SCG TNFD Report 2025

THE SIAM CEMENT PUBLIC COMPANY LIMITED

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ACRONYMS AND ABBREVIATIONS

Acronym	Description
ASEAN	Association of Southeast Asian Nations
BCP	Business Continuity Plan
BoD	Board of Directors
BRF	Biodiversity Risk Filter
CAPEX	Capital Expenditure
CoC	Chain of Custody
COP	Conference of the Parties
COSO	Committee of Sponsoring Organizations of the Tread way Commission
CSR	Corporate Social Responsibility
CVC	Corporate Venture Capital
EBITDA	Earnings Before Interest, Tax, Depreciation, and Amortization
EIA	Environmental Impact Assessments
EMS	Environmental Management Systems
ENCORE	Exploring Natural Capital Opportunities, Risks and Exposure
ERM	Enterprise Risk Management
ESG	Environmental, Social, and Governance
ESRI	Environmental Systems Research Institute
FM	Forest Management
FPIC	Free, Prior, and Informed Consent
FSC™	Forest Stewardship Council™
GBF	Global Biodiversity Framework
GBF-EAS	Global Biodiversity Framework Early Action Support Project
GHG	Greenhouse Gas
ISIC	International Standard Industrial Classification of All Economic Activities
KBA	Key Biodiversity Area
HRDD	Human Rights Due Diligence
HRIA	Human Rights Impact Assessment
IAS	Invasive alien species
I&Ds	Impacts and Dependencies

Acronym	Description
IBAT	Integrated Biodiversity Assessment Tool
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IPs	Indigenous Peoples
ISO	International Organization for Standardization
ISSB	International Sustainability Standards Board
IUCN	International Union for Conservation of Nature
KBAs	Key Biodiversity Areas
Km	Kilometer
KPIs	Key Performance Indicators
LCs	Local Communities
LDAR	Leak Detection and Repair
LEAP	Locate, Evaluate, Assess, and Prepare
LESS	Low Emission Support Scheme
LULC	Land use land cover
m^3	Cubic Meter
MC	Management Committee
MSA	Mean Species Abundance
N	North
NBSAPs	National Biodiversity Strategy and Action Plans
NGOs	Non-Governmental Organizations
NNH	Nature Needs Half
NNL	No Net Loss
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_3	Nitrate
NOAA	National Oceanic and Atmospheric Administration
NOSTRA	Navigational System and Traffic Routing Application
NOx	Nitrogen Oxides
NPI	Net Positive Impact

Acronym	Description
OECD	Organisation for Economic Co-operation and Development
OECMs	Other Effective Area-Based Conservation Measures
ONEP	Office of Natural Resources and Environmental Policy and Planning
OPEX	Operational Expenditure
PA	Protected Area
PEFC	Program for the Endorsement of Forest Certification
R&D	Research and Development
R&Os	Risks and Opportunities
SMEs	Subject Matter Experts
SO	Sulfur Monoxide
SO_2	Sulfur Dioxide
SO_3	Sulfur Trioxide
SOx	Sulfur Oxides
S-RC	Corporate Risk Management and Internal Control System Department
TCFD	Task Force on Climate-related Financial Disclosures
tCO_2e	tonnes of Carbon Dioxide Equivalent
TGO	Thailand Greenhouse Gas Management Organization
THB	Thai Baht
TNFD	The Taskforce on Nature-related Financial Disclosures
UN	United Nations
UNDP	United Nations Development Programme
USGS	United States Geological Survey
VOCs	Volatile Organic Compounds
WRI	World Resources Institute
WWF	World Wildlife Fund
WWF BRF	World Wildlife Fund Biodiversity Risk Filter

EXECUTIVE SUMMARY

This report details SCG's response to the Taskforce on Nature-related Financial Disclosures (TNFD) recommendations, focusing on how the company identifies, assesses, manages, and discloses nature-related risks, dependencies, and opportunities across its operations and value chains.

SCG has integrated sustainability into its core business strategy through the Sustainable Development Committee and specialized committees such as, the Climate Change and Energy Committee, and the Environment Excellence Committee, which address critical environmental initiatives including climate action, eco-efficiency, biodiversity protection, circular economy and waste management, water management, and air quality improvements. In 2024, the "Nature Positive Committee" was established to enhance SCG's natural resource stewardship, biodiversity restoration on land, freshwater, and ocean, and achieving a Net Positive Impact on ecological balance in every area of operation, both domestically and regionally. The roles and responsibilities of the Nature Positive Committee are to develop SCG Nature Positive Roadmap, which involved studying resource dependencies and impacts on nature across the value chain as well as identifying ways to make positive impacts on nature and cultivate a nature positive lifestyle among employees from family to organizational levels.

SCG employs the LEAP approach (Locate, Evaluate, Assess, and Prepare) to systematically identify and assess nature-related issues. SCG assessed 52 sites from 5 business units (Cement and Green Solutions, Smart Living, Decor, Packaging, Chemicals), including 38 direct operation sites and 14 value chain sites. By utilizing the ENCORE tool, the high-priority impacts include the volume of water use, greenhouse gas (GHG) emissions, and emissions of non-GHG air pollutants, which directly contribute to climate change, resource depletion, and air quality degradation. For material dependencies, the topics of water supply, rainfall pattern regulation, water purification, water flow regulation, and flood mitigation, all of which directly impact operational sustainability and risk management are identified as high-level dependencies. Nature-related risks and opportunities are identified for each Business Unit and assessed using SCG's risk framework. Most risks are at a low level and are mitigated with existing mitigation efforts.

SCG developed and has been improving strategies for water conservation, circular economy and waste management, air quality management, and biodiversity conservation through a mitigation hierarchy to mitigate risks and enhance opportunities. Nature Roadmaps are also established to target material nature-related issues for SCG.

SCG is also engaging with local communities and stakeholders, respecting human rights, and collaborating on various projects to address environmental concerns and promote sustainable development. In addition, SCG has established targets and commitments related to environmental and climate management, and it is transparently monitoring and reporting progress using key indicators and metrics.

Looking ahead, we will continue refining our nature-related disclosures, improving data transparency, and integrating TNFD principles into our broader ESG strategy. We encourage investors, partners, and stakeholders to collaborate with us in driving sustainable and nature-positive outcomes that safeguard both business resilience and ecosystem health.

1. TNFD RECOMMENDATIONS

The Taskforce on Nature-related Financial Disclosures (TNFD) provides a comprehensive framework for companies and financial institutions to identify, assess, manage, and disclose nature-related risks, dependencies, and opportunities. TNFD's recommendations are aligned with global policy goals, such as Target 15 of the Global Biodiversity Framework (GBF), and underscore the importance of promoting transparency in corporate reporting.

Key highlights of the TNFD recommendations include:

- **Key Disclosure:** Addressing nature-related impacts, dependencies, risks, and opportunities across business operations and value chains.
- **Alignment with Global Frameworks:** Ensures consistency with existing standards, such as:
  - Task Force on Climate-related Financial Disclosures (TCFD)
  - International Sustainability Standards Board (ISSB)

The TNFD approach integrates sustainability, climate, and nature-related reporting, enabling organizations to address interconnected environmental challenges seamlessly.

Supplementary Guidance

TNFD provides additional resources to assist organizations in effectively reporting nature-related issues, which are also considered in our nature assessment and this TNFD report preparation, such as:

1. Guidance on the LEAP Approach, tools for identifying and assessing nature-related risks and opportunities.
2. Sector-specific guidance related to SCG business
   - Construction materials
   - Forestry, pulp and paper
   - Chemicals

				
Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations	**Guidance on the identification and assessment of nature-related issues: the LEAP approach**	**Additional Sector Guidance - Construction materials**	**Additional Sector Guidance - Forestry, pulp and paper**	**Additional sector guidance – Chemicals**
Source: https://tnfd.global/tnfd-publications/?_sft_framework-categories=additional-guidance-by-sector#search-filter				

Additional Sector Guidance - Construction materials

1.1 LEAP APPROACH

The LEAP (Locate, Evaluate, Assess, Prepare) framework[1] enables companies to systematically address nature-related risks and opportunities while aligning with TNFD disclosure requirements.

The company begins with a comprehensive internal and external data scan to develop initial hypotheses about nature-related dependencies and impacts. This phase establishes assessment parameters through two key activities:

- Development of Working Hypotheses - The company identifies potentially material nature-related activities, dependencies, and impacts to guide subsequent detailed assessment work. This initial mapping ensures focused and efficient use of resources.
- Resource Planning and Goal Setting - Management teams evaluate organizational capacity, required skillsets, and data availability. This assessment determines resource allocation needs and establishes realistic timelines for framework implementation.

The LEAP framework guides companies through their journey of understanding and improving their relationship with nature. It unfolds across four interconnected phases:

Locate - Nature mapping begins with the Locate phase, where the company carefully examines how their activities interact with the natural world. By analyzing operations, value chains, and geographical presence, companies gain a clear picture of where and how they touch the environment.

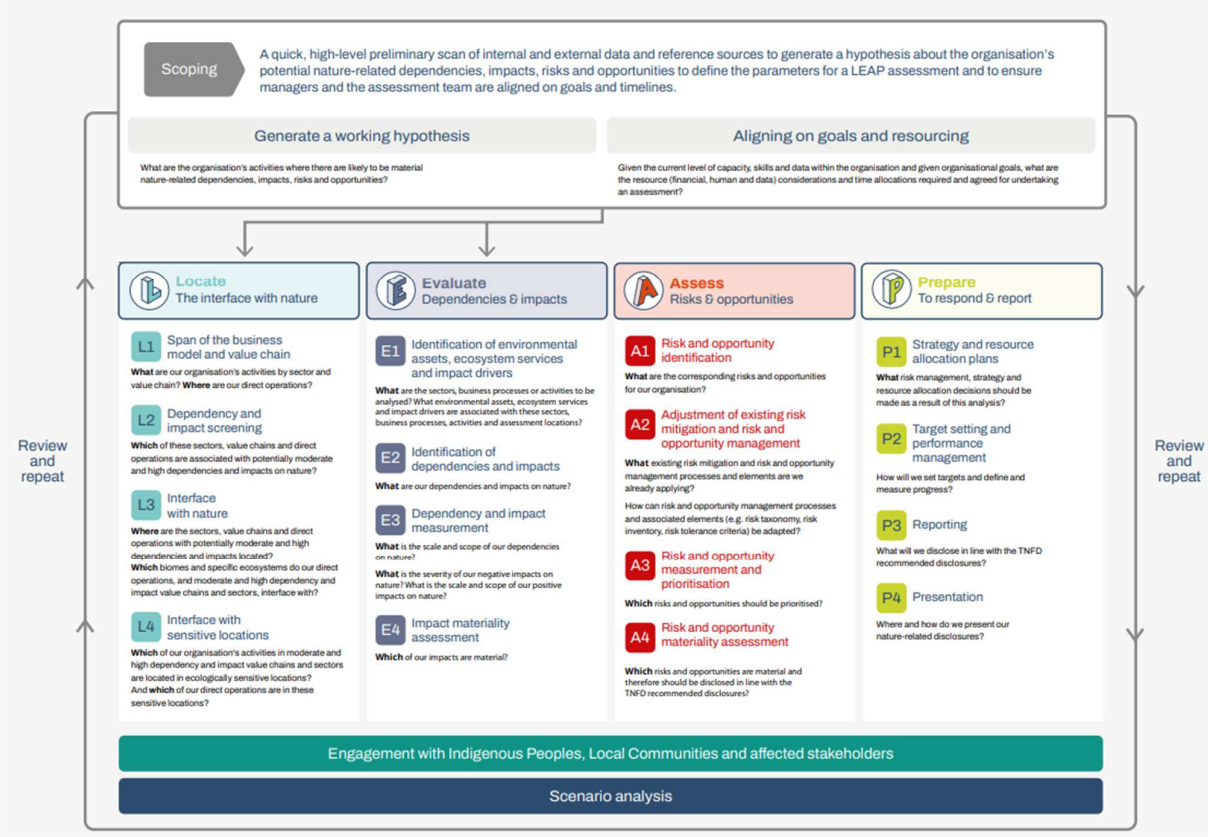
Evaluate – The company takes a deeper look at their connection to nature. They measure how much they depend on natural resources and ecosystem services, while also understanding their impact on these vital systems. This creates a rich foundation of data to inform strategic decisions.

Assess - The Assess phase transforms this knowledge into actionable insights. The company examines potential risks to their operations from environmental changes, while also discovering opportunities to create positive impacts. This dual perspective ensures both protection against threats and pursuit of sustainable value creation.

Prepare – The company channels their insights into concrete actions. They develop targeted strategies, create detailed roadmaps for implementation, and establish robust systems for monitoring progress. This phase also emphasizes the importance of transparent reporting to stakeholders about environmental initiatives and outcomes.

[1] For more details, please see Guidance on the identification and assessment of nature-related Issues: The TNFD LEAP approach

FIGURE 1 THE TNFD APPROACH FOR IDENTIFICATION AND ASSESSMENT OF NATURE-RELATED ISSUES – LEAP[2]



[2] Figure 1. [*The TNFD approach for identification and assessment of nature-related issues – LEAP].* From *Recommendations of the Taskforce on Nature-related Financial Disclosures*, 2023, Taskforce on Nature-related Financial Disclosures. Retrieved from https://tnfd.global/wp-content/uploads/2023/08/Recommendations-of-the-Taskforce-on-Nature-related-Financial-Disclosures.pdf?v=1734112245

2. GOVERNANCE

2.1 THE BOARD'S OVERSIGHT AND MANAGEMENT RESPONSIBILITIES

SCG's sustainability governance is integrated into its core business strategy through the Sustainable Development Committee, which actively addresses and promotes initiatives across three dimensions: Social, Environmental, and Economic. This structure ensures that sustainability is not just a peripheral concern but a fundamental aspect of SCG's mission and operations.

Several specialized committees support the sustainability framework, particularly the committees related to nature issues, including the Circular Economy Committee, the Climate Change and Energy Committee, and the Environment Excellence Committee. These committees oversee key environmental initiatives, including climate action, eco-efficiency, biodiversity protection, waste and water management, and air quality improvements, with all core committees and working groups convening quarterly.

In 2024, the "Nature Positive Committee" was established in order to strengthen SCG's natural resource stewardship, biodiversity restoration on land, freshwater, and ocean, and achieving a Net Positive Impact on ecological balance in every area of operation, both domestically and regionally. The roles and responsibilities of the Nature Positive Committee are to develop SCG Nature Positive Roadmap, which involved studying resource dependencies and impacts on nature across the value chain as well as identifying ways to make positive impacts on nature and cultivate a nature positive lifestyle among employees from family to organizational levels.

As shown in Figure 2, the governance structure follows a clear reporting chain where the President & CEO reports to the Board of Directors, incorporating inputs from two key committees:

1. Risk Management Committee, which handles risk assessment and mitigation (with additional oversight from the Audit Committee).
2. Sustainable Development Committee, which leads ESG initiatives.

The Board of Directors consists of 15 members, of whom 11 have experience or skills in environmental issues. Those with related skills provide knowledge or advice for decision-making for nature-related issues. The board meets 8 times annually to strategically address business strategies, plans, risk management, and investment budgets, with a particular focus on climate change, biodiversity loss, and social inequality.

The details of the Board's and management's roles and responsibilities toward nature-related topics are shown in the Table 1.

FIGURE 2 SCG'S GOVERNANCE STRUCTURE

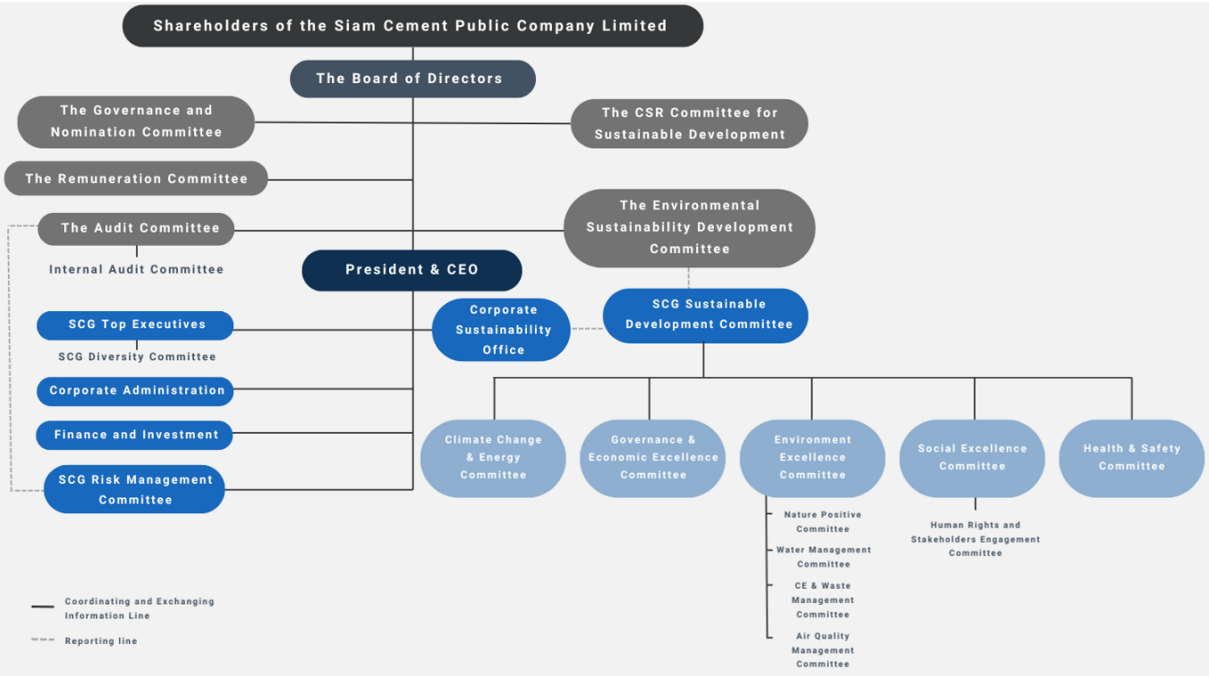


TABLE 1 NATURE-RELATED GOVERNANCE ROLES & RESPONSIBILITIES

Governing Body	Role and Responsibility	Meeting Frequency
Board of Directors	• Review and address business strategies, plans, risk management, and investment budgets as well as oversee climate, nature loss and inequality issues • Oversee the sustainability reporting processes from the SCG Sustainable Development Committee • Oversee the use of internal/external audits via the Audit Committee • Provides autonomous supervision and evaluates both organizational performance and executive leadership effectiveness on nature-related targets • Oversee risks and opportunities over the near-term and long-term business landscape and its impacts including nature-related risk and opportunities	8 times per year
President & CEO	• Review and monitor nature-related risk and opportunities profiles incorporated in enterprise risk management through the SCG Risk Management Committee • Oversee the management of the Company's sustainability and all climate-related issues, including risk management, investment portfolio, climate strategy, operational eco-efficiency, stakeholder engagement, and innovation as well as determine and	Regularly

Governing Body	Role and Responsibility	Meeting Frequency
	review policy, guidelines, and target of SCG sustainability issues including energy and climate.	
SCG Risk Management Committee	• Review and monitor material nature-related risks and integrate them into enterprise risk management	5 times per year
The Remuneration Committee	• Review non-financial performance indicators for remuneration policy, particularly in ESG metrics e.g. Energy Consumption, GHG emission, zero waste to landfill, water, circular economy, etc.	6 times per year
SCG Sustainable Development Committee (Chaired by the CEO and comprised of the highest-level representation)	• Manage ESG issues across the value chain • Review materiality issues and integrate them into business strategies • Review and develop nature-related policy, commitments, and targets as well as nature-related impacts, dependencies, risks, and opportunities • Prepare and engage in national and international stakeholder engagement, such as WBCSD, UNGC, Ellen MacArthur Foundation, TBCSD, the Federation of Thai Industries, The Thai Chamber of Commerce and Board of Trade of Thailand, and government agencies	Quarterly
Environmental Excellence Committee	• Oversee and review environmental-related issues including climate change and energy, eco-efficiency, biodiversity and ecosystem, circular economy, product stewardship, waste management, water management, and air quality management, particularly in the priority locations.	Quarterly
Nature Positive Committee	• Develop SCG Nature Positive Roadmap • Studying resource dependencies and impacts on nature across the value chain • Identifying ways to make positive impacts on nature and cultivate a nature positive lifestyle among employees	Quarterly
Sustainability Development working group	• Assess and manage nature-related dependencies, impacts, risks and opportunities	Quarterly

To emphasize the importance of ESG and sustainable development at SCG, non-financial performance indicators related to ESG, and climate metrics are integrated into the remuneration policy. These indicators are linked to variable compensation and merit for 30% of the CEO's and executives' pay, ensuring the company's sustainable growth. Examples of nature-related metrics and targets include energy consumption, GHG emissions, zero waste to landfill, water management, and circular economy initiatives.

2.2 HUMAN RIGHTS

People are an integral part of nature, both dependent on and impacting the environment. The connection between Indigenous Peoples, Local Communities, and natural ecosystems is vital,

as their knowledge, community-driven practices, and long-standing institutions have proven highly effective in safeguarding biodiversity.

To ensure that the business minimizes disruption and respects the rights of local communities to access natural resources, SCG strictly complies with laws and is committed to respecting human rights in accordance with internationally accepted standards. This includes support for and compliance with the Universal Declaration of Human Rights (UDHR), the United Nations Global Compact (UNGC), the United Nations Guiding Principles on Business and Human Rights (UNGP), OECD, and the International Labor Organization Declaration on Fundamental Principles and Rights at Work (ILO).

SCG has established human rights due diligence process guidelines to identify and assess human rights risks affecting stakeholders, prioritize key issues, and implement preventive and mitigation measures. Local Communities are a critical stakeholder group reviewed under this due diligence framework, which includes monitoring and tracking mechanisms to ensure accountability. Through continuous engagement with relevant stakeholders, SCG evaluates risks, formulates mitigation actions, and monitors their effectiveness across all business operations in Thailand and internationally.

SCG respects stakeholder rights and values their opinions. The company fosters an understanding of sustainability practices, promotes constructive cooperation, and actively contributes to societal and environmental development to ensure sustainable business operations.

Strict environmental policies are implemented to protect communities near SCG operations, including waste management, pollution control, and monitoring of atmospheric emissions. Advanced technology is utilized, and vigilant oversight is maintained to minimize environmental impact.

SCG upholds Good Corporate Citizenship, particularly in local communities including indigenous peoples where we operate, by respecting the right of stakeholders and stands ready to obtain feedback and insights through many engagement approaches such as community visiting and community forum, organize an open house, be a thought partners and providing consultation, and conduct community satisfaction survey. For new projects, Local Communities and affected stakeholders were engaged and public hearing regarding environmental impacts in the Environmental Health Impact Assessment (EHIA) process throughout various development phases and after construction completion, with a focus on ecological concerns and potential impacts on surrounding areas. Significant risks, concerns and mitigation will inform and propose to management for decision making and discuss potential opportunities for collaboration.

2.3 NATURE-RELATED ADVOCACY AND PARTNERSHIPS

SCG maintains political neutrality and has established a policy of providing no financial or other forms of support to any political party. The company did allocate resources to drive sustainable business growth in alignment with ESG principles. This includes efforts to mitigate climate change impacts, maximize resource efficiency, improve plastic waste management, and support the United Nations Sustainable Development Goals (SDGs). Additionally, SCG is committed to supporting the long-term transition to a net-zero, low-carbon economy, with the aim of limiting global temperature rise to 1.5°C above pre-industrial levels.

The detail of allocation is shown in Table 2, for the nature-related spending in 2024.

TABLE 2 NATURE-RELATED SUPPORT/CONTRIBUTIONS & SPENDING

Issue or Topic	Description	2023	2024
Collaboration for driving sustainable business growth and the long-term net-zero transition into a low-carbon economy	SCG contributes to trade associations and organizations, mainly the World Business Council for Sustainable Development (WBCSD), the Global Cement and Concrete Association (GCCA), the UN Global Compact (UNGC), and Thai associations and organizations such as the Thai Cement Manufacturers Association (TCMA), The Thai Chamber of Commerce, and the Board of Trade of Thailand, to develop all public policies and initiatives at the corporate level aimed toward achieving tangible and intangible ESG performance and the United Nations Sustainable Development Goals (SDGs), as well as the long-term goal of achieving net zero emissions	16,958,840	19,166,885
Collaboration in driving the Circular Economy	SCG works closely with all stakeholders to encourage involvement and provides intensive support to trade associations such as the Alliance to End Plastic Waste (AEPW) in order to promote and develop Circular Economy initiatives that support our commitment	10,848,930	17,843,250

2.3.1 SCG'S COMMUNITY ENGAGEMENT APPROACH

SCG prioritizes the needs of local communities and firmly respects their right to access a safe and healthy environment. The company demonstrates this commitment by systematically reducing operational impacts to the minimum possible level, ensuring that business activities coexist harmoniously with community wellbeing. This foundational principle guides all community interactions and environmental management strategies across SCG's operations.

SCG cultivates strong community relationships through a comprehensive engagement strategy. Monthly community forums serve as platforms for gathering feedback and collaboratively planning targeted CSR activities that address specific local needs. The company's annual open house events invite community members to tour facilities, fostering transparency and building trust.

Through regular community visits, SCG promotes environmental awareness while nurturing local pride in shared sustainability initiatives. The company systematically analyzes lessons from these collaborations to continuously enhance programs designed to create lasting environmental benefits for future generations.

SCG extends its community support through multifaceted channels, offering consultation services, facilitating cross-sector partnerships, and developing educational campaigns that promote circular economy practices. Health initiatives organized monthly with local Public Health Volunteers address immediate community wellness needs, while dedicated online communication channels ensure continuous feedback opportunities.

To measure effectiveness, SCG conducts annual community satisfaction surveys that assess impact and inform future engagement strategies. This comprehensive approach—combining regular interaction, practical support, educational outreach, and systematic evaluation—enables SCG to maintain meaningful connections with communities while advancing shared sustainability goals.

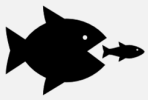
2.3.2 SCG'S NATURE CONSERVATION INITIATIVES THROUGH PARTNERSHIPS

SCG has established an integrated environmental partnership through various projects, uniting communities, industry collaborators, government bodies, and academic institutions to tackle ecological challenges. This approach aims to minimize SCG's environmental impact while promoting biodiversity and ecosystem health. By collaborating with diverse stakeholders, SCG develops comprehensive solutions to environmental issues, creating lasting value for communities and ecosystems. The framework encourages productive engagement, helping partners identify priorities, design interventions, and implement practices that drive measurable ecological improvements. Examples of these initiatives are provided in the Table 3 below.

TABLE 3 EXAMPLE OF NATURE-RELATED INITIATIVES THROUGH PARTNERSHIPS

	DETAILS OF INITIATIVES/PROJECTS	
WATER	**Replenishing water back to Nature and Community**	
	Wet Forest Project at Lampang Cement Plant	Since 2003, the Cement and Green Solution Business has been restoring the ecosystem at its Lampang cement plant using the "wet forest system," which includes 7,000 check dams, a forest fire break, solar-powered pumps, and the Stop Log in Huay Pu Creek, boosting water reserves by 12,000 cubic meters annually.

DETAILS OF INITIATIVES/PROJECTS

	The Conserving Water from Mountain to Mighty River Project	SCG has implemented the Conserving Water from Mountain to Mighty River Project for over 20 years and has taken part in working with local communities to conserve natural resources through tree planting, building check dams, and building series of pond to combat drought and prevent flood as well as enhance local communities' quality of life, increase their productivity and income, and foster self-reliance in a sustainable way. A total of 318,813 rai of terrestrial forests, mangrove forests, and seagrass beds have been restored, 127,618 check dams have been constructed, and 304,000 cubic meters of water have distributed for local community irrigation annually.
	Eastern Region Water Management	In response to the heightened risk of water shortages in Thailand's eastern region due to the 2023 El Niño event, SCG Chemicals (SCGC) collaborated with key stakeholders on collective water management. SCGC actively participated in various committees, including the Eastern Economic Corridor Water Management Subcommittee, the East Coast Basin Committee, and the Water Trends Monitoring Subcommittee. Furthermore, as Chair of the Water and Environment Institute for Sustainability, SCGC spearheaded initiatives to promote efficient water management and foster collaboration among water users and managers at both the basin and national levels.
 **BIODIVERSITY**	**SCG Mae Than Model**	SCG's rehabilitation of the Mae Than mine addresses community and government needs, focusing on restoring ecosystems and creating a sustainable future. The process involves using native plants for rapid ecosystem recovery and applying King Rama IX's philosophy of "three benefits, four uses" by planting edible plants for local food sources. Additionally, the Mae Kua community contributes by selling organic fertilizer made from agricultural waste, which supports soil restoration and generates income for the community. In 2020, a floating solar farm and a solar-power pumping system were installed to pump water from the former mining pit with a potential to store 50 million cubic meters of rainwater to nearby community reservoirs for agricultural use, thus

DETAILS OF INITIATIVES/PROJECTS

		increasing productivity and generating income for local communities
	Love the Sea Project: Expanding Coral Home Installation	In 2022, SCG launched the Love the Sea Project in collaboration with the Department of Marine and Coastal Resources, Chulalongkorn University's Faculty of Veterinary Science, and the Earth Agenda Foundation. The project uses SCG's 3D printing technology to create coral homes, which are designed to help coral larvae attach and promote reef restoration. The design has been refined to mimic natural coral, providing suitable habitats for reef fish. SCG expanded the initiative by partnering with organizations like the Rotary Club of Mining, Thai Union Group PLC, and Supalai PLC, which have installed coral homes at various locations. To date, 1,115 coral homes have been installed, resulting in 39,600 coral colonies, and surveys have identified 17 sessile species and over 50 fish species.
	Biodiversity Preservation and Restoration in Quarry	SCG has collaborated with experts from various universities, including the Faculty of Forestry at Kasetsart University, the Faculty of Science at Prince of Songkla University, and the Forest Restoration Research Unit (FORRU) of the Faculty of Science at Chiang Mai University to do the study on biodiversity in mining areas, impacts assessment, and ecological restoration for all mining sites. In addition, SCG has been sharing knowledge from the study to over 5000 audiences through biodiversity learning center and international conferences.
	Environmental Risk Assessment and Biodiversity Baseline Study	SCGC has restored abandoned shrimp ponds into mangrove forest and conducted a biodiversity baseline study in collaboration with Kasetsart University and the Department of Marine and Coastal Resources to monitor environmental changes in mangrove plantations in Noen Kho Sub-district, Klaeng District, Rayong. The study, running from 2024 to 2026, focuses on enhancing aquatic habitat restoration and evaluating mangrove reforestation success. It also explores the relationship between climate change and biodiversity to improve ecosystem health and support surrounding communities. SCGC plans to expand the study to

DETAILS OF INITIATIVES/PROJECTS

		other areas along the eastern seaboard to ensure long-term nature-positive goals.
	Community forest networks	SCG is supporting and strengthening 45 community forest networks in Saraburi by facilitating knowledge exchanges and promoting the conservation and restoration of 15,000 rai of community forests. These efforts aim to enhance biodiversity, promote sustainable forest use for food sources, and develop eco-tourism in collaboration with the Saraburi Tourism Association.
		SCGP supports the conservation areas of Baan Huay Saphan Samakee Community Forest and Khao Cha-ang Conservation Forest in Kanchanaburi, as well as Kamphaeng Phet Conservation Forest in Kamphaeng Phet. These foster strong involvement and connection with local communities and demonstrate an ongoing commitment to ensuring the site's proper management and adherence to established FSC™ standards.

DETAILS OF INITIATIVES/PROJECTS

 **WASTE**	**SCGP Zero Waste Community Project**	SCGP is advancing circular economy principles through its "SCGP Zero Waste Community" Project, a flagship community initiative launched in 2019. This project has successfully expanded to 183 model communities in the Ban Pong district of Ratchaburi by 2024 (100% of Ban Pong district). The company also plans to introduce the project to other districts of Ratchaburi, where SCGP' s manufacturing facilities are based, and upgrade its implementation in Ban Pong district into "Low-Carbon Community Project".

In the upcoming year, SCG plans to engage with more communities located near the operational site identified as highly sensitive locations (refer to Figure 3). This engagement aims to ensure these communities are not negatively affected by SCG operations while studying their needs to enhance their quality of life. The approach aligns with SCG's four core values focusing on sustainability issues encompassing economic, social, environmental, and corporate governance aspects. The ultimate goal is to foster sustainable growth in all regions and communities near SCG operations.

SCG plans to support and strengthen more community forest networks in Lampang province, covering 30,000 rai of community forest in 2026.

3. STRATEGY

3.1 SCG'S SENSITIVE LOCATION

According to the LEAP approach in line with TNFD recommendation, the SCG's nature assessment starts with L-Locate. The three-step process for the state of nature assessment was implemented, as follows:

1. Data assessment to gain insights into site locations, ensuring quality assurance and quality control (QA/QC), and preparing the data for further processing.
2. GIS analysis, which involved overlaying and manipulating the data to enable manageable analysis at the site and buffer levels across all data layers, with 5, 10, and 50 km buffers[3] applied based on the nature of business activities of the sites.
3. Output analysis, where sites with the highest sensitivity levels were prioritized.

Scope of nature assessment

52 sites of SCG business from 5 business units, including the value chain are assessed for sensitive locations under the locate phase. The sites are selected based on the sites' proximity to important natural habitats, environmental footprint, impact and significance to SCG's portfolio.

- 38 sites of direct operation, cover approximately 65% of total revenue in 2024
- 14 sites of the value chain
    - 8 upstream sites
    - 6 downstream sites

The value chain of SCG Packaging consists of one upstream site and one downstream site.

In the future, SCG intends to expand the scope of the assessment to cover at least 80% of the total revenue.

[3] A 5 km buffer for low-impact operation such as warehouse, storage tank and office building, A 10 km buffer for medium impact operation such as all manufacturing sites including ceramic, tile, paper packaging, chemical, etc., and a 50 km buffer for very high impact operation such as mining activities

TABLE 4 SCG'S SITES AND BUSINESS UNITS OF DIRECT OPERATION

Business Unit	Site Name	Nature of business activities
SCG Decor	1. SCG Ceramics Public Co.,Ltd. (HK)	●
	2. Sosuco Ceramic Co., Ltd.	●
	3. Siam Sanitary Ware Industry Co., Ltd.	●
	4. Siam Sanitary Fittings Co., Ltd.	●
	5. Prime Pho Yen Joint Stock Company– Vietnam	●
	6. Prime Dai Loc Joint Stock Company– Vietnam	●
	7. PT Keramika Indonesia Assosiasi, Tbk. (Karawang Plant)– Indonesia	●
	8. Mariwasa-Siam Ceramics, Inc.– Philippine	●
SCG Cement and Green Solutions	1. The Siam Cement Ta Luang (Khoa Wong Plant) Co.,Ltd.	●
	2. The Siam Cement (Kaeng Khoi) Co.,Ltd.	●
	3. The Siam Cement (Thung Song) Co.,Ltd.	●
	4. The Siam Cement (Lampang) Co.,Ltd.	●
	5. Silasanon Co., Ltd.	●
	6. SCI Eco Services Co., Ltd.	●
	7. The Siam Refractory Industry Co., Ltd.	●
	8. CPAC – Chaing Mai (Don Jan)	●
	9. Kampot Cement Co., Ltd.	●
	10. Khammouane Cement Co., Ltd.	●
	11. Song Gianh Cement Joint Stock Company	●
	12. PT Semen Jawa	●
	13. SCG Precast Saraburi	●
SCG Smart Living	1. Siam Fibre Cement Group Co., Ltd. Ta Luang	●
	2. Quality Construction Products Public Company Limited	●
	3. SCG Roofing Co.,Ltd. (Saraburi1) (SCGR SB1)	●
	4. Siam Fiberglass Co.,Ltd. (SFG)	●
	5. SCG Landscape Co.,Ltd. (Ladkrabang) (SCGLS LB)	●
	6. PT. SCG Lightweight Concrete Indonesia (SLCI)	●
SCG Chemicals	1. Map Ta Phut Tank Terminal Co., Ltd.	●
	2. Map Ta Phut Olefins Co., Ltd. (site7)	●
	3. Thai Polyethylene Co., Ltd. (site7)	●
SCG Packaging	1. Siam Forestry Co., Ltd. – Thailand	●
	2. Phoenix Pulp & Paper Public Company Limited – Thailand	●
	3. Thai Cane Paper Public Company Limited (Prachin Buri) – Thailand	●
	4. Prepack Thailand Co., Ltd. (Samut Songkhram) – Thailand	●
	5. Thai Containers Group Co., Ltd. (Kamphaeng Phet) – Thailand	●
	6. Vina Kraft Paper Co., Ltd. – Vietnam	●
	7. PT Fajar Surya Wisesa Tbk. – Indonesia	●
	8. United Pulp and Paper Co., Inc. – The Philippines	●

Business Unit	Site Name	Nature of business activities
	Low-impact operation (5 km buffer) - ●	
	Medium-impact operation (10 km buffer) - ●	
	Extreme-impact operation (50 km buffer) - ●	

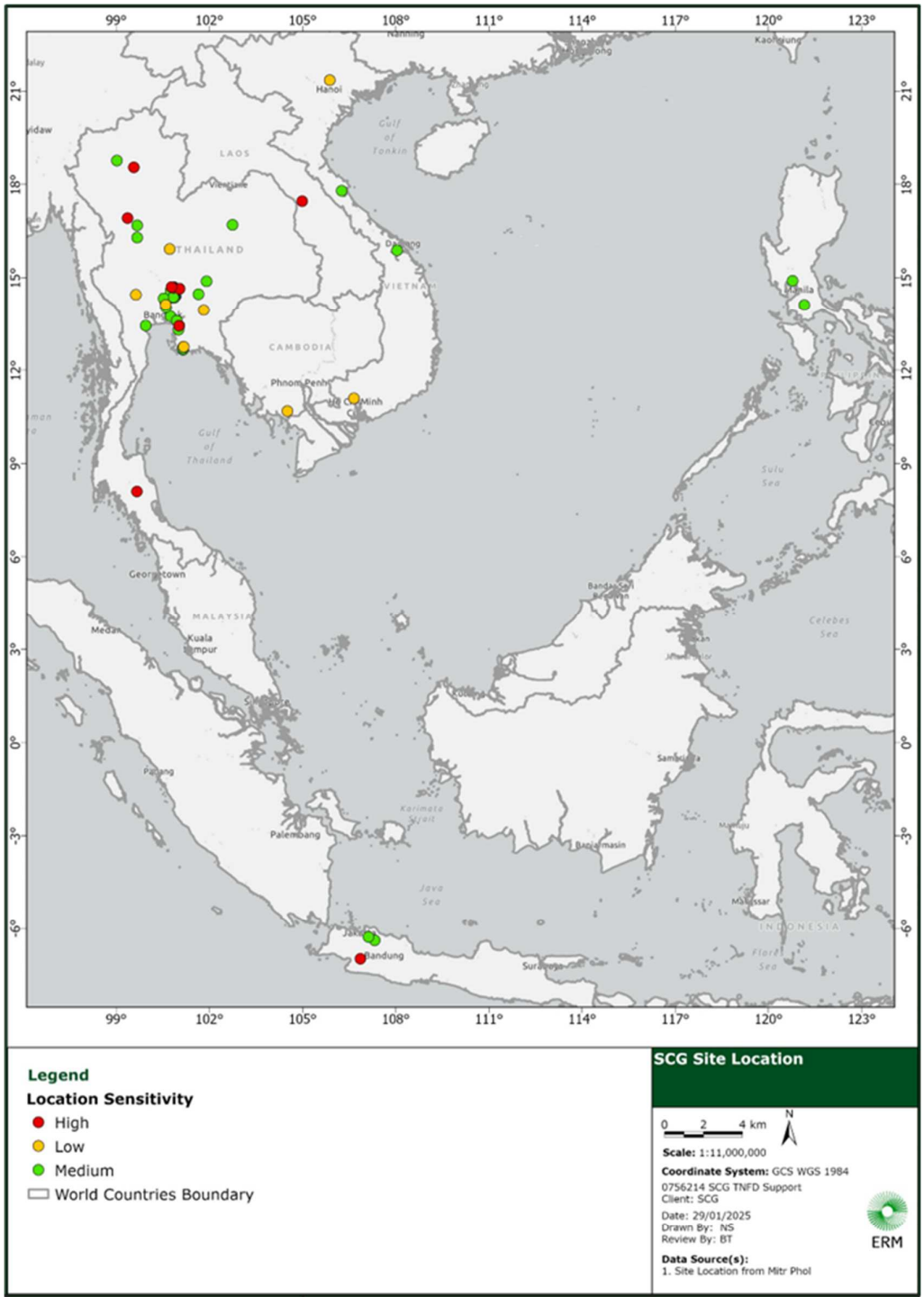
The site prioritization process follows a systematic approach that carefully evaluates location sensitivity through multiple key indicators under TNFD's criteria for sensitive location identification. Our assessment methodology aggregates critical indicator layers and criteria to provide a comprehensive understanding of each site's interface with nature. Through this rigorous evaluation process, we classify SCG's site locations into three distinct sensitivity levels: Low, Medium, and High.

TABLE 5 SCG'S SITES AND BUSINESS UNITS OF DIRECT OPERATION

TNFD Sensitive Location Criteria	Indicator Layer	Low	Medium	High
Biodiversity Importance	Key Biodiversity Areas	26	7	10
	Protected Areas	15	5	5
	Mean Species Abundance	52	-	-
	Sensitive Species	17	5	-
Ecosystem Integrity	Ecoregion – Nature needs half	40	7	5
Water Stress	Baseline Water Stress	6	3	43
	100 Priority Basins	-	-	-
Ecosystem service delivery importance	Land Use Land Cover	29	15	8
	Ethnic Group	9	1	-

To combine all data layers for finding significant locations, the site sensitivity calculation employs a weighted scoring system where each indicator score is multiplied by its corresponding weight. Based on the results, sites are categorized into three sensitivity levels: High, Medium, and Low. The results of the prioritization can be found in the figure below.

FIGURE 3 SCG'S LOCATION SENSITIVITY



Value Chain	Number of Sites Assessment		
	Low	Medium	High
• Direct Operation	6	26	6
• Upstream	2	4	2
• Downstream	1	4	1
Total	**9**	**34**	**9**

3.2SCG'S MATERIAL IMPACTS AND DEPENDENCIES

Following the E-Evaluate steps of LEAP, the ENCORE tool was utilized to identify the relevant impacts and dependencies for SCG. The results were then validated with SCG's working team to ensure that the identified impacts and dependencies were significant for the SCG group. The results are shown in the figure below.

FIGURE 4 SCG'S MATERIAL IMPACT AND DEPENDENCIES

Business unit	Sales revenue by business grouping	Area of land use	Area of freshwater use	Area of seabed use	Volume of water use	Other biotic resource extraction	Other abiotic resource extraction	Emissions of GHG	Emissions of non-GHG air pollutant	Emissions of toxic pollutants to water and soil	Generation and release of solid waste	Disturbance	Introduction of invasive species
SCG Decor	5.00%												
SCG Cement and Green Solutions	16.00%												
SCG Smart Living	12.00%												
SCG Packaging	26.00%												
SCG Chemicals	41.00%												
SCG Group	**100%**	Medium Priority		Low Priority	High Priority	Low Priority	Low Priority	High Priority	High-Priority	Medium Priority	Medium Priority	Medium Priority	Low Priority

Business unit	Sales revenue by business grouping	Biomass provisioning	Genetic Materials	Water supply	Other provisioning - Animal-based energy	Global climate regulation	Rainfall pattern regulation	Local (micro and meso) climate regulation	Air filtration	Soil quality regulation	Soil and sediment retention	Solid waste remediation	Water purification	Water flow regulation	Flood mitigation	Storm mitigation	Noise attenuation	Pollination	Biological control	Nursery population and habitat maintenance	Dilution by atmosphere and ecosystems	Mediation of sensory impacts (other than noise)	Recreation-related	Visual amenity	Education, scientific and research	Spiritual, artistic and symbolic	Other provisioning - rock
SCG Decor	5.00%																										
SCG Cement and Green Solutions	16.00%																										
SCG Smart Living	12.00%																										
SCG Packaging	26.00%																										
SCG Chemicals	41.00%																										
SCG Group	**100%**	Medium Priority	Low Priority	High Priority		Medium Priority	High Priority	Medium Priority	Medium Priority	Medium Priority	Medium Priority	Medium Priority	High Priority	High Priority	High Priority	Medium Priority	Medium Priority		Medium Priority	Low Priority	High Priority	Medium Priority					Medium Priority

* ***Remark:*** *Other provisioning – Mineral Resources is additionally added during the Evaluate phase due to the high dependency of the business unit on the mineral resources*

Impact/Dependency Materiality Level					
	High		Medium		Low

The results in the **Figure 4** shows that the assessment of nature-related impacts highlighted several key areas of concern. SCG group has various nature-related impacts categorized by priority.

- **High-Priority Impacts** include the volume of water use, greenhouse gas (GHG) emissions, and emissions of non-GHG air pollutants, which directly contribute to climate change, resource depletion, and air quality degradation.
- **Medium-Priority Impacts** encompass land use area, emissions of toxic pollutants to water and soil, generation and release of solid waste, and general disturbance. These impacts affect ecosystem health, soil and water quality, and biodiversity.
- **Low-Priority Impacts** include the area of seabed use, extraction of other biotic and abiotic resources, and the introduction of invasive species, which have less immediate but still significant consequences for marine and terrestrial ecosystems.

The SCG group relies on various nature-related dependencies categorized by priority.

- **High-Priority Dependencies** include critical factors such as water supply, rainfall pattern regulation, water purification, water flow regulation, and flood mitigation, all of which directly impact operational sustainability and risk management.
- **Medium-Priority Dependencies** involve a broader range of environmental factors, including biomass provisioning, mineral resources provisioning, climate regulation (global and local), air filtration, soil quality and retention, storm mitigation, and noise attenuation. These dependencies support long-term environmental health and operational resilience, along with solid waste and biological control.
- **Low-Priority Dependencies** focus on genetic materials and the maintenance of nursery populations and habitats, representing less immediate but still important ecological considerations.

SCG operations show a significant dependency on water resources through various aspects, including rainfall patterns, water quality, and water flow regulation, which collectively impact ecosystem services due to substantial water consumption. While the level of dependency and impact varies across business units, water remains an essential resource for all SCG operations.

SCG acknowledges this critical relationship with water resources across the diverse portfolio. In cement operations, water is utilized throughout multiple stages of extraction and processing activities. Similarly, in the paper production division, water plays a fundamental role in the pulp-soaking process that precedes paper manufacturing.

SCG acknowledges that the core business activities in construction materials, chemicals manufacturing, and packaging production result in significant environmental impacts due to the energy-intensive nature of these processes. SCG recognizes both GHG emissions and non-GHG emissions as key factors that affect natural ecosystems.

To effectively track SCG's nature-related impacts and dependencies, the organization has collected environmental data, including water consumption, water withdrawal, and both GHG and non-GHG emissions etc. This information is available in the metrics and targets section (Table)

3.3 SCG'S NATURE-RELATED RISKS AND OPPORTUNITIES

The longlists of nature-related risks are drafted by considering results from WWF BRF, the nature-related impacts and dependencies (from the Evaluate approach), SCG's climate risk assessment, the HRDD results, indicators analysis results (from the Locate approach), SCG's corporate risk criteria, and the perspective of SCG' SMEs shows the prioritization of financial risk levels throughout SCG's value chain and the details.

For the identified nature-related opportunities, SCG considers the aspect of overall business with five categories as outlined in TNFD's recommendation.

Time Horizons Classification

In this study, the timeframe for each prioritized nature-related risk is defined as short-, medium-, and long-term, with description below, following SCG's climate change target to move towards Net-Zero Emissions by 2050[4], and SCG's commitment to achieve Net Positive Impact in all processes involved[5].

Short-term:	Risks that may affect the organization within a time horizon of 0 to 2 years (2025 - 2026). This period is typically associated with immediate impacts and operational adjustments.
Medium-term:	Risks that are expected to materialize or significantly influence the organization within a time horizon of 3-4 years (2027-2028). This period allows for the planning and implementation of strategies to address emerging challenges.
Long-term:	Risks and opportunities that will impact the organization over a time horizon of 5 years or more (from 2029 and beyond). This period focuses on strategic planning, adaptation, and sustainable development efforts that align with future goals.

Summary of SCG's nature-related risks and opportunities

SCG's nature-related risks are identified and assessed using SCG risk framework. Most of the resulting nature-related risks are at low level. The key risks are summarized as follows:

- **Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services:** Land degradation and the increasing frequency of extreme weather events such as floods, storms, landslides, wildfires, extreme heat, and tropical cyclones are interconnected issues leading to significant environmental and economic consequences. Loss of protective ecosystems exacerbates the risk of damage from these events, while excessive sediment runoff from degraded land accumulates in water bodies, causing rivers to become shallow and increasing flood risks. Consequently, facilities and infrastructure suffer damage, leading to operational downtime, increased repair costs, and interruptions to business activities. Furthermore, the degradation of ecosystem services amplifies the exposure

[4] For more information on SCG's Climate Resilience and Energy: https://www.scgsustainability.com/en/climate-resilience-and-energy-en/
[5] For more information on SCG's Biodiversity: https://www.scgsustainability.com/en/biodiversity/

and impacts from extreme weather, creating a cycle of environmental damage and economic losses.

- **Changes in the state of ecosystems and species - Changes to the supply of natural inputs:** Climate change is making essential resources like water and fiber scarcer, which is messing up supply chains and costing more to run things. Also, when water becomes less available in quality and quantity – whether it's because of what the organization does, what others in the area do, or climate change – it can lead to higher operational costs, changes in how things are made, or even producing less because everyone needs water.
- **Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact:** Plant disturbances spark resident protests, hindering operations and investment. Chemical operations can risk worker health (skin, respiratory issues) without safety. Stricter packaging environmental rules raise costs, potentially harming lower-income workers via wage/benefit cuts or less sustainable investment, increasing inequality. Operation relocation due to depletion hits blue-collar workers harder than office staff due to job displacement. Chemical manufacturing's toxic exposure risk demands strict health/safety for workers and the company reputation.
- **Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatization of industry and/or media scrutiny:** Negative environmental incidents and the resulting unfavorable coverage pose a significant threat to a company's brand value and market standing. This reputational damage can trigger a cascade of negative consequences, including clients scaling back or terminating business relationships and investors withdrawing their capital. Major environmental events, such as fires leading to chemical runoff and the continuous discharge of toxic substances into ecosystems, can generate intense negative publicity and substantial public and governmental backlash due to the extensive environmental harm caused. Over time, these incidents erode trust and can severely impact a company's long-term viability and societal license to operate.

To manage the risks, SCG's mitigation strategies, including adopting sustainable processes, enhancing resource efficiency, and engaging in community and environmental initiatives, have been prepared to effectively manage the risks and impacts.

For the opportunities, SCG focuses on developing eco-friendly products, accessing new markets, and leveraging green financing. SCG's proactive measures and comprehensive risk management aim to ensure sustainability and resilience in its operations.

For information on the SCG risks and opportunities, please refer to the Appendix section 6.1 Long list of nature-related risks and section 6.2 Long list of nature-related opportunities

3.4 SCG'S NATURE-RELATED STRATEGY

SCG's Nature-Related Strategy is designed to manage and address nature-related risks and opportunities, aligning with global sustainability objectives. This strategy builds upon the management approaches described in **Section 4.3**, which details key processes for managing nature-related dependencies, impacts, risks, and opportunities. By integrating these processes into the broader strategic framework, SCG ensures a holistic approach to safeguarding ecosystems while enhancing business resilience.

This section delves into the application of these strategies within the business model, value chain, and operational context. It includes targeted measures such as environmental management systems, stakeholder engagement, resource optimization, and monitoring and reporting mechanisms. These initiatives reflect SCG's commitment to integrating sustainability into its core operations and addressing nature-related risks, particularly in priority locations. Priority locations are defined as those that are material and nature-sensitive, demonstrating medium to high nature-related impacts and dependencies, and located in medium to high-sensitivity areas. In this study, all upstream and downstream locations are considered as priority locations because they are the representative within their groups.

TABLE 6 PRIORITY LOCATION ACROSS THE SCG'S DIRECT OPERATION.

Value Chain	Site Name
SCG Cement and Green Solutions	The Siam Cement Ta Luang (Khoa Wong Plant) Co.,Ltd. The Siam Cement (Kaeng Khoi) Co.,Ltd. The Siam Cement (Thung Song) Co.,Ltd. The Siam Cement (Lampang) Co.,Ltd. Khammouane Cement Co., Ltd. PT Semen Jawa
SCG Packaging	Siam Forestry (SFT)
	Phoenix Pulp & Paper (PPPC)
	PT Fajar Surya Wisesa Tbk. - Indonesia
	United Pulp & Paper (UPPC) - The Philippines

3.4.1 BUSINESS MODEL, VALUE CHAIN, AND STRATEGIC RESPONSE TO NATURE-RELATED ISSUES

In this assessment, five main businesses are in scope: Cement and Green Solutions, Smart Living, Decor, Packaging, Chemicals. These operations rely on natural resources, particularly water, and are energy-intensive, resulting in significant environmental impacts such as substantial GHG and non-GHG emissions. Water is crucial in mining, quarrying, and paper production processes. SCG addresses these dependencies and impacts through various sustainable practices, including improving operational eco-efficiency and circular economy, developing and implementing physical risk adaptation, coordinating with climate strategy, integrating across the value chain, and conducting mitigation hierarchy, to mitigate adverse effects on ecosystems and environments.

3.4.1.1 OPERATIONAL ECO-EFFICIENCY AND CIRCULAR ECONOMY

SCG adopts efficient production practices and a circular economy to reduce resource dependencies and operational disruptions for three important resources.

Water Management

SCG's water management strategies focus on reducing water-related risks and promoting sustainable practices. SCG implements disaster preparedness through monitoring and forecasting in partnership with state agencies aiming to reduce water withdrawal by 5% by 2030 compared to the business-as-usual (BAU) using 2022 as the base year and maintain high water quality in the discharges.

SCG engages in projects like the "Conserving Water from Mountains to Mighty Rivers" and collaborates with communities on check dam and water reservoir construction projects. SCG Chemicals participates in water management committees.

SCG also focuses on water conservation through product innovation, such as COTTO's water-saving sanitaryware, and has achieved significant water usage reductions in their factories by boosting efficiency and reusing treated water. SCGP utilizes an activated sludge effluent treatment system to improve wastewater quality, allowing for reuse.

Circular Economy and Waste Management

SCG is committed to minimizing waste and maximizing resource utilization by improving production processes and developing circularity solutions. SCG plans to utilize 8 million tons of recycled and renewable materials per year by 2025, achieve 100% recyclable packaging by 2030 for SCGP, and utilize 500,000 tons of used plastic in SCGC's production process annually by 2030. The strategy involves reducing waste, managing it through the 3Rs, developing circular economy products and services, and focusing on R&D for waste reuse. SCG also engages in network projects and promotes a circular economy through digital platforms and initiatives.

Air Quality Management

SCG aims to minimize pollution from industrial processes by deploying advanced technology and setting emission targets aligned with international standards. SCG targets 4% reduction in dust emissions by 2030 compared to the business-as-usual (BAU) using 2020 as the base year. and is working towards complete coverage of air quality management in the factories both in Thailand and abroad.

3.4.1.2 PHYSICAL RISK ADAPTATION

SCG prioritizes investments in projects that mitigate environmental risks and enhance resource efficiency across the business groups. However, the adoption of technologies to improve eco-efficiency and recourse resilience often involves significant upfront investment, leading SCG to explore collaborative financing models and strategic partnerships. To date, these systems have been implemented in key facilities and raw material sourcing areas, covering a significant portion of SCG's operational footprint, and demonstrating the company's commitment to sustainable resource management.

3.4.1.3 CLIMATE STRATEGY

SCG is committed to achieving net-zero emissions by 2050, aligning with global efforts to mitigate climate change. The SCG's climate strategy is built on a foundation of integrating both mitigation and adaptation measures throughout the operations and value chain. This strategy

aims to reduce GHG emissions, enhance climate resilience, and contribute to a nature-positive impact.

Additionally, SCG received validation from the Science Based Targets initiative (SBTi) for its near-term targets to reduce scope 1 & 2 greenhouse gas emissions by 2030, compared to the 2020 base year, covering all of SCG's subsidiaries, operational jurisdictions, and business areas, and Scope 3 emissions from the use of sold fossil fuels 25% by 2031, compared to 2021 base year.

SCIENCE BASED TARGETS

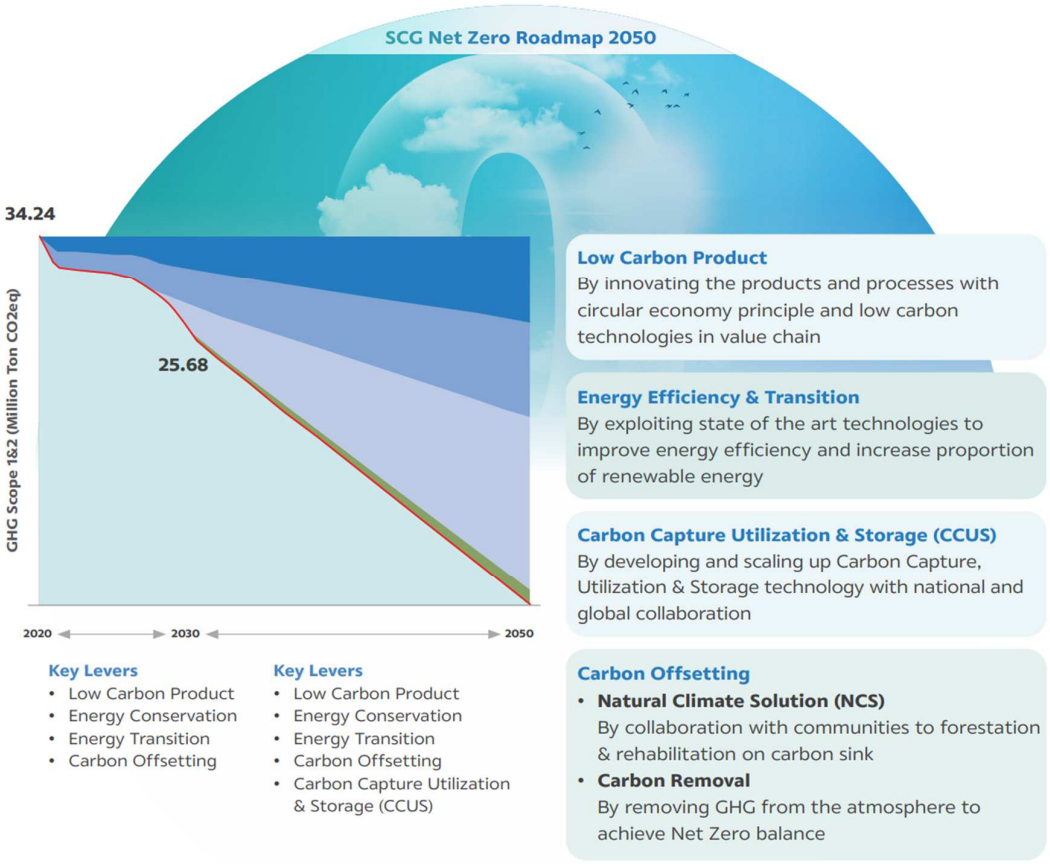
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Near Term Target has been validated by SBTi.

SCG commits to reduce absolute scope 1 and 2 GHG emissions 25% by 2030 from 2020 base year*. SCG also commits to reduce absolute scope 3 GHG emissions from the use of sold fossil fuels 25% by 2031 from 2021 base year.

**The target boundary includes biogenic emissions and removals from bioenergy feedstocks.*

SCG's Climate Strategy towards Net Zero 2025



SCG integrates the climate strategy into its core business operations through:

- Setting clear targets and key performance indicators (KPIs).
- Monitoring and reporting progress transparently.
- Integrating sustainability into investment decisions and operational processes.
- Utilizing internal carbon pricing.

By implementing this comprehensive climate strategy, SCG aims to contribute to a sustainable and low-carbon future while creating long-term value for the stakeholders.

3.4.1.4 INTEGRATION ACROSS THE VALUE CHAIN FOR UPSTREAM AND DOWNSTREAM ACTIVITIES

Integrating nature-related considerations across the value chain is crucial for fostering sustainable ecosystems and responsible resource management in Thailand and beyond. By implementing regular engagement strategies, SCG aims to transparently communicate its commitments and enhance collaborative partnerships with stakeholders. Conducting thorough upstream assessments and integrating impact, dependency, and risk data will provide valuable insights for informed decision-making and targeted mitigation efforts, ensuring the preservation of biodiversity and natural resources.

Furthermore, investing in capacity-building programs will empower SCG's partners and suppliers with the knowledge and skills necessary to adopt sustainable practices, particularly in the context of Thailand's unique environmental challenges. This focus on knowledge sharing and collaboration, coupled with a commitment to industry standards and certifications, will strengthen SCG's position as a leader in sustainable business practices.

3.4.2 MITIGATION HIERARCHY

Recognizing the critical importance of biodiversity conservation, SCG has adopted the mitigation hierarchy framework, aligning with the principles of TNFD and AR3T. This framework guides the development of nature-related action plans aimed at achieving a Net Positive Impact. The following sections detail SCG's commitment and concrete actions across the four stages of the mitigation hierarchy:

AVOID

- Implement an innovative "Semi-Open Cut" mine design
- Reserve 1470 Ha (approximately 50% of concession area) as a buffer zone for domestic quarries
- Maintain buffer zones for the visual aesthetics of the natural landscape
- Protect conservation areas for biodiversity and ecosystem functions
- Establish reference sites for mine rehabilitation

REDUCE

- Utilize "Mine sight" program to minimize operational footprint
- Leave portions of operation area untouched until needed
- Rehabilitate finished areas promptly
- Implement impact mitigation measures: speed limits, controlled blasting times, delay detonators
- Maintain tree cover around mines to reduce dust spread and absorb noise

RESTORE/REGENERATE

- Collaborate with educational organizations on rehabilitation design

- Focus on planting local native species
- Create ecosystem services in rehabilitated areas
- Develop endemic species conservation programs
- Implement rehabilitation and biodiversity management plans at all sites
- Siam Forestry Co.,Ltd. in SCGP allocated 10.6% of its FSC™-certified land (according to FSC™-FM/CoC standard and holding FSC™ license code FSC-C012207), totaling 891 hectares (5,351 rai) for biodiversity conservation areas.

  (Please see the appendix 6.3 of this document for FSC™ license codes of SCGP's subsidiaries and associates.)
- Conducted biodiversity surveys which included Kamphaeng Phet Conservation Forest recorded a high score of Shannon-Wiener Diversity Index at 3.66 in 2023.
- Collaborate on mangrove restoration, seagrass planting, and fish habitat creation

TRANSFORM

- Partner with government departments to restore forests using biodiversity conservation concepts
- Implement Natural Climate Solution initiatives
- Develop a policy for coastal and marine resources with spatial planning, and collaborative action across various sectors.
- Deploy 3D-printed artificial coral reefs in multiple marine locations
- Installed 1115 coral reef houses across eight areas in 2024
- Empower SCG's Thailand-based partners and suppliers through capacity-building programs focused on adopting sustainable practices relevant to the country's environmental challenges.

3.4.3 SCG'S NATURE ROADMAP

SCG's Nature Roadmap includes the commitment to sustainability through nature-related targets and transition plans, including No Net Loss (NNL), Net Positive Impact (NPI), Deforestation- and forest conversion- free. Aligned with the Kunming-Montreal Global Biodiversity Framework, these plans address dependencies, impacts, risks, and opportunities related to nature, demonstrating SCG's proactive environmental stewardship. SCG implements these plans through systematic management strategies, tackling both medium- and long-term biodiversity challenges. This integrated approach includes climate resilience and energy, water management, air quality and pollution management, waste management, energy (biomass), and land use change, ensuring SCG mitigates risks and leverages opportunities across its value chain.

4. RISK AND IMPACT MANAGEMENT

4.1 OVERALL SCG'S RISK MANAGEMENT FRAMEWORK

SCG has developed its ERM process according to the **ISO31000** and **COSO Enterprise Risk Management (ERM) Framework** to ensure the ERM process is transparent and aligns with international practices. The issues potentially have a significant impact and require additional mitigation measures to reduce the risk scores to an acceptable level. For those included in the ERM process, The corporate risk management unit and business unit risk management committees (risk owner) are assigned to prepare the mitigation measures and periodically monitor, report, and re-assess these issues on an annual basis.

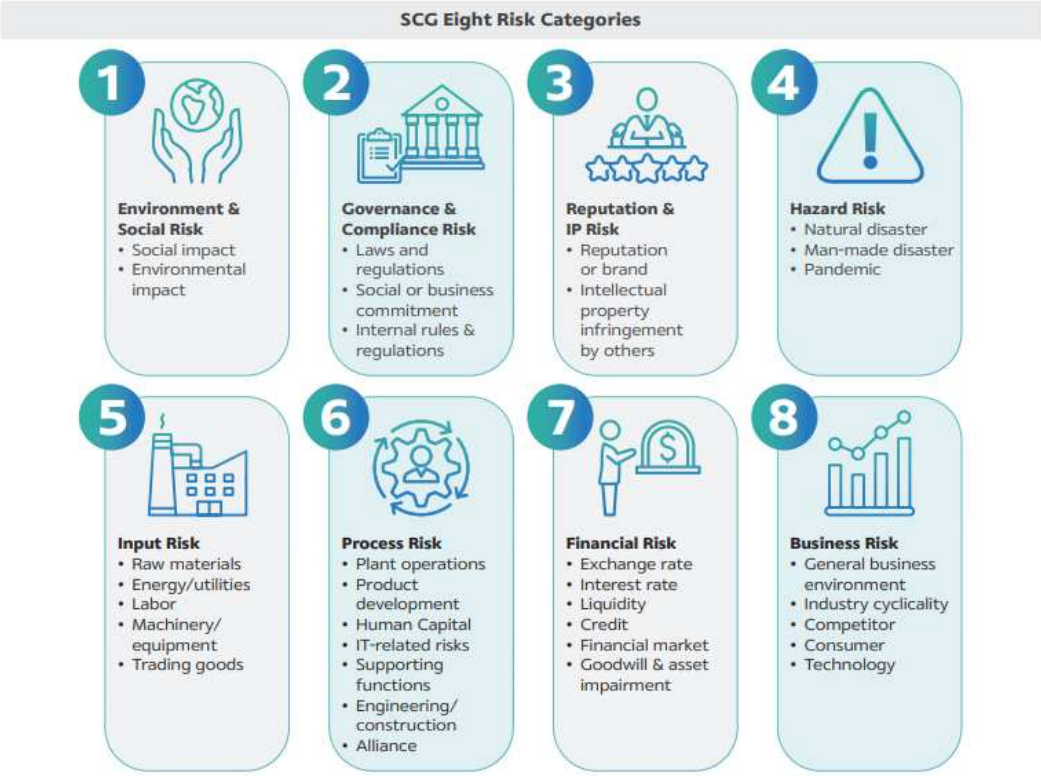
This process is applied in three primary areas, as follows:

1. Time-bound strategic risk management (short-, medium-, and long-term)
2. Investment project risk management
3. Operational risk management

The three primary areas follow the four-step risk management process (Figure 5) to ensure comprehensive and effective risk management across the organization.

FIGURE 5 SCG'S RISK MANAGEMENT PROCESS OVERVIEW

Step 1: Risk/Opportunity Identification - SCG utilizes the results from the Assess phases, which are nature-related risks and opportunities, to identify potential risks that could negatively affect the Company's goals, as well as opportunities that could increase the company's competitive advantages. The identified risks and opportunities will be integrated into the SCG Risk Universe, which is a list of risks that SCG may face in the future in eight categories.



Step 2: Risk/Opportunity Assessment and Prioritization - Risk owners assess the likelihood and impact of risks, both qualitatively (e.g., legal, reputational) and quantitatively (e.g., EBITDA impact). SCG uses a Risk Map to categorize risks into high, medium, or low levels. Risk mitigation measures are developed based on risk levels and internal capabilities. SCG's Risk Universe lists potential future risks grouped into eight categories.

Step 3: Risk Response and Mitigation - Risk owners develop mitigation options, including Key Risk Indicators (KRIs) and Key Performance Indicators (KPIs), to anticipate and manage risks. Mitigation strategies are discussed in various planning meetings for medium-term and annual plans, and project investments.

Step 4: Risk Monitoring and Reporting - Risk owners continuously monitor and review risks, with mitigation results reported to various committees such as the Business Unit Risk Management Committee, SCG Risk Management Committee, and SCG Board of Directors, at intervals based on risk type (e.g., medium-term risks are reported annually, operational risks quarterly).

By embedding nature-related risks into broader risk management strategies, SCG enhances transparency and ensures that risks are managed effectively across operations, upstream, and downstream activities.

4.2 NATURE-RELATED IMPACT, DEPENDENCIES, RISKS AND OPPORTUNITIES IDENTIFICATION

The following steps will follow the LEAP approach from TNFD, which is the core assessment framework guiding organizations through a structured process to integrate nature-related considerations into enterprise risk management and decision-making. This approach helps

companies systematically identify, assess, and respond to nature-related risks and opportunities by:

- Locating interfaces with nature
- Evaluating dependencies and impacts
- Assessing risks and opportunities
- Preparing to respond to risks and opportunities, and report

4.2.1 LOCATING INTERFACES WITH NATURE

In order to locate the priority sites that interface with nature the most, third-party global open-source datasets are used to determine the state of nature and asset red flags. These are assessed across four dimensions: 1) biodiversity importance, 2) water stress 3) ecosystem integrity and 4) ecosystem service delivery importance

TABLE 8 DATASETS FOR ASSESSMENT OF SENSITIVE LOCATIONS

Dimension	Datasets	Description	Assessment Criteria	Parameters
Biodiversity Importance	**Protected Areas (PAs)**	A 5 km radius buffer around the site location to assess the proximity of Protected Areas (PAs). Areas intersecting with a PA within this buffer are prioritized as potential sensitive locations.	Sites within 5 km of a Protected Area are prioritized for consideration as sensitive locations.	Areas important for biodiversity
	Key Biodiversity Areas (KBAs)	KBAs are crucial sites for global biodiversity, essential for species and habitat preservation. These areas are pivotal for conservation efforts and represent strongholds for ecological balance.	Priority is given to sites overlapping with or near KBAs due to their significance in global biodiversity conservation.	Areas important for biodiversity
	Sensitive Species (IBAT)	IBAT, maintained by the IBAT Alliance, provides scientific information from sources like the IUCN Red List to inform decisions affecting critical biodiversity.	Sites overlapping with areas of sensitive species (as identified by IBAT) are prioritized for conservation efforts to protect critical biodiversity.	- Areas important for biodiversity
Ecosystem Integrity	**Land Use Land Cover - ESRI Sentinel Satellite Imagery**	Sentinel-2 provides annual 10-meter resolution maps (satellite imagery) of Earth's land surface. The 2022 data informs land use land cover (LULC) classifications, aiding in policy and land management decisions.	Land use and cover within the site are assessed using 9 LULC categories to inform environmental impact and policy decisions.	Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders.
	Mean Species Abundance (MSA)	MSA measures local biodiversity conditions, with values ranging from 0 (all original species extinct) to 1 (species composition unaffected). MSA reflects the impact of stressors on species abundance compared to undisturbed scenarios.	Sites with low MSA values (indicating significant biodiversity loss) are considered more sensitive and require attention.	Areas important for biodiversity

Dimension	Datasets	Description	Assessment Criteria	Parameters
Water stress or Water physical risk	**World Resource Institute: Baseline Water Stress**	Developed by the World Resources Institute, this tool assesses the ratio of total water withdrawals to available renewable water supplies. Higher values indicate greater competition for water, potentially leading to stricter regulations and reputational risks.	Areas with high baseline water stress are prioritized due to the increased competition and potential regulatory and reputational risks.	Areas of high physical water risks
Water stress or Water physical risk/ Ecosystem Service Delivery Importance	**100 Priority Basins**	The list identifies 100 global basins with significant potential for collaborative initiatives, balancing economic opportunities and shared water risks. The list is adaptive to changing circumstances and stakeholder initiatives.	Priority is given to sites within these basins due to their potential for collaborative water risk management and economic opportunities.	- Areas of high physical water risks
Ecosystem Service Delivery Importance	**Ecoregion - Nature Needs Half**	Ecoregions are ecosystems with distinct biodiversity. Classified into four categories based on protection and recoverability, these ecoregions are essential for conservation planning, representing Earth's biodiversity within natural boundaries.	Sites within ecoregions classified as "Nature Imperiled" or "Nature Could Recover" are prioritized for conservation and recovery efforts.	- Areas of high ecosystem integrity - Areas of rapid decline in ecosystem integrity
	Global Forest Watcher Community	A tool providing satellite-derived fire and deforestation alerts, available offline for forest protection activities. It supports community monitors, park rangers, and others in documenting and exposing illegal deforestation globally.	Sites within or near forests at risk of deforestation are prioritized, especially if alerts indicate active or potential deforestation.	- Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders.

4.2.2 EVALUATING DEPENDENCIES AND IMPACTS

This evaluation forms part of the "Evaluate" phase in the TNFD's LEAP approach, focusing on understanding how SCG's activities both depend on and impact nature. **ENCORE (Exploring Natural Capital Opportunities, Risks, and Exposure)** was used to identify nature-related impacts and dependencies across operations and the supply chain. This tool analyzes how the business interacts with nature through two key pathways:

1. **Impact pathways** – These illustrate how SCG's activities influence natural systems and ecosystem services
2. **Dependency pathways** – These highlight how SCG's business relies on nature's services and how changes in nature's condition can impact operations

These pathways help structure the analysis in the ENCORE tool by showing both how the company affects nature and how it is affected by changes in nature.

SCG identified and prioritized key business activities within selected sites using the ENCORE tool. Fourteen industry categories were mapped using the International Standard Industrial Classification (ISIC) system (Table) to evaluate impact and dependency scores across the value chain. The relevant impacts and dependencies of SCG and its value chain are based on the ENCORE, the results were validated through a collaborative process involving SCG's internal subject matter experts (SMEs) and external biodiversity specialists to ensure the robustness of the identified material impacts and dependencies.

The impacts and dependencies were identified for each of SCG's business units, with group-level impact calculated by weighting individual impact levels according to each unit's revenue contribution percentage. This approach allows SCG to target sustainability efforts toward areas with both high environmental impact and financial significance.

Using a percentile-based ranking, SCG was able to prioritize high-impact areas while still addressing medium- and low-impact activities. This supports a more targeted and risk-informed sustainability response.

TABLE 9 SCG'S VALUE CHAIN MAPPED WITH ENCORE SUB-INDUSTRY

Sub-industry (ISIC Groups)	Decor	Cement and Green Solutions	Smart Living	Packaging	Chemicals
Casting of metals					
Manufacture of non-metallic mineral products n.e.c.					
Manufacture of paper and paper products					
Warehousing and support activities for transportation					
Mining and Quarrying n.e.c					
Quarrying of stone, sand, and clay					
Waste treatment and disposal					
Construction of buildings					
Manufacture of basic chemicals					
Manufacture of plastics products					
Logging					
Silviculture and other forestry activities					
Manufacture of other chemical products					
Transport via pipeline					
Manufacture of gas; distribution of gaseous fuels through mains					

Upstream

Direct Operation

Downstream

4.2.3 ASSESSING RISKS AND OPPORTUNITIES

A comprehensive list of nature-related physical and transition risks as well as opportunities for each of SCG's business units has been developed based on the TNFD sector-specific guidance and an evaluation of impacts and dependencies. This list was then utilized to assess the company's nature-related risks and opportunity systematically.

In the risk level identification process, the World Wildlife Fund's Biodiversity Risk Filer (WWF BRF) tool was used to assess nature-related risks across the entire value chain. WWF BRF is a comprehensive tool that uses spatial data for location-specific and industry-specific evaluations. The selected site locations are input into the WWF BRF to generate risk scores for each site. These scores, combined with insights from the L-Locate and E-Evaluate phases, climate-related physical risks, and SCG's human rights salient issues, are adjusted and validated through consultations with the SCG working team in alignment with SCG's existing risk matrix.

The nature-related risks are considered using the 3 timeframes, short (0-2 years), medium (3-5 years) and long-term (more than 5 years). F

4.3 PROCESSES FOR INTEGRATING INTO AND INFORMING THE ORGANIZATION'S OVERALL RISK MANAGEMENT PROCESSES

The insights gained through integrating nature-related risks into the ERM framework form the foundation for the **Prepare** phase of the TNFD LEAP approach. This phase focuses on developing appropriate mitigation plans, establishing key risk indicators, and embedding nature-related risks into financial planning and governance processes.

While the specific nature-related strategies are available—such as SCG's Green Mining, Circular Economy initiatives, and Climate Strategy (for details on specific mitigation strategies and programs, refer to *Section 3.4 SCG's Nature-related Strategy*), the ERM framework ensures that risks associated with these themes are:

- Translated into financial and operational terms
- Assigned to responsible risk owners
- Managed and monitored using SCG's standard ERM procedures, including regular review by the Risk Management Committee and Board-level oversight.

This ensures consistency between SCG's sustainability ambitions and risk governance, enabling more proactive and integrated management of nature-related risks across all levels of the organization.

5. METRICS & TARGETS

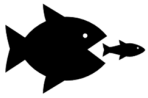
5.1 TARGETS AND COMMITMENTS

SCG is committed to being a regional leader in innovation and sustainability, recognizing the importance of environmental and climate management for sustainable growth. The company has updated SCG Environmental and Climate Policy[6] to ensure its effectiveness, covering all operations, business facilities, partners, and joint ventures. The policy emphasizes compliance with regulations, reducing environmental impacts, and aligning with the Paris Agreement's goal of net-zero emissions by 2050. Key priorities include sustainable resource use, waste reduction, deforestation- and forest conversion- free, and positive impacts on nature. SCG also focuses on implementing environmental management systems, continuous improvement, transparent reporting, and stakeholder engagement while educating employees and partners on environmental issues.

TABLE 10 NATURE-RELATED TARGETS AND COMMITMENTS

	Target for SCG's operation	2024 Performance
 **Climate Change**	Net Zero by 2050	25.48 million tons GHG emissions in 2024 (1.60 million tons GHG emissions reduced)
	GHG scope 1 & 2 emissions reduction by 25% by 2030 compared with the base year of 2020	25.59% of GHG Scope 1 and 2 emissions reduction in 2024
	GHG scope 3 emissions reduction by 25% by 2031 compared to the base year 2021	20.66 % GHG Scope 3 emissions reduction from fossil fuel sales to external customers
 **Water**	Water withdrawal reduction by 5% by 2030 compared with BAU at the base year of 2022.	Water withdrawal increased by 5.3% in 2024 compared to 2023.
 **Air Pollution**	Dust emissions reduction by 4% by 2030 compared with BAU at the base year of 2020.	Dust emissions increased by 2.15% in 2024 compared to 2023.

[6] For more details, please see SCG Environment and Climate Policy (Revision 3)

	Target for SCG's operation	2024 Performance
 **Waste**	8 million tons of recycled and renewable materials by 2025.	Resource consumption was reduced through utilization of recycled and renewable raw materials increased by 8.93 million tons in 2024
	SCGP is committed to engineer packaging product s through co-creation with customers, aspiring to achieve 100% recyclable, reusable, or compostable packaging by 2030.	99.7% of SCGP packaging was reusable, recyclable, or compostable
	500,000 tons of used plastic into SCGC's production process annually by 2030.	Recover and recycle the used plastic 185,200 tons in 2024.
	Zero landfilling of hazardous and non-hazardous waste from production processes in Thailand every year	Zero
	Zero landfilling of hazardous waste from production processes abroad in 2030	6,968 tons
 **Biodiversity**	Striving to be Nature Positive by conserving and restoring nature to increase green spaces and enhance biodiversity, while fostering engagement with communities and stakeholders	Conserve, Restore, and increase Green Spaces, totaling 318,863 rai, including: - Terrestrial forests 317,105 rai - Mangrove forests 1,688 rai - Seagrass beds 70 rai
		Installed coral reef habitats 1,115 units
		Constructed water diversion dams 127,618 units
	Develop a 100% mine rehabilitation plan.	100% coverage of mine rehabilitation plan.
	Develop a 100% Biodiversity Management Plan (for limestone mines in Thailand only).	100% coverage of mine rehabilitation plan.

	Target for SCG's operation	2024 Performance
	More than 60% similarity index between restored mining areas and natural forest buffer zones (For limestone mines in Thailand only)	68% at the limestone quarry in Thung Song
	At least 10% of the FSC™-certified area must be designated as a biodiversity conservation area according to FSC™ standard.	Siam Forestry Co.,Ltd. in SCGP allocated 10.6% of its FSC™-certified land (according to FSC™-FM/CoC standard and holding FSC™ license code FSC-C012207), totaling 891 hectares (5,351 rai) for biodiversity conservation areas.

5.2 METRICS FOR NATURE-RELATED IMPACTS, DEPENDENCIES, RISKS, AND OPPORTUNITIES

SCG has incorporated the TNFD global disclosure metrics into this report to the fullest extent possible for the current reporting year. Beyond the TNFD global disclosure metrics, SCG has also reviewed and started data collection aligned with the three additional sector-specific guidelines from the TNFD Sector Core and Additional Disclosure Metrics framework. This comprehensive approach includes utilizing dependency, impact, risk, and opportunity matrices to systematically identify potential material dependencies and impacts on nature within SCG's operational sector. The three sector-specific guidance are; (1) Construction materials, (2) Forestry, Pulp and paper, and (3) Chemicals

All relevant metrics that SCG has collected have been sorted in the tables below.

TABLE 11 SCG'S METRICS FOR NATURE-RELATED ISSUES

Theme	Metric	Unit	2023	2024
Climate Change	Total GHG emissions: Scope 1	tCO2e	24,329,050	22,869,440
	Total GHG emissions: Scope 2 (Location-based)		2,935,118	2,860,118
	Total GHG emissions: Scope 2 (Market-based)		2,754,817	2,610,166
	Total Biogenic GHG emission		3,968,392	5,522,750
	Total GHG emissions: Scope 3		10,606,251	10,695,208
	1: purchased goods and services		5,303,395	5,822,774
	2: capital goods		0	53,830
	3: fuel- and energy-related activities		1,460,420	1,266,371
	4: upstream transportation and distribution		1,480,778	1,109,770
	5: waste generated in operations		22,427	76,327
	6: business travel		3,910	6,761
	7: employee commuting		9,981	36,009
	8: upstream leased assets		0	0
	9: downstream transportation and distribution		566,064	388,330
	10: processing of sold products		246,235	434,023
	11: use of sold products		887,651	918,074
	12: end-of-life treatment of sold products		67,203	58,623
	13: downstream leased assets		0	106
	14: Franchises		6,578	3,977
	15: Investments		551,609	520,234

Theme	Metric	Unit	2023	2024
Production and Raw Material	Production	Tons	77,518,763	79,120,677
	Raw Materials	Tons	82,039,769	88,201,788
	Renewable Materials	Tons	5,445,245	7,497,227
		%	6.64	8.50
	Recycled Materials	Million Tons	6,892,041	7,458,443
		%	8.40	8.46
	Renewable Materials and Recycled Materials	Million Tons	8,564,830	8,929,642
		%	10.44	10.12
Energy Consumption	Total Energy Consumption	Petajoules	225.11	220.94
	Non-Renewable Fuel Consumption		166.49	157.55
	Renewable Fuel Consumption		38.25	43.23
	Steam & Heat Consumption		2.61	2.59
	Electrical Consumption		18.01	17.81
	Electricity Sold		0.25	0.25
Co-processing Performance of Cement-Building Materials Business	Alternative fuel used to replace the fossil fuel (as % of total heat consumption)	% of total heat consumption	35.50	43.52
	- Alternative fossil fuel		11.66	15.05
	- Biomass		23.84	28.47
	Alternative raw materials contained in cement	%	7.33	7.64
	Alternative raw materials contained in concrete	%	1.05	1.25
	Clinker-to-Cement ratio	%	71.24	69.25
	Alternative raw materials contained in other building materials	%	7.34	6.20

Theme	Metric	Unit	2023	2024
Water Withdrawal and Effluent Quality	Water Withdrawal from surface water	Million Cubic Meters	49.83	28.24
	Water Withdrawal from groundwater		38.99	32.58
	Water Withdrawal from third-party water		30.51	25.88
	Total water withdrawal		119.32	86.70
	Recycled water		17.99	-
	Water discharged to surface water		64.87	49.06
	Water discharged to groundwater		0.03	0
	Water discharged to seawater		0.12	0.05
	Water discharge to third-party water		0.84	0.66
	Total water discharge		65.88	49.76
	BOD	Tons	570	455
	COD		6,031	5,939
	TSS		830	742
Waste Management	Total Weight of Waste Generated	Tons	1,642,500	1,552,106
	Total Weight of Hazardous Waste Generated		107,335	87,984
	Total Weight of Non-Hazardous Waste Generated		1,535,165	1,464,123
	Total Weight of Waste diverted from disposal			
	- Onsite		613,716	609,233
	- Offsite		528,141	559,821
	Total Weight of Hazardous Waste diverted from disposal			
	- Onsite		40,782	4,055
	- Offsite		51,025	55,390

Theme	Metric	Unit	2023	2024
	Total Weight of Non- Hazardous Waste diverted from disposal			
	- Onsite		572,934	605,178
	- Offsite		477,117	504,431
	Total Weight of Waste directed to disposal			
	- Onsite		269,171	198,701
	- Offsite		231,472	184,351
	Total Weight of Hazardous Waste directed to disposal			
	- Onsite		3,162	4,331
	- Offsite		12,367	24,207
	Total Weight of Non-Hazardous Waste directed to disposal			
	- Onsite		266,009	194,370
	- Offsite		219,105	160,144
Air Emissions	Oxides of Nitrogen	Thousand Tons	33.51	28.64
	Oxides of Sulfur		5.80	4.24
	Particulate Matter		2.45	2.28
	Mercury	Kilograms	11.34	19.36
Biodiversity/ Environmental Expenditures and Benefits/ Violations of Legal Obligations and Regulations (Only Thailand Operations)	Quarries with Biodiversity Management Plan in place	Number of Sites	4	4
		%	100	100
	Operating Expenses – Environmental	Million Baht	2,913	1,741
	Capital Investment – Environmental		1,015	5,288
	Total Expenses – Environmental (Capital Investment + Operating Expense)		3,928	7,029
	Savings, cost avoidance, and tax incentives linked to environmental investment		72,177	65,395
	Total costs from water-related incidents	Million Baht	0	0
	Number of violations of legal environmental obligations/regulations (over USD 10,000)	Number of Cases	0	0

For more information on the SCG's environmental performance, please see https://file.scgsustainability.com/wp-content/uploads/2025/04/10084337/EN_ENV.pdf

6. APPENDIX

6.1 LONG LIST OF NATURE-RELATED RISKS

6.1.1 SCG CEMENT AND GREEN SOLUTIONS

No	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
1.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to a change in hazard mitigation services	Increased risk of **damage from floods, storms, and landslides** if protective terrestrial ecosystems are degraded	✓	✓		High	**Disaster Prevention** - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard. - Establish a collaborative network with government agencies, private organizations, and industries while playing a crucial role in planning and managing water resources and natural disaster issues at both the local and national levels **Biodiversity & Ecosystem** - Conserve biodiversity in limestone quarry and agroforest areas	Low
2.	Physical	Acute	Changes in the state of ecosystems and species - Changes in other regulating and maintenance ecosystem services	**Increased water purification costs** as a result of accidental oil spillages upstream	✓	✓		Medium	**Water Quality** - Systematically monitor and prevent the environmental violation (water use), investigate and have mitigation plan in place to prevent the reoccurrence, and regularly report to top executives	Low
3.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to change in hazard mitigation services	**Repair costs and interruptions to business activity** following damage to infrastructure due to wildfires, **tropical cyclones, extreme heat and other extreme weather events**	✓	✓		High	**Disaster Prevention** - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard. - Establish a collaborative network with government agencies, private organizations, and industries while playing a crucial role in planning and managing water resources and natural disaster issues at both local and national levels	Low
4.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	**Declining water supply and/or water quality** as a result of the organization's activities, those of others in the watershed, and climate change		✓	✓	High	**Water Management** - Water Withdrawal Reduction 24.09% compared with BAU at the base year of 2014) - Manage water-related risk in all business operation sites according to international standards, such as applying international risk assessment tools and analyzing water situation, as well as risks/opportunities - Increase water use efficiency with high technology according to international concepts - Efficiently manage wastewater treatment and reuse treated water **Water Quality** - Systematically monitor and prevent environmental violations (water use), investigate and have a mitigation plan in place to prevent the recurrence, and regularly report to top executives	Low
5.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	**Declining** raw material **supply** (or other abiotic raw materials for the business activities)			✓	High		

No	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
6.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	When mineral reserves are exhausted, **mining operations must shift to new locations**, creating significant operational and financial challenges. The search for and development of alternative sites not only disrupts production but also incurs substantial costs. Moreover, establishing new mining operations requires considerable capital investment and can have notable environmental consequences.			✓	High		Low
7.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental & social impact	**Changes in sentiment towards the organization/brand** due to competition for natural resources (e.g. water, land), impacts on nature and/or failure to meet expected stakeholder community expectations (e.g. nature no net loss, failure to meet rehabilitation or reclamation and closure expectations, or late life divestments)			✓	High	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services, and solutions' responsibility performance - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop high-value-added products that are friendly to health, safety, and the environment - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones **CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access to collect suggestions and develop activities that meet their expectations and needs - Assessing the benefits that the organization receives in terms of quantity/value/economic returns	Low
8.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental impact	Disruption to operations due to, for example, the **discovery of rare species on-site**			✓	Medium		Low
9.	Transition	Policy	Changes to legislation/ regulations	**Reduced areas available** to explore for quarrying as more areas are placed under protection mechanisms (e.g., as identified in National Biodiversity Strategies and Action Plans (NBSAPs)- แผนปฏิบัติการด้านความหลากหลายทางชีวภาพแห่งชาติ		✓	✓	High		Low
10.	Transition	Policy	Changes to legislation/ regulations	**Increased restrictions** on access to remote areas where remaining reserves are located and tighter regulations requiring longer suspensions of operations to facilitate inspections and surveys when, for example, previously undetected important cave systems are discovered.		✓	✓	High		Low
11.	Transition	Policy	Changes to legislation/ regulations	Regulatory requirements for engaging **Indigenous Peoples** to obtain their consent and participation, addressing potential impacts on mining operations, contractors, and employees.		✓	✓	Medium	**CSR** - Managing operational impacts to prevent conflicts with communities - Studying expectations and prioritizing stakeholders to design engagement building - Establishing guidelines to ensure the effectiveness of activities and the co-creation of long-term value with stakeholders	Low

No	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
12.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	Disturbances to nearby residents caused by the business activities of mines or plants may **lead to protests at the site**, potentially resulting in **hindered investment or operational difficulties.**	✓	✓	✓	Medium	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services, and solutions' responsibility performance - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop high-value-added products that are friendly to health, safety, and the environment - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones **CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs - Assessing benefits that the organization receives in terms of quantity/value/economic returns	Low
13.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental impact	Cement production, especially when it involves extraction of limestone, quarry and other raw materials, can harm local biodiversity. **If wildlife habitats are destroyed or species are endangered due to the company's activities, it could result in public criticism and loss of trust.**	✓	✓	✓	High	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services, and solutions responsibility performance - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop high value added products that are friendly to health, safety, and the environment - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones **CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs - Assessing benefits that the organization receives in terms of quantity/value/economic returns	Low

No	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
14.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatization of industry and/or media scrutiny	**Negative environmental incidents** or coverage can severely damage a **company's brand value** and market standing. This reputational harm may cause clients to scale back or terminate their business relationships, while investors might withdraw their capital in response to the unfavorable press.	✓	✓	✓	High	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services, and solutions responsibility performance - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop high value added products that are friendly to health, safety, and the environment - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones **CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs - Assessing benefits that the organization receives in terms of quantity/value/economic returns	Low
15.	Transition	Technology	New monitoring technologies used by regulators and other stakeholders	Regulatory requirement to **install the monitoring system may increase operating and labor costs**, as it requires additional resources for setup, maintenance, while ensuring compliance with environmental and water quality standards	✓	✓		Medium		Low
16.	Transition	Liability	Fines/penalties received due to nature-negative outcomes	If the cement company does not effectively manage its environmental footprint, such as air pollution or toxic waste, workers may be exposed to hazardous substances that can cause long-term health issues. Poor air quality or contaminated water around the workplace can result in **claims, regulatory penalties, and harm to employee morale**		✓	✓	High	**Health and safety** - Enhancing occupational health and preventing work-related illnesses, travelling and transportation - Building a safety culture and reducing work-related injuries, travelling and transportation - Utilize digital technology to enhance operational efficiency and reduce the risk of accidents, injuries, and occupational illnesses and diseases.	Low
17.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	When operations relocate due to resource depletion, blue-collar workers often experience more severe financial challenges during transitions compared to office-based employees. **Blue-collar workers may face job displacement, relocation difficulties, or struggles finding new employment, exacerbating financial hardship for those with fewer resources and less job security**.	✓	✓	✓	Low		Low

6.1.2 SCG PACKAGING

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
1.	Physical	Acute	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	**Loss of key species (tree)** due to climate change, it could **disrupt the supply of key materials**, resulting in supply shortages, **price increases,** or the need for more expensive alternative materials.		✓		Medium	**Fibrous supply to business (Biodiversity & Ecosystem)** - In response to climate change disruptions, SCGP has recently developed "new hybrid eucalyptus varieties for sustainability" through a controlled pollination initiative. These hybrid eucalyptus alternatives exhibit resilience against both drought and pests. - SCGP implements a strategic approach to minimize dependence on a single source by expanding its network of suppliers and diversifying sourcing from different regions. - SCGP utilizes data and analytics to enhance the accuracy of future demand predictions, which in turn facilitates improved inventory management and purchasing decisions. **Biomass supply to boilers** - To handle the disruption of biomass supply due to the loss of trees, SCGP can implement the use of flexible boilers that can burn both biomass and fossil fuel. This enables the company to ensure a continuous and uninterrupted production process. However, SCGP has formulated a plan and prepared many projects to incorporate alternative energy sources into its operations while ensuring stability in energy supply. This strategic approach allows SCGP to diversify its energy portfolio and reduce reliance on traditional energy sources. - SCGP involves working with trusted partners and suppliers who adhere to sustainable practices. Additionally, SCGP prioritizes the implementation of efficient transportation methods through supply chain to minimize costs and reduce the environmental impact. - SCGP implements energy management practices that prioritize the highest efficiency and value, in line with the principles of the circular economy. This approach aims to minimize the impact of potential disruptions in key materials	Low
2.	Physical	Acute	Changes in the state of ecosystems and species - Changes in other regulating and maintenance ecosystem services (Pest control)	Increased occurrence of **diseases and pests affecting** forest health, leading to changes in tree growth and increased mortality rates, which affect production yield.		✓		Medium	**Biodiversity & Ecosystem** - The existing eucalyptus trees still hold great potential in terms of their ability to resist pests and diseases. - SCGP has successfully developed "new hybrid eucalyptus varieties for sustainability" through a controlled pollination initiative. These hybrid eucalyptus alternatives exhibit resilience against both drought and pests, leading to improved tree growth and increased production yield. - Research and development of new eucalyptus varieties with enhanced resistance to pests and diseases can further strengthen the existing eucalyptus trees in the long run. Furthermore, it is worth noting that SCGP has not experienced any negative impacts on tree yield due to plant diseases and pests.	Low
3.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to change in hazard mitigation services	Levels of **sediment loss to water bodies leading to the excessing sediment** that can accumulate in rivers, causing them to become shallow and increasing the risk of flooding		✓		Low	**Biodiversity & Ecosystem** **-** Trees and forests along river and lake banks play an important role in reducing sediment loss by stabilizing banks, filtering runoff, and trapping sediments, thus improving water quality and protecting aquatic ecosystems. Therefore, SCGP has employed advanced tools like WRI AQUEDUCT, satellite imagery, and the Early Warning System (EWS) to evaluate water-related hazards such as water scarcity, flooding, droughts, and sediment erosion. Additionally, SCGP has made investments in suitable infrastructure, including a range of systems and technologies.	Low
4.	Physical	Chronic	Changes in the state of ecosystems and species - Changes in other regulating and maintenance ecosystem services	**Ecosystem degradation and biodiversity loss** may diminish yield (impact to income)			✓	Medium	**Biodiversity & Ecosystem** - SCGP has recently created "new hybrid eucalyptus varieties for sustainability" using a controlled pollination initiative. These hybrid eucalyptus alternatives demonstrate resilience against both drought and pests. Moreover, the new hybrid eucalyptus varieties developed by SCGP provide a 40% higher yield compared to the original strains. - SCGP has implemented a diverse range of tree planting areas, which serve to mitigate the risk of degradation in specific areas and help protect biodiversity and ecosystem integrity. By establishing multiple planting areas, SCGP can distribute the potential impact of environmental disruptions more effectively, reducing the vulnerability of its operations to localized issues.	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
5.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to a change in hazard mitigation services	Degradation of ecosystem services and increased exposure and impacts from **extreme weather from the occurrence/increase of storms/floods in the area (Extreme Heat and Tropical Cyclones)**			✓	Low	**Biodiversity & Ecosystem** - Floods disrupt supply chain and push up logistics costs. Therefore, SCGP invests in relevant infrastructure such as systems for flood prevention and water recycling together with expanding supply chain to reduce region-based risks. - SCGP employs an Early Warning System (EWS) to enhance its water risk management efforts. By integrating satellites imagery and data from WRI Aqueduct, the Geo-Informatics and Space Technology Development Agency (GISTDA), the Royal Irrigation Department, the Meteorological Department and the Pollution Control Department through Power BI, the system provides a dashboard for real-time monitoring of water conditions using tools such as WRI AQUEDUCT, satellite images, and Risk Maps - Generate Net Positive Impact in every process and ensure integrity of sustainable ecosystem. - Deforestation- and forest conversion- free target has been achieved in line with the SCGP's goal. Conservation forests play a crucial role in flood control by absorbing rainwater, reducing runoff, and preventing erosion, thus mitigating flood risks. In 2024, SCGP planted 66,985 trees on company owned and concession land, bringing the cumulative total since 2020 to 2,350,269 trees.	Low
6.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to change in hazard mitigation services	Degradation of ecosystem services (from biodiversity loss) and increased exposure to and impacts from **wildfire hazards, leading to supply chain disruptions and increased operational costs**	✓	✓		High	**Biodiversity & Ecosystem** - To reduce the risk of wildfires, SCGP follows guidelines that involve spacing plants both horizontally and vertically, giving priority to low-flammability plants, and ensuring that open areas are maintained around homes in the vicinity. - SCGP manages the areas by regularly clearing out dry debris and weeds, ensuring that the landscape remains clean and well-maintained. This proactive approach helps in reducing the risk of wildfires by eliminating potential fuel sources and maintaining a tidy environment. - Coordinating efforts among various agencies and organizations involved in wildfire response to ensure a unified and efficient approach. - In addition, SCGP creates cleared strips of land that act as barriers to slow down or stop the spread of wildfires.	Low
7.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	Increased **scarcity of key natural inputs, such as water and fibre, due to climate change and invasive alien species**, leading to supply chain disruptions and increased operational costs			✓	High	**Water Management** - SCGP adheres to our water management goals to effectively manage the variations in the supply of natural resources such as water withdrawal reduction 27.3% compared with BAU at the base year of 2014 and water withdrawal intensity (per ton of production) reduction by 3.12% compared with the base year of 2022. - SCGP manages water-related risk in all business operation sites according to international standards such as applying international risk assessment tools, analyzing water situation as well as risks & opportunities and conducting area-based water risk assessments with stakeholders. - SCGP enhances water use efficiency through advanced technology in line with international standards. We manage wastewater treatment effectively and reuse treated water. By recycling wastewater, we reduce the need to withdraw water from natural sources. **Biodiversity & Ecosystem** - SCGP has successfully developed "new hybrid eucalyptus varieties for sustainability" through a controlled pollination program. These new hybrid eucalyptus varieties are characterized by their rapid growth and ability to withstand both drought and pests associated with climate change. - SCGP adopts a strategic approach to reduce reliance on a single source by broadening its supplier network and diversifying sourcing from various regions. - To effectively manage invasive alien species, SCGP prioritizes prevention through the implementation of strict controls and biosecurity measures to prevent the spread of invasive species.	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
8.	Transition	Policy and legal	Changes to legislation/ regulations	The quantity and concentration of pollutants emitted into air, water, and soil may violate environmental regulations, resulting in **legal penalties, fines, or even lawsuits**			✓	Medium	- SCGP ensures the quality of air, water, soil, and GHG emissions, as well as waste management, in accordance with international standards like ISO 14001, which specifically focuses on environmental management systems. - SCGP has not incurred any fines or settlements exceeding 10,000 US dollars in relation to violations of legally binding regulatory obligations concerning environmental liability. **Air Quality** - SCGP effectively manages air quality and noise by leveraging the latest cutting-edge technology. SCGP has developed an AI-powered Detect Odor & Monitoring (DOM) system, a comprehensive technology designed to measure and track odors with high precision. **Water Management** - SCGP adheres to stringent wastewater treatment, water withdrawal and effluent standards, employing advanced technology to ensure that the quality of treated wastewater meets prescribes criteria. **Soil Management** - SCGP utilizes a specific map to assess the soil's characteristics and identify the most suitable species for cultivation. - Soil inspection is conducted in accordance with legal requirements. **GHG Emission** - SCGP actively mitigates the impacts of climate change by implementing measures to reduce greenhouse gas emissions throughout its value chain. By adopting these sustainable practices and utilizing advanced technologies, this is also focused on increasing the share of biomass usage with various resources. **Waste Management** - SCGP has successfully achieved the milestone of zero non-hazardous and hazardous waste to landfill in Thailand. Furthermore, SCGP manages resources and waste by adhering to the 3Rs concept (Reduce, Reuse, Recycle) and the principles of the Circular Economy throughout its supply chain.	Low
9.	Transition	Policy and legal	Changes to legislation/ regulations	Increased costs of operations and input from tighter regulation on activities that **impact and alleviate pressures on nature, such as permits for natural resources**			✓	Medium	- SCGP's operations have never been subject to a forced cessation, however, SCGP has taken proactive measures to inspect the plantation area to ensure compliance with the law to prevent encroachment on the area. - SCGP has a stringent policy of promptly ceasing any procurement activities upon the detection of illegal practices when it comes to purchasing timber. This demonstrates SCGP's commitment to responsible sourcing and environmental stewardship. In addition, SCGP follows the standards set by the Forest Stewardship Council™ (FSC™) on land uses for cultivation. This ensures that SCGP is fully compliant with all relevant regulations and promotes sustainable land management practices. - SCGP handles new regulations in a proactive and compliant manner. **Water** - The new regulation, Control of soil and ground water contamination within factory by Department of Industrial Works, will be launched in 2025. SCGP participates in the process of influencing public policy and decision-makers to support or change specific policies. **Forest** - SCGP is actively preparing to ensure that its operations comply with the European Union Deforestation Regulation (EUDR) to avoid losing business opportunities. The EUDR is a recent piece of legislation aimed at combating global deforestation and promoting sustainable practices within the supply chain of products that contribute to deforestation. Given that SCGP exports products to European countries, adherence to this regulation is crucial. To handle the EUDR requirements, SCGP follows the standards set by the Forest Stewardship Council™ (FSC™), ensuring that its practices align with both regulatory and sustainability standards. **Carbon Tax** - SCGP employs a carbon tax strategy as part of its efforts to reduce greenhouse gas (GHG) emissions. We take a holistic approach by considering energy efficiency, renewable energy, natural climate solutions, and supply chain decarbonization to achieve significant results. **E-Waste Management** - By following Waste Electrical and Electronic Equipment Act of Thailand, SCGP ensures the responsible management of e-waste in accordance with Thailand's approach to a circular economy and help to protect the environment and public health.	High

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
10.	Transition	Market	Decline in brand and value proposition due to nature-performance being perceived worse than competitors - Due to environmental impact	Shifting customer values or preferences (e.g. away from single use forest products)			✓	High	**Sustainable products** - SCGP is committed to engineering packaging products through co-creation with customers, aspiring to achieve 100% recyclable, reusable, or compostable packaging by 2030 - SCGP implements the use of biodegradable products to be designed for easy disassembly and recycling, which can help minimize the amount of waste. For example, Fest Redi Pak Food Packaging: An innovative peelable pulp tray design for refrigeration, heating, and ready-to-eat applications. Made from natural materials, it biodegrades within 60 days. - SCGP enhances its brand and value proposition through its commitment to nature and performance, as evidenced by its adherence to Forest Stewardship Council™ (FSC™) standards. This certification offers a trusted value proposition by certifying responsible forest management, ensuring products come from sustainable and legal sources, and promoting environmental, social, and economic benefits. **Customer analysis** - SCGP identifies problems and needs, as well as the selection and purchasing behavior, use of products, services, and solutions. Additionally, SCGP analyzes customer satisfaction survey results to gather inputs for systematic improvement.	Medium
11.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatization of industry and/or media scrutiny	**Decline in brand perception due to negative comments** and reviews, such as - the company failing to deliver on its nature-positive outcomes with poorly perceived nature management, - while competitors advance with true sustainable practices. As a result, the company may face **declining sales, reputational damage, and increased costs in an attempt to recover.**			✓	High	**CSR** - SCGP implements effective CSR strategies that can help rebuild trust, enhance public perception, and demonstrate a commitment to positive social and environmental impact. **Proactive strategy on product/service responsibility** - SCGP utilizes technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones. Additionally, eco-friendly products reinforce the company's commitment to environmental sustainability, strengthen its reputation, and enhance long-term profitability. **Reactive strategy on product/service responsibility** - SCGP prioritizes listening to customer feedback, responding professionally, and taking proactive steps to improve the customer experience. We handle the issue promptly and take appropriate steps to rectify the situation on delivering the outcomes. This include conducting assessment to elevate the quality of product, services, and solutions from customers' voices.	Low
12.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatization of industry and/or media scrutiny	The company may experience a decline in brand reputation following public criticism and negative reviews regarding its tree plantation practices. Local residents may report that these activities have **reduced natural forest areas**, limited public access to recreational spaces, and degraded the ecological value of community green spaces.			✓	High	**CSR** - Forestation programs help offset environmental impacts from its operations. Meanwhile, the company's conservation projects promote biodiversity and long-term ecological security. Partnerships with communities and non-governmental organizations further enhance its image as a sustainable organization. These efforts align with international ESG practices and regulations. **Sustainable products** - By adhering to FSC™ standards, SCGP plays a significant role in safeguarding natural forest areas and supporting global initiatives to promote sustainable forestry. This approach not only strengthens SCGP's environmental credentials but also aligns with its broader commitment to sustainability, ultimately enhancing SCGP's reputation in the industry. **Sustainable conservation** - Implementing conservation projects for long-term biodiversity and ecological security in the Khao Cha-ang Conserved Forest, Kanchanaburi, the Ban Huai Saphan Samakkee Community Forest, Kanchanaburi, and the Kamphaeng Phet Conserved Forest in Kamphaeng Phet. - According to a research, the cultivation of eucalyptus trees does not have any adverse effects on the environment.	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
13.	Transition	Technology	Requirements to transition to more efficient, resilient and less environmentally damaging technologies	Accelerated **stakeholder pressure** for nature-friendly technologies may require **significant capital and operational investments in R&D,** infrastructure upgrades, and alternative production methods, potentially impacting short-term profitability.	✓	✓	✓	Low	**R&D** - SCGP continues on research and development (R&D) for sustainable packaging. We consistently invests in environmentally friendly packaging innovations to support its goal of becoming a leader in sustainable packaging solutions. **Marketing** - SCGP analyzes market demand, tracks shifts in social trends, and identifies diverse consumer needs. This comprehensive approach to market analysis helps SCGP stay responsive to changing market dynamics and better understand and meet consumer expectations. **Energy Efficiency** - SCGP invests in the available technology and machinery, including the adoption of AI and machine learning, to maximize energy efficiency across the manufacturing process. - Shifting from fossil fuels to renewable energy ensures that the company progresses in line with its climate targets. Investments in renewable energy, such as solar and biomass energy, support efforts to achieve Net Zero emissions, reduce dependence on fossil fuels, minimize operational cost fluctuations, and strengthen its position as an environmentally responsible organization. - Additionally, Siam Forestry Company Limited in collaboration with CERT+ has used satellites and AI in calculating technology to calculate the carbon dioxide sequestered in its economic forests.	High
14.	Transition	Technology	New monitoring technologies used by regulators and other stakeholders	The company faces nature-related risks from a lack of access to **high-quality data**, which hampers accurate assessments of its environmental impact, **failing to meet expectations from regulators and stakeholders**, potentially leading to poor ratings and **reputational damage**			✓	Low	**Disclosure** - SCGP recognizes the importance of information disclosure and real-time performance monitoring to build confidence among stakeholders. The company actively engages in sharing information and regularly conducts internal and external assessments of its management systems to ensure responsibility in its products, services, and solutions. - By implementing online COD analyzers, SCGP ensures access to high-quality data essential for effective water effluent regulation and industrial processes. This approach not only supports regulatory compliance and process optimization but also reinforces the company's dedication to environmental protection and sustainability. - SCGP utilizes Continuous Emission Monitoring Systems (CEMS) to meet expectations from regulators and stakeholders and prevent reputation damage when it comes to air emissions. - SCGP places a strong emphasis on the reliability and accuracy of its performance monitoring systems. Preventive maintenance and calibration are planned frequently if any malfunctions are happanned, stakholders can inform the regulators for notification.	Low
15.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	Lack of **consutation with Indigenous peoples** before establishing operations, **it can lead to legal, social, and political conflicts** regarding any activities that affect their lands or resources		✓	✓	Low	- SCGP is committed to support human rights across all operations. We have successfully maintained a record of zero cases of human rights violations, reflecting its dedication to ethical practices and the well-being of its workforce. - SCGP is dedicated to upholding the highest standards of sustainability and ethical practices, particularly in the areas of responsible forestry and labor human rights. We actively pursues Forest Stewardship Council™ (FSC™) certification and adheres to labor human rights policies to ensure responsible and ethical operations. - SCGP places a strong emphasis on consulting with local communities before establishing any operations. The company recognizes the importance of stakeholder engagement and actively seeks input and feedback from the communities where it operates. - SCGP provides job creation and career development opportunities for local residents in the communities where it operates. The company is committed to supporting the local economy and enhancing the quality of life for community members through these initiatives. - To prevent legal, social, and political conflicts arising from a lack of consultation with indigenous peoples, SCGP prioritizes CSR activities and informs before undertaking any activities that affect their lands or resources, ensuring meaningful participation and respect for their rights.	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation and remarks	SCG's Risk Level
					S	M	L			
16.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	Disturbances to nearby residents caused by **the business activities of plants may lead to protests** at the site, potentially resulting in hindered investment or operational difficulties.		✓	✓	Medium	- SCGP employs a corporate social responsibility (CSR) approach to address the concerns of the community and engage in a constructive dialogue. To ensure effective communication and address concerns from the community, SCGP establishes a channel for receiving feedback and complaints. - SCGP has set a target of receiving no official odor complaints from the community. SCGP is committed to minimizing any unpleasant smells and ensuring a high quality of life for the community. - SCGP has created an AI-powered Detect Odor & Monitoring (DOM) system, a novel technology that accurately measures and monitors odors. This comprehensive system is designed to track odors with high precision, ensuring a better quality of life for the community.	Low
17.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	Packaging companies often use chemicals, adhesives, dyes, and solvents in production. **Workers may be exposed to these hazardous substances**, which could lead to health problems such as skin irritation, respiratory issues, or long-term illnesses if proper safety protocols are not followed.	✓	✓	✓	High	**Health and safety** - SCGP is dedicated to enhancing occupational health and preventing work-related illnesses. We are committed to building a safety culture and reducing work-related injuries. - SCGP prioritizes safety and environmental protection when handling hazardous substances. We follow proper safety protocols, including our environmental framework and chemical management procedures, to ensure the safe handling and management of these substances. - SCGP follows the ISO 14001 standard to ensure compliance with best practices related to environmental issues. Additionally, we have implemented the Environmental Performance Assessment Program (EPAP), which features an internal assessment component. - SCGP plans for industrial inspections and measurements are also established along with health surveillance programs aligned with exposure risk factors. Data analysis is conducted to identify trends in abnormalities causing work-related illnesses and diseases thereby, paving the way for the enhancing the quality of life for operational staff.	Low
18.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	Stricter **environmental regulations**, such as those related to waste management, emissions, and sustainability practices, may result in **higher operational costs for packaging companies**. These increased costs may disproportionately impact lower-income workers if companies choose to cut wages, reduce benefits, or fail to invest in sustainable practices that could reduce long-term costs. **This can lead to greater financial inequality between workers and company leadership.**			✓	Low	**Transition to low-carbon & circular economy** - SCGP is dedicated to support a circular economy by actively engaging in business partnerships to develop green supply chains and low carbon products. The company invests in recycling infrastructure, promotes the efficient reuse of materials, reduces operational costs, and minimizes the need for new resources. - SCGP is committed to sustainability by adopting alternative technologies and materials to reduce natural resource and energy consumption in its production processes. The company also increases the use of renewable and alternative energy sources and leverages carbon credits to reduce operational costs. **Supply Chain Management** - SCGP fosters sustainable business practices by carefully selecting and assessing suppliers based on their capabilities and sustainability performance. We categorize suppliers into specific groups to ensure effective management and collaboration. - To develop suppliers' capability towards sustainability, SCGP is committed to enhancing the capabilities of its suppliers, particularly local ones. SCGP encourages these suppliers to formulate their own development plans and supports them through training and knowledge-sharing initiatives. - To support the development of employees' careers and professional growth, SCGP implements training programs aimed at strengthening their skills and knowledge.	Low

6.1.3 SCG DECOR

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
1.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	Increased risk of **damage from floods, storms, and landslides** if protective terrestrial ecosystems are degraded - The Philippines operation has experienced a flood event.	✓	✓		High	**Disaster Prevention** - Installing a Flood Protection Barrier/Reservoir and an emergency pump system at factories in the risk area - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard. - Collaborating with the government agency to follow up on incoming natural disasters and prevent any damage in time, following the BCM plan. **Biodiversity & Ecosystem** - Tree Plantation 2,000 trees	Low
2.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	Repair costs and interruptions to business activity following damage to infrastructure due to **wildfires, tropical cyclones, extreme heat, and other extreme weather events**	✓	✓		High	**Disaster Prevention** - Promoting a campaign "to stop burning agricultural waste" to communities around the factory with the government agency. Not only preventing wildfire but also stopping the source of PM2.5 - Tree planting around the factory boundary to create a Green Belt - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard.	Low
3.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	**Declining water supply** and/or water quality as a result of the organization's activities, those of others in the watershed, and climate change			✓	High	**Water Management** - Installing reservoir 1.3 Million cu.m., covering over 60% of yearly water consumption. - Installing groundwater well with legal license. - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard. **Water Quality** - Internal reservoirs are a buffer for unstable water withdrawal quality, and factories have their own water supply treatment facilities to control the quality of water that is used in the process.	Low
4.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	Disruption of operations due to **scarcity and increased cost of raw materials**			✓	-	**Supply Chain Management** - SCGD has a contract with multiple suppliers to serve main raw material. - SCGD also has its own source of raw material, such as a clay mine. - Factory located in many countries that can import products from other locations to serve customer needs.	Low
5.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental & social impact	**Changes in sentiment towards the organisation**/brand due to competition for natural resources (e.g. water, land), **impacts on nature** and/or **failure to meet expected stakeholder community expectations** (e.g. nature no net loss, failure to meet rehabilitation expectations, or late life divestments)			✓	Medium	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services,solutions responsibility performance and follow PL Law - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop Environmental friendly product to serve customer need. - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones **CSR** - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs	Low
6.	Transition	Policy	Changes to legislation/ regulations	**Tighter regulations** requiring longer suspensions of operations to facilitate inspections and surveys			✓	Low	- SCG Legal team and In house compliance committee are responsible for monitoring regulartory change	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
7.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatisation of industry and/or media scrutiny	The production of ceramics, concrete, and other construction materials often generates dust, particulate matter, and wastewater, which can contribute to **local air and water pollution** if **not managed properly.** If the company is seen as **disregarding proper pollution control measures**, it could face **reputational damage** from local communities or environmental groups.		✓	✓	High	**Operation Control** - Installing and operating wastewater treatment, air pollution control according to standards - Regulary monitoring effluence, emission to meet legal standards **CSR** - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs	Low
8.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Disturbances to nearby residents** caused by the business activities of plants may lead to **protests** at the site, potentially resulting in hindered investment or **operational difficulties.**	✓	✓	✓	Medium	**Operation Control** - Regulary monitoring noise to meet legal standards **CSR** - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs	Low
9.	Transition	Liability	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Workers** may face **exposure to harmful chemicals or materials**, such as paints, adhesives, or finishes. In areas with poor environmental regulation or inadequate safety measures, workers' health could be jeopardized, leading to long-term **health issues**, such as respiratory problems or skin conditions.			✓	High	**Health and safety** - Conduct chemical Management system following safety standard - Enhancing occupational health and preventing work-related illnesses,travelling and transportation - Building a safety culture and reducing work-related injuries, travelling and transportation - Utilize digital technology to enhance operational efficiency and reduce the risk of accidents, injuries, and occupational illnesses and diseases.	Low
10.	Transition	Policy	Changes to legislation/ regulations	As environmental **regulations become stricter**, the companies may face **increased costs** related to reducing carbon emissions, waste management, or transitioning to sustainable materials. These costs could **lead to financial strain, particularly for lower-wage workers or local communities,** if the company opts to cut costs by reducing wages, benefits, or labor hours, exacerbating financial inequality.			✓	Medium	- Setting GHG Reduction align with SBTi - Conduct GHG reduction projects - SCG Legal team and In house compliance committee are responsible for monitoring regulartory change	Low

6.1.4 SCG SMART LIVING

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
1.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	Increased risk of **damage from floods, storms, and landslides** if protective terrestrial ecosystems are degraded **(Floods from rainstorms)**	✓	✓		High	**Prevention: Floods from rain bomb** 1. Setting a rainfall monitoring system and improving the drainage system by ground leveling 2. Setting a gutter clearing plan during storm season to prevent flooding from overflowing within the factory area 3. Setting standards for the newly installed machine and process, and designed with updated rain assumption & water direction in the plant 4. Having insurance in place 5. Increasing the safety stock of raw material & product in the warehouse to prevent raw material shortage for at least 2 months	Low
2.	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	Repair costs and interruptions to business activity following **damage to infrastructure due to wildfires, tropical cyclones, extreme heat, and other extreme weather events (Storm in dry season)**	✓	✓		High	**Prevention: Storm in the dry season** 1. Setting an annual building inspection plan to prevent structure failure 2. Setting a site survey monitoring plant	Low
3.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	**Declining water supply and/or water quality** as a result of the organization's activities, those of others in the watershed and climate change **(Water quality at source)**			✓	High	**Prevention: Water contaminated at the source** 1. Setting a water quality monitoring system before it enters the water supply line 2. Sampling and adjusting the water treatment chemicals to match with water quality input 3. Setting up working teams to monitor water conditions in the upstream area 4. Setting up a working team to monitor new regulations	Low
4.	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	Disruption of operations due to **scarcity and increased cost of raw materials and freshwater (Water scarcity)**			✓	-	**Prevention: Water scarcity** 1. Having alternative sources of water, such as underground water and a private pond, in place 2. Setting a desiltation plan before the rainy season 3. Increasing the efficiency of the wastewater treatment plant to improve %recycled water	Low
5.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental & social impact	**Changes in sentiment** towards the organization/brand due to **competition for natural resources** (e.g. water, land), **impacts on nature and/or failure to meet expected stakeholder community expectations** (e.g. nature no net loss, failure to meet rehabilitation or reclamation and closure expectations, or late life divestments)			✓	Low	**Prevention: Natural resource impact to communities at source** Using rejected product as alternative raw materials to reduce the need of virgin materials	Low
6.	Transition	Policy	Changes to legislation/ regulations	**Tighter regulations requiring longer suspensions of operations** to facilitate **inspections and surveys** when, for example, previously undetected important cave systems are discovered			✓	Low	**Prevention: Tighter regulation - Solid waste** 1. Setting a working team to monitor new regulations monthly 2. Turning non-hazardous waste into a new product (Waste to Value)	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Time horizon			Adjust score	Mitigation	SCG's Risk Level
					S	M	L			
7.	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to stigmatization of industry and/or media scrutiny	The production of ceramics, concrete, and other construction materials often **generates dust, particulate matter, and wastewater**, which can contribute to local air and water pollution if **not managed properly**. If the company is seen as disregarding proper pollution control measures, it could **face reputational damage from local communities or environmental groups.**		✓	✓	High	**Pollutions control** 1. Having a monitoring system in place for the dust collector and the wastewater treatment plant 2. Having PM plan in place 3. Having stakeholder engagement projects/activities and a crisis/normal communication plan with stakeholders	Low
8.	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Disturbances** to **nearby residents** caused by **the business activities of plants may lead to protests** at the site, potentially resulting in hindered investment or operational difficulties.	✓	✓	✓	Medium	**Workplace (Dust, Odor, Vibrant) disturbs communities** 1. Having a monitoring system in place 2. Having stakeholder engagement projects/activities and a crisis/normal communication plan with stakeholders	Low
9.	Transition	Liability	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Workers may face** exposure to **harmful chemicals** or materials, such as paints, adhesives, or finishes. In areas with poor environmental regulation			✓	High	**Harmful chemical effects on staff** 1. Using less harmful materials 2. Having a chemical management system in place (risk assessment, PPE, procedure, OJT) 3. Having Safety Observations & Inspections, and other activities 4. Preparing necessary PPE better than the regulation requires	Low
10.	Transition	Policy	Changes to legislation/ regulations	As **environmental regulations become stricter**, **companies may face increased costs related to reducing carbon emissions, waste management, or transitioning to sustainable materials**. These costs could lead to financial strain, particularly for **lower-wage workers** or local communities, if the company opts to cut costs by reducing wages, benefits, or labor hours, exacerbating **financial inequality.**			✓	Medium	**New climate change regulation (Carbon Tax, ETS)** 1. Setting a working team to monitor new regulation/trend (by SL-BD,HPB-ESG team) 2. Implementing GHG reduction projects 3. Increase renewable energy ratio to reduce the effect, such as solar roof installation, covering over 20% of electricity use in 2025 and using biomass over 36% of thermal energy use in 2025	Low

6.1.5 SCG CHEMICALS

No.	Type risk	Risk category	Nature-related risk	Business Risk	Adjust score	Mitigation	SCG's Risk Level
1	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	**Damage** to facilities due to **extreme events** (e.g., **flooding and landslides**) causes operational downtime and increased costs of repairs - The factory has remained flood-free due to its location outside of flood-prone watershed areas, which are at lower elevations. Furthermore, the industrial park features an efficient drainage system that facilitates rapid water runoff into the sea. - Employee residences located within the downtown are susceptible to flooding.	High	SCGC Tree Planting Project - cumulatively to date, 870,129 trees were planted both in inland and mangrove forests in multistakeholder collaboration **Disaster Prevention** - Monitor and assess disaster risks to establish contingency and business continuity plans in accordance with the international TCFD standard. - Establish a collaborative network with government agencies, private organizations, and industries while playing a crucial role in planning and managing water resources and natural disaster issues at both the local and national levels - Transportation operations remain unaffected, and alternative port facilities are available.	Low
2	Physical	Acute	Changes in the state of ecosystems and species - Changes to protection from natural hazards due to changes in hazard mitigation services	Operational disruptions and financial impacts from **hurricanes/storms** hitting a coastal region. This could **damage chemical storage facilities** and lead to **leaks of hazardous substances** into nearby ecosystems if resilience investments are not placed - This location is not subject to regular storm activity, and wind events generally have minimal impact	High	- Effective water management is in place, supported by a comprehensive water pipeline infrastructure.	Low
3	Physical	Chronic	Changes in the state of ecosystems and species - Changes to the supply of natural inputs	Progressive **reduction of water supply** can cause increased operational costs, changes in production lines or **reductions in production capacity** due to competing demand for water throughout the process (e.g. cooling, solvent, cleaning). - The region experienced instances of water scarcity in 2005 and again during 2019-2020.	High	**Water Management** - Water Withdrawal Reduction 24.09% compared with BAU at the base year of 2014) - Manage water-related risk in all business operation sites according to international standards, such as applying international risk assessment tools and analyzing water situation, as well as risks/opportunities - Increase water use efficiency with high technology according to international concepts - Efficiently manage wastewater treatment and reuse treated water **Water Quality** - Systematically monitor and prevent environmental violations (water use and water discharge), investigate and have a mitigation plan in place to prevent the recurrence, and regularly report to top executives - A representative serves on the river basin committee, ensuring the implementation of water management guidelines and policies aligned with the National Water Resources Committee (NWRC) Plan. คณะกรรมการลุ่มน้ำ - A reserve reservoir is available as a backup water source. - A comprehensive maintenance program is in place for the water supply network. - Ongoing engagement with all relevant stakeholders is maintained.	Low
4	Transition	Policy	Changes to legislation/ regulations	**Higher operational costs** and financial burdens from **stricter environmental regulations**, including those requiring the management of end-of-life product impacts, such as the recovery and recycling of chemical containers. - No case	Medium	- SCG continuously monitors the regulatory change - There is a packaging design that can be easily reused or recycled, such as: Recycled PP (PCDP02JN) for sustainable packaging, Recycled HDPE to personal care packaging, Eco-Friendly Packaging for the premium-grade diesel fuel additive "FURiO Ultra HD, develop environmentally friendly packaging for the food industry from HDPE S111F plastic pellets with SMX™ technology and develop Lightweight Caps from SX002JA, plastic resin using SMX™ technology, for Carbonated Drink	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Adjust score	Mitigation	SCG's Risk Level
5	Transition	Technological	Shifting customer/investor values or preferences to products and/or services that have positive impacts on nature/ mitigate negative impacts on nature	Potential **loss of business (May lose business opportunities)** for companies sticking to **older, more damaging practices** as safer and more sustainable chemical products become available. Ex: Companies that continue to use solvents with high VOCs, which are harmful to health and the environment, may face pressure from customers and legislation to switch to safer bio-based solvents. If they don't adapt, they may lose customers to companies that offer environmentally friendly solvents.	Low	**Product/Service Responsibility** - Conduct Assessment to Elevate the Quality of Product, Services, and Solutions - Report product, services, and solutions' responsibility performance - Analyze market demand, shifts in social trends, and diverse consumer needs - Develop high-value-added products that are friendly to health, safety, and the environment - Conduct Product Hazard Analysis (PHA) at every step, from production to transportation, storage, usage, and post-consumer management - Utilize technology and innovation to develop products, services, and solutions that are higher in quality and offer greater commercial value than existing ones - Environmental Management System There is a system to control the system to prevent exceeding the standard values as specified by law. All equipment undergoes preventive maintenance (PM) according to the specified schedule, and complete leakage measurement (Fugitive Emission) is performed. The measured values are within the specified standard criteria.	Low
6	Transition	Market	Shifting customer/investor values or preferences to products and/or services that have positive impacts on nature/ mitigate negative impacts on nature	Loss in market share due to **inability to supply green chemicals** or challenges in sourcing **bio-feedstock and biofuels**.		**Supply Chain Management** - Conduct supplier/contractor analysis and assessment for annual certification - Select suppliers/contractors with the potential to collaborate and for sustainable mutual business growth - Spend analysis and risk assessment in tandem with an ESG approach through risk prioritization - Build capacity of procurement staff and share knowledge among procurement officers in the public and private sectors - Educate suppliers/contractors on SCG Supplier Code of Conduct practices - Evaluate compliance with SCG Supplier Code of Conduct - SCGC has developed products under the concept of "Green Polymer", an innovation that responds to the needs of the Circular Economy, such as packaging made from biodegradable plastics, and some products have received international certifications such as ISCC PLUS (International Sustainability & Carbon Certification). - The project is a joint development of Bio-based Polyethylene (Bio-PE) in collaboration with world-class partners such as Braskem from Brazil. It is a bioplastic made from sugarcane with similar properties to regular Polyethylene but significantly reduces greenhouse gas emissions (Carbon Footprint). The goal is to produce Bio-PE for use in various industries such as food packaging and consumer goods. - The LSP (Long Son Petrochemicals) project has integrated Green Chemistry concepts into the production process, such as efficient use of raw materials and reduction of waste in the production process, in order to align with sustainability goals. - Circular PP (Polypropylene) and Advanced Recycling projects have developed advanced recycling processes to turn plastic waste into new raw materials for the production of chemicals and plastics, such as Circular Polypropylene (Circular PP), which reduces the use of new resources and reduces the impact on the environment (production of 100% recyclable packaging). - SCGC has collaborated with global organizations and partners such as: Alliance to End Plastic Waste (AEPW): to solve the problem of plastic waste(https://www.scgchemicals.com/uploads/Alliance_Catalysing_Impact_Progress_Report_2022_SCGC1.pdf) ICCA (International Council of Chemical Associations): Supporting the development of sustainable chemicals - Venus System Business Partner Management is a comprehensive procurement platform that helps the business partner management process to be efficient and meet international standards. The E AUCTION system (online auction system) enhances procurement efficiency with AI, helping to increase accuracy in the decision-making process, resulting in a more efficient procurement process, increased transparency, reduced errors, and 5-8% better prices.	Low

No.	Type risk	Risk category	Nature-related risk	Business Risk	Adjust score	Mitigation	SCG's Risk Level
7	Transition	Market	Shifting customer/investor values or preferences to products and/or services that have positive impacts on nature/ mitigate negative impacts on nature	**Supply chain shortages and increased costs from** the **dependence on natural resources** that are at risk from biodiversity loss (e.g. certain minerals used in chemical manufacturing). For example, overexploitation could lead to the scarcity of certain critical minerals essential for specific chemical products	Low	- Plan to procure raw materials from sustainable sources - Support the Circular Economy approach - Monitor biodiversity loss trends in raw material source areas by assessing risks according to the TNFD framework: Using the LEAP approach – Locate, Evaluate, Assess, Prepare	Low
8	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental impact	Divestments or legal actions due to **environmental incidents as chemical spills or violations of environmental laws**	Medium	- There is an environmental risk management system (Environmental Risk Management System) such as the ISO 14001 chemical quality control system - There is a safety risk management system for emergency planning and leakage response drills - There is a transition risk such as Carbon, CE, Biodiversity and have a governance process for monitoring and engaging with relevant parties	Low
9	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to environmental impact	A company found responsible for a **significant environmental incident** may face intense **negative publicity**. For example, fires and subsequent chemical runoff at petrochemical storage facilities could cause extensive nature loss (waste, air pollution) leading also to major public and governmental backlash. Over time, continuous and improper discharge of toxic substances (e.g. heavy metals) from chemical manufacturing into aquatic ecosystems could impact species and all communities depending on them. This can lead to significant public backlash.	High	**CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs - Assessing benefits that the organization receives in terms of quantity/value/economic returns - There is an Environmental Management System (ISO 14001) - There is an Emergency Response Plan (ERP) - There is proactive communication and build trust (Proactive Stakeholder Engagement)	Low
10	Transition	Liability	Fines/penalties received due to nature-negative outcomes	Chemical companies may face **lawsuits, litigation, or claims for damage to nature when incidents occur** within their operations. For example, companies operating in a biodiverse region may face class-action lawsuits from local communities and environmental groups after a chemical spill contaminates a major river. The litigations could result in significant financial penalties, mandated costly cleanup operations and a directive to invest in better pipeline integrity monitoring technologies	-	- Safety reform - CSR - Communication	Medium

No.	Type risk	Risk category	Nature-related risk	Business Risk	Adjust score	Mitigation	SCG's Risk Level
11	Transition	Reputation	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Disturbances to nearby residents** caused by the business activities of plants may lead to protests at the site, potentially resulting in hindered investment or operational difficulties.	Medium	**CSR** - Managing operational impacts to prevent conflicts with communities - Developing the quality of life in communities and fostering sustainable self-reliance - Fostering engagement among one another in creating an inclusive and shared-value society - Disclosing and communicating information to foster confidence among stakeholders - Developing a complaint channel that stakeholders can access in order to collect suggestions and develop activities that meet their expectations and needs - Assessing the benefits that the organization receives in terms of quantity/value/economic returns - There is an environmental management system (Environmental Management System) ISO 14001 - Continuously create cooperation with the community (Stakeholder Engagement)	Low
12	Transition	Reputational	Changes in sentiment towards the organization/brand due to impacts on nature - Due to social impact	**Workers** in chemical manufacturing may be **exposed to toxic substances** such as acids, solvents, or other hazardous chemicals. Prolonged exposure to these substances can lead to **serious health issues** like respiratory problems, skin burns, or even long-term diseases such as cancer. Strict health and safety measures are essential to minimize these risks, and failing to implement them can damage the company's reputation and increase worker compensation claims.	High	**Health and safety** - Enhancing occupational health and preventing work-related illnesses,travelling and transportation - Building a safety culture and reducing work-related injuries, travelling and transportation - Utilize digital technology to enhance operational efficiency and reduce the risk of accidents, injuries, and occupational illnesses and diseases. - SCGC Health Management Systems - Safety Reform (High risk response, Operation Risk Improvement, Strategic Governance)	Low
13	Transition	Policy	Changes to legislation/ regulations	As environmental **regulations become stricter**, companies may face **increased costs** related to reducing carbon emissions, waste management, or transitioning to sustainable materials. These costs could **lead to financial strain, particularly for lower-wage workers or local communities,** if the company opts to cut costs by reducing wages, benefits, or labor hours, exacerbating financial inequality.	Low	- There is a growing focus on stricter environmental regulations, such as carbon reduction laws, waste management, or requirements for the use of more sustainable materials.	Low

6.2 LONG LIST OF NATURE-RELATED OPPORTUNITIES

6.2.1 SCG CEMENT AND GREEN SOLUTIONS

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Markets			✓	Opportunities for organizations to engage in emerging natural capital markets by reducing emissions or investing in technologies that capture carbon to generate carbon credits which can be sold on voluntary or compliance carbon markets.	- SCG Clean Energy Platform **connects clean energy and carbon credit trading**, standing ready to support Thailand's The private sector to use clean energy to achieve Net Zero target along the ESG pathway SCG encourages communities to adopt agricultural practices based on the BCG (Bio-Circular-Green Economy) model by implementing the alternate wetting and drying technique in rice cultivation to reduce methane emissions from rice paddies, which not only **reduces water usage** but also increases crop yields and can **build towards carbon credits** in the future	Companies can not only reduce their carbon emissions but also unlock new revenue streams by participating in carbon markets. Carbon credits also enhances a company's sustainability profile, which may attract customers, investors, and regulatory favor
Business Performance	Products and services		✓	✓	Replace virgin raw materials through the reuse and repurposing of waste and loss into alternative products (e.g., recycled concrete aggregates, recycled powder, and recycled construction demolition waste)	**From pile waste to recycled concrete** - Pile wastes are ground to yield Recycled Concrete Aggregate, which is then used as a constituent in recycled concrete for flooring substitute materials in the project vicinity. **SCG Fly Ash Pipe Concrete** is a concrete pipe made from a 3.46% by weight mix of recycled fly ash, while maintaining its strength and life cycle. This is manufactured by SCG Factor in Indonesia.	The companies can lower their operational costs by replacing expensive virgin materials with more affordable recycled products. This can enhance their profitability and make them more competitive in markets where cost control is essential.
Business Performance	Products and services			✓	Certification of sustainable products	SCG Green Label-certified - 70 Carbon Footprint Reduction (CFR) Label products (2023) - 505 Carbon Footprint Label products (2023) - 26 Green Label products (2023) - 57 Energy Efficiency Label products (2023) - 53 EPD Label products (2024)	Their ability to cater to high-value construction projects or secure partnerships includes the domestic and regional markets. Such as the first cement manufacturer to receive the Environmental Product Declaration (EPD) label in the United States, SCG has exported over 1 million tons of low-carbon cement. Organizations seeking to meet sustainability standards can significantly enhance their revenue.
Business Performance	Products and services			✓	Use of owned or managed natural assets to create or enhance ecosystem services that may be monetized (e.g. natural flood risk management)	Cement-Building Materials Business operates a forest/agriculture project for Thailand Voluntary Emission Reduction Program (T-VER) around Lampang cement plant and Th cement plants by implementing land and mangrove forest since 2022. This system features a network from the Thai Department of Forestry, the Department of Marine and Coastal Resources, and Local Community Forest Management to execute plantation and reforestation in a total of 30,496.7 rai within 2026.	The companies can monetize carbon credits by investing in large-scale carbon sequestration projects on land they own or manage. This not only provides an income source but also strengthens the company's sustainability profile, demonstrating a commitment to reducing climate change impact.
Business Performance	Reputational capital			✓	Increase in consumer brand loyalty and enhanced social license to operate through actions such as transparent biodiversity management plans and focus on circular economy		The companies can gain broader acceptance and reduce potential conflicts with local communities by aligning their operations with community values. This leads to a more stable and supportive operating environment, which is critical for securing long-term access to resources and avoiding disruptions to production.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Sustainability Performance	Ecosystem protection, restoration and regeneration			✓	Conservation (e.g., through the creation of temporary habitats during the quarry lifecycle)	Cement-Building Materials Business implemented the project to rehabilitate the nature and environment around mining areas, in partnership with agencies in Thailand and abroad - **Community Forest Conservation Project** working with community in Lampang totaling 30,000 rais. It is planned to apply for T-VER certification from TGO (Public Organization). - **Participatory Forestation** with Ban Thungpanan Community in Palian District, Trang Province, to rehabilitate the ravaged mangrove the size of 96.7 rais and in Tumbon Kao in Mae Ping National Park, Lamphun Province for 400 rais back to its former health.	The companies that create temporary habitats can integrate these efforts into biodiversity offset programs, enabling them **to meet regulatory requirements while avoiding costly fines or legal challenges**. These programs can also help the company build stronger relationships with regulators and conservation groups.
Business Performance	Resource efficiency	✓	✓	✓	Technological innovations that increase resource efficiency and/ or reduce risks related to nature dependencies	SCG Cleanergy has developed a Smart Grid management system, operated via the SCG Cleanergy Platform, which facilitates power trading between operators. The system transmits electricity through transmission lines that are connected to factories and the Provincial Electricity Authority's grid through the SCG Cleanergy Platform, which records electricity usage and carbon credit data for the purpose of carbon footprint offsetting. The solution is particularly effective in managing multiple factories in industrial estate areas as it optimizes efficient solar power usage and thus promotes clean energy usage.	
Business Performance	Resource efficiency	✓	✓	✓	Technological innovations that increase resource efficiency and/ or reduce risks related to nature dependencies	Over recent years, SCG Cement and Green Solutions has promoted the use of CPAC BIM solutions for building design to enhance design accuracy and quality control across the construction project. Particularly effective in error detection, this technology helps reduce construction mistakes and redundant tasks, thus minimizing unnecessary resource waste-including time, labor, and materials-by 5-15%, depending on the project type.	
Business Performance	Resource efficiency	✓	✓	✓	Create positive changes to the supply of natural resources that are inputs to production.	The cement plants process community waste into refuse derived fuels (RDF) to reduce the use of coal and methane (CH4) emissions from landfilling community waste, equivalent to 2.24 million tCO2eq in avoided emissions.	Reduce fossil fuel usage for the cement operation that produce more emission than alternative fuel. Especially for local resource fuel that usaully damages the environment; such as municiple solid waste that can be turned into refuse derived fuels (RDF) used in cement heating process. Green Circular business under SCG Cement and Green Solution is a new business established to regulate the methods and quantities of alternative fuel utilization under the operations of SCG Cement and Green Solution.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Products and services	✓			New Nature-positive products that reduced negative impacts on nature	Expanding into the Middle East with 3D Printing Mortar: SCG is the first to develop 3D printing mortar using low-carbon cement, backed by over a decade of patented research. This innovation reduces greenhouse gas emissions by more than 15%. SCG has shifted its business strategy from providing 3D printing construction services to selling 3D printing mortar with technical support, enhancing market opportunities in the Middle East. Ultra-High Performance Concrete (UHPC): UHPC offers superior strength and durability, making it ideal for load-bearing structures while enabling more efficient designs with reduced material usage, contributes to sustainability by reducing carbon dioxide emissions by 20-60%. Biochar Carbon Removal: SCG has developed Biochar technology as part of its Green Circular Business initiative. This process transforms agricultural waste biomass into Biochar, which is used to improve soil quality and in concrete applications for long-term carbon storage. SCG received funding from the Japan Carbon Frontier Organization (JCOAL) in 2024 to explore the conversion of agricultural waste into Biochar, which will be used as a coal substitute and a carbon storage medium in both soil and concrete. This initiative is a crucial step in promoting sustainability and advancing carbon-neutral solutions.	
Business Performance	Markets			✓	Access to new and emerging markets	Carbon Capture, Utilization, and Storage (CCUS) technology is central to SCG's 48% GHG emission reduction. Hydrogen Production: SCG researches cost-competitive hydrogen production and its integration with captured carbon dioxide to create high-value-added products.	
	Markets	✓	✓	✓	Access to new and emerging markets	Consumers are increasingly interested in low-carbon products, creating greater sales opportunities. SCG Cement and Green Solution is accelerating the production of low-carbon products through both mass customization and innovative green products, while also effectively communicating with target groups.	
Business Performance	Markets		✓	✓	Access to new and emerging markets	The upcoming carbon tax from Thailand's climate change act has accelerated the feasibility and cost reduction of CO_2 reduction technologies, creating greater opportunities for businesses involved in selling green solution technologies.	

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Markets	✓	✓	✓	Access to new and emerging markets	Investors have more likely to increase their investments in Green Businesses, presenting opportunities for Biomass and Green Industry. SCG Cement and Green Solution will accelerate new green business initiatives, such as Biomass Business and RDF & RDF Power Plant Business.	
Business Performance	Markets	✓			Access to new assets and locations for biomass usage.	Sources biomass sustainably using a contract farming model, in which the company purchases energy crops grown on long-term leased land at reasonable prices. In the initial phase, over 1,000 rais have been cultivated, with an estimated annual crop yield of 30,000 tons of energy crops.	New asset that business invests for industrial crop, such as bamboo and Napier grass, gain more feasible source for alternative fuel in market. Green Circular business under SCG Cement and Green Solution is a new business established to regulate the methods and quantities of alternative fuel utilization under the operations of SCG Cement and Green Solution.
Sustainability Performance	Ecosystem protection, restoration and regeneration	✓	✓	✓	Technological innovations that increase resource efficiency and/ or reduce risks related to nature dependencies	Guided by green mining principles, SCG Cement and Green Solutions prioritizes environmental protection and harmonious co-existence with local communities and thus minimizes potential environmental impacts by adopting semi-open cut mining, leaving buffer zones around mine perimeters to preserve natural mountain landscapes. In addition, the company has been working with external experts to study biodiversity in its mining areas and has developed restoration plans fromthe beginning through to the present.	
Sustainability Performance	Sustainable use of natural resources		✓	✓	Transition to processes/ circularity mechanisms with reduced negative impacts on nature/ increased positive impacts on nature, including within value chains.	Process improvement and increase the share of Biomass usage; such as nozzle ring improvement, AI and automation, hot-air generator for biomass production from agricultural waste, biomass boiler, etc. Reducing GHG emissions up to 24,923 tCO2eq.	Fuel for heating process is continuous need. To reduce impact to nature, changing of fuel type support this goal. Process improvement that applicable for cleaner type of fuel also provide this alignment.

6.2.2 SCG PACKAGING

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Resource efficiency		✓	✓	Transition to processes with increased positive impact on nature (e.g., restoration, reduced pollution)	Prepack Thailand Co., Ltd., holds a Class A certification from **RecyClass** for its mono-material plastic packaging, specifically the R1 -PE mono-layer pouch or PE flexible pouch. RecyClass is an organization that evaluates the recyclability and traceability of recycled materials used in plastic packaging through stringent testing processes. With this certification, Prepack Thailand Co., Ltd., gains the trust of customers and consumers, both domestically and internationally.	By shifting to more sustainable processes, such as producing compostable packaging or using plant-based materials, packaging companies can capture a larger share of the growing market for eco-friendly packaging. Additionally, as government regulations around plastic waste and packaging disposal become more stringent, packaging companies that have already adopted sustainable practices will be well-positioned to meet compliance requirements and avoid penalties.
Business Performance	Resource efficiency		✓	✓	Adoption of resource circularity mechanisms that reduce dependencies and impacts on nature	- **Green Carton**, an environmentally friendly corrugated cardboard packaging, decreases paper materials usage while maintaining quality and strength. For example, Green Carton's G4 model can reduce paper consumption by over 15%. - **Fest Fresh Pak** Food Packaging: An innovative, recyclable paper tray, designed for chilled fresh meat, increases the use of renewable materials by at least 80%. - **Glassine Paper** is produced through an environmentally friendly process that can reduce energy consumption during production by at least 2% per ton. Utilizing eco-fiber pulp at a 10% ratio significantly enhances the sustainability of this product.	By increasing the use of recycled materials or renewable resources in packaging production, companies can ensure a more stable supply chain and reduce their exposure to fluctuations in raw material prices. This reduces costs associated with procurement and can create a more resilient business model that is less vulnerable to resource scarcity and price hikes. Additionally, businesses adopting circular practices can reduce the carbon footprint of their packaging, enhancing their sustainability credentials and attracting eco-conscious consumers.
Business Performance	Products/services			✓	New business model activities with positive/ reduced impacts on nature	- **Recycled Plastic Pellets**: Utilizing advanced technology, plastic scraps from the waste reject generated during the paper recycling process are separated and melted into recycled pellets, which are then used as raw materials in product manufacturing. This process significantly reduces waste disposal through incineration and decreases greenhouse gas emissions. Recycled plastic pellets are produced in SCGP's operations in Indonesia and Thailand. - **Processing Fly Ash and Bottom Ash**: This initiative focuses on developing products from fly ash and bottom ash generated from boilers to create eco-friendly bricks, including PROBLOCK-ECO Bricks, Miracle Block, and temporary and permanent partition barriers. In 2024, these innovations contributed to a reduction of approximately 5,210 tons of waste requiring disposal.	By sourcing raw materials from sustainable and regenerative suppliers, packaging companies can help ensure that their products are not only environmentally responsible but also contribute to positive impacts on ecosystems. For instance, companies could use certified sustainable wood or plant-based fibers sourced from regenerative agriculture practices, which promote soil health and biodiversity. This can improve the company's reputation, enhance brand value, and appeal to sustainability-focused consumers and investors. - Fest by SCGP has joined the Program for the Endorsement of Forest Certification (PEFC) to promote sustainable forest management. In Thailand, this initiative is supported by the certifying Thailand Forest Certification Council (TFCC), which operates under the Institute of Agro-Based Industries (IAI) within the Federation of Thai Industries (FTI). Both TFCC and IAI are recognized as National Governing Bodies (NGB) by PEFC International based on internationally recognized sustainable forest standards, similar to FSC™.
Business Performance	Products/services			✓	New products with positive/ reduced impacts on nature and climate	**Fest Redi Pak** Food Packaging: An innovative peelable pulp tray design for refrigeration, heating, and ready-to-eat applications. Made from natural materials, it biodegrades within 60 days.	
Business Performance	Markets		✓	✓	Access to new and emerging markets	Integrating B2C & E-Commerce Order Systems for **Real-Time Inventory Tracking**: This integration facilitates for seamless collaboration between customer service and logistics teams by managing shipping preparations and enabling the automatic submission of purchase orders to factories, thereby enhancing overall operational efficiency.	The companies can develop specialized solutions for the e-commerce sector, such as tamper-proof packaging, easy-to-open designs, sustainable packaging options, and small-batch production tailored to individual customer needs. Partnering with major e-commerce platforms, retailers, or subscription box companies can help packaging companies tap into this fast-growing market, leading to increased revenues and long-term growth.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Markets			✓	Access to new assets and locations	SCGP strategically moved into the rapidly growing packaging materials recycling business via the acquisition of a 100% stake in **Peute**, the Netherlands' largest independent packaging materials recycling and trading company. The acquisition enables the Company to attain an additional one million tons per year of recovered paper and strengthens its integrated packaging business, from **sources of raw materials**, upstream and downstream production through to integrated packaging solutions, while also augments the ability to fulfil consumers' needs for sustainable packaging and **enhances the efficiency of recycling operations** in ASEAN with leading technologies.	By strategically locating production facilities near key raw material sources, the companies can lower operational costs, reduce reliance on long supply chains, and create more resilient and sustainable sourcing models. Additionally, new sources of recycled materials or bio-based feedstocks could help companies tap into the growing demand for eco-friendly packaging solutions.
Business Performance	Capital flow and financing		✓	✓	Access to nature-related green funds, bonds or loans	- SCGP sealed long-term support of its first 4-year **Sustainability-Linked Loan (SLL)** worth a total of THB 5 billion with Krungsri in 2021. The success of this SLL issuance emphasizes both organizations' ESG mission as the country's sustainability leaders, and it is an important step for integrating cooperation, leading to solid growth in ASEAN.	Many government and private sector funds are dedicated to green projects. These include low-interest loans or grants specifically aimed at businesses focused on sustainability, such as eco-friendly packaging development. Some banks and financial institutions offer loans that cater to projects promoting sustainable business practices.
Business Performance	Reputational capital	✓	✓	✓	Actions that create positive changes in sentiment towards the brand	- SCGP prioritizes customers, consumers, communities, employees, and the value chain by integrating their needs into product development and sustainable solutions, including leading the development of the Carbon Footprint of Product (CFP). Additionally, the company supports community development through the SCGP **Zero Waste Community Project.** - SCGP enlisted its employees with engineering backgrounds to provide guidance to the community. As a result of this collaboration, an innovative **"LeafCane Harvester Tank"** was developed. This machine can chop, collect and bundle sugarcane leaves for sale to SCGP and other organizations interested in biomass energy production. This innovation has nearly eradicated the reduced agricultural fires in the Khao Khlung subdistrict of Ban Pong district, Ratchaburi province, representing a remarkable environmental achievement.	Direct involvement in supporting Indigenous communities, local stakeholders, and forest management can lead to enhanced public relations and positive sentiment toward the brand. Companies can highlight their partnerships and initiatives through storytelling, marketing campaigns, and transparent reporting, creating a narrative around their commitment to social responsibility and environmental stewardship
Business Performance	Reputational capital	✓	✓	✓	Promote and support production by Indigenous Peoples and Local Communities	- SCGP supports and collaborates with local communities such as the Baan Huay Saphan Samakkee Community Forest, Khao Cha-ang Conservation Forest in Kanchanaburi, as well as the Kamphaeng Phet Conservation Forest in Kamphaeng Phet.	By partnering with Indigenous Peoples and local communities, the companies can support sustainable production methods that respect traditional knowledge, biodiversity, and cultural practices. For example, sourcing sustainable materials like bamboo, natural fibers, or timber from community-managed forests directly empowers local economies and preserves traditional knowledge on resource management.
Business Performance	Reputational capital	✓	✓	✓	Develop community forestry projects		

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Reputational capital	✓	✓	✓	Implement integrated forest management plans	- SCGP collaborated with various partners and organizations in support of biodiversity such as **FSC™- Forest Stewardship Council™** and engages communities and stakeholders to enhance their understanding of biodiversity conservation and the participatory utilization of community forests based on community forest principles. - Fest by SCGP has joined the **Program for the Endorsement of Forest Certification (PEFC)** to promote sustainable forest management. In Thailand, this initiative is supported by the certifying Thailand Forest Certification Council (TFCC), which operates under the Institute of Agro-Based Industries (IAI) within the Federation of Thai Industries (FTI). Both TFCC and IAI are recognized as National Governing Bodies (NGB) by PEFC International based on internationally recognized sustainable forest standards, similar to FSC™.	Establishing or supporting community forestry projects creates opportunities for packaging businesses to source materials from managed, sustainable forest resources. These initiatives allow communities to manage forests in ways that ensure they are maintained for future generations, reducing deforestation, enhancing biodiversity, and improving carbon sequestration.
Sustainability Performance	Ecosystem protection, restoration and regeneration	✓	✓	✓	Implementation of site based, nature-based solutions	- SCGP conducted biodiversity surveys to assess plant and wildlife species in **one community forest and two conserved forests**. The site's survey and monitoring included the Baan Huay Saphan Samakkee Community Forest and Khao Cha-ang Conservation Forest in Kanchanaburi, as well as the Kamphaeng Phet Conservation Forest in Kamphaeng Phet. SCGP actively collaborates with local communities in the areas to implement sustainability initiatives that focus on environmental restoration. - Additionally, SCGP expanded **carbon-sink forests** by planting 301,326 trees between 2019 and 2024. In 2024 alone, the company planted 62,767 trees, which is estimated to sequester approximately 2,863 tons of carbon dioxide equivalent.	The companies can implement restoration projects to rehabilitate degraded land, wetlands, and forests in areas near manufacturing sites or within supply chains. By planting native trees, restoring wetlands, and protecting local habitats, businesses contribute to biodiversity conservation while improving the environmental health of the surrounding areas.
Sustainability Performance	Ecosystem protection, restoration and regeneration		✓	✓	Investment in multistakeholder action at land/jurisdictional level	SCGP partnered with several organizations to support biodiversity: - **FSC™ (Forest Stewardship Council™)**: Ensures SCGP's economic forests meet FSC™-FM certifications by assessing operations and collaborating with local communities to mitigate risks. - **Forestry Research Center of Kasetsart University**: Conducts surveys and research on biodiversity and ecosystem management. - **Thai Forest Ecological Research Network**: Monitors and reports on long-term forest and biodiversity conservation, offering expert advice. - **Forest Resource Management Office of the Royal Forest Department**: Focuses on conserving natural resources in targeted areas.	The companies can partner with governments, NGOs, and local communities to engage in collaborative land-use planning that promotes sustainable resource management. This could include forest management, sustainable agricultural practices, and land restoration projects that align with the needs of local communities and ecosystems while ensuring a reliable supply of raw materials like wood, paper, and agricultural fibers for packaging production.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Sustainability Performance	Ecosystem protection, restoration and regeneration		✓	✓	Reduced incidence of flooding events (ecosystem service)	- SCGP utilized **advanced tools** such as **WRI AQUEDUCT, satellite images and Early Warning System (EWS**) to assess water-related risks including such as water shortages, floods, and droughts. - SCGP implements the **"SCGP Conserving Environments from the Mountain through the Sea Project"** which aims to conserve natural resources through tree planting and achieve sustainable management of water resources. In 2024, SCGP built 4,662 dams as part of its goal to construct 10,000 check dams by 2030. This project is vital for effective water resource management, flood prevention, and landslide reduction, aligning with SCGP's ESG 4Plus strategy, that emphasizes environmental sustainability.	The companies can support the restoration of wetlands in regions where they operate or source materials. Wetlands act as natural sponges, absorbing excess rainwater and slowly releasing it into the environment, which helps to prevent flash floods and reduce flood peak intensity. Companies can also invest in the creation of new wetlands or the enhancement of existing ones.
Sustainability Performance	Sustainable use of natural resources		✓	✓	Transition to processes with increased positive impacts on nature	- **Timber sourcing** from sustainable forests enables compliance with the **FSC™ - Forest Stewardship Council™**, reduce deforestation risks, and enhance supply chain security. In addition to ensuring a long-term supply of raw materials, sustainable forestry practices also strengthen the company's image as an eco-friendly enterprise.	The companies can adopt a sourcing strategy that prioritizes regenerative resources—materials that naturally replenish themselves over time. This includes materials like renewable plant fibers (e.g., bamboo, hemp, or agricultural by-products) that can be grown and harvested sustainably without depleting natural ecosystems. Companies can also support sustainable forest management practices or engage in regenerative agriculture to source packaging materials.
Sustainability Performance	Sustainable use of natural resources		✓	✓	Increased circularity of natural resources	- **Paper Recycling Project** promotes the recycling of used paper by establishing drop points in collaboration with partners effectively closing the recycling loop. In 2024, this project successfully recycled over 101 tons of paper through several initiatives, including: "WeCYCLE" project organized by WHA Corporation Public Company Limited, teaming up with MCOT Public Company Limited in the "Old Paper for New" project, setting up Recycling Drop Points at various locations and signing a memorandum of understanding (MoU) on "Systematic Collection of Used Paper Packaging for Recycling" with Thai Beverage Recycle Co., Ltd. (TBR)	
Sustainability Performance	Sustainable use of natural resources				Reduction in total freshwater discharge in areas with water stress (impact driver)	- SCGP has designed and installed a **heat exchanger system** to recycle wastewater from pulp-making machines. The system utilizes excess heat from the production process to increase the temperature of the wastewater, allowing the treated water to be reused as hot water in the pulp washing process. This initiative reduces water consumption in the pulp production process by 0.22 million cubic meters per year. - SCGP has implemented **pumps to direct excess water** from the pulp transportation process via pipelines to the paper production plant for reuse, successfully reducing its water consumption by 0.55 million cubic meters annually. - To facilitate water recycling, SCGP employs **Save-all and PETAX filtration system** for water used in production processes.	In water-scarce areas, effective wastewater treatment becomes essential to minimize the discharge of harmful pollutants into the environment. The companies can invest in advanced wastewater treatment technologies to ensure that wastewater is treated to the highest environmental standards before being released back into water bodies or reused. This includes using natural treatment methods such as constructed wetlands or biofiltration to clean and treat wastewater in an environmentally sustainable way.

6.2.3 SCG DECOR

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Markets			✓	Opportunities for organizations to engage in emerging natural capital markets by reducing emissions or investing in technologies that capture carbon to generate carbon credits which can be sold on voluntary or compliance carbon markets.		The companies can not only reduce their carbon emissions but also unlock new revenue streams by participating in carbon markets. Selling carbon credits also enhances a company's sustainability profile, which may attract customers, investors, and regulatory favor
Business Performance	Products and services	✓	✓	✓	New products that are designed for sustainable consumption	**COTTO SMART Water-Saving Sanitary War** The SMART series of water-saving sanitary ware features toilets that use less water than the industry standard of 6 liters per flush. For example, the C10207 VERZO model uses only 3.8 liters, reducing water usage by 36%, and includes an automatic lid to prevent contamination. The C105287 Riviera Pro model uses 4.8 liters per flush, exceeding the standard by 20%, and features a touchless system and Ultra Clean+ coating to reduce bacteria by 99% in 24 hours. These eco-friendly, hygienic solutions aim to save up to 35 million liters of water annually, promoting sustainability and well-being. **Water-Saving Faucets and Energy-Efficient Production** The CT4916AC automatic faucet is a water-saving product with a flow rate of 4 liters per minute, 33% more efficient than the industry standard. It features a touchless sensor system for added convenience and reduced physical contact. The faucet is produced using Non-Foundry technology, replacing brass ingots with brass pipes and bars, which cuts energy consumption in production by 20%.	The companies can tap into a growing market for sustainable construction by developing and supplying innovative, reusable, and recyclable cement-based products. As the demand for green building materials increases, these products can appeal to architects, builders, and developers focused on long-term sustainability and waste reduction.
Business Performance	Products and services		✓	✓	Replace virgin raw materials through the reuse and repurposing of waste and loss into alternative products (e.g. recycled concrete aggregates, recycled powder and recycled construction demolition waste)	To extend the lifespan of natural resources such as soil, rock, and minerals (Virgin Materials), which are the primary raw materials for ceramic tile production, the Company has developed an innovative process to produce ceramic tiles using up to 80% recycled materials (Recycled Materials) as substitutes for natural resources. This involves utilizing waste from internal processes or other factories in the production process. Additionally, the production formula has been developed to be free from volatile organic compounds (VOCs) and heavy metals. The COTTO ECO Collection tiles cater to environmentally conscious customers with their unique designs, suitable for both flooring and wall applications	The companies can lower their operational costs by replacing expensive virgin materials with more affordable recycled products. This can enhance their profitability and make them more competitive in markets where cost control is essential.
Business Performance	Products and services			✓	Certification of sustainable products	received international standard certification, such as CE, Green Choice, ISO 9001, ISO14001, Green Guard, FloorScore, and Carbon Zero Material, emphasizing environmental friendliness and user's health and safety with modern and	The companies can command a premium price for certified sustainable products. Their ability to cater to high-value construction projects or secure partnerships with organizations seeking to meet sustainability standards can significantly enhance their revenue.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
						environmentally friendly manufacturing processes	
Business Performance	Products and services			✓	Use of owned or managed natural assets to create or enhance ecosystem services that may be monetized (e.g. natural flood risk management)		Companies can monetize carbon credits by investing in large-scale carbon sequestration projects on land they own or manage. This not only provides an income source but also strengthens the company's sustainability profile, demonstrating a commitment to reducing climate change impact.
Business Performance	Reputational capital			✓	Increase in consumer brand loyalty and enhanced social license to operate through actions such as transparent biodiversity management plans and focus on circular economy		The companies can gain broader acceptance and reduce potential conflicts with local communities by aligning their operations with community values. This leads to a more stable and supportive operating environment, which is critical for securing long-term access to resources and avoiding disruptions to production.
Sustainability Performance	Ecosystem protection, restoration and regeneration			✓	Conservation (e.g., through the creation of temporary habitats during the quarry lifecycle)		The companies that create temporary habitats can integrate these efforts into biodiversity offset programs, enabling them **to meet regulatory requirements while avoiding costly fines or legal challenges**. These programs can also help the company build stronger relationships with regulators and conservation groups.

6.2.4 SCG SMART LIVING

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives / actions	Description
		S	M	L			
Business Performance	Markets			✓	Opportunities for organisations to engage in emerging natural capital markets by reducing emissions or **investing in technologies that capture carbon** to generate carbon credits which can be sold on voluntary or compliance carbon markets.		The companies can not only reduce their carbon emissions but also unlock new revenue streams by participating in carbon markets. Selling carbon credits also enhances a company's sustainability profile, which may attract customers, investors, and regulatory favor
Business Performance	Products and services	✓	✓	✓	**New products** that are designed for sustainable consumption	**Green Choice Product** - SCG Decorative Wall - Wood-D - EPD - SCG Wood Substitute - EPD - SCG Wood Plank - SCG Smartboard - SCG Decorative Wall - Modeena and Modish - SCG Cementboard - SCG Decorative Product - C-Channel	The companies can tap into a growing market for sustainable construction by developing and supplying innovative, reusable, and recyclable cement-based products. As the demand for green building materials increases, these products can appeal to architects, builders, and developers focused on long-term sustainability and waste reduction.
Business Performance	Products and services	□	✓	✓	Replace virgin raw materials through the **reuse and repurposing of waste** and loss into alternative products (e.g. recycled concrete aggregates, recycled powder and recycled construction demolition waste)		The companies can lower their operational costs by replacing expensive virgin materials with more affordable recycled products. This can enhance their profitability and make them more competitive in markets where cost control is essential.
Business Performance	Products and services			✓	**Certification of sustainable products**	CFP - Q-CON - Reinforced Lightweight Concrete CFP - Q-CON - Block G4 CFP - Q-CON - Block G3 CFP - Q-CON - Block G2 EPD - SCG Decorative Wall - Wood-D	The companies can command a premium price for certified sustainable products. Their ability to cater to high-value construction projects or secure partnerships with organizations seeking to meet sustainability standards can significantly enhance their revenue.
Business Performance	Products and services		□	✓	Use of owned or managed **natural assets to create** or enhance ecosystem services that may be **monetised** (e.g. natural flood risk management)		The companies can monetize carbon credits by investing in large-scale carbon sequestration projects on land they own or manage. This not only provides an income source but also strengthens the company's sustainability profile, demonstrating a commitment to reducing climate change impact.
Business Performance	Reputational capital	□	□	✓	Increase in consumer **brand loyalty** and enhanced social **licence to operate** though actions such as transparent biodiversity management plans and focus on circular economy		The companies can gain broader acceptance and reduce potential conflicts with local communities by aligning their operations with community values. This leads to a more stable and supportive operating environment, which is critical for securing long-term access to resources and avoiding disruptions to production.

6.2.5 SCG CHEMICALS

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Business Performance	Resource efficiency		✓	✓	Increased productivity and higher margins through reduced use of resources as water, energy, petroleum-based inputs, or reduced waste.		The reduction in water, energy, and petroleum-based material consumption leads directly to cost savings for chemical companies, improving their profitability. These savings can be reinvested in R&D for further innovations or sustainability initiatives. Lower resource input costs enable companies to maintain or increase margins, even in competitive market conditions.
Business Performance	Resource efficiency		□	✓	Cost savings and innovation in the production process through industrial symbiosis. This refers to the process where waste or byproducts of one industrial process are used as inputs for another, creating a closed-loop system that minimizes waste and maximizes resource efficiency. This could involve using waste heat from one process to power another or repurposing chemical byproducts as raw materials in different production cycles		By embracing industrial symbiosis, chemical companies can substantially lower their operational costs, reduce raw material procurement expenses, and minimize waste disposal costs, ultimately improving profitability and resource efficiency. This can free up capital that could be reinvested in further innovation or sustainable practices.
Business Performance	Products and services		□	✓	Reduced waste and potential access to new markets focused on eco-friendly products through product stewardship. This means developing products that are safer for the environment, require fewer natural resources, and are more easily recyclable or biodegradable.	**EcoClear-PP**, clarifying agent for polypropylene products, promotes the use of recycled plastic as a substitute material in production by at least 20% weight-wise, with no effect on the product's clarity and food-packaging safety certified. The Closed Loop Collaboration for Circularity Initiative collects used plastics from Global House retail stores and distribution centers. These **plastics are converted into High Quality Post-Consumer Recycled Resin** (High Quality PCR) using SCGC GREEN POLYMERTM technology to produce eco-friendly plastic bags.	Reducing waste through product stewardship can lower operational costs, mitigate environmental risks, and improve a company's reputation for sustainability. The more waste that is reduced, the less a company spends on disposal or environmental penalties, and the more it can allocate toward other value-creating activities, such as product innovation.
Business Performance						Products and services	□	□	✓	Innovation in product design through biotechnology methods like synthetic biology and metabolic engineering		The companies can tap into the growing demand for green chemistry and bio-based products, positioning themselves as leaders in the sustainability-driven market. Through synthetic biology, they can offer innovative, eco-friendly alternatives to petroleum-
Business Performance						Products and services	□	□	✓	Innovation in product design through the employment of biotechnology methods, such as synthetic biology and metabolic engineering, to produce chemical compounds		

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
							based chemicals, thereby differentiating themselves in an increasingly environmentally conscious market.
Business Performance	Products and services	☐	☐	✓	Innovation in chemical use and potential strengthening of relationships with customers through chemical leasing. This involves a change in business model from selling quantities of chemicals to selling the function that the chemicals provide. This model encourages suppliers and customers to minimize chemical use and waste together, as costs are related to the functionality of the chemical rather than the quantity		Chemical leasing offers chemical companies a powerful opportunity to shift from traditional chemical sales to a more sustainable, efficient, and service-oriented business model. By focusing on the functionality of chemicals rather than the quantity, chemical companies can reduce waste, minimize environmental impact, and enhance their relationships with customers through long-term service agreements.
Business Performance	Markets	☐	☐	✓	Increased revenues coming from access to new markets		The companies can capitalize on the growing demand for recycled PVC by investing in technologies that promote circular economy principles, such as chemical recycling and PVC reclaiming. This approach can open new revenue streams in industries that prioritize sustainability, such as green construction and eco-conscious consumer goods. Companies that position themselves as leaders in sustainable vinyl production can not only tap into new markets but also differentiate themselves in a competitive industry.
Business Performance	Capital flows and financing	☐	✓	✓	Access to new sources of sustainability-linked finance to pioneer new functionalized or advanced materials. Examples include conductive polymers for electronics that have the potential to be more easily recycled and might require lower energy production processes		Sustainability-linked finance can provide the capital needed for research, development, and scaling up the production of these advanced materials. Chemical companies can access funding for R&D projects that focus on developing new materials with improved environmental profiles, better performance characteristics, and longer lifecycles.
Sustainability Performance	Sustainable use of natural resources			✓	Reputational benefits and achievement of sustainability targets set from use of certification schemes to ensure biobased feedstock is sustainably produced and upstream impact is defined.		The companies can use certifications as a marketing tool to boost brand reputation and consumer trust. Certified products are often seen as premium items, allowing companies to potentially charge higher prices for products that carry these certifications. This enhances a company's ability to tap into the growing green consumer segment, especially those looking for biobased and eco-friendly chemicals for applications in industries such as packaging, textiles, construction, and automotive.

Opportunity type		Time horizon			Business Opportunities	SCG's initiatives/actions	Description
		S	M	L			
Sustainability Performance	Ecosystem protection, restoration and regeneration			✓	Reputational benefit and reduced regulatory scrutiny from investments in initiatives to conserve and restore high biodiversity areas, such as water catchment area protection. This could include strategies and practices implemented to safeguard the areas where water is collected, including rivers, lakes and underground sources, from contamination due to chemical manufacturing processes	Biodiversity research project in the forestation area for carbon credits by restoring the original shrimp pond area	By proactively investing in water catchment area protection and adopting sustainable chemical processes, companies can reduce their regulatory burden and improve their compliance standing. These initiatives demonstrate that the company is not only meeting but exceeding environmental regulations, which can lead to fewer inspections, reduced likelihood of penalties, and a more favorable regulatory relationship. Additionally, these actions can help streamline permitting processes, reduce the cost and time associated with environmental assessments, and prevent costly fines or legal challenges.
Sustainability Performance	Ecosystem protection, restoration and regeneration			✓	Increased sustainability ratings and brand reputation by developing a sustainable land use plan to minimize ecosystem fragmentation and support habitats		The companies can earn higher ESG scores, attracting sustainability-conscious investors and green finance. Companies with strong sustainability ratings are also better positioned for public recognition and access to environmentally-focused investment funds or sustainability-linked financing.

6.3 FSC™ LICENSE CODES OF SCGP'S SUBSIDIARIES AND ASSOCIATES

SCGP's Subsidiaries and Associates	FSC™ License Code
SCG Packaging Public Company Limited Fiber Packaging Product Group (Thailand & abroad) Packaging Paper Product Group (Thailand & abroad) Siam Nippon Industrial Paper Company Limited	FSC-C135609
Thai Paper Company Limited	FSC-C014429
The Siam Forestry Company Limited	FSC-C105470 FSC-C133879 FSC-C012207
Phoenix Pulp & Paper Public Company Limited	FSC-C015565
Interpress Printers Sdn. Bhd., (Malaysia)	FSC-C127941
Go-Pak Paper Products Vietnam Company Limited	FSC-C208875
Go-Pak Vietnam Limited	FSC-C214942
Starprint Vietnam Joint Stock Company	FSC-C145065

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