities (RMHC). In 2022, McDonald's, along with franchisees and customers, raised more than US$182 million for RMHC, providing overnight stays for more than 2.2 million families worldwide. More than 28,000 people across the McDonald's system volunteered with RMHC, further underscoring the company's commitment to providing vital support to communities in need.

McDonald's Community Engagement Initiatives

With a global presence spanning over 40,000 restaurants, McDonald's recognises its unique connection to communities worldwide and embraces the responsibility that comes with it. This commitment stems from a deep understanding that when communities flourish, so does the company. By adopting a strategy of thinking globally while acting locally, McDonald's enhances its ability to support customers, employees and the broader community effectively.

In times of crisis and significant world events, McDonald's has consistently positioned itself as a vital resource, providing critical support to vulnerable populations. Whether through charitable initiatives or on-the-ground assistance, the company is dedicated to being there for communities, reinforcing its role not just as a business but as a trusted partner in times of need.

McDonald's approach to community impact demonstrates several core actions:

- **Financial Assistance and Emergency Relief:** In 2022, McDonald's donated over US$5 million in employee assistance to international relief efforts by organisations like the Red Cross in Ukraine and Europe.

- **Community Grants and Sponsorships:** With an emphasis on local engagement, McDonald's US operations allocated over US$850,000 in grants and sponsorships to American communities, supplemented by donations from Happy Meal sales to RMHC, totalling US$6.5 million.

- **Youth Employment and Training:** McDonald's has prioritised youth empowerment by training and hiring 1.7 million young people since 2018, providing critical job skills and employment opportunities.

- **Local Investments and Partnerships:** A Chicago-based investment strategy with a US$3.5 million fund was launched to support local organisations, showing the company's focus on targeted and localised support.

- **Global Food Donation Programmes:** The company partnered with global suppliers to redirect surplus food to organisations supporting food-insecure families.

These efforts demonstrate McDonald's commitment to providing support to communities in times of need, particularly through partnerships with local and global organisations. By promoting social equity and reducing waste, McDonald's investments in community restoration, youth employment and food donations are consistent with the United Nations Sustainable Development Goals.

McDonald's initiatives illustrate how corporate philanthropy is a cornerstone of sustainable development. By engaging in financial donations and community-focused projects, companies can meet immediate social needs while supporting long-term community well-being. This alignment with socially sustainable development goals demonstrates that corporate donations not only benefit communities but are also critical to promoting sustainable business practices.

Governance

McDonald's governance structure is designed to ensure that sustainable development is systematically integrated into all levels of management decision-making, from top leadership to operational execution. The Board of Directors plays a critical role in overseeing the strategic direction of the company, including sustainability and ethical behaviour. Within McDonald's board, the Corporate Responsibility Committee met four times in 2023, and its meetings focused on assessing sustainability goals, monitoring progress, and identifying unexpected risks that need to be mitigated. The committee noted that sustainability is a core strategic priority for the company, ensuring that environmental, social, and corporate governance matters can be an integral part of McDonald's long-term predictable value creation, rather than a superficial and ancillary initiative.

At the executive governance level, the senior leadership team is responsible for driving McDonald's strategic impact and managing risks and opportunities related to ESG. The team also ensures that SDGs are translated into actionable strategic practices. This hierarchical management approach underscores McDonald's commitment to integrating ESG principles into core business. In addition, the franchise model, including both company-owned and franchised restaurants, poses inherent challenges to sustainability

implementation. Decentralisation in this model complicates the adoption of sustainable practices. To address this issue, McDonald’s must continually strengthen incentives for franchisees who adopt sustainable practices.

In Asia, McDonald’s faces unique governance challenges in different environments due to the diversity of regulatory environments and levels of infrastructure development across countries. The sustainability governance model must be adapted to the specific needs of individual countries, such as China, Japan and India, where local regulations and consumer expectations vary widely. In China, for example, McDonald’s has been working to align sustainability practices with China’s green development goals, which emphasise energy efficiency and the reduction of plastic usage. In particular, the China Market Report notes that McDonald’s has purchased energy-efficient kitchen equipment and LED lighting in all its restaurants. In addition, McDonald’s has worked with local suppliers in China to implement sustainable sourcing measures, including the use of nationally certified sustainable palm oil and responsibly sourced packaging materials. These efforts reflect McDonald's adaptation and commitment to local market needs and regulatory requirements in China.

McDonald’s further enhances transparency and accountability through its ESG disclosures. It has formed an ESG committee which ensures that external reports are accurate and consistent with McDonald’s sustainability commitments. The committee met six times in 2023, highlighting the importance of focusing on maintaining robust reporting standards. Additionally, regular informal engagement between committee members reveals a proactive approach to ESG governance, enabling the company to adapt swiftly to emerging challenges and evolving stakeholder expectations.

In China, McDonald’s ESG disclosures are aligned with both international standards, such as the Sustainability Accounting Standards Board (SASB) framework, and local reporting requirements, which emphasise transparency in carbon emissions and waste management-related areas.

McDonald's collaborates closely with franchisees and suppliers to ensure that sustainability goals are accomplished across its system. This collaborative governance model—referred to as the “three-legged stool”—aims to distribute responsibility for sustainable efforts equitably. However, varying levels of commitment and operational capabilities among franchisees reveal challenges, especially in Asia, where franchisee capabilities and infrastructure readiness vary greatly across markets. In China, McDonald’s has been implementing training programmes specifically designed for franchisees to enhance their capacity to comply with sustainability initiatives, such as energy conservation and sustainable sourcing. These efforts are supposed to cover the

gap between markets that are already well-equipped to implement sustainability measures and those that are still developing the essential infrastructure.

Transparency and Reporting

McDonald’s has demonstrated its commitment to business transparency by adopting the SASB framework. For three consecutive years beginning in 2020, McDonald’s has disclosed information in accordance with SASB standards to provide stakeholders with consistent, transparent and comparable information about its sustainability initiatives. This voluntary adoption reflects McDonald’s proactive sustainability stance to meet investor and stakeholder expectations for transparency in areas related to environmental, social, and corporate governance.

However, McDonald’s has occasionally deviated from the exact format prescribed by the SASB, choosing to provide brand-related data and metrics that are consistent with the underlying intent of McDonald's financial reporting. While this approach provides the flexibility needed to address the nuances of McDonald’s operations, it can also create difficult comparative complexities for stakeholders and shareholders seeking to compare the company's performance with industry peers. This challenge is particularly pronounced in Asian markets, where sustainability metrics and benchmarks can be very different from those in North America or Europe and thus vary from country to country. To address this limitation, McDonald’s can strengthen its sustainability reporting by clarifying specific deviations from standard indicators and providing similar data to support effective comparisons across regions, including Asia.

McDonald’s Purpose and Impact report provides a comprehensive overview of the results of its sustainability practices, with a particular focus on the company’s progress towards goals such as net-zero emissions by 2050 and increased use of renewable energy. The report includes sections for its strategy, challenges and milestones, which mention intermediate goals such as reducing greenhouse gas emissions across restaurant operations and supply chains by 2030. In the Asia region, specific challenges include the limited efficiency and scale of renewable energy use in certain countries and the high cost of infrastructure retrofits needed to support sustainable practices. In China, for example, McDonald’s is participating in a pilot project to install solar panels in selected restaurants to offset energy consumption and reduce waste emissions. In addition, the company is actively involved in government-led green initiatives, such as reducing plastic waste by phasing out plastic straws and transitioning to paper alternatives. Importantly, McDonald’s is transparent about the limitations when reporting its ESG data, acknowledging that the data is not audited by a third party. This candid disclosure builds stakeholder trust by highlighting both achievements and areas for further development. Nonetheless, McDonald’s could strengthen its credibility through third-party validation of its ESG data,

which would provide additional, non-artificial assurances of the accuracy and reliability of its disclosures.

Integration with Broader ESG Goals

McDonald’s ESG framework is deeply integrated with its Impact Strategy, focusing on four key areas: Our Planet; Food Quality and Sourcing; Employment, Inclusion and Empowerment; and Community Connections. Each of the public commitments in these areas has a designated lead and accountable person responsible for progress, risk escalation and accuracy of disclosure. In Asia, the Global Sustainability and Social Impact team works with local franchisees to adapt these commitments to local regional contexts. For example, under the Our Planet initiative, McDonald’s in China has implemented measures to reduce plastic packaging and adopt paper straws; and in India, solar panels have been installed in some restaurants to offset energy consumption. This structure underscores the importance McDonald’s places on its governance responsibilities while recognising the need to adapt to regional contexts to effectively achieve sustainability goals.

McDonald’s enterprise risk management framework assesses environmental, social and corporate governance risks by integrating sustainability risks with financial and operational risks. This integration reflects McDonald’s understanding of the significant impact that non-financial factors can have on the resilience and long-term success of a business. In Asia, climate-related risks such as monsoons and typhoons pose a significant threat to supply chain continuity, affecting the availability of local ingredients. In China, where increasingly frequent extreme weather events can disrupt operations, McDonald’s has invested in supply chain resilience by diversifying its sourcing strategy and strengthening local partnerships. By integrating ESG risks into a broader risk management framework, McDonald’s is better able to anticipate and mitigate these challenges. However, the effectiveness of this approach depends on the company's ability to quantify and translate these risks into actionable strategies at the operational level, especially in regions where regulatory pressures are less stringent and local adaptation is critical.

Challenges and Opportunities

There are many challenges that McDonald’s currently faces with their ambitious ESG-related targets, such as achieving 100% renewable sources in their packaging by 2025 or their ongoing commitment to a deforestation-free supply chain.

These challenges result from the sheer scale of ensuring emissions reduction, standardised recycling processes across restaurants, more environmental packaging,

creation of a circular economy, effective waste management, distribution of innovative processes, fostering a widespread ESG-conscious culture and avoiding greenwashing. Difficulties in each of these areas arise from managing cultural differences, different business standards and consumer expectations, accounting for bad actors that contribute to issues, loss of control down the command chain and many more.

Simultaneously, McDonald's has the potential to grow into a more ESG-conscious firm if it can effectively leverage this scale and build a strong company culture that works towards sustainability. This will also build their reputation as an industry leader in ESG. Problems such as the need to improve packaging may spur R&D and give McDonald's a competitive advantage in the long run, alongside the reputational value of being an early green mover.

Challenges

McDonald's most prominent challenge in the near future is their increasing emissions. Its report first delves into Scope 1 and 2 emissions which accounted for a total of 0.98% of total emissions. Then it reveals that the sources of the remaining 99.02% of emissions have increased since 2021, releasing a further 7,001,781 metric tons of GHG into the atmosphere.

McDonald's needs to address this significant increase in emissions head-on rather than hide shortcomings behind two comparatively neglible emission scopes that portray them in a better light. This comes off as a thinly veiled attempt at downplaying its increase in emissions. This lack of progress warrants concerns, as "there does not seem to be any proactive involvement or serious investment by McDonald's to support its suppliers or make significant changes in its beef supply chain" (Elgin, 2024), which contributes to one third of McDonald's emissions. A steep improvement curve remains if it is to reach its targeted 36% reduction in emissions from 2018 to 2030.

Greenwashing is a pitfall to avoid. If McDonald's emissions continue to increase as it portrays a sustainable image, then accusations will eventually mount. In China, for instance, McDonald's has built 2,500 LEEDS restaurants—a significant proportion of their total 5,900 restaurants in the country. This is a success story but must become the norm. In the US where McDonald's restaurants number 14,300, there are only anecdotal reports of LEEDS restaurants, such as the one in Chicago. When promoting its ESG efforts such as its LEEDS-certified restaurants, sustainably-sourced ingredients, eco-friendly packaging and environmental collaborations, McDonald's need to substantiate its claims and not overstate the benefits, so as to avoid greenwashing.

For example, McDonald’s aims to remove deforestation from their supply chain; however, as previously mentioned, many of McDonald’s issues are related to their scale and possible loss of agency or control further down the command chain. Positive changes, such as McDonald’s ambitious deforestation targets and climate impact tracking system, are open to scrutiny. While McDonald’s aims to account for emissions from land, they inevitably seem to increase emissions in line with their company growth, as the demand for beef and the agricultural damage of beef production are ever-growing. Despite implementing a tracking system, an anti-deforestation commitment, and interacting with many environmental boards, McDonald’s scored below par in a Greenpeace study for deforestation in Australia.

We know in the last five years that we have data for, over 660,000 hectares of mapped koala habitat was bulldozed just for beef production.

These are companies that profit from selling beef. It’s highly likely they have deforestation in their supply chain, and are not able to tell their customers if they do or do not.

—Gemma Plesman, Greenpeace (Casben, 2024)

While the exact impact of McDonald’s on deforestation is unclear, their large scale and profit motives around beef production suggest possible misalignment with stated environmental standards. This raises questions about commitments to environmental organisations like the WWF and Forest Positive Coalition as these connections may be leveraged for positive ESG-related perception, potentially masking ongoing deforestation issues. This situation could be seen as greenwashing. Alternatively, McDonald's size may limit direct ESG oversight, diluting efforts of well-intentioned actors as orders pass down the chain of command.

McDonald’s faces significant in-store challenges in meeting its goal for recyclable or reusable packaging, as current materials require substantial R&D to become fully sustainable. For example, cups are made from poly-coated paperboard to prevent leaks, however, this coating complicates recycling. Similarly, creating packaging that resists oil and grease without plastic is difficult, resulting in either contamination or the use of non-recyclable materials. While there’s potential for progress in sustainable packaging, achieving these goals will require major innovation, and timelines remain uncertain.

Ultimately, many of McDonald’s challenges relate to integrating ESG measures in economically viable ways due to the profit-seeking nature of large corporations. Currently McDonald’s is using ESG as a public relations measure, emphasising pledges regarding deforestation and palm oil despite some accounts suggesting that deforestation is

ongoing for beef production. Certain measures, such as wooden cutlery, appear to be sustainably sourced; however, accusations of deforestation in certain regions still loom over McDonald's, regardless of whether it might be due to a principal-agent disconnect or other reasons.

Despite pledges to cut emissions and waste by 2025 and 2030, McDonald's emissions have risen from 51.26 million metric tons in 2015 to 57.38 million metric tons, while profits grew from $9.79 billion in 2015 to $14.56 billion in 2023 (macrotrends.net, 2024). Although the profit-to-emissions ratio has improved, the economic incentives within McDonald's ESG efforts are still limited. This suggests that McDonald's ESG initiatives lack meaningful scalability as emissions increase alongside profit growth. Without addressing this disconnect, McDonald's risks further accusations of greenwashing.

Opportunities

There are several opportunities available to McDonald's, as much innovation is needed to reach their current climate goals.

- **Circular economy:** McDonald's can improve the efficiency and sustainability of their processes if they use a circular economy approach.

- **R&D:** R&D is necessary to approach a number of issues such as packaging (which is implicated in the circular economy). Becoming a leader in new technology in the food supply chain offers McDonald's huge profit potential. Additionally, financial penalties in certain territories (e.g. Europe) for failing to meet targets further incentivise their R&D efforts.

- **Behavioural change:** Educating consumers about recycling and proper disposing of packaging could improve the efficiency and potential of a circular economy.

- **Collaboration:** McDonald's has already built up a number of connections with environmental organisations and boards with strict emissions or production targets. These can be leveraged to further improve McDonald's processes and set an industry standard, at the same time improving McDonald's branding.

Opportunities also arise as consumer taste leans towards healthier food that are sustainably-sourced. Menu options that provide more alternatives to beef could be welcome by consumers who wish for less GHG emissions, damage to agriculture, and potential deforestation to be associated with their food. While many of McDonald's

challenges relates to making ESG economically viable, many of McDonald's opportunities relate to the creation of a circular economy.

Research-related opportunities and improved packaging will reduce overall wastage and remove plastics from the supply chain, while consumer education improvements will make this change more actionable. Alongside improving its own packaging, McDonald's can benefit significantly from utilising a near unparalleled asset—its huge consumer base. Most efforts to encourage consumers to use reusable containers for food and drinks are done on a smaller scale due to overall consumer sentiment, but over time, these sentiments are changing as environmental support becomes more necessary. McDonald's has the scale to drive change and become one of the biggest beneficiaries of such a scheme. Benefits might include the initial revenue from selling reusable packaging, increased consumer loyalty, potential brand exposure and enhanced brand image, streamlined processes due to reduced dishwashing, and reduced costs in buying disposable packaging.

Considering McDonald's network with NGOs, non-profits and charities, alongside its own efforts such as the Ronald McDonald House Charities, it is well placed to build a strong name in sustainability, provided its pledges are met. These relationships can help McDonald's stay on top of current information and initiatives, hence improving its recycling infrastructure and community engagement. Relationships with governments may also improve as its abide by pledges and standards, avoiding fines and potentially earning grants for future projects. Stricter rules are likely to emerge, and by placing themselves on the right side of the debate, McDonald's takes a step ahead of competitors. For example, by building a non-deforestation supply chain early, it is likely to outcompete rival restaurants and reap significant rewards in the long run. These principles also apply to other sustainability legislation that will likely tighten, such as in waste management, recycling, water saving, emissions and single-use plastics.

Conclusion

The path that McDonald's has charted towards sustainability has been laid with hopes and challenges. There has been corporate commitment, some progress in renewable energy, sustainable packaging and greener restaurant designs including LEED-certified ones in both China and Europe. These actions are a testament to McDonald's ESG commitment.

At the same time, there is still a way to go. In reality, while McDonald's has reduced some of its direct emissions, emissions from its wider network—particularly those coming from its franchise holders and supply chains—have actually increased. It points to the bigger

challenge: McDonald’s large global scope and reliance on high-carbon-footprint products like beef means that meeting ambitious climate targets is difficult. Much more will be required to achieve its net-zero pledge by 2050, including stronger collaboration with franchisees and suppliers and deeper investments in sustainable solutions.

McDonald’s journey bears a salient lesson—that true sustainability involves more than stating big goals; it is about follow-through, transparency in the face of challenges, and adjusting course as regional and local needs dictate.

Where McDonald’s has proved that it is capable of making progress, maintaining customer and stakeholder trust will depend on transparency around its successes and setbacks alike. That requires a steady focus on what truly matters: from better packaging to taking responsibility for emissions in more imaginative ways than quick fixes.

In many ways, McDonald’s journey can be instructive for others. On this scale, it is not easy to balance business growth with genuine environmental concern. Through acceptance of responsibility, embracing transparency, and remaining committed to change, McDonald’s can do even more than just lead within the food service industry; it can set an example of what responsible business looks like on a global scale.

Discussion Questions

1. Considering McDonald’s ambitious ESG commitments, how effectively do you think the company is balancing its growth objectives with its environmental responsibilities, particularly in relation to emissions and sustainable sourcing?
2. What indicators can consumers and stakeholders use to differentiate between genuine sustainability efforts and potential greenwashing in McDonald’s marketing and reporting practices?
3. What specific innovations or strategies should McDonald's prioritise to overcome its challenges in achieving recyclable packaging and reducing indirect emissions from its supply chain?

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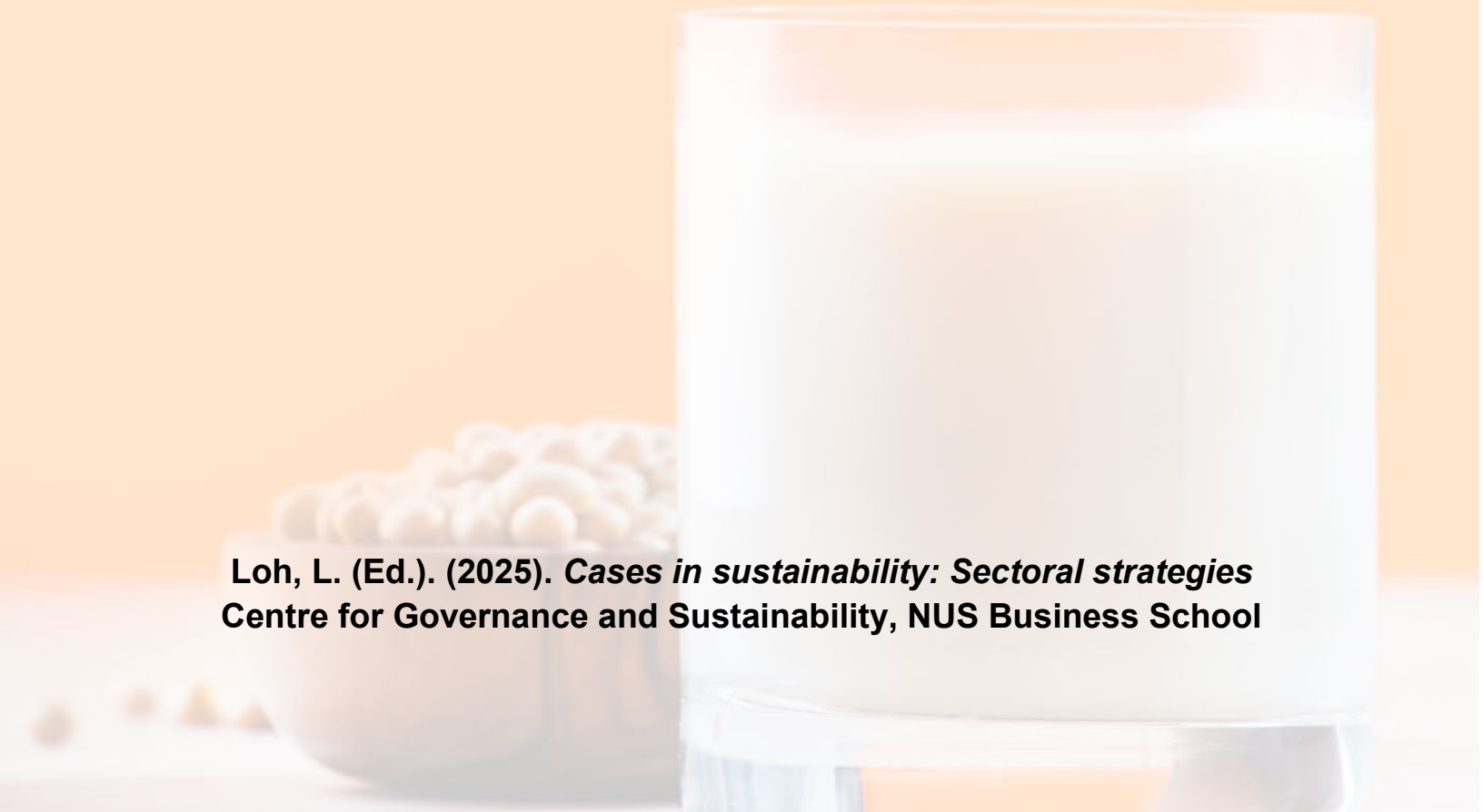
Vitasoy: Embracing the Future of Plant-based Products

LAU Yuk
LI Xinlin
SAFITRI Larasati Adinda
XIAO Xiao
YAO Andy Shanyao
ZHAO Zhendong



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Introduction

Founded in 1940, the Hong Kong-based beverage company Vitasoy International Holdings Limited is well known for its plant-based drinks and desserts. Over the past 80 years, Vitasoy has grown into a multinational listed company, operating in five key regions: Australia, China, New Zealand, North America, Philippines and Singapore. The natural advantage of soy and oat drinks is that they have a carbon footprint 62% to 71% lower than dairy milk, using 80% less land and 99% less water during production (SCMP, 2024). Under the leadership of CEO Roberto Guidetti, who oversees sustainability strategies himself, Vitasoy aims to make a positive and lasting impact on the communities it serves.

Drawing from corporate reports, scientific studies and industry insights, this case study provides an in-depth analysis of Vitasoy's strategic approach to sustainability. It explores the company's efforts in environmental, social and governance (ESG), social responsibility and supply chain management, offering insights into how Vitasoy navigates challenges and opportunities within a rapidly evolving market landscape.

Vitasoy's Business Model

As the leading company in the plant-based food and beverage industry, Vitasoy is committed to delivering sustainable alternatives to traditional animal-based and dairy products (Vitasoy, 2024). With a core mission that prioritises health, wellness and environmental sustainability, Vitasoy's business model is built to innovate and produce products for a healthier planet by unlocking the potential of plant-based food and beverages.

Over its 80-year journey from a humble start in Hong Kong into an international brand with a variety of products, Vitasoy has expanded its offerings to various product categories. Its product portfolio includes a range of plant-based products like soy milk, almond milk, oat milk, tofu and related beverages, which gains loyalty from health-conscious consumers who pursue a lower dairy intake and lower environmental footprint (Vitasoy, 2024). Moreover, Vitasoy's retail network has achieved penetration in vast markets around the world, particularly in China, the Philippines, Singapore and other Asia-Pacific regions. Consumers can easily purchase Vitasoy products in supermarkets, convenience stores, retail chains and food service providers (Vitasoy, 2024). In addition, the rise of e-commerce has enabled Vitasoy to connect directly with more potential consumers (Malloy, 2024).

Vitasoy takes steps to ensure the sustainability of its ingredient sourcing and production processes. The company grows non-GMO soybeans (absence of genetically modified organisms) and adheres to sustainable farming practices, demonstrating a strong dedication to biodiversity preservation and ethical agriculture (Vitasoy, 2024). Moreover, the company utilises local production infrastructures when operating in different regions, which helps to lower logistics costs and better cater to local consumer tastes (Vitasoy, 2024). Most importantly, such local production and sourcing align with Vitasoy's sustainability goals because of reduced transportation emissions.

To maintain its competitive advantage, Vitasoy invests heavily in research and development with a focus on improving the taste, texture and nutritional profile of products, allowing the company to meet the changing consumer demand for healthier, higher-quality options (Vitasoy, 2024). Vitasoy aims to fulfil its goal of being a socially responsible firm by producing goods that are both high-quality and beneficial to health.

Strategically, Vitasoy's business model is consistent with the consumer preference shift towards health, sustainability and ethical consumerism. With its plant-based portfolio, Vitasoy appeals to consumers seeking substitutes for traditional animal-derived foods. This model rides the growing trend of plant-based products, establishing Vitasoy's leadership in sustainable food production within the Asia-Pacific region (Alcorta et al., 2021).

Looking forward, Vitasoy is ambitious to deepen its sustainability path. To reduce the side effects caused by waste production, the company plans to further reduce its carbon emissions and develop advanced sustainable packaging. Furthermore, Vitasoy intends to expand its product portfolio to better meet local preferences and adopt new technologies to improve production efficiency. Vitasoy's continued commitment to these goals not only strengthens its competitive advantage but also enhances its brand sustainability narrative, being a company known for promoting health, innovation and environmental responsibility.

Strategic Sustainability Framework

Environmental

In recent years, companies around the world have been facing environmental sustainability issues, not only because of increasing ESG attention from society and the public, but also due to climate change, environment deterioration and the gradual depletion of natural resources (Chopra, 2024). In this context, Vitasoy, an international plant-based beverage manufacturer, is one example of a company adapting and striving to achieve environmental sustainability; in fact, Vitasoy has integrated the policy of

environmentally sustainable strategic development into its business operation model. Its efforts lie in plant-based, carbon management, sustainable supply chain and waste disposal; these initiatives not only help reduce negative environmental impacts through sustainable methods, but also meet consumer demand for environmental-friendly products (Sustainability report, n.d.).

Plant-based

The core element of Vitasoy's environmental strategy is product innovation based on plant ingredients, as they generally require fewer resources and are less harmful to the environment than animal-based ingredients. This approach is therefore in line with the circular economy model, which advocates reducing waste and pollution in production systems while enhancing the maintenance of products and materials in use and regenerating natural systems (Lamba, 2023). Vitasoy uses soy, oats, almonds and other plants as the main ingredients of its products; in addition to ensuring that the products are healthy and clean, it is also able to reduce the carbon footprint caused by animal products. In addition, the properties of these plant ingredients can even help alleviate water pressure and reduce agricultural emissions, making Vitasoy's products more sustainable.

Carbon Management and Renewable Energy

To reduce direct and indirect carbon emissions, Vitasoy has incorporated renewable energy into its daily operations, such as using green energy wherever possible, promoting the use of solar cells, etc.

Vitasoy has aligned its carbon management strategy with the Science Based Targets initiative (SBTi), which provides companies with a series of indicators on how to set greenhouse gas emissions based on science (Kanwalroop, 2020). In fact, the SBTi framework helps Vitasoy ensure the science of its carbon reductions and demonstrates its alignment with the Paris Agreement, especially the goal of limiting global warming to below 1.5°C. Through setting and implementing these ambitious goals, Vitasoy not only enhances its operational resilience in the global environmental market but also effectively reduces its negative impact on the environment.

In fact, Vitasoy's environmental sustainability strategy has received recognition. It is one of Corporate Knights "Global Sustainability Top 100 Companies", which reflects Vitasoy's efforts for carbon neutrality and environmental responsibility. This recognition also demonstrates Vitasoy's success in implementing its carbon management strategy and also sets a benchmark for the food and beverage industry.

Sustainable Supply Chain and Water Management

A sustainable supply chain is also a top priority for Vitasoy. In fact, to reduce the agricultural footprint and keep the soil healthy, Vitasoy stipulates that suppliers must strictly adhere to sustainable agricultural guidelines, thereby regulating suppliers to conserve resources, reduce pesticide use, protect biodiversity, and promote friendly agricultural practices (Jedynak, 2023). Strict compliance with these guidelines will not only help strengthen the environmental integrity of the supply chain but also actively promote agricultural sustainability.

In addition, as a beverage producer, water resource management is indispensable for Vitasoy. As a result, Vitasoy has made key investments in water-saving technologies such as rainwater collection systems and wastewater treatment systems to minimise water usage during production. These water-saving measures reflect Vitasoy's proactive implementation of reducing its water footprint, especially in water-scarce areas (Dirwai, 2021). By adopting advanced water management and practices, Vitasoy has developed environmental sustainability into a broader goal.

Waste Reduction and Recycling Programme

Vitasoy strives to divert more than 98% of waste from landfills (Vitasoy Sustainability, n.d.). Based on the principles of a circular economy, it seeks to eliminate waste generation by recycling materials or reintroducing them into the production cycle. In fact, by achieving this high level of waste diversion, Vitasoy has set an industry standard for reducing landfill-related bio-footprint.

Besides, Vitasoy uses sustainable packaging, including a shift from plastic straws to biodegradable paper straws. This shift is also in line with Vitasoy's commitment to reducing single-use plastic products, given the serious pollution that single-use plastics cause to the marine environment (Rabiu, 2024). Its waste-reduction efforts are heeding consumer demand for environmental protection.

Furthermore, Vitasoy's recycling programme involves internal and external communities, as demonstrated by the "Beverage Carton Clean Recycling Education Programme" in Hong Kong (Vitasoy Beverage Carton, n.d.). Through collaboration with educational institutions and neighborhood associations, Vitasoy raises public awareness of waste pipelines while simultaneously fortifying recycling infrastructure. In addition to encouraging sustainable consumption, this community-centred strategy motivates customers to share environmental responsibility.

Social

Vitasoy implemented strategies relating to its products, supply chain, and community commitment to ensure that they benefit consumer well-being, promote employees' human rights in the workplace and raise social awareness about sustainability.

Healthy and Green Product

Vitasoy aims to provide consumers with healthy products that encourage healthy living. Meanwhile, it tries to reduce waste and pollution in its products' life cycle, minimizing environmental damage to human health and thereby promoting social welfare. In this way, it aligns with the United Nation Sustainable Development Goal (SDG) 3: Good Health and Well-Being.

Vitasoy products are mainly plant-based and made from beans, grains, nuts and seeds. These products include soy milk, yoghurt and tofu. Based on the World Health Organisation Dietary Recommendation guidelines, Vitasoy divides the nutritional content of its products into two main categories: "Nutrients to Encourage" and "Nutrients to Limit". "Nutrients to Encourage" represents nutrients that are good for the body, such as calcium and dietary fibre, while "Nutrients to Limit" represents nutrients that are not suggested to be consumed in excess, such as saturated fat. Based on these two categories, Vitasoy has developed its own "Vitasoy Nutrition Criteria" and systematically evaluates each of its products every year. Taking sugar as an example, Vitasoy has three categories, including "Moderate to Zero Sugar", "Low Sugar", and "No Sugar" (Vitasoy, 2024), with detailed sugar levels for each category. Moreover, Vitasoy is involved in voluntary graphical labelling programmes in several countries, where nutritional facts disclosed on the packaging helps the public to make informed choices.

Human Resource Management within the Company and Across the Supply Chain

In human resource management, Vitasoy's focus is mainly internal. It stresses the importance of people in senior management training programmes and supports junior staffs' career development. For their suppliers, Vitasoy is striving to ensure safe working conditions for workers. To monitor the overall performance in the workplace, Vitasoy designed four principles of continual improvement, including "Lead", "Grow", "Reward", and "Thrive" (see Figure 1). Considering this, Vitasoy's performance on SDG 8: Decent Work and Economics Growth, can be improved.

Figure 1: Vitasoy's Principles of Continual Improvement in Workplace

Source: 2023/24 Vitasoy Sustainability Report, 2024, p.50

From the internal operations perspective, the principles of "Lead", "Grow" and "Reward" are more relevant. For "Lead", the "Trusted Leadership Programme" is in place, allowing associates to continuously have informal conversations with senior management. The senior management teams are also trained to deliver the company's value to middle management and front-line staff. These measures help to ensure staff engagement in strategy planning and the alignment of goals within the company, making employees more motivated. For "Grow" and "Reward", the "Career Advancement Programme" and "Team Excellence Programme" provide career support and reward employees with outstanding performance using certain key performance indicators (KPIs). Therefore, employees are expected to be evaluated more equally and dedicated to improving their performance.

The principle of "Thrive" is related to supply chain management. Vitasoy designed the Occupational Health and Safety Policy (see Figure 2) and has a Global Safety Committee to manage factory workers' safety. In 2023/24, Vitasoy put extra emphasis on road safety, manual handling safety and safety facilities to achieve the target of zero lost-time injuries in 2025/26. Vitasoy's business in Australia also published the "Modern Slavery Act Statement" (Modern Slavery Act Statement - Vitasoy, 2024) to ensure all workers are fairly treated in the supply chain.

Figure 2: Elements of Vitasoy's Occupational Health and Safety Policy

Source: 2023/24 Vitasoy Sustainability Report, 2024, p.54

Nevertheless, Vitasoy still has significant shortcomings in human resource management. The first is a lack of transparency. In the sustainability report, Vitasoy does not disclose specific metrics for assessing employee performance, raising questions about their effectiveness in implementing the KPI measures. Meanwhile, in terms of social sustainability in the supply chain, Vitasoy mainly highlights standards in its internal operations but not what applies to its suppliers across the world.

Second, Vitasoy might have set unrealistic goals. The sustainability report in 2023 reported a lost-time injury rate of 0.69, and this figure decreased to 0.61 this year. Following this trend, Vitasoy is unlikely to achieve zero lost-time injuries by 2025, which is further evidenced by the fact that the company downplayed the figure in the 2024 report. Therefore, Vitasoy needs to continuously review internal resources to establish achievable goals. Finally, there are concerns regarding workers' wages. Their recent sustainability reports primarily focused on workers' safety. However, salary is an important indicator to measure employees' rights, such as a living wage. Overall, there is still considerable room for improvement in Vitasoy's human resource management.

Community Contribution

By making community contributions in Hong Kong and mainland China through donations and education, Vitasoy aims to make further progress in SDG 2: Zero Hunger and SDG 3: Good Health and Well-being.

Vitasoy has been participating in the Community Care Programme in mainland China since 2021. From 2022 to 2023, they have donated 2.5 million packs of low-sugar soybean milk to rural schools in China, helping students gain nutrition for their daily needs.

For education, Vitasoy cooperates annually with NGOs to hold the Nutrition Exploration Programme, both in mainland China and Hong Kong. It aims to help students understand the benefits of a plant-based diet at an early age, which encourages them to adopt and maintain healthy eating habits in the future. However, since these activities are still small in scale, its impact on the social aspect of sustainability is not as much as the impact that would materialise if its efforts were directed towards its products and human resource management instead.

Governance

Vitasoy takes a well-rounded approach to stakeholder engagement by acknowledging the wide-reaching impact its business has on diverse groups like employees, customers, investors and government entities. In prioritising financial, social and environmental matters, it first identifies issues that matter the most to both the company and its stakeholders.

Stakeholder Management

Vitasoy takes a strategic approach when it comes to engaging with the business' stakeholders; they fully acknowledge that their operations have an impact on many groups, ranging from employees, customers, investors, suppliers, non-profits, and government bodies located in their main business markets like Australia, Hong Kong, mainland China, the Philippines and Singapore. By leveraging the "double materiality" method to govern their business, which considers both social/environmental and financial aspects, Vitasoy is able to locate the most critical ESG issues that matter to both their business and stakeholders.

This approach ensures that the company's resources and efforts are directed at where they can make the most meaningful impact. Regular materiality assessments play an important role in this process; they provide insights that help Vitasoy stay responsive to evolving priorities and keep its sustainability strategy relevant.

Risk Management

To stay ahead of potential issues, Vitasoy's leadership team plays a critical role in managing the company's ESG performance, working closely with a dedicated ESG team that zeroes in on important areas like climate risks and new opportunities. To stay on top of potential challenges, Vitasoy has introduced a Governance, Risk, and Compliance (GRC) system that focuses on activities that could potentially pose risks to the business

with real-time monitoring. This system enables the company to act quickly when issues come up, making sure that ESG principles are built into everyday operations, financial planning and the bigger picture of their long-term strategy.

Economics

Vitasoy's commitment to sustainability can be shown in their circular economy approach when it comes to packaging, which aligns with both government policies and the UN SDGs. Reducing single-use plastics, providing recyclable ingredients, and incorporating plant-based ingredients, Vitasoy also addresses consumer demand for eco-friendly products while improving operational efficiency. This strategic focus not only reduces environmental impact but strengthens Vitasoy's market position as an environmentally conscious brand, which will help to drive profitability and align with global shifts towards healthier, sustainable diets.

Circular Economy for Plastics

The use of recyclable and environmental-friendly components, along with programmes like the "Drink Without Waste" project in Hong Kong, highlights Vitasoy's dedication to sustainable packaging. Vitasoy incorporates recycled materials and is already shifting from single-use plastics. This is what defines a circular economy—a model encouraged by government policies and increasing consumer demand for eco-friendly packaging options (Ellen MacArthur Foundation, 2023).

Working alongside the Hong Kong government to control plastic waste, Vitasoy aligns its packaging practices with national circular economy policies and the UN SDGs, particularly Goal 12 on Responsible Consumption and Production. This strategy allows the business to reduce its waste while adapting to the growing regulatory focus on sustainable packaging. Vitasoy's commitment to reducing environmental impact through plastic consumption reduction can be shown in their strategic shift towards lighter-weight packaging materials, such as using amorphous polyethylene terephthalate (APET) bottles and polyethylene (PE) caps, which eventually leads to resource savings and minimised waste.

Vitasoy also works to discontinue non-biodegradable and environmentally harmful materials like polyvinyl chloride (PVC), replacing these with more sustainable options where possible. This approach to plastic management is an important part of Vitasoy's economic sustainability efforts and value as it aligns their packaging strategy with greater environmental goals. Subsequently, this approach will lead to reinforced brand value and cost savings through material efficiency.

Balancing Sustainability and Profit: Vitasoy's Path to Eco-Conscious Growth
Vitasoy's sustainability strategy has driven profit and revenue throughout the years by aligning its plant-based products with a global consumer shift towards environmental-friendly diets. This approach not only positions Vitasoy to gain a following but also gives it a competitive advantage in the market.

The company has broadened its portfolio to include plant-based milk, yoghurt and tofu—all aimed to promote better health while minimising environmental impact. Clear KPIs for sustainable practices and recyclable packaging will also eventually lead to operational efficiencies that save costs and grow revenue.

External Challenges and Opportunities

Unsustainable food systems contribute to the climate crisis and ecosystem degradation. In 2023, more than 130 countries signed the COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action, making an important declaration about the global importance of transforming food systems. Shifting to more sustainable, plant-based nutrition also offers promising solutions at local, regional, and global levels for human health challenges associated with malnutrition, obesity, and chronic disease. Approximately 75% of deaths are caused by chronic diseases such as heart disease, cancer, and diabetes. Switching to healthier, plant-based diets. It may prevent around 11 million premature adult deaths annually.

Unsustainable food systems contribute about one-third of GHG emissions and 70% of freshwater use. A shift to plant-based nutrition could cut diet-related GHG emissions by up to 74%.

Supported by governments and organisations like the WHO and UN FAO, the plant-based movement is becoming a strong global trend. With increasing awareness of health and environmental issues, consumers are gradually adopting plant-based beverages and foods from legumes, whole grains, nuts, fruits, and vegetables.

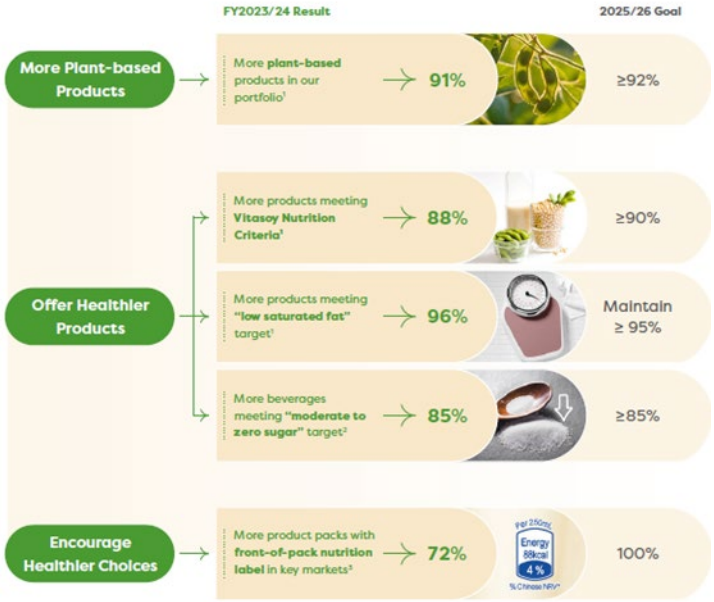
This shift towards plant-based nutrition shows a valuable opportunity to address sustainable development challenges, including population growth, unsustainable food systems, climate change and environmental crises. By aligning with this trend, Vitasoy aims to strengthen its competitive position and drive revenue growth in a rapidly evolving market.

Vitasoy's health and nutrition strategy prioritises:

- Expanding plant-based products
- Offering healthier options
- Promoting healthier choices

Vitasoy has set Key Performance Indicators (KPIs) and targets within its Sustainability Framework to monitor and measure progress.

Figure 3: Vitasoy's KPI in Sustainability Framework



Source: 2023/24 Vitasoy Sustainability Report, 2024, p.22

Vitasoy's Sustainable Supply Chain Strategy through the SAB Model

Steering (Strategy and Leadership)

Strategy and Goals

Vitasoy has implemented sustainable farming, a zero-deforestation policy, and strict controls on non-GMO ingredients within its supply chain. These actions are potential solutions to global challenges such as climate change and ecosystem degradation. It also shows the company's long-term commitment to sustainability.

Leadership
Working with environmental experts, Vitasoy implements sustainable farming guidelines in China to provide training to suppliers on soil health and emissions reduction. This is a good demonstration of leadership in promoting sustainable practices within the supply chain.

Accelerator (Performance)

Performance Improvement Initiatives
Vitasoy works with suppliers to achieve lower carbon emissions in its green supply chain, such as through energy-efficient agricultural machinery and renewable energy use. Vitasoy also requires major suppliers to disclose environmental data, enhancing transparency and supporting carbon accounting improvements.

Outcome Evaluation
Through ESG risk assessments of key suppliers, Vitasoy identifies environmental and social risks within its supply chain, ensuring that suppliers meet the company's sustainability standards and taking corrective action when necessary.

Brake (Conformance)

Compliance and Control
Vitasoy requires all suppliers to sign its Supplier Responsibility Principles and conducts modern slavery risk assessments to ensure compliance with laws and ethical standards. The company also issued a Modern Slavery Act Statement in Australia, strengthening compliance across its global supply chain.

Risk Management
Vitasoy's zero-deforestation policy prohibits sourcing from suppliers involved in illegal land clearing in high-conservation areas, actively preventing non-compliance and minimising environmental impact within its supply chain.

Achievements and Future Outlook

Currently, Vitasoy is disclosing its operations based in China (mainland and Hong Kong SAR), Australia, Singapore, and the Philippines voluntarily with reference to the Global Reporting Initiative's (GRI) Universal Standards, Financial Stability Board (FSB)'s Task Force for Climate-related Financial Disclosure (TCFD) and Taskforce on Nature-related Financial Disclosure (TNFD) recommendations. In Financial Year 2023-2024, the

Environmental, Social and Governance (ESG) Committee of Vitasoy stated that the group will continue to keep track of its ESG strategy to align the sustainability outcomes with the group's responsibility.

Vitasoy is committed to maintaining high quality and safety standards for its plant-based nutrition products. In recent disclosures, Vitasoy has established its new sustainability framework, namely consisting of two pillars: "Making the Right Products" and "Making Products the Right Way" (Vitasoy, 2024).

Table 1: Vitasoy Sustainability Framework

Vitasoy Sustainability Framework	
Making the Right Products	**Making Products the Right Way**
Vitasoy aims to build a product portfolio that aligns with its developing plant-based products, which are rich in nutrition and low in sugar and saturated fats. Vitasoy products will also have nutritional information clearly labelled on the front of Vitasoy's product packaging.	Vitasoy is actively participating in social and environmental projects in the communities where it operates. Vitasoy is also committed to reducing environmental impact by setting a group-wide emissions reduction roadmap to lower emissions and consumption. Vitasoy also plans to build a safe and inclusive workspace.

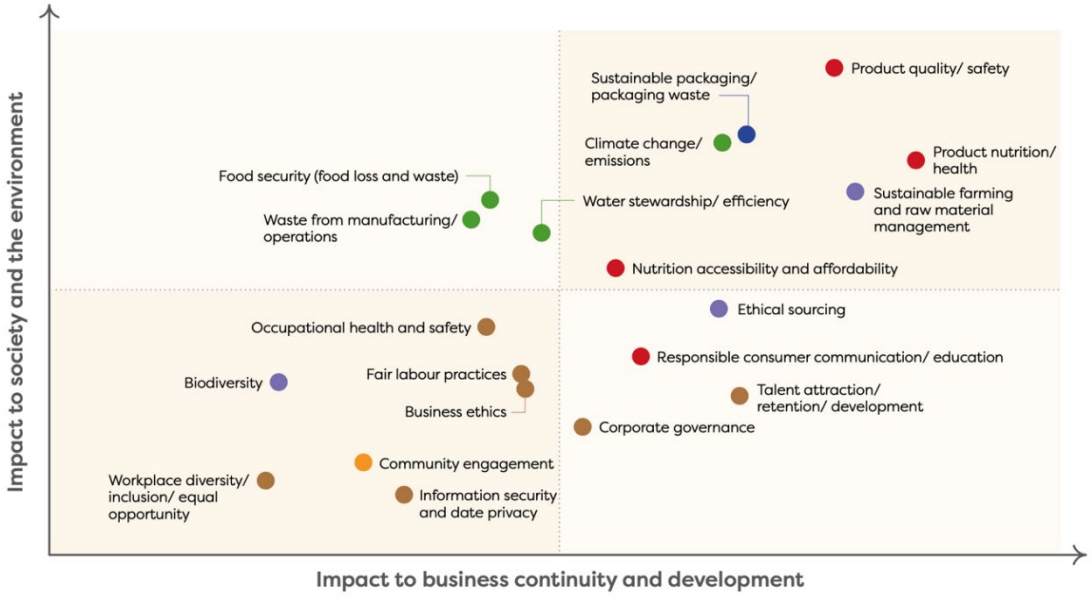
Source: 2023/24 Vitasoy Sustainability Report, 2024, p.3-4

Vitasoy's sustainability framework has already achieved recognition across regions. In FY2022-2023, Vitasoy received an "A" grade in the MSCI ESG ratings and was listed as a Corporate Knights' Global 100 Most Sustainable Corporations for the fourth consecutive year. In addition, Vitasoy Singapore, a wholly owned subsidiary of Vitasoy, has become a Certified B Corporation ("B Corp") starting in January 2023.

In FY2023-2024, Vitasoy reported a 155% increase in profit attributable to equity shareholders, displaying improved operational efficiency and successful portfolio innovation in the Hong Kong market (PR Newswire, 2024).

To strengthen its sustainable strategies, Vitasoy could consider investing in digital platforms to increase its supply chain transparency, making the origins of its plant-based products visible to consumers, stakeholders, and social bystanders. Using the Science-Based Targets initiative (SBTi) framework, Vitasoy could potentially strengthen its commitment to reducing carbon emissions by setting clear, science-aligned targets for both its direct (Scope 1, 2) and indirect (Scope 3) emissions across its value chain. Establishing a formal carbon management system in place could make it easier for Vitasoy to maintain alignment with the regional carbon emission regulations, increasing its sustainable contribution.

Figure 4: Vitasoy Materiality Matrix



Source: 2023/24 Vitasoy Sustainability Report, 2024, p.66

Looking ahead, Vitasoy can work with universities and institutions to continue researching plant-based product development, which will help Vitasoy secure market share and increase market awareness. It is also recommended that Vitasoy further enhance its sustainability impact as a leader in eco-friendly nutritional products, achieving sustainable and financial success. With Vitasoy's increasing financial performance, it could also explore different renewable energy generation and procurement options to lower future energy impact and increase potential investment in renewable energies.

Conclusion

In conclusion, Vitasoy pursues its sustainable development goals by adopting a comprehensive business model while making innovations in environmental, social, governance and economic sustainability. This has enabled Vitasoy to align with consumer and social expectations of ethical consumption and ecological transformation, as well as strengthen its competitive position in the market. Both opportunities and challenges lie ahead. Looking forward, Vitasoy can use its digital transparency to expand business opportunities and explore renewable energy options, paving its way to be a strong leader in the sustainable, plant-based beverage industry.

Discussion Questions

1. How does Vitasoy’s commitment to environmental sustainability contribute to its competitive advantage in the plant-based beverage industry?
2. What challenges might Vitasoy face in balancing its sustainability goals with profitability and growth, and how can the company overcome these challenges?
3. Evaluate Vitasoy's sustainability approach to supply chain management. How effective is it, and what improvements could be made?
4. How does Vitasoy address social sustainability within its operations and supply chain, and what areas require further improvement?

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