



THAI WAH  
PUBLIC COMPANY LIMITED

# Sustainability Report 2024



**Creating  
Innovation  
and Sustainability  
from Farm  
to Shelf**

Thai Wah Public Company Limited





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# Thai Wah Overview



# Message from Chairman



**Dear Friends and Family of Thai Wah,**

Reflecting on the past year brings immense pride and gratitude for the progress made in our journey towards sustainability. Our commitment to sustainability is deeply ingrained in our operations, corporate philosophy and every aspect of our business from Farm to Shelf. Our initiatives focus on environmental stewardship, social responsibility, and economic growth, ensuring that we create value for all our stakeholders while preserving the planet for future generations.

Our sustainability efforts have been guided by our core values and a clear vision for a sustainable future. We have implemented numerous initiatives aimed at reducing our carbon footprint, enhancing resource efficiency, and promoting social well-being. These efforts have not only strengthened our business but also reinforced our role as a responsible corporate citizen.

In 2024, we have made substantial progress in our environmental initiatives. We have expanded our renewable energy projects, including the installation of solar panels across our factories in Thailand, which has significantly reduced our reliance on non-renewable energy sources and greenhouse gas emissions.

Our dedication to our associates is a key part of our sustainability commitments. We invest in skills development, healthcare, and economic empowerment. Through partnerships with leading organizations, we provide comprehensive training that has resulted in improved productivity, enhanced leadership skills, and increased innovation among our employees. Additionally, we offer enhanced healthcare benefits to ensure their well-being. These efforts reflect our commitment to fostering a supportive and empowering work environment.

Economic sustainability is integral to our long-term success. We have adopted innovative technologies and practices that enhance our operational efficiency and productivity. By fostering a culture of continuous improvement and innovation, we have been able to achieve sustainable growth while maintaining our competitive edge in the market.

Looking ahead, we are excited to continue building on the strong foundation established. Our vision for the future is centered on driving sustainable growth and creating lasting value for all our stakeholders. Through continued commitment to advancing our environmental stewardship by scaling our regenerative agricultural practices across Southeast Asia, enhancing social responsibility, and ensuring economic sustainability, Thai Wah is a proud recipient of the Thailand Prime Minister's Export Award for Outstanding Achievement as the Green and Sustainable Exporter.

By working together, greater sustainability can be achieved, and lasting values can be created for all stakeholders. Thank you for your unwavering support and trust in Thai Wah. Together, we will build a prosperous and sustainable future for our company and the communities we serve.



**Mr. Ho Kwon Ping**

Chairman



# Message from Chief Executive Officer



## Dear Friends and Family of Thai Wah,

Thai Wah has experienced a transformative year in 2024, marked by significant progress in our sustainability initiatives. Our focus on innovation and sustainable practices has achieved remarkable results, while strengthening our business and our impact on the environment, our associates, and our communities. As we continue to navigate the evolving landscape, I am excited to share the significant milestones we have achieved and the challenges we have overcome.

Thai Wah, as a leader in the agri-food industry, has been at the forefront of innovation and sustainability for over seven decades. Our commitments to excellence and sustainable growth have driven us to continuously evolve and adapt to the changing world and the changing needs of our stakeholders.

The vision to “Create Innovation and Sustainability from Farm to Shelf.” drives every aspect of our operations. From adopting sustainable regenerative farming practices to delivering high-quality products to our customers. One of the key milestones this year was verified with the Gold-level FSA by the SAI platform for our cassava farming operations in Rayong and Kanchanaburi, Thailand. This prestigious recognition highlights our efforts in promoting sustainable agriculture and responsible sourcing, reinforcing our position as a leader in the Agri-food industry.

Energy efficiency continues to be a key focus area. Thai Wah implemented a range of innovative energy-saving measures across our operations. These initiatives include optimizing our production processes, investing

in energy-efficient technologies and expanding solar panels to 2 additional factories in Thailand. Our commitment to energy efficiency is a testament to our dedication to sustainable growth and environmental stewardship. Moreover, we have strengthened our environment and waste management initiatives together with our local communities by upcycling the waste into valued agricultural inputs. By involving local communities in these efforts, we aim to create a more sustainable environment. As a result, we have achieved a significant reduction in greenhouse gas emissions compared to the previous year.

As we face the critical challenge of climate change, Thai Wah remains steadfast in our commitment to meaningful action. Our goals are to achieve 50% renewable energy usage for total electricity consumption, attain carbon neutrality by 2030, and reach net-zero emissions by 2050. Currently, renewable energy accounts for 22% of our total electricity consumption, and we have reduced greenhouse gas emissions by 37% from the year 2021. These efforts are crucial in mitigating the impacts of climate change and ensuring a sustainable future for generations to come.

People excellence is another cornerstone of our sustainability strategy. Our associates are our greatest asset, and their well-being and development are crucial to our success. We have invested in comprehensive training and development programs to enhance their

skills and capabilities. Additionally, we have fostered a culture of continuous improvement and excellence, encouraging our employees to innovate and excel in their roles. Thai Wah is proud to be the recipient of the “HR Asia Best Companies to Work For in Asia” Award for the third year in a row.

Our accomplishments in 2024 reflect this commitment. Thai Wah was honored with the Prime Minister’s Export Award for Best Green & Sustainable Exporter. We also achieved the SET ESG Rating Level A from the Stock Exchange of Thailand (SET) and were recognized with the Sustainability Disclosure Recognition by Thaipat for the fourth consecutive year.

While we are proud of our achievements, our journey toward sustainability is ongoing and will never end. We will continue to drive innovation, enhance our sustainable practices, and contribute to a greener, more sustainable future.

I am deeply grateful to our dedicated team, partners, and stakeholders for their unwavering support and collaboration. Together, we will continue to build a resilient and sustainable Thai Wah.

Thank you for being a part of our journey.



**Mr. Ho Ren Hua**

Chief Executive Officer



# Awards and Recognitions



Prime Minister's Export Award 2024:  
Best Green & Sustainable Exporter  
by the Department of International Trade Promotion (DITP)



Excellence CG Scoring in  
Corporate Governance Report  
of the Thai Listed Companies  
2024 (CGR) by the Thai  
Institute of Directors (IOD) for  
5<sup>th</sup> Consecutive Year



Bronze level Recognition  
for Climate Action Leading  
Organization under the Thailand  
Carbon Neutral Network by  
the Thailand Greenhouse Gas  
Management Organization for  
the 3<sup>rd</sup> Consecutive Year



Sustainability Disclosure  
Recognition by the Thaipat  
Institute for 4<sup>th</sup> Consecutive  
Year



HR Asia Best Companies to  
Work for in Asia for three  
consecutive years and HR Asia  
Sustainable Workplace Award



HR Excellence Awards 2024  
for organizational wellness and  
CEO commitment to employees  
by Human Resources Online,  
Singapore



Farm Sustainability Assessment  
(FSA) Gold level certification  
for cassava farms in Rayong  
and Kanchanaburi by SAI  
Platform



Certification for the Thai  
Private Sector Collective  
Action Against Corruption for  
the 3<sup>rd</sup> Consecutive Year



Thai SELECT certification for  
Instant Bean Vermicelli Boat  
Noodle Flavor and Instant Rice  
Noodles Boat Noodle Flavor  
Double Dragon Ready Brand  
by the Office of Agricultural  
and Industrial Trade Promotion



SET ESG Rating 2024 Level  
A by the Stock Exchange of  
Thailand for the 2<sup>nd</sup> Consecutive  
Year

# Business Overview

Thai Wah Public Company Limited is the leading agricultural and food company in Southeast Asia, committed to sustainable growth and creating shared value with stakeholders. The company operates in three main business segments: cassava starch and modified starch under the “ROSE BRAND” and “Thai Wah Brand” food products such as vermicelli and noodles under the “Double Dragon, Phoenix and Kirin” brands, and biodegradable bioplastic products made from cassava starch under the “ROSECO” brand, sold domestically and internationally.

## Thai Wah's core business is divided into three main groups:

### Starch and starch-related products

including tapioca flour and starch, modified starch, glucose syrup, tapioca pearl, alpha starch, rice flour and starch, and other organic products. The products are made using an innovative range of high-quality locally and sustainably sourced farm materials to enhance the values of food texture for the globally consumers.

### Food products

such as bean vermicelli, rice noodles, rice vermicelli, starch, flour, pearl, meal kit, and instant noodle, among many others, are used in preparing many popular Thai and other Asian dishes due to their well-known taste and high quality, both domestically and internationally.

### Biodegradable products

are a special type of thermoplastic starch resin made from tapioca starch that can be used in various applications, from single-use packaging, agricultural mulch-film, consumer goods, among many applications.



With over 77 years of experience, Thai Wah has become the largest cassava starch producer in Southeast Asia and one of the largest vermicelli and noodle producers in Thailand and Vietnam, serving over 1 million consumers worldwide. The company has expanded its offices and factories to 16 locations in 7 countries and exports products to over 40 countries globally, with significant growth potential in the agricultural and food industries.

# Value Chain



Group of Stakeholders	Procurement	Manufacturing	Logistics	Marketing	Sales and Services
 Farmer	✓				
 Partner and Supplier		✓	✓	✓	
 Customer and Consumer			✓	✓	✓
 Employee	✓	✓	✓	✓	✓
 Community and Society	✓	✓	✓	✓	
 Shareholder and Investor	✓	✓	✓	✓	✓
 Government Agency and Social Enterprise	✓	✓		✓	✓



# **Sustainability at Thai Wah**



# Thai Wah's Journey to Sustainability

At Thai Wah, sustainability is not just a principle but a journey that defines our identity and goals. With a commitment to Environmental, Social, and Governance (ESG) practices, we are responsible for creating shared value beyond financial profit. Under the vision “Creating Innovating and Sustainability from Farm to Shelf,” we proudly deliver products to consumers worldwide with integrity and stability, driving meaningful change in our business and stakeholders’ processes. We aim to be a global leader in initiating and promoting sustainable agri-food industries by leveraging our expertise and resources to drive positive change through innovation and product development that meets customer needs while being environmentally friendly and socially responsible.

Our approach integrates sustainability into every dimension of our business operations, from reducing environmental impact to enhancing the quality of life for people in society. We are committed to setting new standards in initiating and promoting sustainable agri-food industries by embedding these methods into our strategies. We are building a future where business success and positive impact go hand in hand, considering ESG principles to ensure our growth and success contribute to a better world and an equitable society.



# Stakeholder Identification and Prioritization and Stakeholder Engagement

Stakeholder identification arises from awareness of the impact throughout the company's value chain on various stakeholder groups. The company regularly analyzes, identifies, and prioritizes stakeholder groups to assess both positive and negative impacts, internally and externally, from the company's operations. This involves considering the level of impact in two dimensions: the impact of the company's operations on stakeholders and the influence of stakeholders on the business, with input from the board and senior management.

**Thai Wah identifies and prioritizes stakeholders as follows:**

## 1. Farmers

Individuals or groups supplying agricultural products to Thai Wah for use in the production process.

## 2. Customers and Consumers

Individuals or entities purchasing or consuming products from Thai Wah, including retailers and distributors.

## 3. Suppliers and Partners

Individuals or entities selling goods or services to Thai Wah, including business and sustainability partners.

## 4. Communities

Communities around Thai Wah's operational areas affected by or impacting Thai Wah's operations.

## 5. Employees

Individuals involved in business operations and related activities at Thai Wah, under employment contracts, including permanent and temporary employees, interns, and probationary employees.

## 6. Shareholders and Investors

Shareholders of Thai Wah and investors in Thai Wah's business.



## 7. Government Agencies and Social Enterprises

Government agencies and social enterprises involved in the agri-food industry.

Thai Wah believes stakeholder engagement is crucial for strategic planning in economic, social, and environmental dimensions to ensure organizational sustainability. The company gathers feedback and perspectives from stakeholders, including needs, opinions, and concerns, to improve regulatory compliance in line with fair and appropriate sustainability practices.

## Stakeholder Engagement and Expectations



### Farmers

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Field visits by Thai Wah's agronomists</li> <li>Farmer sustainability and regenerative agriculture development program</li> <li>Thank You Farmer Day</li> </ul>	<ul style="list-style-type: none"> <li>Improved quality of life, job creation, income generation, and economic promotion</li> <li>Fair and transparent raw material purchasing</li> <li>Promoting and supporting sustainable and safe agricultural practices</li> <li>Providing knowledge on agricultural technology and innovation, as well as developing efficient waste management system</li> </ul>	<ul style="list-style-type: none"> <li>Organizing training programs for farmers to develop management, business, and farming skills</li> <li>Providing agricultural equipment to increase convenience, reduce labor dependency, and save time</li> <li>Deploying agronomists to work closely with farmers in the field</li> <li>Supplying clean cassava stems to farmers</li> </ul>

See more details in the chapter "Farmer Development"



### Customers and Consumers

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Annual customer satisfaction surveys</li> <li>Communication via email and online meetings</li> <li>Customer visits on various occasions</li> <li>Contact channels and information on the website and social media (Facebook, YouTube, LinkedIn, Line@)</li> </ul>	<ul style="list-style-type: none"> <li>Quality and food safety control</li> <li>Access to healthy and nutritious food</li> <li>Promoting food innovation and diversity, responsible marketing, and clear labeling</li> <li>Clarity and progress in driving the organization towards sustainability</li> <li>Sales and after-sales services that meet the needs of customers and consumers</li> </ul>	<ul style="list-style-type: none"> <li>Raising awareness and understanding of nutrition and ingredients</li> <li>Increasing contact channels to promote sales both online and offline</li> <li>Developing products that meet global quality and safety standards</li> <li>Offering a variety of healthy product options</li> <li>Developing marketing campaigns that meet global market needs</li> <li>Developing products and services to meet the needs of customers and consumers</li> </ul>

See more details in the chapter "Food and Finished Goods"





## Suppliers and Partners

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Communication via website and email</li> <li>Supplier visits and evaluations</li> </ul>	<ul style="list-style-type: none"> <li>Activities to promote the potential of small suppliers</li> <li>Fair, transparent, and legal procurement, respecting payment terms</li> </ul>	<ul style="list-style-type: none"> <li>Considering environmental impact, social responsibility, and governance in procurement, and adhering to human rights principles</li> <li>Maintaining good relationships with suppliers and partners, continuously enhancing and developing together</li> </ul>

See more details in the chapter “Food and Finished Goods”



## Employees

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Bi-annual employee engagement surveys (AES)</li> <li>Town hall meetings</li> <li>Annual performance reviews</li> <li>Satisfaction surveys for all activities organized internally</li> <li>“My Thai Wah” application</li> <li>“SHE” application</li> </ul>	<ul style="list-style-type: none"> <li>Promoting skill development, potential, and career paths</li> <li>Providing compensation, special rewards, and benefits</li> <li>Responding to employee feedback and participation</li> <li>Ensuring workplace safety and occupational health</li> </ul>	<ul style="list-style-type: none"> <li>Conducting employee engagement surveys (AES)</li> <li>Developing a Performance Management System (PMS)</li> <li>Onboarding programs for new employees, Thai Wah Leadership Academy (TLA)</li> <li>Interest-based capacity development programs</li> <li>Developing employee welfare management systems (TPA Care)</li> <li>Responding to unsafe conditions or accidents through the “SHE” application</li> </ul>

See more details in the chapter “Green Factory and Community” and “Family and Well-being”





## Communities and Society

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Community relations activities (Thai Wah Care and Community Day)</li> <li>Grievance channels</li> <li>Community development projects with the government</li> </ul>	<ul style="list-style-type: none"> <li>Job creation and community economic development</li> <li>Managing and controlling operations to reduce environmental, community, and social impacts</li> <li>Business growth alongside community development</li> </ul>	<ul style="list-style-type: none"> <li>Energy and waste management to reduce community and environmental impacts</li> <li>Communicating with communities through community leaders and other communication channels</li> <li>Organizing annual community relations activities</li> <li>Participating in community development projects with the government</li> </ul>

See more details in the chapter “Farmer Development” and “Green Factory and Community”



## Shareholders and Investors

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Annual General Meeting (AGM)</li> <li>Analyst meetings</li> <li>Communication via Opp Day</li> <li>Special interviews</li> <li>Website, email, and phone</li> <li>Annual report (56-1 One Report) and sustainability report</li> </ul>	<ul style="list-style-type: none"> <li>Good corporate governance</li> <li>Anti-corruption</li> <li>Transparent, accurate, and timely information disclosure</li> <li>Sustainability operations and progress</li> </ul>	<ul style="list-style-type: none"> <li>Adhering to good corporate governance principles</li> <li>Ensuring transparent and equal treatment of shareholders</li> <li>Establishing clear guidelines for disclosing risk management strategies to stakeholders and investors</li> </ul>

See more details in the chapter “Good Corporate Governance”



## Government Agencies and Social Enterprises

Engagement Channels	Examples of Expectations	Examples of Company Responses
<ul style="list-style-type: none"> <li>Annual report (56-1 One Report) and sustainability report</li> <li>Collaboration and projects on relevant issues with the government and/or private sector</li> <li>Participation in relevant events</li> </ul>	<ul style="list-style-type: none"> <li>Compliance with laws and regulations</li> <li>Good corporate governance</li> <li>Anti-corruption</li> </ul>	<ul style="list-style-type: none"> <li>Conducting business in accordance with relevant laws and regulations</li> <li>Supporting government projects on relevant issues</li> <li>Disclosing information on greenhouse gas emissions and developing effective mitigation strategies</li> <li>Supporting and/or initiating projects to enhance the capacity of the agri-food industry, such as SEA, GROW, World Economic Forum, UNGCNT</li> </ul>

See more details in the chapter “Sustainability at Thai Wah” and “Good Corporate Governance”

# Sustainability Materiality Assessment

Thai Wah has identified and addressed sustainability issues that are significant to the company's operations and stakeholders, recognizing that a robust sustainability strategy must come from collaboration and insights from all sectors in the company's value chain.

## Materiality Assessment Process

### 1. Understand the Organization's Context

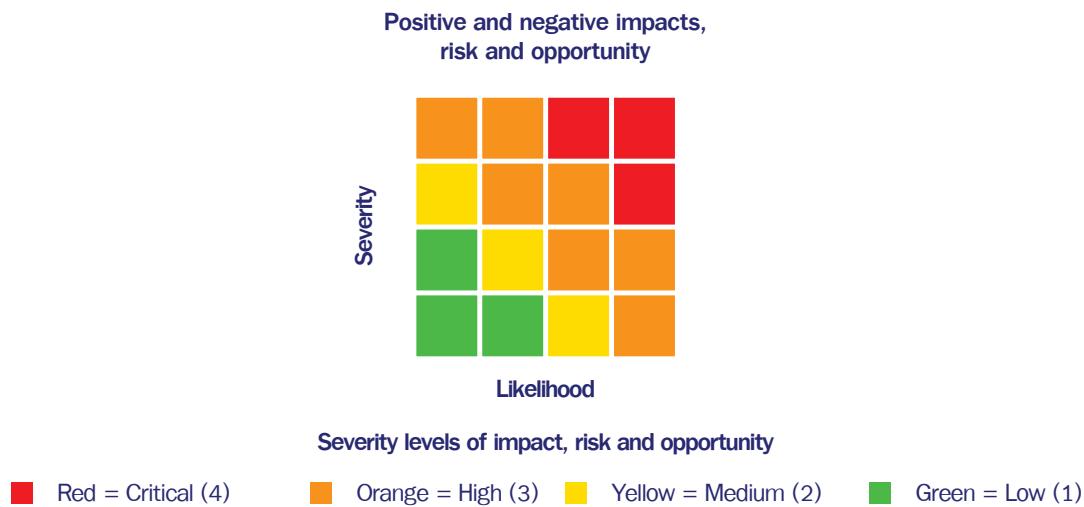
Thai Wah reviews the organization's context by considering its vision, mission, strategy, and stakeholder relationships. This includes examining industry standards, reports from similar organizations, and trends related to key sustainability issues.

### 2. Identify Actual and Potential Impacts

Thai Wah identifies actual and potential impacts on the economy, environment, society, and human rights. The company engages stakeholders such as employees, customers, suppliers, investors, communities, and regulatory agencies through surveys and interviews to understand the impacts and significance of each issue. Thai Wah summarizes and evaluates these impacts based on their effect on the business and on society and the environment. This two-dimensional assessment helps the company understand which issues are critical to business success and stakeholder expectations.

### 3. Assess the Significance of the Impacts

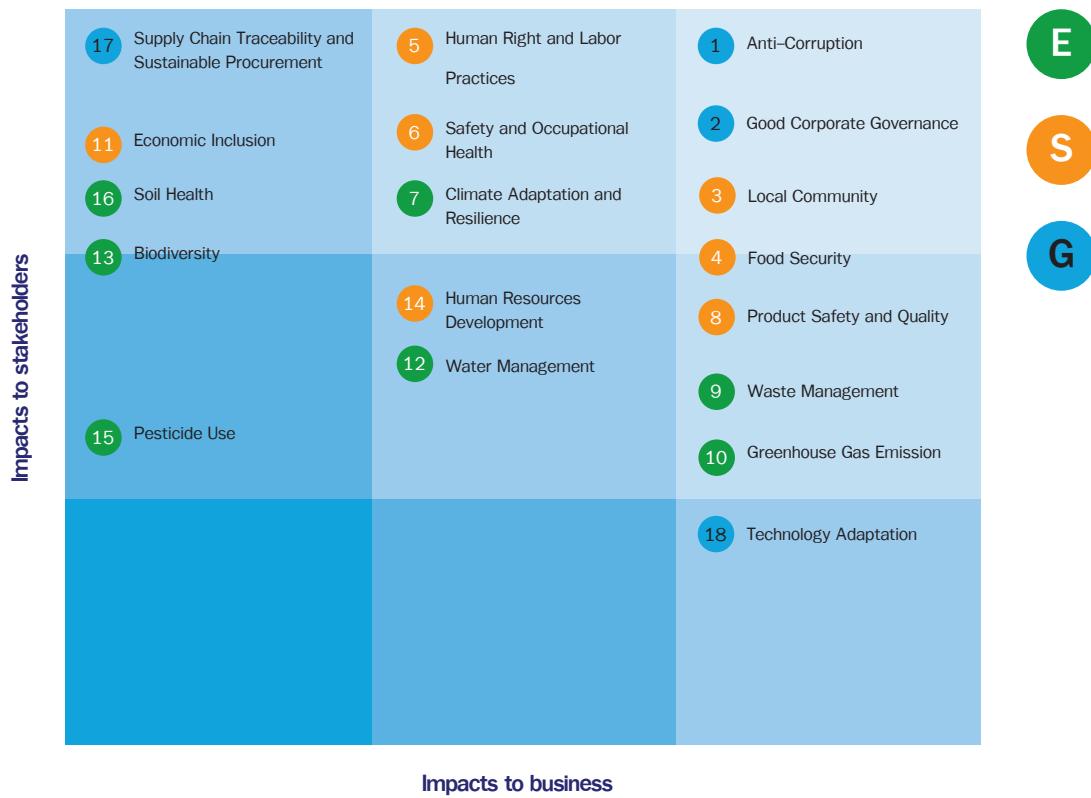
Thai Wah considers the identified impacts from stakeholder engagement both internal and external, using a Materiality Matrix to evaluate the severity and likelihood of impacts on the business and stakeholders.



### 4. Prioritize the Most Significant Impacts for Reporting

Thai Wah reviews the assessment results with senior management and the board to ensure alignment with strategic goals. The materiality assessment reveals key environmental, social, and governance issues such as greenhouse gas emissions, water management, waste management, employee well-being, community engagement, transparency, and anti-corruption. Thai Wah gathers stakeholder feedback and incorporates it into improving operations to better respond to stakeholder needs.

## The key sustainability issues identified from the above assessment process are as follows:

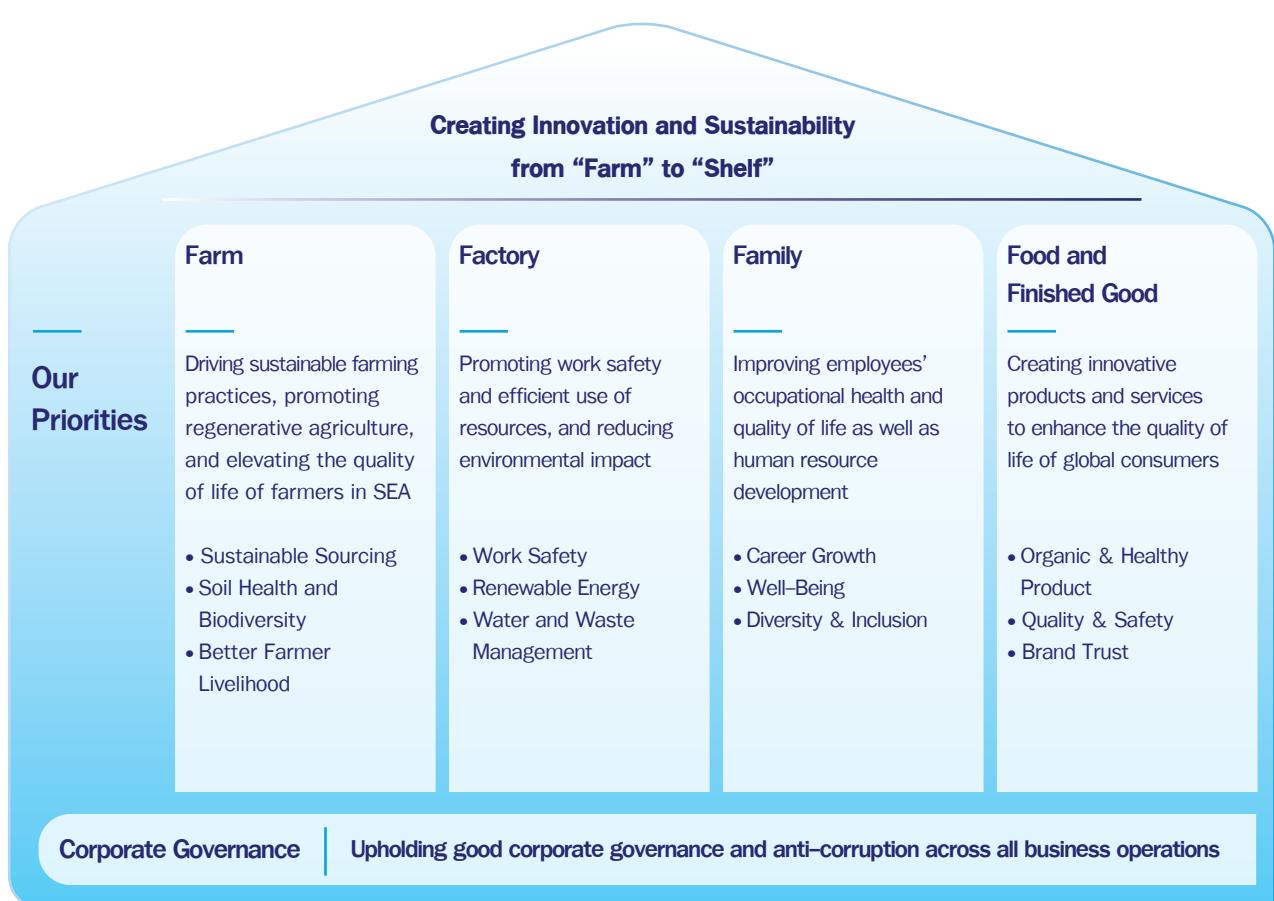


Thai Wah's Sustainability Framework	Sustainability Materiality Topics
Good Corporate Governance	Good Corporate Governance (2) Anti-Corruption (1) Supply Chain Traceability and Sustainable Procurement (17) Technology Adaptation (18)
Farmer Development	Soil Health (16) Biodiversity (13) Pesticide Use (15) Economic Inclusion (11)
Green Factory and Community	Climate Adaptation and Resilience (7) Greenhouse Gas Emission (10) Water Management (12) Waste Management (9) Safety and Occupational Health (6) Local Community (3)
Family and Well-being	Human Resources Development (14) Human Rights and Labor Practices (5)
Food and Finished Goods	Food Security (4) Product Safety and Quality (8)

# Sustainability Framework

Thai Wah's sustainability framework has been developed to integrate innovation and sustainability into every aspect of operations, from farm to shelf. This framework serves as a guide and key objective for sustainability efforts. We operate with a goal-oriented approach, considering stakeholder engagement throughout the value chain. This supports and drives changes in various areas, from raw material sourcing to the production of food and other products, promoting sustainable

development and growth for the company and the agri-food industry. The framework covers economic, social, and environmental aspects. The sustainability framework consists of four pillars: Farmer Development, Green Factory and Community, Family and Well-being, and Food and Finished Goods. These pillars are based on good corporate governance, serving as a crucial guide for the company's efforts in environmental management, social responsibility, and governance excellence.



## Supporting United Nations Global Compact and Sustainable Development Goals

Thai Wah is committed to integrating the principles of the United Nations Global Compact (UNGCG) and the United Nations Guiding Principles on Business and Human Rights (UNGPR), which are widely recognized by businesses worldwide, into the company's strategy, culture, and daily operations. We aim to participate in collaborative projects that drive the United Nations' development goals, particularly the Sustainable Development Goals (SDGs), to identify and implement sustainability goals that align with international standards and contribute to the company's continuous growth and development.

To drive sustainable development at every stage of production, enhance the quality of life and well-being of stakeholders, and promote sustainable economic growth in the country, the company pledges to use its knowledge, capabilities, experience, and expertise to support the 17 Sustainable Development Goals relevant to the company's abilities and potential.

# Key Projects, Initiatives and Performance

## Sustainable Agriculture



Thai Wah promotes sustainable agricultural practices through agricultural techniques and technology. We provide training and resources to farmers to adopt sustainable farming methods, ensuring long-term agricultural productivity and environmental conservation. Farmers practice sustainable land management, reduce reliance on chemical pesticides and fertilizers, and promote crop rotation and integrated farming. These efforts ensure that farmers can make informed decisions, improve yields, and maintain their livelihoods. Additionally, Thai Wah is a member of the Sustainable

Agriculture Initiative (SAI) Platform, emphasizing our dedication to sustainable agriculture practices and responsible sourcing. We aim to support the development of sustainable agriculture globally. We are committed to making a difference in the lives of farmers not only in Thailand but also in Southeast Asia by expanding raw material sourcing areas and supporting sustainable agricultural practices. Our goal is to reduce environmental impact, protect biodiversity, and promote social equity.

## Environmentally Friendly Production



Thai Wah has set ambitious targets to achieve net-zero greenhouse gas emissions by 2050, with mid-term goals to ensure continuous progress. The company has conducted a comprehensive assessment of current greenhouse gas emissions. Thai Wah's production processes are regularly adjusted and monitored to reduce environmental impact through efficient resource use and quality waste management. By utilizing renewable energy sources such as solar power and biogas from

production by-products, we reduce emissions and promote sustainable production processes. This shift has significantly reduced reliance on coal and fossil fuels, promoting the use of cleaner and more sustainable energy. Additionally, Thai Wah prioritizes water use in production by employing water recycling and investing in machinery that reduces water consumption in the production process.

## Innovation for a Sustainable Future



ROSECO, a line of biodegradable products and sustainable packaging, is Thai Wah's commitment to creating and developing bioplastics from tapioca starch. We offer environmentally friendly alternatives to fossil-based plastics. Our products can be made into shopping bags, straws, and various items that are 100% biodegradable.

Additionally, Thai Wah has adopted mono-material in laminated flexible packaging, using the same type of plastic material to enhance recyclability and reduce plastic use in food products. These sustainable packaging developments are designed to minimize environmental impact and promote sustainability.

## Plant-Based Products and Food Innovation



As the world shifts towards healthier and more sustainable food options, Thai Wah is at the forefront of this transformation. Our journey in producing plant-based products begins with utilizing tapioca starch and rice. These ingredients are processed into innovative food products that meet global demand. In a future where plant-based foods are not just an option but

a preferred choice, consumer demand is expected to increase significantly by 2030. Our commitment to research and development of organic and healthy foods ensures that we meet the growing demand for nutritious and environmentally friendly options.

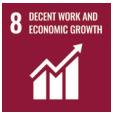
# Key Performance Summary

## Financial Performance for Sustainable Growth

Revenue	10,129 million THB
EBITDA	506 million THB
Dividend	5 million THB
Revenue Contribution by Country	
• Thailand	5,854 million THB
• Vietnam	1,886 million THB
• China	2,054 million THB
• Indonesia	179 million THB
• Cambodia	154 million THB
Revenue Contribution by Business	
• Starch	7,621 million THB
• Food	2,373 million THB



	Performance	SDG
<b>Corporate Governance</b> 	Procurement of environmentally friendly products and services accounts for 8% of the total national procurement budget	 <b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION
<b>Farmer Development</b> 	Executives and employees participated in anti-corruption training at 100 percent and 99 percent of target group, respectively	 <b>16</b> PEACE, JUSTICE AND STRONG INSTITUTIONS
<b>Green Factory and Community</b> 	Disease-free cassava stems distributed to farmers covered 447 rai with 803,810 stems	 <b>1</b> NO POVERTY
	Farm Sustainability Assessment (FSA – SAI) related knowledge sharing and training were provided to 490 farmers in Thailand	 <b>2</b> ZERO HUNGER
	Greenhouse gases emission scope 1 and 2 reduced 37% from year 2021	 <b>3</b> GOOD HEALTH AND WELL-BEING
	Consumption of electricity generated by renewable energy accounted for 22% of the total electricity consumption	 <b>13</b> CLIMATE ACTION
	Treated water as a percentage of used water remained at 100%	 <b>7</b> AFFORDABLE AND CLEAN ENERGY
	Lost-Time Injury Frequency Rate (LTIFR) at 1.96	 <b>6</b> CLEAN WATER AND SANITATION
		 <b>8</b> DECENT WORK AND ECONOMIC GROWTH

	Performance	SDG
	Average training hours was 44 hours/person/year	
Family and Well-being	Ratio of female employees to male employees remained at 1:1	
	Number of employees with disabilities was 15 people and donated 2,689,307 baht to the Empowerment for Person with Disability Fund	 
	R&D spending 31 million baht	
Food and Finished Goods	Clean label and healthy solutions starch products at 16 SKU	
	Plastic packaging consumption reduced by 4.5 tons	
	Paper consumption reduced 7 tons from redesigning packaging and reduce raw materials input	



## Sharing Knowledge and Success for a Sustainable Future

Thai Wah believes that collaboration is key to achieving sustainability. Successful projects and activities resulting from partnerships with universities, the Stock Exchange of Thailand, and other organizations have demonstrated the power of working together to create positive social and environmental impacts. Additionally, we prioritize educational and training programs that promote sustainability by organizing activities with various organizations to enhance the knowledge and skills necessary to drive sustainability in all dimensions. These collaborative efforts and shared vision for a sustainable future underscore Thai Wah's commitment to creating a better and more sustainable future for everyone.

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Thai Wah participated in the 3rd Annual Sustainability Week Asia from March 11–13, 2024. Mr. Ho Ren Hua, Chief Executive Officer, and Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, shared case studies under the topic “Fostering Sustainability with Thai Wah.” This highlighted the efforts and successes in driving sustainability. The objective of participating in this event was to share experiences and successes in driving sustainability and inspire attendees to adopt sustainable practices. It included presenting case studies showcasing Thai Wah's sustainability-focused operations and projects, as well as discussions and exchanges of ideas on driving sustainability. This participation was part of Thai Wah's efforts to build collaboration and share knowledge to drive sustainability in the Asia region.

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Thai Wah played a role in the event “Advancing Inclusive Businesses in Thailand – Breakfast with Executives” organized by The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), in collaboration with Office of SMEs Promotion (OSMEP) and supported by the Bill & Melinda Gates Foundation, on April 2, 2024. Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, shared an inclusive business model for working with farmers, sharing experiences and approaches to inclusive business operations, and exploring opportunities for inclusive business development in Thailand. This participation was part of Thai Wah's efforts to promote inclusive businesses and build collaboration to develop sustainability in Thailand.





The Stock Exchange of Thailand (SET), in collaboration with ESG Academy and the Faculty of Business Administration, Mahidol University, organized the 4th special lecture on “Sustainability in Business Practices” on June 10, 2024. Ms. Kamonchanok Areerat, Senior Manager – Sustainability and Innovation, was a speaker. The objective of this lecture was to share sustainable business practices and good ESG practices. The main activities included lectures and discussions on strategic sustainability concepts and reducing environmental impacts. This lecture was part of a quarterly program to build understanding and promote sustainable business practices in Thailand to the younger generation.



Thai Wah participated in the event “Leadership Development and Management Amidst Change” on June 26, 2024, at the Office of the Royal Development Projects Board (ORDPB). Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, was a speaker to share experiences and approaches to effective leadership during times of change. The main activities included lectures and discussions on case studies from global leaders and exchanges of ideas on effective leadership. This participation was part of Thai Wah’s efforts to enhance leadership and sustainable management capabilities within the organization.

Thai Wah, in collaboration with the Faculty of Environment, Kasetsart University, and VGREEN KU, organized training on carbon credits for sustainability on July 15, 2024. The objective was to understand carbon neutrality and achieving net-zero greenhouse gas emissions, including measuring the carbon footprint of organizations and using T-VER standards in the agricultural sector. The main activities included lectures and discussions on T-VER standards and types of carbon credits, as well as practical training on measuring the carbon footprint of organizations and evaluating training results for organizational application. This training was part of Thai Wah’s efforts to drive sustainability and reduce environmental impacts through the use of carbon credits and achieving net-zero goals.

On August 14, 2024, Ms. Kamonchanok Areerat, Senior Manager – Sustainability and Innovation, was a speaker at the Certificate in ESG Management Program by SET & Sasin (C-ESG) under the topic “Turning Risks into Opportunities: How Organizations Adjust Strategies to Seize Proactive Opportunities in ESG.” The objective was to share how organizations can turn ESG-related risks into proactive opportunities, innovative strategy adjustments, and success stories of companies using ESG risks to drive growth and sustainability. This participation was part of Thai Wah’s efforts to promote effective and sustainable ESG management to the younger generation.



Thai Wah participated in the event “Moving Green Forward: Progressing for Our Planet and Us” organized by the Institute for Small and Medium Enterprises Development (ISMED) under the Department of Industrial Promotion on July 12, 2024. The event focused on enhancing the competitiveness of SMEs through BCG (Bio–Circular–Green) economy knowledge and promoting innovation for sustainable production. Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, was a speaker on the topic “Lessons from 5 Global Businesses in Decoding Sustainability,” along with representatives from Thai Union, NRF, PTTGC, and SCG, providing valuable insights into sustainable practices and innovation.





At the SUSTAINABILITY EXPO 2024 (SX2024) at the Queen Sirikit National Convention Center on September 28, 2024, a panel discussion was held on the topic “Stories of Small People... to Careers in the Sustainability Market in the Thai Capital Market.” The aim was to create an understanding that anyone can pursue a career in sustainability, which is a stable career path with high market demand and sustainable income, while creating a positive impact on society and the nation. Ms. Sasinee Pansailom, Section Head – Group Sustainability, and panelists from PTT Global Chemical Public Company Limited and Advanced Info Service Public Company Limited shared their experiences working in sustainability in listed companies in Thailand, emphasizing the importance of the growing sustainability profession in the Thai capital market and its significance to leading organizations.

Thai Wah participated in the Cleantech Forum Asia, where Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, was a speaker on the topic “Waste Valorization in Thailand and Driving Regenerative Sustainable Agriculture in Thailand and Cambodia.” The objective was to share experiences on waste valorization and driving sustainable agriculture in Thailand and Cambodia. The main activities included presentations and discussions on waste valorization and sustainable agriculture, and exchanges of ideas on long-term strategic planning to address the impacts of climate change.



Thai Wah participated in the event “Inclusive Business Landscape in Thailand: Study Launch and Dialogue” on September 30, 2024. Ms. Hataikan Kamolsirisakul, Assistant Vice President – Head of Group Strategy, Sustainability and Innovation & New Business Group, was a speaker on the topic “Supporting Inclusive Business Growth: Capacity Building and Financial Support” to share experiences and approaches to supporting inclusive businesses in Thailand and explore strategies for building capacity and financial support for inclusive businesses. This participation was part of Thai Wah’s efforts to promote inclusive businesses and build collaboration to develop sustainability in Thailand.

# Good Corporate Governance



# Good Corporate Governance

Thai Wah is committed to maintaining the highest standards of good corporate governance throughout its business operations to ensure sustainability and stability while demonstrating social and environmental responsibility. The company values its stakeholders by considering their rights, expectations, benefits, and fair treatment. Thai Wah aims to ensure that its corporate governance practices are fair, responsible, and transparent, enhancing the company's reputation and driving sustainable growth.

Therefore, the Board of Directors has established corporate governance policies and business ethics based on the principles of good corporate governance for listed companies (CG Code), the guidelines for corporate governance of Thai listed companies (CGR), and other standard guidelines. These policies are reviewed, updated, and developed annually to align with changing laws, economic conditions, and social and environmental contexts.

## Management Approach

Thai Wah's corporate governance is based on the principles of fairness, accountability, and transparency. The Board of Directors, management, and employees play a crucial role in ensuring these principles are implemented effectively. The company operates with the following governance



- Board Structure and Responsibilities:** The company has a corporate governance structure that supports efficient and sustainable operations. The Board of Directors is responsible for setting strategic direction, overseeing management, and ensuring compliance with legal and regulatory requirements. Various committees have been established, including the Audit, Risk, and Corporate Governance Committee, the Nomination and Remuneration Committee, and the Sustainability Committee.



- Corporate Governance Policies and Business Code of Conduct:** Thai Wah is committed to conducting business in accordance with the highest ethical standards. The company's Business Code of Conduct outlines principles guiding its operations, including compliance with relevant laws, anti-corruption measures, transparency in communication and disclosure, and the establishment of whistleblowing, feedback, and complaint channels.



- Risk Management:** Effective risk management is a crucial component of corporate governance. The company has adopted internationally recognized risk management frameworks to identify, assess, and mitigate potential risks. The Audit, Risk, and Corporate Governance Committee regularly reviews and improves risk management strategies to ensure the company's business operations remain effective and adaptable to current circumstances.



## Implementations and Performance

### Board Structure and Responsibilities

The Board of Directors consists of a number of directors appropriate to the company's size and business strategy. Each director must possess the necessary knowledge, expertise, and experience relevant to the company's operations. Additionally, they must have a clear understanding of their roles, duties, and responsibilities toward shareholders, ensuring decision-making that benefits the company, shareholders, and all stakeholders. Furthermore, the company believes that a diverse board structure, free from discrimination based on nationality, religion, culture, age, or gender, encourages independent and diverse perspectives, fostering well-rounded and effective corporate governance.

To support the operations of the Board of Directors, the company has established subcommittees to oversee and monitor various aspects of the business in accordance with good corporate governance principles. These subcommittees include:

- Audit, Risk, and Corporate Governance Committee
- Nomination and Remuneration Committee
- Business Strategy and Innovation Committee
- Sustainability Committee

Details on the composition, structure, and responsibilities of the Board of Directors and its subcommittees can be found in the Annual Report (Form 56-1).

### Corporate Governance Policy and Business Code of Conduct

The company is committed to conducting business with integrity, ethics, and legal compliance, while maintaining a strong sense of responsibility. Thai Wah upholds the principles of honesty, fairness, and transparency to build trust among investors and stakeholders.

To ensure good corporate governance practices, the company has established a Corporate Governance Policy and Business Code of Conduct as a framework for directors, executives, and employees to apply in their operations. This approach aims to create long-term value for the business, investors, stakeholders, and society as a whole. The Board of Directors reviews and updates the Corporate Governance Policy and Business Code of Conduct annually to ensure alignment with evolving regulations and business conditions. In 2024, 100% of employees successfully completed training and passed the Business Ethics Assessment.

Additionally, in 2024, the company had no legal disputes related to anti-competitive behavior, monopolistic practices, legal violations, or unfair trade practices. Furthermore, there were no significant legal disputes concerning social issues, human rights, or environmental matters.



Good Corporate Governance Policy

## Enterprise Risk Management

Thai Wah is committed to systematic and transparent risk management, integrating risk management policies as a core component of its corporate strategy. This approach supports strategic decision-making, sustainable operations, and stakeholder trust. The company has established a comprehensive risk management framework to ensure robust and effective risk mitigation. Thai Wah's risk management system aligns with the Enterprise Risk Management (ERM) framework under internationally recognized COSO standards. Additionally, the company continuously enhances internal control systems to adapt to evolving business environments and regulatory requirements.

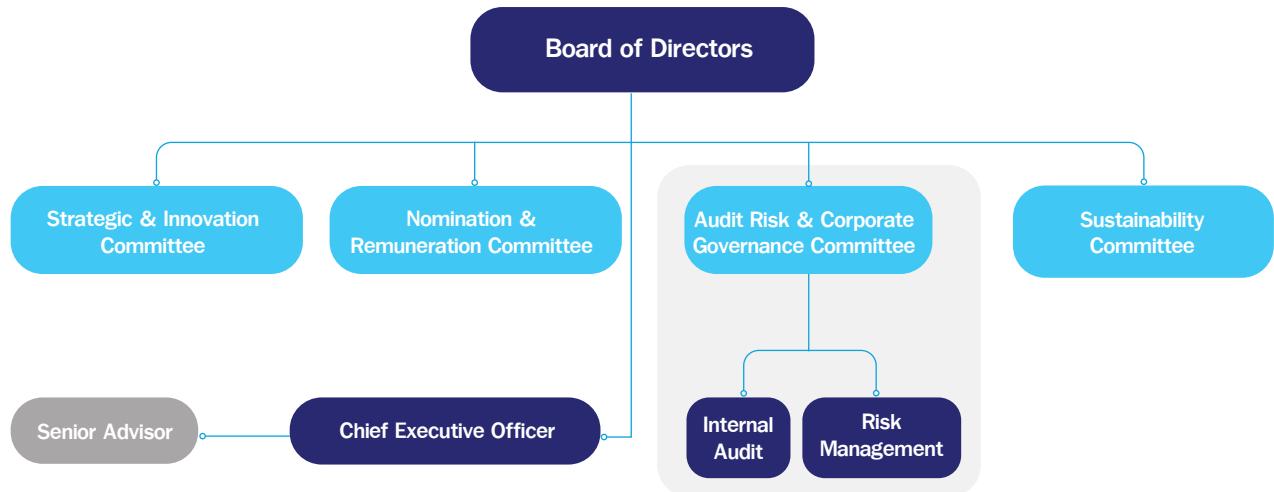
Thai Wah's risk management approach covers risk assessment, mitigation, and reporting, with the primary objective of preventing potential losses and creating long-term growth opportunities. The company implements a structured risk management framework, detailed as follows:

### 1. Risk Governance Structure

The Board of Directors places great importance on risk management and internal control. To ensure independent oversight, the company has established the Audit, Risk, and Corporate Governance Committee (ARCG). This committee is responsible for ensuring financial reporting accuracy, completeness, and adequacy; reviewing compliance with legal and regulatory requirements; assessing risk management plans and monitoring their implementation on a quarterly basis; managing risks at both the corporate and departmental levels.

Thai Wah has implemented a clear and well-defined risk management structure to ensure comprehensive risk oversight across the organization. The company's approach includes:

- Emphasizing the independence of risk management units to enhance auditing and risk oversight efficiency
- Promoting fast and accurate information flow between departments, factories, and subsidiaries
- Raising awareness of risk management among employees at all levels



## 2. Strategy and Objective Setting

The Board of Directors employs a comprehensive risk management system to support efficient and sustainable business operations, making risk management a crucial part of the corporate strategy. This includes:

- Setting Clear Objectives: Establishing clear objectives to create a connection between the organization's goals and risk management approaches at all levels, from strategic to operational.
- Assessing External Factors: Analyzing and evaluating economic, social, and environmental changes that may impact the business over a 3 to 5-year period.
- Proactive Risk Management: Continuously developing and improving risk management processes to reduce impacts to an acceptable level (Risk Appetite) and ensure transparency and efficiency.
- Transaction and Relationship Monitoring: Emphasizing the importance of monitoring transactions involving related parties or those with conflicts of interest to ensure alignment with the company's policies and goals.
- Knowledge Support and Development: Focusing on developing and training employees in risk management through training programs and awareness activities to enhance capabilities and foster a risk-aware organizational culture in the long term.

## 3. Implementation

The company has developed effective risk management approaches, which include:

- Setting Criteria Impact and Likelihood: Establishing criteria to assess risks and opportunities to achieve desired outcomes, reduce adverse impacts, and enhance beneficial opportunities for the organization.
- Continuous Improvement: Regularly reviewing and updating risk assessment criteria, focusing on evaluating both impacts and related opportunities.
- Monitoring and Reporting: The internal audit and risk management units conduct regular reviews and report risk assessment criteria to the Audit, Risk Management, and Corporate Governance Committee annually to ensure alignment with organizational goals.
- Decision Support: Presenting risk management results to support strategic and operational decision-making effectively.

The company believes that comprehensive risk management operations will enhance sustainability and increase the organization's long-term competitiveness.

## 4. Review and Improvement

The Board of Directors annually evaluates the adequacy of the company's internal control and risk management systems to ensure they are comprehensive, effective, and up-to-date. The company conducts thorough assessments to analyze whether the current systems and approaches are sufficient and appropriate. Additionally, the company makes necessary improvements to keep pace with changes from internal and external factors. This proactive approach helps the company remain resilient and prepared to prevent potential future issues, ensuring that the risk management systems and approaches continue to align with the organization's current objectives and needs.

## 5. Information, Communication, and Reporting

The Board of Directors receives annual reports from the internal audit and risk management units, which are responsible for reviewing and verifying information to ensure its accuracy and completeness. These reports provide in-depth details about the company's risk management operations, helping to identify potential risks and develop strategies to mitigate them effectively. This comprehensive reporting supports the company's decision-making with accurate and thorough information, enabling the company to stay ahead of potential risks while maintaining high standards of quality and safety. Additionally, it fosters sustainable growth and increases value for the company's stakeholders.

## Building a Risk Culture

The company recognizes the importance of establishing a strong risk management culture at all organizational levels. This ensures that both management and employees possess the knowledge, understanding, and capability to effectively assess and manage risks. In 2024, the company conducted comprehensive risk management and internal control training across the entire organization, including both domestic and international units. This training focused on enhancing knowledge and understanding of risk assessment at the unit level. All employees participated in creating risk assessment tests, evaluating risks, and brainstorming to develop joint risk management plans.

## Performance in 2024

1. Developed a comprehensive risk register at the unit level that aligns with the organization's goals.
2. Appointed Risk Coordinators at the unit level to act as representatives, communicating and tracking risk management plans with Risk Owners on a quarterly basis.
3. Enhanced understanding of risk management and internal control among employees at all levels.
4. Reported risk assessment results to the Audit, Risk Management, and Corporate Governance Committee quarterly.

Building a risk culture not only improves risk management efficiency but also strengthens collaboration between units and sustainability in the company's operations. Risk management performance is included as one of the Key Performance Indicators (KPIs) for various units and is used as a criterion for new investment decisions and long-term strategic risk assessment.

## Crisis Management Plan

Thai Wah has prepared to respond to various threats that may arise, such as fires, floods, riots, pandemics, and natural disasters, which could impact business operations, reputation, and stakeholder confidence. To mitigate these impacts, the company has developed a Business Continuity Management (BCM) plan with the following key objectives:

1. Crisis Preparedness: Developing management and communication processes that align across the organization to handle crisis situations effectively.
2. Protecting Assets and Reputation: Creating strategies to reduce impacts and build confidence.
3. Team Capability Development: Conducting continuous training and drills for crisis response plans.

## Key Actions in 2024

- Utilizing Key Risk Indicators (KRI):
  - Monitoring plant disease outbreaks in cassava (Cassava Mosaic Disease).
  - Managing impacts from energy price crises and natural disasters.
  - Building resilience against pandemics.
- Developing and Reviewing the Business Continuity Plan (BCP):
  - Defining roles and responsibilities of the BCM team, covering both management and operational levels.
  - Conducting crisis response drills once a year and reporting results to the Board of Directors.
  - Training employees at all levels on business continuity management practices.

## Monitoring and Reporting

The company reports progress and updates on risk management plans to the Audit, Risk Management, and Corporate Governance Committee on a quarterly basis. For more detailed information on risk management, please refer to the 2024 Annual Report (Form 56-1 One Report) under the "Risk Management" section.

## Anti-Corruption

Thai Wah places great importance on conducting business with honesty, transparency, and accountability under the principles of good governance. The company has implemented strict anti-corruption policies across the organization to promote business sustainability. Thai Wah has been a member of the Thai Private Sector Collective Action against Corruption (CAC) since February 21, 2017, and has continuously renewed its certification. In 2024, the company applied for its second renewal to maintain CAC standards.

### Key Anti-Corruption Actions in 2024

#### 1. Developing and Improving Systems and Processes:

- Enhanced the gift reporting system through Gift Systems.
- Communicated and reaffirmed policies via the TW Policy and TW Policy Acknowledgement systems.
- Promoted the “No Gift Policy” to demonstrate a collective commitment to anti-corruption.

#### 2. Training and Awareness Development

- Conducted training for employees at all levels, including new hires, through an E-learning system covering topics such as:
  - Corruption situations in Thailand
  - The company’s anti-corruption policy
  - Related and relevant laws
- Tested understanding of the policy with clear passing criteria.
- In 2024, 100% of targeted employees and 100% of management participated in the training.

#### 3. Audit and Reporting:

- The internal audit unit verified the accuracy of disbursement records according to the anti-corruption policy.
- Reported operational results to the Audit Committee quarterly.

#### 4. Risk Assessment and Mitigation:

- Assessed corruption risks at the unit level.
- Developed risk control plans to align with the policy.

The company is committed to conducting business with integrity, focusing on preventing and combating all forms of corruption to build stakeholder confidence and elevate corporate governance standards.

## Whistleblowing and Complaint Management

### Board of Directors



bod@thaiwah.com

### Audit and Risk Management Committee



arc@thaiwah.com

### Internal Audit Unit



ia@thaiwah.com



#### Thai Wah Public Company limited

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Thai Wah has a clear stance on transparent operations, strictly prohibiting any actions that violate ethics or legal standards. Under the Whistleblowing Policy, the company provides channels for employees and external parties to report inappropriate actions or violations of laws and regulations. Whistleblowers are assured that they will not face punishment, discrimination, or any inappropriate actions. This policy creates a safe space for everyone to report issues confidently, such as fraud, corruption, and legal or regulatory violations.

## Complaint and Whistleblowing Management Process

The company has established a systematic process for handling complaints and whistleblowing, with transparent and verifiable steps. This process covers the receipt of complaints, investigation, resolution, and prevention of recurrence. Additionally, the company reports the results of these processes to the Audit Committee and the Board of Directors on a quarterly basis.

## Summary of Complaint Management in 2024

- Number of Complaints: A total of 16 complaints were received.
- Investigation Results: All investigated cases did not impact the company's reputation or financial performance.
- Actions Taken:
  - Disciplinary actions were taken against employees who violated company regulations.
  - Measures were implemented to prevent recurrence of the incidents.
  - Follow-up and reporting to the relevant committees and management were conducted.

Type of Complaint	Number of Cases	Management Measures			
		Verbal Warning	Written Warning	Suspension	Termination
1. Corruption	3	-	-	-	3
2. Failure to follow work regulations	12	1	1	-	10
3. Non-compliance with the Anti-Corruption Policy	1	-	1	-	-
Percentage of disciplinary actions imposed by the Company's regulations for all cases (%)	100%				

## Sustainable Procurement

Sustainable procurement is crucial in managing the economic, social, and environmental impacts of our operations throughout the supply chain. Our procurement management approach is comprehensive, setting criteria for selecting suppliers that include environmental care, social responsibility, and ethical governance, along with other criteria relevant to the agriculture and food industry. Integrating sustainable procurement into our business strategy not only protects our supply chain but also contributes to creating a more sustainable and equitable agricultural and food system.

Thai Wah has established a group procurement policy that aims for maximum efficiency in procurement processes, adhering to principles of value, transparency, and fairness. The policy ensures that all suppliers comply with our sustainability standards, which are regularly reviewed and updated to align with best practices and legal requirements. We also promote adherence to the Supplier Code of Conduct, ensuring that suppliers' operations align with Thai Wah's sustainable procurement guidelines. This code covers environmental, social, and governance issues, as well as legal compliance. Additionally, the company promotes green procurement or environmentally conscious procurement to reduce potential impacts on the environment and communities.

## Management Approach



- **Procurement Policy and Supplier Code of Conduct:** Thai Wah has established a procurement policy that serves as a guideline to ensure transparency and alignment with the organization's vision and goals. The company has also developed a Supplier Code of Conduct to communicate expectations to suppliers and ensure sustainable operations together.
- **Supplier Screening and Assessment:** The supplier selection process involves evaluating suppliers to ensure they meet specific criteria related to quality and compliance with environmental, social, and governance (ESG) standards. This process includes thorough checks on suppliers' capabilities, ethical practices, and regulatory compliance, demonstrating reliability and business standards. Suppliers are informed about the company's Supplier Code of Conduct.



## Implementations and Performance

### Procurement Policy and Supplier Code of Conduct

Thai Wah's commitment to sustainable operations throughout the supply chain is reflected in its procurement policy. This policy serves as a guideline for fair, ethical procurement practices that consider environmental and social care, as well as supplier relations. It ensures the procurement of goods and services that are efficient, cost-effective, and effective in terms of quality, safety, price, and service. This procurement policy helps ensure that the company's procurement activities are transparent and aligned with its vision and goals.

Thai Wah has developed a Supplier Code of Conduct to communicate expectations to all suppliers and ensure compliance. This code outlines expectations for sustainable practices, ethical operations, and continuous improvement. Thai Wah supports suppliers in meeting these standards and plans to audit compliance to ensure alignment with the company's sustainability goals. The company promotes collaborative efforts with suppliers to achieve shared sustainability goals, reflecting a broader commitment to creating long-term value for all stakeholders through responsible and sustainable operations.



**Procurement Policy**



**Supplier Code of Conduct**

Our sustainable procurement approach includes supporting local economies and communities. Prioritizing local suppliers and producers allows the company to reduce emissions from transportation and support local farmers and businesses, leading to cost savings and improved efficiency. In 2024, 8% of our local procurement budget was allocated to environmentally friendly products and services. This approach underscores our commitment to environmentally friendly procurement and supporting local economies.

Additionally, we have invited our business partners to join the Thai Private Sector Collective Action against Corruption (CAC) network to emphasize our commitment to anti-corruption and promote business confidence, social responsibility, and sustainable practices through transparency and ethics, benefiting the organization's stakeholders.

### **Supplier Screening and Supplier Assessment**

The supplier selection process involves evaluating suppliers to ensure they meet specific criteria related to quality and compliance with environmental, social, and governance (ESG) standards. This process includes thorough checks on suppliers' capabilities, ethical practices, and regulatory compliance, demonstrating reliability and business standards. Suppliers are informed about the company's Supplier Code of Conduct.

The company has a regular process for monitoring, auditing, and evaluating supplier performance to ensure compliance with established standards and business ethics. Evaluations are conducted through self-assessment questionnaires or on-site audits of key suppliers selected randomly. Evaluation and audit topics include food safety, environmental management, occupational health and safety, and labor practices.

Additionally, to align with the risk assessment approach for suppliers, in 2024, we identified critical Tier 1 suppliers—those crucial to business processes, such as those with high contract values and high product volumes. These suppliers are assessed for environmental, social, and economic risks. Relevant and concerning topics are considered to address potential impacts on the supply chain that exceed acceptable risk levels. Plans are developed to mitigate risks through monitoring and supplier development in key areas affecting the business supply chain.

Using this proactive approach to auditing, evaluating, and assessing supplier risks helps us maintain standards throughout our supply chain, promote continuous improvement, and uphold our commitment to sustainability and ethical business practices. This approach not only enhances the quality and reliability of our products but also strengthens Thai Wah's relationships with suppliers, making them more sustainable.

# Farmer Development



# Farmer Development

Agriculture is a cornerstone of the economy in Southeast Asia, particularly in Thailand, which plays a significant role as a producer and exporter of various agricultural products. This sector not only supports the livelihoods of local people but also contributes significantly to global food security. However, the agricultural industry is currently facing unprecedented challenges due to climate change, leading to extreme weather events and resulting in droughts and floods. These conditions disrupt traditional agricultural practices and reduce crop yields.

To address these challenges, sustainable agriculture is not an option but a necessity to balance food security with environmental protection and mitigate the impacts of climate change. Sustainable practices include reducing greenhouse gas emissions, improving soil quality, conserving water, and maintaining biodiversity. Implementing these sustainable practices will enable the agricultural sector in Southeast Asia to continue growing despite the challenges posed by climate change. These efforts not only ensure the sustainability of agriculture but also contribute to the overall well-being of farmers and communities.

## Management Approach

In the strategic pillar of “Farmer Development,” Thai Wah demonstrates its commitment to improving the quality of life for farmers by promoting sustainable agriculture and responsible sourcing of raw materials. This involves leveraging technology to support agriculture and collaborating with various relevant agencies to jointly develop the agricultural sector. The management approach includes:



- Supply Management and Promotion of Sustainable Agriculture:** To ensure continuous, sufficient, and stable raw material sourcing, Thai Wah has established policies and practices for sustainable agricultural sourcing. The company emphasizes sourcing quality raw materials from sustainable cultivation areas and developing degraded cultivation areas by providing knowledge sharing and training programs on sustainable agriculture principles, and disease-free and disease-resistant stems are propagated and delivered to farmers to ensure strong and healthy stems to address the cassava mosaic disease outbreak.

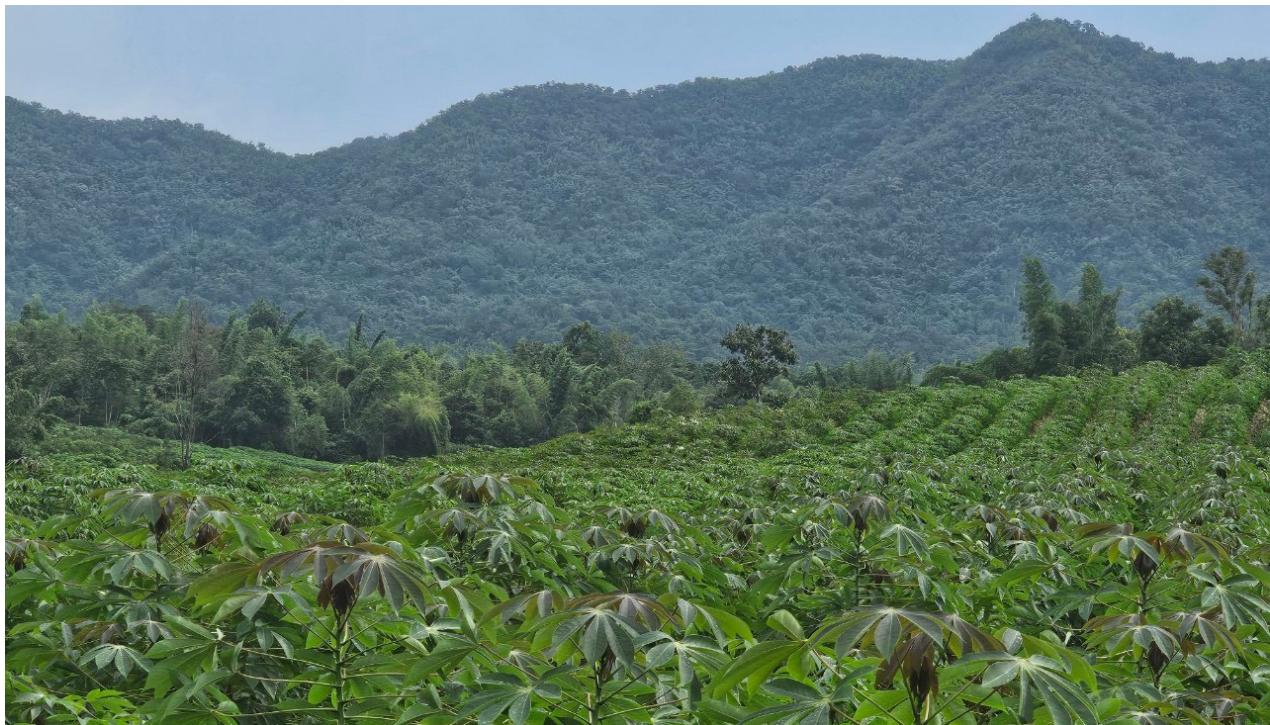


- Utilizing Technology to Enhance Agricultural Efficiency:** Thai Wah is committed to developing and integrating agricultural technology to promote planting efficiency. This includes using precision agriculture technology for agricultural planning, particularly applying satellite imagery, big data and artificial intelligence for climate forecasting, crop cycles, yield assessment, and water usage analysis in agricultural areas. Access to this information helps farmers determine the optimal planting and harvesting times.



- Collaboration with Government and Business Partners in Agricultural Development:** Thai Wah collaborates with various public and private sector organizations to enhance the efficiency and sustainability of Thai agriculture. These collaborations aim to improve farmers' quality of life, and such partnerships enable us to achieve our goals more quickly and securely.





## Implementation and Performance

### Supply Management and Promotion of Sustainable Agriculture

Faced with increasing environmental challenges and the need for responsible resource management, sustainable supply chain management has become a cornerstone of modern agricultural practices. Sustainable agriculture aims to balance the demands of food production with the need to protect the environment, ensure economic viability, and promote social equity.

Thai Wah has established policies and practices for sustainable agricultural sourcing that reflect sustainable supply chain management. The company is committed to reducing environmental impacts throughout the entire agricultural process, including adopting practices that reduce greenhouse gas emissions, conserve water, enhance soil health, and maintain biodiversity. Implementing these practices promotes agricultural activities that do not deplete natural resources or harm ecosystems, ensuring long-term food production sustainability.

Sustainable agriculture also emphasizes the importance of economic and social sustainability, including supporting fair labor practices, improving farmers' quality of life, and promoting resilient rural communities. Investing in the development of sustainable farming methods and supporting farmers through training to raise awareness and provide necessary tools will help farmers adapt to changing environments and market demands.



**Sustainable Sourcing  
Policy and Practices of  
Agricultural Raw Material**

## Raw Material Traceability

Traceability of our raw materials is a crucial part of the procurement process to ensure quality and traceability from customer to agricultural area. Therefore, we have outlined comprehensive steps for purchasing fresh cassava roots, which include selecting farmers, evaluating farmers, planning the purchase of fresh cassava roots, setting prices, and payments. These steps help us trace the origin of raw materials throughout the procurement and production process.



1

In the supplier selection process, suppliers are categorized into four groups

- Farmers participating in the company's sustainable agriculture promotion program
- General farmers who sell fresh cassava roots at the announced price at the factory gate
- Collectors who gather fresh cassava roots from small farmers or brokers to sell to the company
- Organic fresh cassava root suppliers.

2

Each supplier group has criteria and requirements to ensure accurate traceability. Annual evaluations ensure that suppliers comply with the agricultural standards set by Thai Wah to be considered for the Approved Vendor List (AVL).

3

During the fresh cassava root purchasing process, the company collects information, including the farmer's name, growing location, production/harvest date, weight, and starch content, to ensure it meets the specified quality standards. The roots are then processed according to FIFO (First In, First Out) or FEFO (First Expire, First Out) principles.

4

The company retains documents and records for effective traceability.

Our commitment to transparency and efficiency in the procurement process enhances traceability throughout our supply chain. The above raw material procurement process allows us to trace products back to the source of raw materials and the environmentally, socially, and economically conscious agricultural practices of each farmer group.

## Farm Sustainability Assessment

The Farm Sustainability Assessment (FSA) is an evaluation approach developed by the Sustainable Agriculture Initiative (SAI) Platform to assess and promote sustainable agricultural practices. The FSA covers environmental, social, and economic topics with various details and indicators, helping farmers and evaluating organizations understand the sustainability aspects of agriculture.



More information about  
Farm Sustainability Assessment  
and SAI Platform

In 2023, Thai Wah began assessing agricultural sustainability using the Farm Sustainability Assessment (FSA) established by the SAI Platform, covering environmental, social, and economic topics in Preah Vihear, Cambodia. This was done in collaboration with Amru Rice, Cambodia, to support sustainable agricultural practices for organic cassava farmers. We have successfully verified the area as a Silver-level cassava cultivation site, covering over 12,500 rai (2,000 hectares) and involving 859 farmers.

Following the success and certification of the cassava cultivation site in Cambodia, Thai Wah expanded the assessment area to cassava cultivation sites in Non Sa-at District, Udon Thani Province, covering three sub-districts: Thonnangam Subdistrict, Pho Si Samran Subdistrict, and Bung Kaew Subdistrict. This involved 1,440 farmers and covered over 7,842 rai (1,254 hectares), which were also verified as Silver-level cassava cultivation sites.

In 2024, Thai Wah expanded the FSA assessment area to Rayong and Kanchanaburi provinces, involving both individual farmers and farmer groups under the local cassava collection group. These farmers delivered cassava to Thai Wah's factory, with a total yield of over 184,000 tons from 46,060 rai (7,370 hectares) and 490 farmers. The cassava cultivation sites mentioned above were verified at the Gold level.

These successes affirm Thai Wah's commitment to driving positive change in the agricultural sector in terms of environmental, social, and economic aspects, and promoting farmers' understanding of the importance of sustainable agriculture. Farmers who passed the FSA assessment accounted for 53% of the cassava supply to Thai Wah. Thai Wah aims to continuously monitor this sustainable agricultural approach. This success reflects the recognition of our efforts in supply management, sustainable agriculture, pollution reduction, and human rights protection.

Additionally, the company is dedicated to sourcing raw materials from local farmers, which not only benefits the farmers by providing them with income but also reduces the time and energy used in transportation. In 2024, purchasing cassava from local farmers and cassava collection sites accounted for 100% of the budget for purchasing agricultural products for domestic production.



## Sharing Knowledge and Training on Sustainable Agriculture to Farmers

During 2023–2024, Thai Wah collaborated with both public and private sectors, focusing on developing farmers based on sustainable agriculture practices. This began with creating awareness and understanding of sustainable agriculture and piloting these practices with groups of cassava farmers. Thai Wah emphasized the importance of soil improvement, nutrient management, and water management to guide cassava farmers in producing quality yields using resources efficiently while preserving environmental quality for future generations.

To raise awareness on how to prevent, address environmental challenges, and develop limited resources to maintain their quality and sustainability, knowledge was provided through farmer training on sustainable agriculture practices, such as:

- **Improving Soil Quality:** Promoting the growth of stems and enhancing the soil's ability to retain moisture and nutrients. Emphasizing soil quality is fundamental to providing plants with the necessary support for growth.
- **Effective Weed Control:** Reducing the use of agricultural chemicals and managing fertilizers and nutrients to meet the specific needs of plants at different growth stages, thereby minimizing unnecessary chemical usage.

- Climate Change and Its Impacts: Addressing issues such as soil degradation in many areas, including erosion, acidic soil, saline soil, or low organic matter, which can hinder plant growth and reduce agricultural yields. Educating farmers on how to cope with these changes is crucial.
- Non-Turn Composting: Supporting farmers in the Non Sa-at community by providing key raw materials for composting, such as cassava soil residue, which is rich in nutrients that can enhance soil fertility.
- Safe Use of Chemicals: Training and providing farmers with protective equipment and first aid kits to ensure safe use of agricultural chemicals and protect farmers' health, as well as understanding basic first aid for injuries during farming.
- Soil Quality Inspection Training: Enabling farmers to assess the quality of their soil, determine its pH level, and decide whether it needs improvement and how to do so.
- Installing Efficient Water Systems: Supporting the installation of water systems for effective cassava growth and providing necessary equipment for these systems.
- Training on Legal Employment and Labor Practices: Promoting fairness and social equity by training farmers on legal employment and labor practices, including paying minimum wages according to the law.



All the aforementioned operations are designed to improve the quality of life for farmers by promoting sustainable agricultural practices. These practices aim to effectively reduce agricultural costs, allowing farmers to optimize resource use, reduce waste, and improve crop health, which in turn increases overall yields. As a result, farmers can increase their income by selling more produce to buyers. By focusing on sustainability, these actions not only support the environment but also provide long-term economic benefits to farming communities.

Furthermore, sustainable agricultural practices enhance the ability to adapt to climate change and other environmental challenges. Farmers can better withstand adverse conditions and maintain consistent yields by adopting techniques such as crop rotation, precise fertilization, and efficient water management. This adaptability is crucial for maintaining food supply and supporting the livelihoods of farmers' family.

In addition to environmental and economic benefits, these sustainable practices also promote social well-being within farming communities. By reducing reliance on chemicals and supporting natural alternatives, farmers can create healthier living environments for themselves and their families. Moreover, emphasizing local sourcing and community involvement strengthens social relationships and fosters a sense of shared responsibility for sustainable development.



## Innovation from Thai Wah

At Thai Wah, we are committed to creating sustainable and environmentally friendly innovations using the concept “from nature to nature.” This approach emphasizes the efficient use of natural resources and minimizing waste in the agricultural production process, from cultivation to harvesting and processing. The goal is to maximize resource use and minimize environmental impact. These products result from the innovation development of Thai Wah Agri Biotech, which transforms industrial waste and utilizes biotechnology and microorganisms to create valuable products.

### TW8 Bioinoculant

TW8 Bioinoculant is a product that contains eight beneficial microorganisms that promote plant growth by enhancing fertilizer efficiency and soil microorganism activity. This product helps reduce chemical use, increase biodiversity, and sustainably boost yields. TW8 Bioinoculant improves nutrient absorption in plants, increases soil microorganism activity, and accelerates the decomposition of agricultural waste and starch production by-products into valuable fertilizers. It contains one million nitrogen-fixing microorganisms, ten million potassium-solubilizing microorganisms, and one hundred million phosphate-solubilizing microorganisms.



### TW8 VermiTea

TW8 VermiTea is a product that combines beneficial microorganisms for plants with plant hormones and humic acid derived from earthworm castings. It stimulates seed germination and root development, resulting in strong and vigorous plant growth. This product is suitable for all types of plants and promotes growth, leading to increased yield weight. It is a natural product with no added chemicals.



## Vermicompost

Vermicompost is an organic fertilizer made from 100% earthworm castings, suitable for both indoor and outdoor plants. Vermicompost is odorless and enhances beneficial microorganisms, helping plants grow strong by promoting root growth and producing high-quality fruits and flowers. It deeply nourishes the soil, revitalizes it, and increases its water-holding capacity. Rich in natural nutrients such as high organic matter (OM) and natural humic acid, Vermicompost helps restore degraded soil to fertility and strengthens plants. It contains 51.6% organic matter and essential nutrients like nitrogen (1.8%), phosphorus (1.9%), and potassium (1.7%), ensuring sustainable plant growth.



Thai Wah Agri Biotech

## Thai Wah Model

Currently, farmers in Thailand are facing several challenges, such as soil degradation, natural disasters, and the impacts of climate change due to global warming. To address these issues, Thai Wah has introduced the “Thai Wah Model,” which focuses on improving yields, maintaining soil moisture, enhancing water use efficiency, reducing reliance on chemical fertilizers, and improving soil fertility in physical, chemical, and biological aspects.

### Thai Wah Model consists of three main components:

- **Roseco Biodegradable Mulch Film:** This film enhances cultivation efficiency by reducing soil moisture loss through evaporation, resulting in higher quality yields and lower costs for farmers. Additionally, Roseco mulch film is biodegradable, ensuring it does not cause environmental pollution.
- **Thai Wah's Ag-Biological Products:** These products contain eight types of live microorganisms that can decompose industrial or agricultural waste into valuable fertilizers. These biological products promote plant growth without degrading soil quality in the long term, reducing reliance on chemical fertilizers that may harm soil quality and user health over time.
- **Healthy Cassava Stem:** These stems are cultivated in disease-free areas using methods that produce a large quantity of stems in a shorter time than traditional methods. This ensures that farmers receive healthy stems for planting, enhancing the stability of quality and reliable raw material supply for the Thai cassava industry.



## X20 Clean Stem Multiplication

To address the widespread outbreak of cassava mosaic disease over the past several years, Thai Wah has contributed by propagating disease-free cassava stems and distributing them to farmers to ensure they have healthy stems for planting. Additionally, close monitoring and support are provided by agronomists to offer necessary technical information for maintaining robust cassava greenhouse that can effectively combat the cassava mosaic disease crisis.

The Greenhouse Farming Project for Urgent Propagation of Cassava Stems is a collaboration between the company and the Thai Tapioca Development Institute (TTDI). This project has enabled the company to rapidly increase the number of cassava stems from 4–5 stems to 20 stems. Currently, the company has 12 greenhouses in Thailand across four provinces: five in Rayong, two in Kalasin, three in Tak, and two in Nakhon Ratchasima. These greenhouses are located near the company's factories, allowing for the provision of high-quality, disease-free cassava stems to farmers within the company's network, ensuring they can consistently harvest quality produce. Additionally, this initiative helps farmers reduce costs by up to 500 baht per rai. The improved quality and higher yield of these cassava stems make them more desirable to starch producers, who are willing to pay more for them. This project not only benefits farmers and the local economy but also promotes cassava starch exports, creating significant economic value and strengthening Thailand's position in the global cassava starch industry.

In 2024, the company distributed 803,810 X20 cassava stems to farmers, covering an area of 447 rai in four provinces: Udon Thani, Kalasin, Rayong, and Tak. The number of X20 stems distributed to farmers was lower than the target set for the previous year due to low rainfall distribution in the early part of the year, which prevented farmers from planting cassava as usual.

	2019	2020	2021	2022	2023	2024	2025
Number of Closed-System Greenhouses (Greenhouse)	3	10	10	10	12	12	12
Number of Disease-Free X20 Stems Distributed Annually (Stem)	174,454	362,151	613,000	797,102	903,792	803,810	1,150,000
Number of Farming Areas Using X20 Stems (Rai)	109	226	383	494	548	447	700
Cost Saved Calculated at 500 baht/rai (Baht)	54,500	113,000	191,500	247,000	274,000	223,500	350,000



In 2024, Thai Wah received 130,000 X20 disease-resistant cassava stems from the Thai Tapioca Development Institute Foundation in March 2024 and distributed them to 33 farmers, covering an area of 60 rai. This initiative is part of the efforts to address the widespread outbreak of cassava mosaic disease, which has been a severe issue for cassava farmers. For continuous operations, Thai Wah expects to produce 150,000 disease-resistant stems in 2025, which can be planted and propagated to cover an area of 300 rai. Using these disease-resistant stems is a crucial step in addressing the problems caused by cassava mosaic disease. By providing farmers with healthy stems, we aim to increase yields, improve product quality, and ensure the sustainability of cassava cultivation. This approach not only supports farmers' livelihoods but also contributes to the overall stability and growth of the agricultural sector.



X20 Clean Stem Multiplication

### Thai Wah Thank You Farmer Day



Thai Wah recognizes the crucial role of farmers as the primary suppliers of raw materials to us. Therefore, the company organizes the "Thai Wah Thank You Farmer Day" every quarter to express gratitude to them. This event is organized for all farmers who supply cassava to the company's starch factories by paying incentives to farmers who sell cassava to Thai Wah's factories located in Ban Chang District, Rayong Province; Phimai District, Nakhon Ratchasima Province; Tha Kham District, Kalasin Province; and Mae Sot District, Tak Province. In 2024, Thai Wah paid a total of 10,670,390 baht in dividends to 3,769 farmers, averaging 2,931 baht per person per year. This event not only expresses our appreciation for the hard work and dedication of the farmers but also reinforces our commitment to the well-being of farmers and the sustainability of our agricultural supply chain.

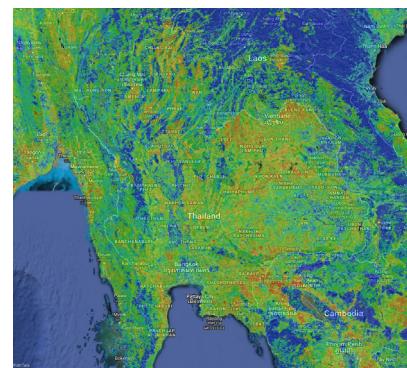
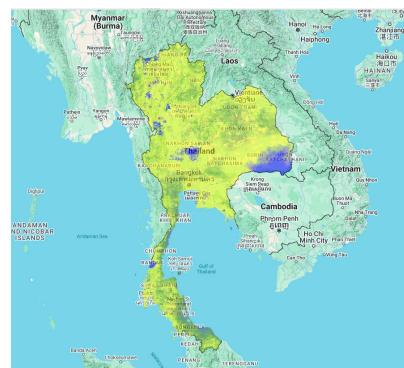
## Utilization of Agricultural Technology to Enhance Efficiency

### Digital Platform for Analyzing and Monitoring Crop Growth

Thailand is committed to developing and integrating agricultural technology into operations to enhance planning and cultivation efficiency. We have integrated technology to promote precision agriculture, particularly by applying satellite imagery and artificial intelligence (AI) in the agricultural sector. These innovations transform agricultural management approaches to be more efficient and help improve crop yields.

The satellite imagery analysis system allows farmers to plan their cultivation accurately, including predicting planting cycles, assessing yields, and analyzing water usage in agricultural areas through the processing of current and historical data. Comprehensive spatial data analysis with AI and machine learning identifies important agricultural patterns and trends, such as weather conditions, water levels, and soil quality. This helps farmers make more efficient agricultural decisions, such as determining the optimal planting and harvesting times, reducing unnecessary resource use, including water, fertilizers, and agricultural chemicals, and using integrated pest management and organic fertilizers by recommending appropriate amounts for each planting period to minimize environmental and ecosystem impacts. This results in higher quality and quantity of produce, leading to higher selling prices.

Examples of data used for analysis include:



- Normalized Difference Vegetation Index (NDVI): A drought indicator derived from satellite image reflectance calculations to monitor plant health and vegetation density, analyzing crop change trends during droughts.
- Vegetation Condition Index (VCI): Used to monitor plant stress levels, combined with historical NDVI data to detect droughts and other stress factors directly affecting plants.
- Rainfall Data: Used to analyze the amount of rainfall in each area, which can be used to predict the timing of cassava planting and harvesting. It also accurately forecasts trends of flood and drought situations in each area.

The adoption of precision agricultural technology marks a significant transformation in Thailand's agricultural sector by enhancing farmers' competitiveness, ensuring income stability, and improving farmers' quality of life. It also promotes sustainable and environmentally friendly farming, helping the agricultural sector grow better despite challenges such as climate change. This is a crucial step towards advancing and sustaining Thailand's agricultural sector in the long term.

The Geo-Informatics and Space Technology Development Agency (GISTDA)

## Collaboration with Public Sectors and Business Partners in the Development of the Agricultural Industry

The journey to achieve the objective of improving farmers' quality of life and promoting agriculture in the region cannot be done alone. Therefore, collaboration with partners who share the same goals is crucial and allows all parties to reach their objectives more thoughtfully and swiftly. This collaborative approach emphasizes our commitment to food security and enhancing the resilience and adaptability of the regional food system.

Thai Wah has partnered with both government and private sector partners to promote agricultural cooperation through various initiatives that support sustainable farming, improve productivity, and enhance farmers' quality of life. Government agencies, such as local administrative organizations under the Ministry of Interior, the Department of Agriculture, and the Department of Agricultural Extension under the Ministry of Agriculture and Cooperatives, have a deep understanding of the Thai agricultural sector and can effectively reach the target communities and farmers. In 2024, there were several collaborations and projects related to agriculture, including:

### Thai Tapioca Trade Association



Mr. Umnad Sukprasongphol, Director and Senior Advisor to the CEO of Thai Wah, attended the quarterly meeting of the Thai Tapioca Trade Association (TTTA), an organization that promotes the trade of high-quality tapioca products and the development of the Thai tapioca industry. The meeting provided an opportunity to share and exchange information about the tapioca trade situation, production conditions, and tapioca starch in Thailand and neighboring countries, benefiting members' understanding of current and upcoming trade and production trends.

In addition to the quarterly meeting, on December 12, 2024, Ms. Hataikan Kamolsirisakul, Mr. Pornsak Aiernaka, and Ms. Paspira Kueasakun participated as speakers in a seminar on the SAI Platform and Carbon Credit during the member meeting. They shared knowledge and experiences on sustainable agriculture assessment using standards like the FSA developed by the SAI Platform with association members.

## Sustainable Agriculture Initiative (SAI) Platform

In 2024, Thai Wah became a member of the SAI Platform for the first time, marking a significant step in driving sustainable agriculture. This membership allows Thai Wah to use internationally recognized tools and guidelines to assess and improve the agricultural practices of farmers within its network, building trust and cooperation with farmers and other stakeholders. It also provides access to new practices being developed among members and the SAI Platform, as well as success stories and examples from members to elevate global agriculture and improve the quality of life for farmers in low-income countries.

We are committed to driving positive change in the agricultural sector to ensure our farmers can grow sustainably while contributing to the well-being of the community. Our participation in the SAI Platform underscores our commitment to creating a more sustainable and equitable future for all stakeholders in the agricultural value chain.

## SET – Destination Sustainability Trip

On March 28–29, 2024, the Stock Exchange of Thailand organized a trip for members to learn and exchange sustainability practices from various organizations. Thai Wah was honored to be one of the companies participating and sharing experiences in promoting sustainable agriculture. Thai Wah emphasized its focus on improving the quality of life for farmers and communities through collaboration with government agencies, including district offices and three local administrative organizations, as well as farmer networks from large tapioca plots in Non Sa-at District, Udon Thani Province. This area serves as a model for sustainable tapioca plot management and has been recognized by Mr. Sirithep Siriwanhom, the group's leader, and farmer representatives from the Plang Yai cassava group, who shared their experiences in community development with Thai Wah and government agencies. This collaboration has helped farmers gain knowledge and skills, promote production factors, provide guidance on selling produce, and create economic stability for local farmers. Today, the large plot group has succeeded and gained a reputation as a collector of tapioca roots from sustainable cultivation areas certified by the FSA and government agencies.

## MOU with VGreen KU on carbon credit assessment project from THAI WAH SUSTAINABLE MODEL towards sustainable agriculture business

On June 17, 2024, Thai Wah and VGreen KU signed a memorandum of understanding for academic cooperation on agricultural carbon credits. This cooperation aims to assess greenhouse gas emissions related to tapioca cultivation and discuss ways to transition to more sustainable agricultural practices, reducing greenhouse gas emissions from the tapioca cultivation process. This cooperation is a significant step in addressing climate change and promoting sustainable agriculture by leveraging academic expertise and industry knowledge. The cooperation will comprehensively assess current agricultural practices and identify key areas for improvement. Both organizations are committed to sharing knowledge, conducting joint research, and developing practices for farmers. These efforts will not only reduce greenhouse gas emissions but also enhance the overall sustainability of agricultural operations, emphasizing the importance of collaboration between academia and industry in driving meaningful environmental change.



## MOU with Alltech: Thai Wah and Alltech collaborate to promote sustainability and environmental stewardship in the agricultural and food industry

Thai Wah has partnered with Alltech, a global organization specializing in sustainable agricultural solutions. This collaboration aims to achieve several key objectives aligned with both organizations' commitment to sustainability and environmental stewardship, such as sustainable animal feed production, enhancing the nutritional value of animal feed, efficiently utilizing waste through biogas projects, reducing carbon emissions in the agricultural and food industry, and developing overall sustainability practices. This collaboration, reflected in the memorandum of understanding (MOU), represents a shared vision of "Working Together for a Planet of Plenty" and "Creating Innovation and Sustainability from Farm to Consumer," demonstrating a joint commitment to promoting sustainability and environmental stewardship.



### Collaboration with Grow Asia

Grow Asia is a multi-stakeholder platform that fosters collaboration to cultivate inclusive, resilient, and sustainable food systems in Southeast Asia by working together with key stakeholders from the public sector, private sector, civil society, and farmer organizations in the region on macro-level issues and developing inclusive and sustainable agricultural value chains.

Thai Wah is involved in driving collaborations that enhance the stability of the regional food system through its membership in the Grow Asia Business Council from July 1, 2024, to June 1, 2025. Additionally, Thai Wah was elected as a co-chair of the Grow Asia Business Council alongside Visa, driving and strengthening collaborations that address key challenges such as climate change adaptation, access to financial services, and regenerative agriculture practices, impacting the livelihoods of smallholder farmers and economic development in Southeast Asia.



## Southeast Asia Agri-Food Roundtable 3<sup>rd</sup> Edition



On May 30, 2024, the Banyan Tree Hotel in Bangkok became the focal point for leaders in the agri-food industry from across Southeast Asia and internationally. Thai Wah, Temasek, and Rethink Events co-hosted the 3<sup>rd</sup> Southeast Asia Agri-Food Roundtable, bringing together over 180 leaders to share ideas and create a shared vision for a sustainable future.

The seminar was filled with the energy of creativity and collaboration. Participants explored new approaches to reducing carbon emissions in the agri-food supply chain and discussed building diverse and resilient food systems. Key discussion topics included achieving Net Zero by 2050, enhancing food security amid El Nio phenomena, and promoting economic growth in response to climate change.

The Southeast Asia Agri-Food Roundtable marks the beginning of systemic change, particularly in reducing food waste, driving appropriate investments, and promoting public-private partnerships. Thai Wah and all partners aim to create a better future together in the next edition.



## Media Field Trip – Visiting Agricultural Areas and Thai Wah Model

On August 22–23, 2024, Thai Wah organized a media field trip in Udon Thani Province to demonstrate the company's commitment to promoting sustainable agriculture through the "Thai Wah Model." The event showcased the integration of innovation with tapioca cultivation development while improving the livelihoods of local communities.

The event included in-depth presentations by Ms. Hataikan Kamolsirisakul and Mr. Pornsak Aiernakha, focusing on sustainable practices under the "Thai Wah Model," including the use of TW8 bio-fertilizer to restore soil health, ROSECO biodegradable mulch film to enhance water retention and reduce chemical use, and the establishment of a disease-free tapioca stem bank to increase yields.

The field visit helped deepen understanding as journalists met with local farmers who shared success stories, such as increasing yields by up to 50% and reducing production costs. These successes have improved farmers' quality of life, proving that the "Thai Wah Model" can effectively address climate challenges and promote sustainable agriculture.

Additionally, the media group visited a beef cattle farm that uses tapioca residues to produce Thai Win animal feed, exemplifying circular economy principles. Farmers shared that this utilization not only reduces costs but also contributes to environmental conservation.



## Asia-Pacific Agri-Food Innovation Summit 2024

On November 19–21, 2024, Thai Wah participated in the Asia-Pacific Agri-Food Innovation Summit in Singapore as a gold partner. This event is a significant platform that brings together leaders and experts in agriculture and food from across the Asia-Pacific region to shape the future of food security and support the resilience of the food system in the Asia-Pacific region.

Mr. Ho Ren Hua, CEO of Thai Wah, shared insights on the topic "Climate Adaptation in Agri-Food: Ensuring Food Affordability, Availability, and Production Across APAC" alongside representatives from Olam Agri, Rabobank, and TEMASEK, emphasizing the importance of enhancing supply chain resilience through collaboration with farmers and sustainable practices.

**ASIA-PACIFIC AGRI-FOOD INNOVATION SUMMIT**  
Singapore, November 19–21, 2024  
HOSTED BY rethink IN PARTNERSHIP WITH TEMASEK



**GARY SCATTERGOOD**  
Editor-in-Chief  
AgTechNavigator



**DIANE BOOGAARD**  
Head of Sustainability & Global Food System Transformation  
Rabobank



**LAURENCE JASSOGNE**  
Head of Nature & Climate Solutions  
Olam Agri



**REN HUA HO**  
Director and CEO  
THAI WAH



**ANUJ MAHESHWARI**  
Managing Director and Head of Agri-Food  
TEMASEK



**YVONNE PINTO**  
Director General  
IRRI

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# Green Factory and Community



# Green Factory and Community

Operations in safety, occupational health, and environmental management within the factory are crucial for promoting sustainable practices. The factory must implement strict safety measures to protect employees and workers from potential hazards through regular training, safety inspections, and continuous improvements. Thai Wah recognizes the importance of efficiently and responsibly using natural resources, including raw materials, energy, and water throughout the production process, to minimize environmental and social impacts. This can be achieved by monitoring and improving every step of the process, from purchasing raw materials to waste management, which involves reducing waste, adding value, and repurposing it. Effective waste management is a key outcome of fostering innovation within the organization to enhance resource management, emphasizing both environmental and social sustainability.

Thai Wah places great importance on its responsibility towards stakeholders' rights, ensuring that the company's business operations are ethical, lawful, and respectful of human rights and fair labor practices. We continuously build relationships with surrounding communities to promote mutual sustainable development. The company is committed to the health and well-being of employees and the local community, dedicating efforts to community and social development, and will continue to promote positive and sustainable change.

## Safety, Occupational Health, and Working Environment

Creating a safe working environment is paramount for employees, contractors, partners, and anyone conducting business activities within the factory premises. A safe environment reduces the risk of accidents and injuries, enabling employees to work more safely and efficiently. It also builds trust among partners and contractors in collaborative efforts. Adhering to strict Safety, Occupational Health, and Environment (SHE) policies is essential. These requirements are designed for everyone in the workplace, including employees, contractors, and partners, with clear measures and guidelines to ensure everyone understands the importance of safety and strictly follows the rules. Regular inspections and continuous improvements throughout the factory, along with frequent employee training, ensure that the workplace remains safe and that employees stay informed with occupational health and safety standards.

### Management Approach



- Establishing safety, occupational health, and environmental management policies and systems, including compliance with relevant laws and standards such as ISO 45001 and ISO 14001. These certifications demonstrate our commitment to maintaining a safe workplace. Adhering to these guidelines allows us to continuously improve our safety and environmental practices.



- Managing safety and occupational health risks: The Safety, Occupational Health, and Working Environment Committees hold monthly meetings to review and assess safety, occupational health, and working environment risks encountered during operations. They identify potential risks and implement preventive and mitigating measures, as well as communicate information between factories to enhance and improve practices.



- Promoting safety behavior and environment: Regular training and integration of safety into operations and safety projects through training and awareness programs for employees and workers. This ensures safe working conditions and enables employees to respond to or report emergencies effectively. Proactive safety measures and timely monitoring are encouraged.

## Implementation and Performance

### Establishing Safety, Occupational Health, and Environmental Management Policies and Systems

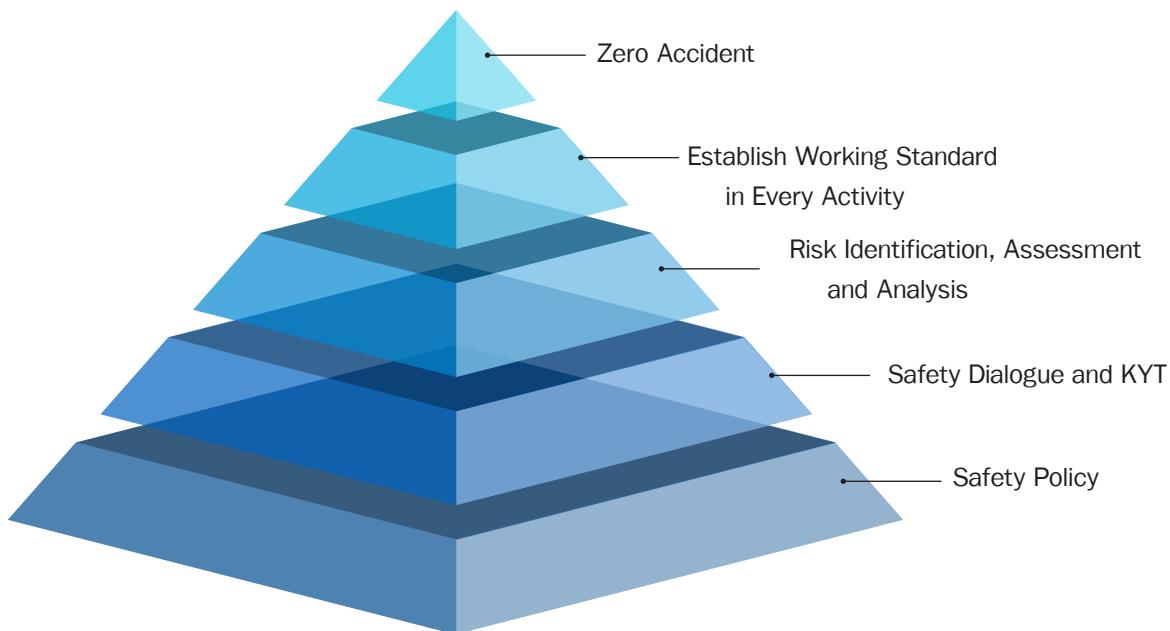
The company establishes safety, occupational health, and environmental policies and systems, including compliance with relevant laws and standards such as the Industrial Product Standards (TIS), the Occupational Health and Safety Management System ISO 45001, and the Environmental Management System ISO 14001. These certifications demonstrate our commitment to maintaining a safe workplace. Adhering to these guidelines allows us to continuously improve our safety practices.



Safety, Occupational Health and Environmental Policy

### Managing Safety and Occupational Health Risks

To ensure the effectiveness of our Safety, Health, and Working Environment (SHE) management system, the company has established the SHE Committee. This committee includes representatives from each factory and subsidiary. Monthly meetings are held to review safety, occupational health, and working environment risks encountered during operations, identify potential risks, and implement preventive and mitigating measures. Additionally, the committee evaluates the effectiveness of regulations and makes necessary improvements. These steps are crucial for maintaining a safe and hygienic working environment in our factories. Safety, occupational health, and working environment risks are reported to the Audit, Risk Management, and Corporate Governance Committee (ARGC) on a quarterly basis.



Thai Wah has developed a comprehensive Safety, Occupational Health, and Working Environment Pyramid. Each level of the pyramid is built on the foundation of our safety policy, integrating key elements such as safety talk, risk assessments, and work standards. Our ultimate goal is zero accidents. We are committed to fostering a culture of safety, occupational health, and reducing safety risks within the organization. The details of the Safety Pyramid include:

#### **1. Zero Accidents**

Achieving our ultimate goal of zero accidents demonstrates our commitment to ensuring that employees and contractors can work safely every day.

#### **2. Setting Work Standards for All Activities**

Establishing clear and consistent work standards for all activities provides employees and contractors with guidelines to follow for safe work practices, reducing risks and ensuring that all tasks are carried out safely and efficiently.

#### **3. Identifying, Assessing, and Analyzing Risks**

Identifying, assessing, and analyzing risks is a crucial step in our safety process. We proactively identify potential hazards and evaluate their impact on our operations. This thorough analysis allows us to implement effective control measures to reduce risks and prevent accidents before they occur.

#### **4. Safety Talk and KYT**

Engaging in safety talk and Kiken Yochi Training (KYT) promotes open communication about safety issues and raises awareness of potential hazards. Involving employees in these discussions helps them take a proactive role in maintaining a safe workplace.

#### **5. Safety Policy**

A comprehensive safety policy is the foundation of our efforts to achieve zero accidents. We regularly review and improve the policy based on employee feedback, legal changes, and industry best practices.

#### **Safety Performance Indicators**

Thai Wah is dedicated to implementing and improving SHE (Safety, Health, and Environment) standards across all operations. To ensure compliance with these standards, the company has established a comprehensive monitoring and evaluation system. This system includes various safety performance indicators such as the Lost-Time Injury Frequency Rate (LTIFR), Incident Severity Rate (ISR), and Fatality Rate (FR). Additionally, the company closely monitors and analyzes each step of its operations to identify potential risks. The collected statistical data enables relevant departments to take proactive measures, minimizing the likelihood of accidents and striving for zero accidents. This proactive SHE approach enhances the efficiency of each operational step, allowing the company to create a safe environment for employees, customers, and all stakeholders.

#### **Statistical data on the SHE performances:**

Performance of 2024	
Lost Time Injury Frequency Rate (LTIFR):	Injury Frequency Rate: <b>4.80</b>
1.96	
Target	
Zero accident by 2025	
Zero fatality rate	

In 2024, the cumulative number of accidents decreased by approximately 19% compared to 2023. The majority of accidents were caused by unsafe behaviors, such as not following specified procedures, failing to conduct risk assessments before starting work, communication errors, and lack of operational skills. In response, the Safety Committee analyzed current preventive measures to identify areas for improvement and to foster safe behaviors among employees. The safety tools currently in use include KYT to assess risk before starting work, Behavior-Based Safety (BBS), and the SHE app for reporting unsafe conditions. These measures aim to prevent accidents and maintain a safe working environment.

We are committed to enhancing our safety culture by focusing on achieving zero accidents, with people at the center of all business activities. Our safety strategy targets the most critical risks, including machinery safety, material handling, and vehicle safety within the factory premises.

### **Promoting Safety Behavior and Environment**

We are committed to reducing risks and preventing workplace accidents through proactive measures, including regular safety training. This ensures safe working conditions and enables employees to respond effectively in emergencies, supported by comprehensive risk assessments. These efforts not only protect our employees, contractors, and partners but also enhance the overall operational efficiency of our business.

### **Safety Behavior Training and Safety Promotion Activities for Employees**

To ensure employee safety, Thai Wah continuously focuses on raising awareness and understanding of appropriate workplace safety measures. To achieve this goal, the company conducts SHE training for employees at all levels, fostering awareness of safety in each step of their work and instilling a culture of safety within the organization. Ultimately, these training sessions aim to guide employees in identifying potential risks and hazards while working, making decisions, and stopping work when they observe potential dangers. Additionally, the company encourages employees to participate in training and provide feedback on how they can better apply the knowledge gained.

The training courses offered in 2024 include examples such as:

#### **1. Safety Courses as Required by Law**

- Safety, Occupational Health, and Environment Committee
- Safety Officers at the Supervisor Level
- Fire Drills and Evacuation Training
- Environmental Staff Training
- Confined Space Safety
- Overhead Crane and Crane Operator Safety
- Senior Energy Responsible Officer

#### **2. Behavior-Based Safety Promotion Courses**

- Basic Safety Review for Employees and Contractors
- Machinery Energy Isolation
- Promoting Safety Behavior in the Workplace with BBS (Behavior-Based Safety)
- Job Safety Analysis
- Safe Forklift and Stacker Operation
- Basic First Aid
- Chemical Spill and Emergency Management
- Basic Electrical Safety

To raise safety awareness and prevent hazards from machinery and tasks that employees must perform, the company focuses on building knowledge, skills, and participation in safety for the benefit of the employees themselves. Regular training is provided for both new and current employees. The organization's safety department organizes various activities throughout the year to promote safety among employees, including:

- 5S Safety Activities
- Fire Hose and Equipment Refresher Training
- Safety Role Model Contest
- KYT Clip Contest
- Workplace Safety Week Activities
- Safety Training for New Employees
- Safety Refresher Training
- Safety Roadshows



Basic Fire Fighting Training



Fire Drills and Evacuation Training



KYT on Safety Awareness every Tuesday

KYT on Safety Awareness every Tuesday  
Safety Work at Height Training

Safe Forklift and Stacker Operation Training



Check the PPE usage and adherence to safety regulations daily

## Promoting Safety for Suppliers and Contractors



Safety training for contractors to understand safety standards in the area to reduce accidents



Inspect tools and check the PPE before starting work

Ensuring the safety of suppliers and contractors working within the company's operational areas is crucial to prevent accidents and maintain a safe working environment. We have implemented comprehensive safety training and practices, which include the following actions:

- 1. Approval for Site Access:** Before partners or contractors enter the factory premises, they must obtain approval and receive a work permit. This process ensures that everyone entering the site is authorized and informed about the necessary details for accessing the company's areas.
- 2. Acknowledgment of Safety Requirements:** All partners and contractors must acknowledge and understand our safety policies and requirements. This step ensures that everyone is informed about the safety standards and procedures they must follow while working in the factory.
- 3. Safety Training:** Safety training for suppliers and contractors covers essential safety practices, emergency procedures, and proper equipment usage. Providing the necessary knowledge and skills for safe work helps reduce the risk of accidents and injuries.
- 4. Random Safety Compliance Inspections:** To ensure continuous adherence to safety standards, we conduct random inspections of work activities. These inspections help us identify potential safety violations and take preventive or corrective actions promptly.

Implementing these proactive measures demonstrates our commitment to the safety and well-being of all suppliers and contractors by promoting a culture of safety and strict adherence to safety guidelines.

### SHE Application – Safety Reporting Tool

Using essential and rapid tools is crucial for addressing unsafe conditions promptly. The SHE application is designed to enhance the efficiency of safety operations and improve the reporting process, thereby elevating safety at Thai Wah.

This digital application enables both employees and management to participate in safety management, allowing timely reporting of safety issues. It ensures that responsible personnel are immediately notified and can address concerns quickly. The application supports various types of reports, such as factory access requests, unsafe condition reports, and accident reports.

Key features of the SHE application include:



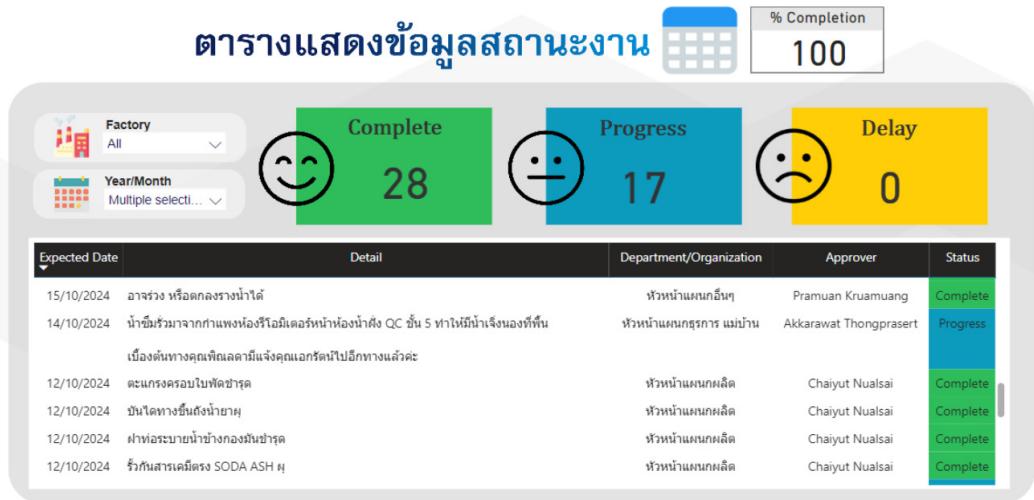
- 1. Convenience:** Accessible from both mobile phones and computers, allowing users to report issues and access information easily from anywhere.



- 2. Data Recording and Reporting:** Efficient data recording and the ability to generate appropriate reports, facilitating clear and professional communication of safety information.



- 3. Competitive Environment:** Promotes fair competition among different factories by displaying dynamic graphs that track safety indicators, encouraging continuous improvement and accountability.

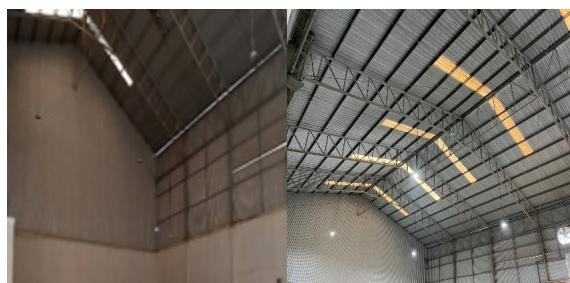


Example of displaying the status of safety issue resolutions on the SHE application.

By leveraging this digital tool, Thai Wah not only improves safety and health management but also fosters a culture of proactive participation and continuous improvement. The SHE occupational health application demonstrates our commitment to adapting to a changing world and increasing the effectiveness of our safety practices.

### Improving Factory Environment for Safety

The company prioritizes maintaining a safe factory environment for employees, contractors, and visitors. Thai Wah regularly conducts comprehensive risk assessments and analyses to identify and mitigate potential workplace hazards. This includes inspecting the workplace to ensure compliance with safety standards, as well as installing, maintaining, and repairing necessary protective equipment. These measures ensure a safe environment for all personnel within the factory premises. The goal is to create a safer and more efficient workplace for employees and visitors. Examples of environmental improvements for creating a safe workplace in 2024 include:



Improve lighting in the warehouses



Installed signs indicating hi-risk areas



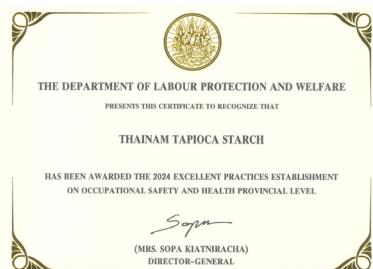
Monitored environmental quality, including, light, noise, heat, dust, and airborne chemical



Added three additional fire sprinkler heads to cover fire-prone areas

## Safety and Occupational Health Awards and Standards

In 2024, Thai Wah and its subsidiaries are committed to elevating safety and occupational health standards across all operational processes. By strictly adhering to relevant standards and regulations, we ensure a safe working environment for all employees, contractors, and visitors. Our efforts to promote safety are also reflected in the recognition we have received through various awards and standards, including:



Thai Nam Tapioca Company Limited, a subsidiary of Thai Wah, received the Outstanding Model Establishment Award for Safety, Occupational Health, and Working Environment at the Provincial Level for 2024 from the Department of Labour Protection and Welfare. This award confirms the company's commitment to prioritizing safety, occupational health, and the working environment. The company also passed the ISO 14001 environmental management system audit.



Mae Sot Factory received the ZERO Accident Award at the Provincial Level from the Institute for Occupational Safety, Health, and Environment Promotion (Public Organization), reflecting the factory's safety performance. Additionally, Mae Sot Factory passed the Thai Labour Standard audit.



has successfully participated  
in the Healthy, Safety and Happy Workplace Project,  
achieving the gold level  
This recognition is valid as of the fiscal year 2024

Date of Issue: 30th September 2024  
Date of Expiry: 30th September 2027



Tha Khantho Factory received the Disease-Free, Safe, and Happy Workplace Award (Gold Level) at the national level from the Ministry of Public Health.

## Natural Resources Management

Thai Wah is committed to enhancing efficiency at every stage of the production process to achieve maximum effectiveness. This involves efficient management of personnel and resources, aligning with economic, social, and environmental priorities, and the goal of reducing greenhouse gas emissions, which are crucial for long-term success and sustainability.

To achieve these goals, we promote environmental responsibility among employees. We believe that fostering a culture of environmental awareness is essential to linking environmental stewardship with business success. This involves continuous improvement of factory systems and integrating sustainability principles into every step of our operations. Our efforts include using energy-efficient technologies, reducing waste, conserving water, and engaging with local communities. By integrating these practices, we aim to minimize environmental impact and set standards for

sustainable business practices in the industry. We are committed to continuous improvement and innovation to ensure our green factory concept contributes to a healthier planet and a more sustainable future for everyone.

### Management Approach

- Environmental Policy and Compliance:** Establishing comprehensive environmental policies and adhering to environmental management system requirements, such as waste management, pollution prevention, and resource conservation. Thai Wah develops comprehensive environmental policies to guide operations and decision-making processes to promote sustainable practices.
- Greenhouse Gas Management:** Integrating efficient operational approaches, utilizing technology, and adopting renewable energy to reduce reliance on

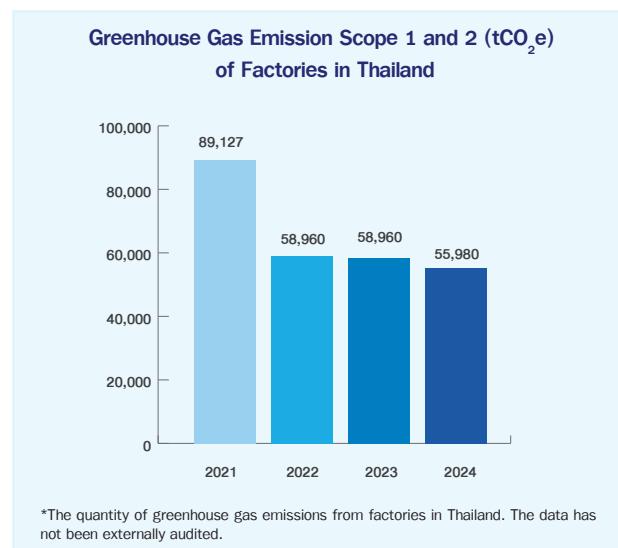
fossil fuels. This includes setting challenging targets and proactive strategies to reduce the organization's greenhouse gas emissions and raising awareness about the impacts of climate change.

- **Waste and Wastewater Management:** Efficient and responsible management of wastewater and waste is crucial for the food industry due to its impact on the environment and surrounding communities. Agricultural and food industry waste can be categorized into various types that require proper management to minimize environmental and community impact.
- **Water Management:** Continuous water management to ensure the most efficient use of water throughout the production process, with significant projects aimed at reducing water usage and promoting water conservation among employees to raise awareness of systematic water resource management.
- **Community and Social Development:** The organization's significant role in supporting society and communities. We believe in community, social, and environmental responsibility through CSR projects.

## Implementation and Performance Greenhouse Gas Management

To address and manage impacts on severe climate change, Thai Wah aims to enhance operational efficiency and reduce reliance on fossil fuels by using renewable energy. The company has set a goal to achieve net-zero greenhouse gas emissions by 2050. Thai Wah manages greenhouse gas reduction through the 3T strategy:

- **Traceability:** Identifying the sources and quantities of greenhouse gases across Scopes 1, 2, and 3 annually. Continuous data tracking helps us pinpoint emission sources and measure changes promptly.
- **Transition:** Transforming business processes to reduce greenhouse gas emissions from controllable sources, such as efficient energy use and renewable energy adoption. This includes inspecting and improving factory production systems and innovating to reduce emissions in the production process.
- **Transformation:** Promoting sustainable behaviors and culture both within and outside the company. This involves integrating sustainability into core strategies and understanding customer needs regarding the company's sustainability operations and goals.



The company has implemented activities and projects to reduce greenhouse gas emissions, such as using renewable energy from solar power and biogas, improving the efficiency of production processes for more efficient resource use, and upgrading wastewater treatment systems. These efforts have enabled the company to reduce greenhouse gas emissions by over 33,000 tons of carbon dioxide equivalent, or approximately 37% from 2021. Thai Wah remains committed to reducing greenhouse gas emissions every year, with a target to reduce emissions by 5% from the previous year by 2025. In addition to reducing greenhouse gas emissions in Scope 1 and 2, Thai Wah is continuously researching innovations to reduce emissions throughout the supply chain.

Thai Wah is committed to enhancing employees' understanding of climate change and its broad impacts on both the world and the company's operations. To achieve this goal, Thai Wah collaborates with climate change experts to share knowledge with employees. The training includes simulations that demonstrate how different business decisions can affect climate impacts, providing employees with deeper insights into how their actions and decisions impact the environment and the business. This approach not only raises awareness but also equips employees with the principles for making informed and sustainable decisions in their roles.

## Renewable Energy Use

### Biomass as a Replacement for Coal

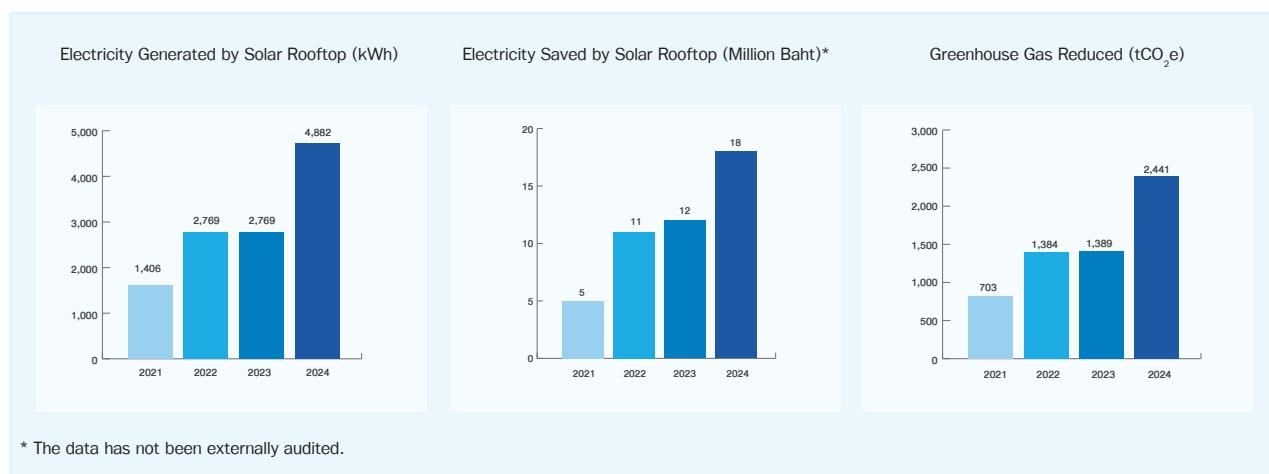
Thai Wah's food production factory require significant thermal energy. Before 2021, Thai Wah primarily used coal as the main energy source for producing food products. Currently, Thai Wah has experimented with using biomass, such as palm kernel shells and wood chips, as a mixed energy source for heat. In 2024, we adjusted the appropriate mixing ratio and were able to reduce coal usage to 4% of the thermal energy while maintaining good heat efficiency and achieving results similar to using coal.

## Solar Energy Use

Thai Wah has increased its use of renewable energy. The transition to solar energy has resulted in an installed capacity of 2.43 MW at the food factory in Bang Len District, Nakhon Pathom Province. This not only increases the proportion of renewable energy use but also helps reduce energy costs. Part of the savings from renewable energy is donated to the Energy Regulatory Commission's (ERC) Energy Fund to support and promote community and social activities near the factory.

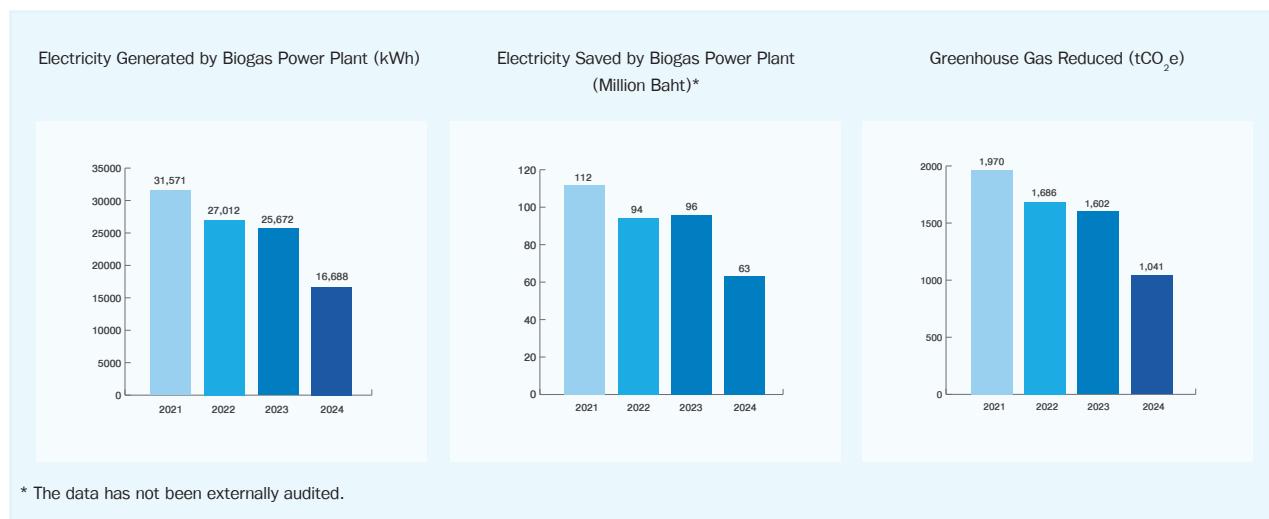
In 2023, the company installed additional solar panels at three more factories: Rayong branch, Phimai branch, and Tha Khantho branch, with a total capacity of 3.4 megawatt-hours. Currently, the proportion of renewable energy usage is at 22% of total electricity consumption. By 2025, we aim to increase this proportion to 30%, bringing us closer to our short-term goal of achieving 50% renewable energy usage of total electricity consumption by 2030.

Additionally, Thai Wah joined the Thai Renewable Energy Association (RE100) to demonstrate its commitment to transitioning to clean energy sources. This supports and contributes to reducing Thailand's greenhouse gas emissions and enhances the competitiveness of the country's industry.



## Biogas Power Plants

Thai Wah systematically manages the environment by generating electricity from wastewater and by-products of production, creating a significant source of renewable energy for the company. Currently, Thai Wah operates two biogas power plants: one owned by Thai Nam Tapioca Company Limited and the other located at the Tha Khantho branch.



## Energy Management through Various Projects

Efficient energy management is crucial for enhancing operational efficiency and reducing environmental impact. Thai Wah has implemented various energy management projects across all factories to improve energy efficiency and promote sustainability within the organization. These projects include upgrading machinery for better energy efficiency, planning appropriate maintenance schedules to reduce energy consumption, and regularly monitoring energy use to identify areas for improvement. Additionally, energy and water conservation initiatives are promoted, encouraging participation from all employees.

### Examples of Energy Management Projects:

#### 1. Reducing Thermal Energy Use in the Production Process

- **Implementing a Pre-heat System in Tapioca Starch Production:** In the production process, the burner stage consumes high energy. We have developed a pre-heat step to warm the air, drawing ambient air to exchange heat at the outer surface of the hot air furnace combustion chamber, increasing the air temperature by approximately 50°C from the original 30–35°C. This reduces energy use in the combustion chamber by about 10% compared to using regular fuel, saving approximately 1,500 cubic meters of biogas per day.
- **Cleaning the Tube Heat Exchanger in Starch Factories:** During the cleaning cycle of the tapioca starch factory (CIP), we increased the frequency of cleaning the Tube Heat Exchanger. Results showed improved efficiency of the Tube Heat Exchanger, leading to reduced gas consumption.

#### 2. Planning Efficient Machinery Inspection and Maintenance

- **Planned Maintenance (PM):** Planned maintenance is essential for ensuring machinery operates at maximum efficiency. The engineering departments of each factory continuously plan and conduct machinery inspections and maintenance, such as cleaning, inspecting, and lubricating machinery. One example of the results from developing this inspection plan is a reduction in electricity consumption by approximately 3–5% of the machinery's power (kilowatt-hours).

## Wastewater and Waste Management

Efficient and responsible wastewater and waste management are crucial for the food industry due to their impact on the environment and surrounding communities. Waste from the agricultural and food industries can be categorized into various types, such as organic waste, packaging materials, and wastewater, which require proper management to minimize environmental and community impact.

Thai Wah is committed to reducing waste throughout the production process by creating more sustainable and environmentally friendly operations. This includes maximizing the efficiency of raw material and resource use. These approaches not only help reduce waste but also improve the overall efficiency of Thai Wah's production processes. Additionally, we are dedicated to finding new ways to reuse waste, transforming it into valuable products that can provide economic, social, and environmental benefits.

The wastewater treatment process at tapioca starch factories begins with an activated sludge system, a biological treatment process that uses aerobic bacteria to decompose organic matter in the wastewater. This process consists of two main parts: the aeration tank and the sedimentation tank. Wastewater is sent to the aeration tank, where air is added to allow aerobic bacteria to decompose the organic matter. The treated wastewater is then sent to the sedimentation tank to separate microbial sludge from the clear water.

The treated water is sent to a biogas pond, a crucial step in producing renewable energy. The water then undergoes another round of aeration treatment to ensure it meets legal quality standards. We send water samples monthly to external agencies for quality checks and calibrate wastewater measurement instruments twice a year to ensure accuracy.

Renewable energy production involves generating biogas and electricity from wastewater and production waste. This renewable energy source is a vital resource for the company. Currently, all of Thai Wah's tapioca starch factories produce biogas from wastewater and production waste. There are two biogas power plants that produce electricity: Thai Nam Tapioca Company

Limited in Udon Thani Province and the Tha Khantho factory in Kalasin Province. These plants not only help reduce greenhouse gas emissions but also lower the company's energy costs.

Additionally, we use sludge from aeration ponds and dredged sediment from sedimentation ponds to increase the volume of treated water storage ponds. This sludge is processed into soil conditioners and compost. The process includes drying the sludge, mixing it with microorganisms, and using it as a soil conditioner in agricultural fields. Tapioca production sludge is utilized to produce organic fertilizer for the company's experimental plots and distributed to local farmers.

Through these wastewater and waste management practices, Thai Wah not only reduces environmental impact but also contributes to sustainable development and resource conservation. Our commitment to systematic environmental management and efficient resource use allows us to create new benefits and set standards for sustainable practices in the food industry.



### Animal Feed from Cassava Pulp



Thai Wah collaborates with leading universities in Thailand to develop and research "Thai Win Animal Feed" for buffaloes, beef cattle, and dairy cows. This animal feed is produced from cassava pulp, a byproduct of cassava starch production. The development and research focus on enhancing nutritional value, improving milk yield, and promoting the use of domestic raw materials to reduce production costs and increase market competitiveness. This includes using new technologies in animal feed development, such as improving digestion efficiency and quality control, to ensure the feed provides maximum nutritional value and fully meets farmers' needs.

Using raw materials from production waste at tapioca starch factories results in lower production and environmental costs for Thai Win animal feed compared to other animal feeds. Thai Wah is studying the reduction in carbon footprint compared to conventional animal feeds. Additionally, the affordable price and high quality of the feed offer significant cost saving for farmers.

From the wastewater and waste management process of Thai Wah mentioned above, we can say that in 2024, 100% of the waste from tapioca starch production at the Tha Khantho branch was utilized. This includes producing 73 million kilograms of electricity from biogas, selling 14 million kilograms to cassava yards for composting, and producing 1.3 million kilograms of animal feed. This reflects Thai Wah's commitment to adding value to production waste for economic, social, and environmental benefits.

## Waste Sorting and Management

Efficient waste sorting and management are crucial components of sustainable industrial practices. Thai Wah recognizes the importance of responsible waste management to reduce environmental impact and support community well-being. The increasing trend of waste volume in Thailand poses a significant threat to the environment, as improper waste management and disposal can lead to soil, water, and air contamination. Landfills, a common waste disposal method, often face inadequate on-site management issues.

To address these challenges, Thai Wah has implemented several projects to reduce waste and promote recycling. Our approach includes systematically sorting different types of waste, such as general waste, hazardous waste, used engine oil, and office waste, by allocating specific areas for each type to ensure proper management. Additionally, we encourage the use of reusable packaging and ensure that damaged packaging is disposed of correctly. We have reduced the amount of waste sent to landfills and regularly inspect factory areas to ensure systematic waste management efficiency.

## Water Management

Water management is a crucial component of sustainable development, encompassing the planning, development, and management of water resources. As the global population continues to grow and climate change intensifies, the demand for clean and accessible water has increased more than ever. Efficient water management ensures that this vital resource is used effectively, equitably, and sustainably, balancing the needs of people, industries, and ecosystems. Effective water management plays a significant role in creating a sustainable future for all.

Thai Wah aims to reduce overall water usage, improve the quality of key water sources, and promote conservation by addressing issues such as water scarcity and pollution. We continuously plan water management to ensure the most efficient use of water throughout the production process. Significant projects and initiatives are implemented to reduce water usage and promote water conservation among employees, raising awareness of water resource management.

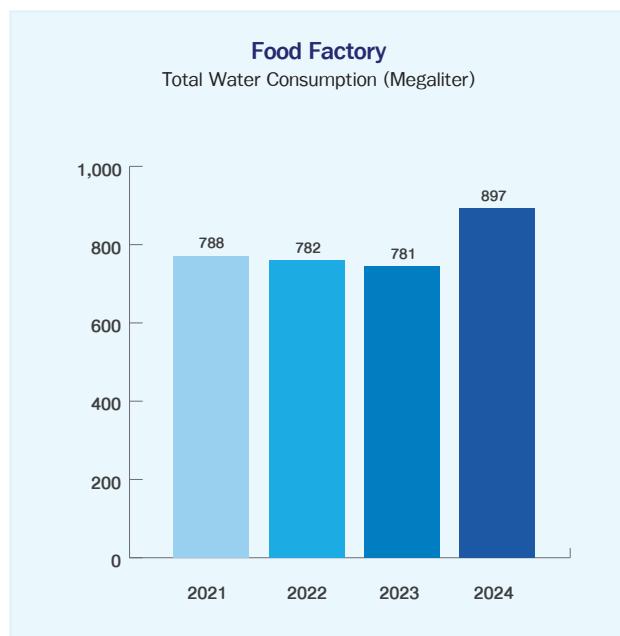
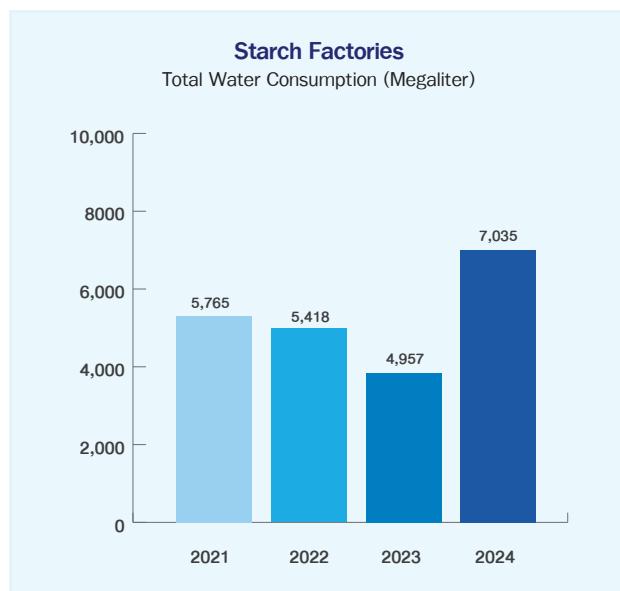
## Approaches to Reducing and Efficiently Using Water

Effective water management is a cornerstone of our commitment to sustainability. Our approach focuses on two main practices: reducing water usage and recycling water. These practices not only help conserve water but also enhance the efficiency and sustainability of our operations.

**1. Reducing Water Usage:** We continuously assess the availability and consistency of water from various sources to plan efficient water use in our production processes. By evaluating and improving our water use practices, we aim to reduce water consumption at each production stage. This is achieved through the integration of technology and continuous maintenance and improvement of our machinery.

- **Installing New Machinery:** To improve production efficiency and reduce water usage, the installation of new machinery has reduced water consumption by 760 m<sup>3</sup>/day and saved over 450,000 THB annually in water production costs.
- **Planning Efficient Machinery Inspection and Maintenance:** Regular inspection and maintenance of machinery help reduce unnecessary water usage due to equipment inefficiencies.

**2. Recycling Water:** In our efforts to promote sustainability, we implement water reuse practices in our production processes. For instance, water used in the initial stage of washing cassava roots is treated and recycled. This reuse significantly reduces our overall water consumption and supports more sustainable production practices.



## Water Consumption

The company records the volume of water used from sources and purchased from suppliers, and monitors the amount of water used in the production process. We have plans to improve the efficiency of water resource usage, aiming to reduce water usage in production by 1% for the starch and food factories. This includes regular inspection and maintenance of machinery to ensure they operate at maximum water efficiency, as well as considering the implementation of appropriate technologies to reduce water usage per unit of production.

## Water Risk Assessment

Assessing and managing water risks is a crucial component that reflects the company's commitment to sustainability and enhancing the quality of life for surrounding communities. Effective water risk management requires a systematic process to identify, evaluate, and mitigate potential impacts from water use. This approach is essential for balancing business needs with environmental and community care. Proactive water risk management helps reduce the likelihood of operational disruptions and ensures the continuous and sustainable availability of water resources.

### Details of Water Risk Assessment:

#### 1. Identifying and Evaluating Water Risks

The company conducts comprehensive identification and evaluation of water risks to understand potential impacts. This includes analyzing the availability and quality of water sources and assessing risks related to contamination or water loss that could affect production processes.

#### 2. Preventing and Mitigating Negative Impacts

Once risks are identified and evaluated, the company implements appropriate measures to mitigate potential impacts. This may include shifting water use plan, investing in technologies that enhance water use efficiency, or improving water treatment systems.

#### 3. Continuous Monitoring and Improvement

The company regularly monitors risk factors such as the quantity and quality of water used in production processes. Continuous monitoring allows for accurate decision-making and adjustments to operations as needed to address potential risks.

#### 4. Developing Action Plans and Mitigation Measures

The company has developed comprehensive action plans and mitigation measures, outlining clear steps to manage assessed risks. This includes strategies to improve water management in high-risk areas, enhancing the ability to address water-related challenges and promoting operational sustainability.

#### 5. Community Engagement and Collaboration

The company values communication and feedback from the community, encouraging stakeholders to provide comments and suggestions. Additionally, the company collaborates with local authorities and water suppliers to assess and control water risks related to operations, leading to the development of effective management and mitigation strategies.

Effective water risk management is vital for maintaining business sustainability and enhancing the quality of life for surrounding communities. The company is committed to protecting water resources and promoting sustainable water use through proactive assessment, impact mitigation, continuous monitoring, and community engagement, ensuring stable and environmentally responsible business operations in the long term.

## Social and Community Development

In addition to its commitment to business excellence, Thai Wah recognizes the important role of supporting society and communities. We believe that responsibility towards the community, society, and the environment through CSR projects creates value for both employees and the organization. To demonstrate this responsibility, Thai Wah organizes activities with nearby communities under the “Thai Wah Care & Community Day” program. This fosters good relationships with the community and gives back to society, creating meaningful short-term and long-term impacts on the surrounding communities.

The Thai Wah Care & Community Day activities enable the organization to respond more quickly to societal needs and build a committed, team-oriented workforce proud of their roles. This allows Thai Wah to advance both in business and sustainable social support. The details are as follows:

### 1. Responsive to Social Needs

- Our CSR projects focus on addressing urgent community needs, such as providing assistance in emergencies or developing communities in need
- With support from employees at all levels, we can mobilize resources and act quickly and efficiently

### 2. Strengthening Community Trust and Relationships

- Working closely with communities through CSR projects allows Thai Wah to quickly build local trust and enhance the organization's reputation

### 3. Fostering a Culture of Collaboration

- Employee participation in CSR activities fosters teamwork and collaboration, which are essential for an agile organization
- Collaboration enables us to implement social projects more quickly, driven by the power of teamwork

### 4. Building Employee Pride and Engagement

- Encouraging employees to participate in social activities fosters a sense of pride in being part of Thai Wah, motivating them to work and respond to organizational goals quickly
- Engaged employees are enthusiastic about driving change both within the organization and in society

### Thai Wah Care & Community Day Activities in 2024:

- Constructing a patient reception building at Kok Sa-at Health Promoting Hospital, Mueang District, Udon Thani Province
- Thai Wah Cup: A community football competition to award scholarships in Nai Mueang Subdistrict, Phimai District, Nakhon Ratchasima Province
- Donating water coolers and gym lighting, and supporting sports equipment at Baninwitthaya School, Ban Chang District, Rayong Province
- Sports activities and awarding scholarships and sports equipment at Ban Yang Um School, Kalasin Province
- Relationship-building activities, storytelling, singing, and giving gifts and scholarships at Laguna Kindergarten, Phuket Province
- Environmental activities and setting an example for the community by cleaning the beach in Phuket Province
- Painting schools, playgrounds, and awarding scholarships at Wat Kiri Phawanaram School, Rayong Province
- Sports activities and awarding scholarships to four schools in Mae Kasa Subdistrict Administrative Organization, Tak Province



# Family and Well-being



THAI WAH  
PUBLIC CHARITY LIMITED

We are

STRONGER !  
FASTER !  
BETTER !



UNDP  
UNFPA  
UN Women  
UNICEF  
UNDP Thailand

2-13 SEP 2019 | 2019

TISSON ROOM, AIA HALL, AIA CENTER

STRONGER !  
FASTER !  
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Together

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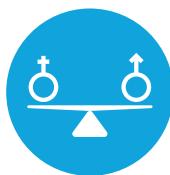
# Family and Well-being

The year 2024 is significant for our organization as we embark on a journey of transformation. Recognizing the need for agility and flexibility in the rapidly changing landscape and shifting market demands, we have restructured our organization into a Business Unit-led model. This model is designed to enhance operational agility, speed to market, and accountability.

To maintain competitiveness and resilience, the company must foster a culture of continuous learning and skill development among its personnel. Thailand currently faces labor market issues such as skill gaps, an aging workforce, and changing labor demands, which may impact productivity and efficiency. Therefore, investing in upskilling and promoting knowledge transfer among employees can enhance their ability to adopt new technologies, sustainable practices, and evolving industry standards. This commitment to flexibility and learning not only strengthens the organization's competitiveness but also supports long-term sustainability and preparedness for future challenges.

## Management Approach

Under the strategic pillar "Family and Well-being," Thai Wah emphasizes respecting human rights and developing employee potential while improving the quality of life for all employees in all aspects. The management approach includes:



- **Promoting Equality:** To support diversity and embrace differences within the organization, Thai Wah values the unique diversity each employee brings. We practice equal treatment in employment and all aspects of the company's operations, ensuring fairness, equality, and non-discrimination.



- **Enhancing and Developing Human Resources:** Through upskilling and reskilling programs via the Thai Wah Leadership Academy (TLA), we assess performance, capabilities, and potential to enhance employee performance and meet organizational goals. This includes preparing for effective role transitions.



- **Well-being and corporate culture:** We promote employee engagement, development, and quality of life activities to ensure employees feel safe at work and are committed to career growth. Thai Wah prides itself on upholding fundamental rights that everyone is entitled to.



## Implementations and Performance

### Promoting Equality

Thai Wah recognizes that embracing diversity and individuality goes beyond legal compliance. We focus on treating employees equally, creating a workplace where everyone can grow based on their unique abilities, experiences, and perspectives to build a stronger and more diverse organization ready to face future challenges.

### Human Rights Management

At Thai Wah, we prioritize respecting human rights, building trust and respect. We adhere to international human rights frameworks such as the United Nations Global Compact, ILO Declaration on Fundamental Principles and Rights at Work, and UN Guiding Principles on Business and Human Rights.

To build trust and dignity within the organization, employees and stakeholders are treated fairly and equally, leading to sustainable relationships and confidence in the organization. Our commitment to open communication helps ensure that all employees have equal access to relevant information and rights, fostering collaboration and an open organizational culture.

### Human Rights Policy

The company has a policy to avoid any actions that violate human rights and related laws, focusing on equal treatment without discrimination based on physical or mental differences, race, nationality, religion, culture, gender, age, language, skin color, education, or social status. This policy applies to all employment processes, from recruitment, compensation, working hours, and annual leaves, to job assignments, performance evaluations, training and development, career planning. The company is also committed to the prohibition of forced labor, human trafficking, or child labor.

### Human Rights-Related Projects and Activities

- **Caring for Migrant Workers:** This includes ensuring their quality of life and welfare, performance evaluations, providing knowledge and communication, and appropriate training in local languages, as well as access to grievance channels under the same management system.

- **Policy Communication:** Creating understanding among employees about human rights and the Code of Conduct through channels such as email, bulletin boards, group chats, and during employee orientation.

### Grievance Channels:

- **Whistleblowing Policy:** Thai Wah's whistleblowing policy reflects our commitment to fairness and human rights, providing employees with a safe and confidential channel to report misconduct while protecting whistleblowers from retaliation and building trust. This policy helps create a respectful and ethical workplace for everyone. The whistleblowing form, along with related policies and channels, can be accessed on the Thai Wah website (<https://www.thaiwah.com/en/corporate-governance/declaration-of-anti-corruption>).
- **Accessible Grievance Channels:** Establishing easily accessible grievance channels, such as red boxes, for submitting complaints in both Thai and Burmese.



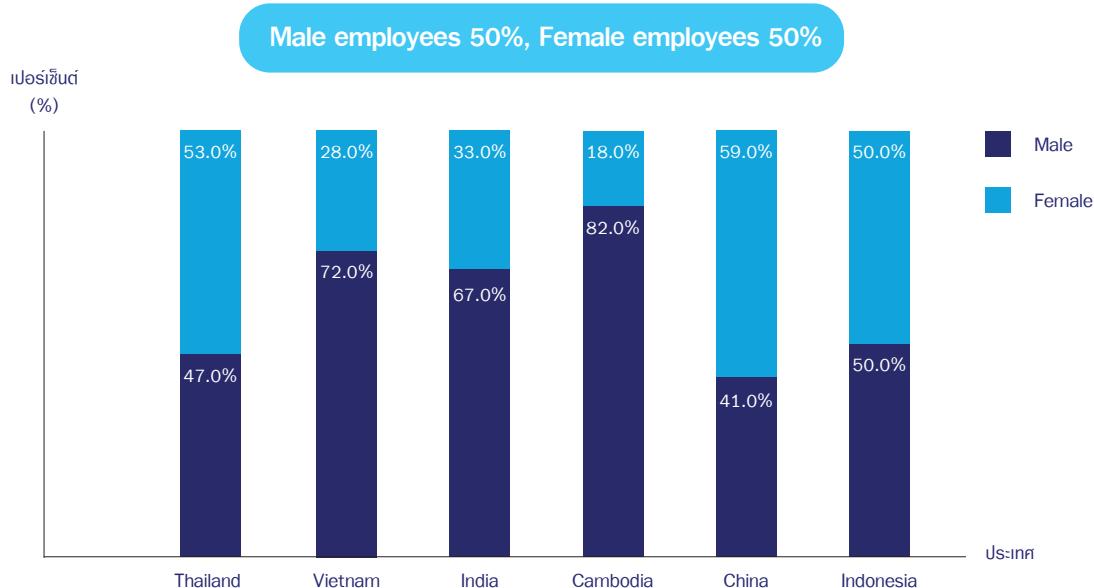
Morning talks for employee training. Communicate important information in Thai and Burmese.



Setting up red boxes to receive information, complaints, and grievances from employees.

## Principles of Promoting Gender Equality

### Gender Balance



Thai Wah places importance on gender balance not just as a diversity policy but as a key strategy for building a strong organizational foundation. By fostering a culture of 'trust' and 'respect,' we believe that supporting and providing opportunities for all employees to fully realize their potential, regardless of gender, is crucial for driving the organization towards sustainability. In 2024, Thai Wah had a total of 4,065 employees, comprising 2,028 female employees and 2,037 male employees. The gender distribution trends in each country are as follows:



**Thailand:** Female employees (53%) outnumber male employees (47%), indicating progress in achieving gender balance.



**Vietnam:** Male employees dominate (72%) compared to female employees (28%), highlighting the need for further promotion of equality.



**India:** Female employees constitute (33%), while male employees make up (67%), reflecting the need for additional support for diversity.



**Cambodia:** Male employees have the highest proportion (82%), while female employees account for only 18%, showing a clear imbalance.



**China:** Female employees lead (59%) compared to male employees (41%), demonstrating the strong role of women in the workforce.



**Indonesia:** There is perfect gender balance, with male and female employees each constituting 50%.

These data points indicate diverse successes in achieving gender balance across regions. We continue to maintain a balanced ratio at the senior management level, accounting for 0.34% of the total workforce. In the performance evaluation process, we emphasize fairness and equality, without discrimination based on gender, to ensure that evaluations truly reflect employees' potential and performance. This success reflects our commitment to creating an organization that embraces diversity, promotes equality, and enables everyone to develop and thrive in a safe environment.

## Driving Gender Balance through Trust and Respect

### 1. Comprehensive Policies and Benefits:

- Gender Affirmation Leave: The company provides up to 5 working days of leave per year for employees undergoing gender transition to accommodate their specific needs. This benefit is effective from January 1, 2025.
- Paternity Leave: Male employees are entitled to up to 5 consecutive working days of leave per pregnancy per year to care for their family after their spouse gives birth, reflecting the company's support for work-life balance. This benefit is effective from January 1, 2025.

### 2. Celebrating Diversity to Raise Awareness:

- Organizing celebrations on important days such as International Women's Day and Pride Month to raise awareness on social issues, promote equality, and create a space where everyone feels respected and valued, reflecting diversity and fostering an inclusive culture for all.

### 3. Promoting Equal Opportunities at All Employee Levels:

- With gender balance in senior management positions, the company continues to promote opportunities for female leaders and provides growth opportunities for all employees at all job levels.
- Building trust within teams through equal opportunities and recognition of abilities.
- Promoting respect at all organizational levels to foster collaboration and innovation.

### 4. Creating Transparency and Effective Communication:

- Regularly publishing gender distribution data and progress reports to build trust among employees and stakeholders.
- Conducting regular diversity training for employees and leaders to foster understanding of equality and respectful collaboration.
- Providing platforms for employees to voice their opinions through surveys, meetings, and various opportunities, ensuring all voices are heard to improve policies and operational approaches.

## Elevating Equality to Lead the Organization towards a Sustainable Future

We believe in the power of diversity and the unlimited potential of every individual. The gender balance we strive to create and maintain at all organizational levels, along with benefits that meet diverse needs, reflects a culture that genuinely promotes trust, respect, and equality. With a clear goal of creating meaningful change, Thai Wah is committed to being a model organization that supports and values diversity. We continue to develop programs that reduce disparities and support everyone in growing and overcoming various limitations confidently.



Celebrate International Women's Day and Pride Month

## Promoting Equality for Persons with Disabilities

Creating an inclusive workplace that promotes the potential of everyone, including Persons with Disabilities (PWDs), by recognizing their capabilities and value. We believe that supporting PWDs is both a social responsibility and a crucial factor in building a strong organization. Through flexibility and commitment, we aim to create a culture that respects differences and provides opportunities for everyone to grow.

In 2024, Thai Wah employed 15 PWDs and donated 2,689,307 Baht to the Fund for the Promotion and Development of the Quality of Life of Persons with Disabilities to support the broader development of PWDs' quality of life. Creating jobs for PWDs helps promote their life sustainability and economic stability.



In addition to employing PWDs, Thai Wah launched the “Physical Wellness & Well-being” project, providing therapy services by physically impaired specialists every Wednesday and Thursday from 10:00 AM to 4:00 PM in collaboration with the Foundation for the Promotion and Development of the Quality of Life of the Blind.

This project offers therapy services conducted by PWDs and integrates them into Thai Wah’s work environment with the following objectives:

- Create stable and sustainable income for PWDs
- Support inclusivity within the organization and foster a culture that respects and accepts diversity
- Promote health and well-being for Thai Wah employees

Promoting equality for PWDs not only supports the disabled community but also reflects Thai Wah’s commitment to creating an environment where everyone is accepted, respected, and has the opportunity to fully develop their potential. This is achieved through genuine collaboration and support from everyone. By integrating all abilities, we can create sustainable change and promote a stronger future together.



## Enhancing and Developing Human Resources

The company recognizes the importance of employee engagement in alignment with business goals. Therefore, it encourages employees to continuously develop themselves and utilize their potential to drive the organization towards sustainable growth. This is achieved through skill-building, enhancing capabilities, and equipping employees with the mindset to adapt to situations effectively and promptly. Additionally, Thai Wah collaborates with universities to allow students to learn business management and work skills through seminars, visits, and internships.

### Thai Wah Open House

In 2024, Thai Wah focused on driving rapid development by building strong collaborative networks between the organization and educational institutions both domestically and internationally. This aims to support the exchange of knowledge and develop the potential of students and new generation workforce to respond to the rapidly changing world.

### Building Networks and Knowledge Exchange

Thai Wah welcomed professors and students from leading universities such as The Wharton School, University of Pennsylvania, and Singapore Management University to exchange industry perspectives and trends with Thai Wah executives and employees. During these activities, students listened to and learned from real case studies from the company, gaining insights into the company's operations and strategies. Conversely, the company received new perspectives and creative ideas on current and future operational approaches presented by representatives from each participating university.



### University Visits and Job Fair Participation

Thai Wah continuously visits and meets with university students through university visit programs and participation in job fairs to promote opportunities within the organization. Information about business operations, products, and available job opportunities is presented. Engaging with students through these programs helps communicate the organizational culture and concrete development approaches, allowing interested students to better understand the organization's values. Additionally, exchanging information and interests with students provides insights into the expectations, skills, and perspectives of the new generation.



## Knowledge and Experience Sharing Activities

In 2024, Thai Wah organized knowledge exchange activities with four universities, covering topics related to rapid and sustainable development:

1. The use of GIS technology in agriculture and sustainability, and experience sharing activities from students participating in the internship program at the Faculty of Geoinformatics, Burapha University.
2. Digital Transformation: Using technology to enhance organizational efficiency, Faculty of Commerce and Accountancy, Chulalongkorn University.
3. The importance of cassava and the use of technology to promote and increase sustainable production, Department of Agronomy, Faculty of Agriculture, Kasetsart University.
4. The importance of cassava and the use of technology to promote and increase sustainable production, Department of Agronomy, Faculty of Agriculture, Khon Kaen University.



These activities involved 184 students, with a satisfaction rate of 90.8%. The knowledge and experience sharing activities reflect Thai Wah's goal of accelerating development processes efficiently through collaboration within the organization and with partners to create a network of rapid, modern learning and growth that meets future business needs.

## Internship Program

Thai Wah places importance on preparing the new generation to be a key force in driving the organization and industry to be more agile and faster. In 2024, the Thai Wah Internship Program was designed to meet the needs of developing personnel who can adapt to rapidly changing environments, support collaboration-driven work, and help students develop essential professional skills. This program offers students from both domestic and international educational institutions the opportunity to learn through hands-on experience in various fields such as engineering, biotechnology, and data analytics, under the guidance of experts in each field. This year, 21 students from leading institutions participated in the program.

Additionally, Thai Wah supports cultural diversity and the exchange of new perspectives through cross-cultural collaboration with the Co-Operative Education Program from The Chinese University of Hong Kong (CUHK), where student majoring in computer science interned in the Data Analytics and student majoring in chemistry interned in the Group Marketing departments for six months.



## Activities Promoting Agility and Growth

- Internships focused on hands-on work and intensive skill development
- Adapting to rapidly changing environments
- Innovative thinking and problem-solving
- Cross-cultural teamwork and collaboration
- Presenting internship reports to executives to enhance communication and decision-making skills
- Participating in monthly activities that build relationships and increase organizational understanding



The combination of the new generation's energy and cross-cultural work helps the organization respond quickly to business changes. Thai Wah not only develops students' potential but also creates an environment that accelerates the organization's development towards strength and sustainability in the future.

## CEO Coffee Talk with Employees

The CEO Coffee Talk program involves conversations with both new employees and current employees who are part of the Talent group. It is held quarterly for new employees and monthly for the Talent group. Throughout 2024, 12.5% of the total employees participated in the program. This program provides an opportunity for employees to exchange opinions with the organization's leaders, helping them understand the company's strategic goals. It enables new employees to quickly adapt to the culture and feel connected to the organization's vision, while also boosting their confidence to work efficiently. This program contributed to increasing the probation pass rate of new employees last year, demonstrating its effectiveness in fostering a sense of engagement with business operations and aligning with the company's goals.



## Providing Work Options

We recognize the value of the knowledge and experience of senior or retired employees who have worked with the organization for a long time. Therefore, Thai Wah offers work options for these employees, designed to suit senior personnel as business consultants or other positions. In 2024, we had 10 senior employees working as consultants and/or part-time contractors.

## Customized Learning for Individual Development

Thai Wah emphasizes employee development through the 70:20:10 model, focusing on hands-on experience, guidance on applying learned knowledge, and classroom learning with experts to enhance knowledge, skills, and attitudes or behaviors necessary for work. This is achieved through designing learning paths tailored to individual needs, ensuring that our employees continuously possess the skills, knowledge, and abilities that align with business needs. This approach helps develop employees and supports the long-term success of the organization by creating highly skilled employees. Last year, the training hours for operational-level employees increased from 24 hours to 40 hours, and 48 hours for management-level employees, with an average of 44 training hours per employee per year. Thai Wah aims to ensure that the average training hours for employees at all levels are similar and exceed the standards set by the Department of Skill Development, Ministry of Labor, by at least 200%.





# People Manager Program



## Inspiring & Alignment

- CEO Talk "People Value"
- Guest Speaker "People Skill Leader"
- People Journey



## Build-In

- Coaching Skill Class



## Plug-In

- Align Culture of Feedback Coaching Skill to People Journey



## Integrate

- Sharing Best Practice, Award and Ceremony



"Role of Line Managers and Make People Grow by Coaching" is one of the courses developed by the Thai Wah Leadership Academy, focusing on enhancing coaching skills and leadership of supervisors at all levels. The targeted learning path aims to empower supervisors to provide constructive feedback and foster effective development opportunities for their subordinates.

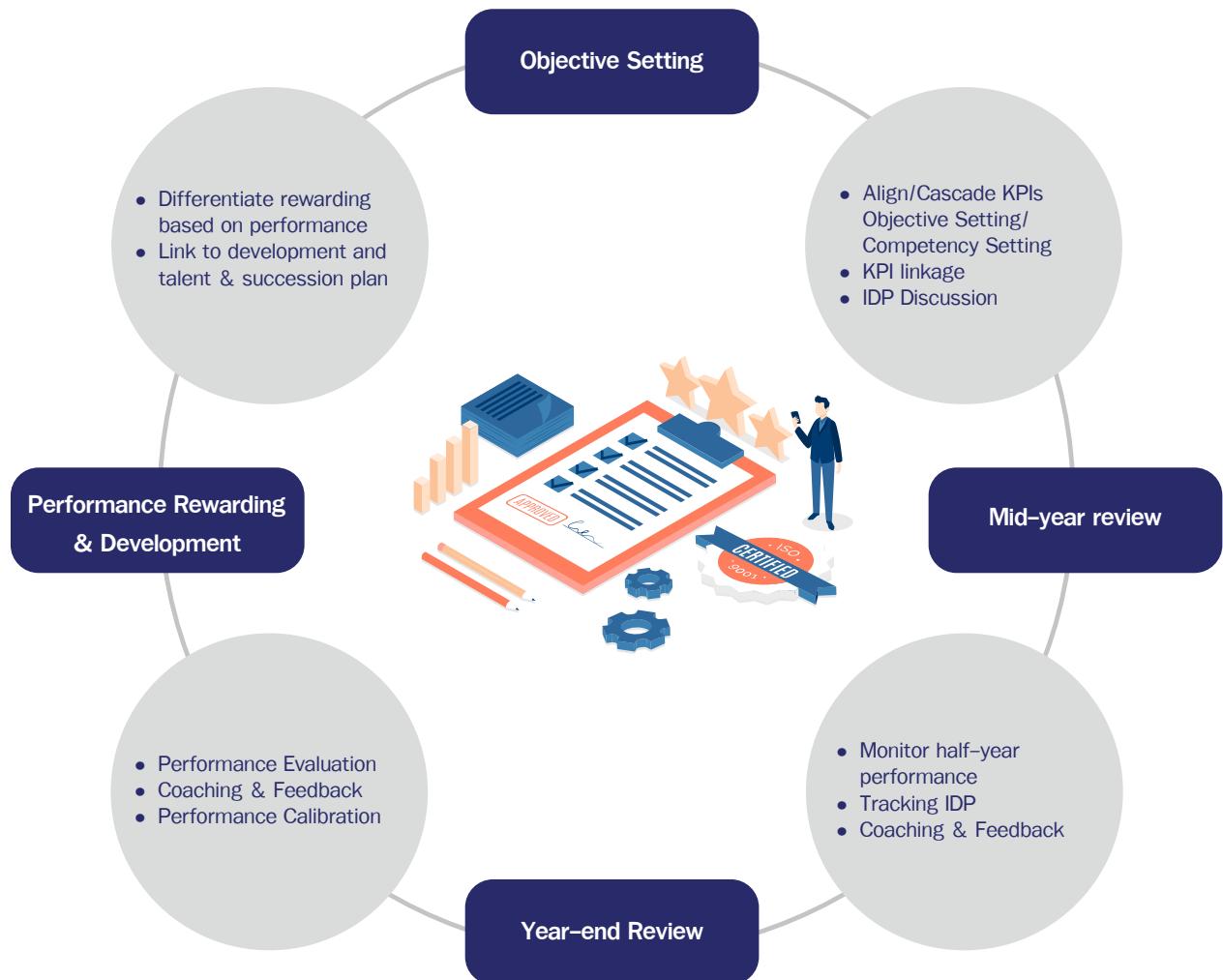
After attending this course, employees had a better understanding of the connection between their work, team goals, and organizational objectives. The course received a high recommendation score of 91, with additional comments that it is a course every supervisor should attend as it is practical and applicable.

We are confident that continuous investment in employee development and a focus on creating sustainable innovation will keep Thai Wah as a leader in the agro-industrial and food business. At the same time, we will retain personnel who can adapt and are ready to face challenges. This year, Thai Wah's average spending on employee development is 3,500 Baht per person per year.

## Performance Evaluation

Thai Wah places importance on creating a Performance Management System (PMS) to foster growth for both employees and the organization. The evaluation emphasizes transparency, fairness, and aligning employee goals with organizational goals through the My Thai Wah system. This system is designed to support effective performance management, encouraging open communication between employees and supervisors through continuous feedback. It promotes employee engagement at all levels to set clear goals that align with the organization's strategies and core behaviors. Additionally, it supports the development of skills, abilities, and career potential of employees in line with organizational goals.

The annual performance evaluation details are as follows:



## The annual performance evaluation details are as follows:



**1. Objective Setting:** Goals are set from the corporate goals to the individual goals. The goal-setting process involves collaboration between supervisors and subordinates. The framework covers two aspects: Individual Goals and Collaboration Goals. Thai Wah uses Key Performance Indicators (KPIs) through the Balanced Scorecard at the corporate level, combined with Objective and Key Results (OKRs) to align with the SMART principles: Specific, Measurable, Achievable, Relevant, and Time-bound.



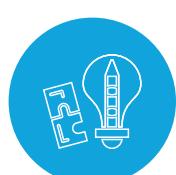
**2. Individual Development Plan (IDP):** This plan ensures that employees have clear self-development aligned with their career advancement needs and goals. It helps employees develop the knowledge, skills, and abilities required for their current roles and prepares them for future roles effectively.



**3. Performance Evaluation:** The evaluation is divided into two rounds: mid-year (January–June) and year-end (January–December). It starts with self-assessment by employees, followed by initial evaluation by supervisors based on set goals and competencies. The focus is on continuous coaching and feedback between employees and their supervisors (1-on-1 sessions) to support ongoing improvement and development.



**4. Year-End Evaluation Calibration:** This process ensures that performance evaluations are transparent, fair, and comprehensive across all dimensions, following the organization's evaluation principles and guidelines. It aligns with the understanding and expectations of all supervisors.



**5. Evaluation Results:** The results are crucial in compensation management and human resource management processes, such as salary adjustments, bonus payments, and long-term employee development planning. They also serve as an essential tool for maintaining work standards and providing valuable feedback to employees, supporting their skill and potential development, and enhancing their career growth opportunities.



## Competency and Personality Assessment

Thai Wah places importance on organizational and employee development by adhering to a systematic and integrated development approach. This is achieved through the creation of a personnel development plan based on the Competency Model, which serves as a crucial standard for setting development guidelines. Thai Wah integrates Competency and Personality Assessments to help identify strengths and opportunities for self-improvement.

These assessments are conducted through tests designed by leading consulting firm, with the following assessment formats:

- Situation-based Competency Test (SCT): Evaluates employees' competencies through simulated scenarios that closely resemble real work situations, measuring analytical skills, problem-solving, and decision-making in various contexts.
- Comprehensive Personality Assessment (CPA): Conducts in-depth personality assessments to understand traits and behaviors that contribute to success in roles.

These assessments are designed to support personnel development, especially for those in leadership roles, which are crucial for creating a work environment that fosters trust, collaboration, and positive team impact.

The assessment results are used as key information for creating personnel development plans in various dimensions, including:

- Training Roadmap: Establishes clear training paths, considering the skill development needs of employees in each role
- Individual Development Plan (IDP): Designs personalized development plans tailored to the potential and specific goals of employees
- Career Development Plan: Develops career advancement plans to help employees build stable and sustainable career paths

This process helps Thai Wah create human resources who are well-prepared for both current and future roles, aligning with the organization's sustainable development goals and fostering a collaborative and growth-oriented work culture.

## Job Success Profile

Thai Wah is committed to developing human resources to be ready for the transition to the new era under Thai Wah 2.0, a key strategy in human resource management to support business operations according to the organization's strategy. This development focuses on building readiness in both potential and capabilities of personnel to effectively meet the organization's current and future needs.

One of the key approaches is creating Job Success Profiles, a tool used to define success characteristics in each job role, especially in the Talent and Leadership Pool or high-potential employees and executives. This approach helps the organization clearly identify the attributes and skills necessary for success in key roles and supports the creation of a comprehensive and continuous Succession Planning to ensure that personnel in key positions are developed and prepared for smooth transitions.

Additionally, Thai Wah emphasizes Talent Development by fostering the right mindset through developing human resources from various fields to be ready for future changes. This development is not limited to technical skills but also includes instilling leadership skills, adaptability, and strategic thinking.

This helps Thai Wah create a competitive advantage in the market by having personnel ready to support growth and change securely. Creating Job Success Profiles and Succession Planning provides the organization with essential tools for developing and retaining talented employees, a crucial factor in driving the organization towards long-term growth and sustainability.

## Creating a Work Environment and Organizational Culture

### Associate Engagement Survey

During significant organizational changes, we are moving towards the goal of creating a strong culture ready to face new challenges. Employees' opinions and perspectives are key to driving organizational change. This change starts with listening to employees to improve and develop to meet needs and expectations at all levels

#### Responding to this survey helps us:

- 1. Improve and Develop:** Helps us understand strengths and development opportunities to make our organization better.
- 2. Create Unity:** Provides an opportunity for everyone to participate in setting the organization's direction and gives meaning to every employee's voice.
- 3. Develop the Organization Sustainably:** Survey data will guide creating a work environment that supports the growth of both employees and the organization

The company conducts the Associate Engagement Survey every two years and continuously plans development based on survey results. The 2022 survey results helped us understand key strengths and development opportunities to plan and implement over two years. These efforts have been highly successful, with a progress rate of 95%-100%, reflecting the cooperation and commitment of everyone in the organization in five main areas:

#### Associate Engagement Survey Action Plan 2023-2024

##### 1. Driving Growth and Capability

- Improve PMS system
- Review Promotion & ARA Process
- Communicate clear criteria for performance review
- People manager capability building

##### 3. Enhance Our Drive for Growth

- Update job description to clear role and responsibility
- Market and competitor data and update weekly in BU review

##### 2. Improve Work Efficiency

- Make SOP available
- Utilize SharePoint as a digital platform to share with all associates

##### 4. Ensure Fit-for-Purpose Total Rewards

- Review and update total reward

##### 5. Build Inspiration and Understanding

- Vision & Mission communication campaign
- Quarterly townhall to share priorities, update business performance
- Internal HR communication platform

To support the goal of creating a strong and continuous organizational culture, the company conducted an “Associates Satisfaction and Engagement Survey” from November 4–15, 2024. A total of 3,582 employees from six countries, including Thailand, Vietnam, China, Indonesia, Cambodia, and India, participated in the survey, accounting for 97% of the total employees.

### Outstanding survey results in 2024:

- 98% of employees are willing to work beyond their job descriptions to ensure the organization's success
- 96% of employees are proud to work with the company
- 95% of employees have confidence in the organization's goals and objectives and demonstrate the ability to handle work challenges effectively

### Comparing success with global standards and setting goals

The Sustainable Engagement Score in 2024 remained high at 95%, surpassing the Thailand Norm, Global High-Performance Norm, and the Asia Pacific Manufacturing Norm set by Willis Towers Watson. The company aims to maintain the employee satisfaction and engagement score at 95% in the next evaluation.

This survey is more than just numbers; it reflects the potential of employees ready to move forward with the company. Continuous support for creativity and innovation will be key to creating a better future. Thai Wah is steadily moving towards the goal of being a strong and agile organization, unlocking the potential of every employee to create positive changes in all dimensions of the organization.



Employee Participate in Associate Engagement Survey  
in 2024

The 2024 survey results highlighted key areas needing improvement and further development to create sustainable employee satisfaction and engagement, leading to the development of clear and comprehensive action plans. This process allows us to:

- 1. Identify urgent issues:** Analyzing survey results helps us understand the issues that need immediate resolution to create tangible results in a short time.
- 2. Set goals and timelines:** Setting clear goals with achievable timelines helps us track progress and evaluate the success of action plans clearly.

The goal of this survey is to create an inclusive work environment that meets everyone's needs at both the organizational and group levels, involving everyone in the change process. We believe that cooperation from employees at all levels and positions will help Thai Wah achieve sustainable and strong success in the future.

## Associates Recognition Award and Monthly Outstanding Daily Employee Award



To boost morale and motivation for employees who perform according to core values and exhibit behaviors consistent with the organizational culture, Thai Wah has implemented the Associates Recognition Award and the Monthly Outstanding Daily Employee Award. These programs not only inspire employees but also show that the organization values employees regardless of race, gender, age, or education.

Last year, the Monthly Outstanding Daily Employee Award reduced absenteeism, leave, and tardiness among daily employees by 25% compared to the previous year. This statistic underscores the importance of recognizing equality, which drives work efficiency, productivity, innovation, and a sense of involvement among employees, as well as awareness of both individual and team achievements, fostering a culture of continuous improvement.



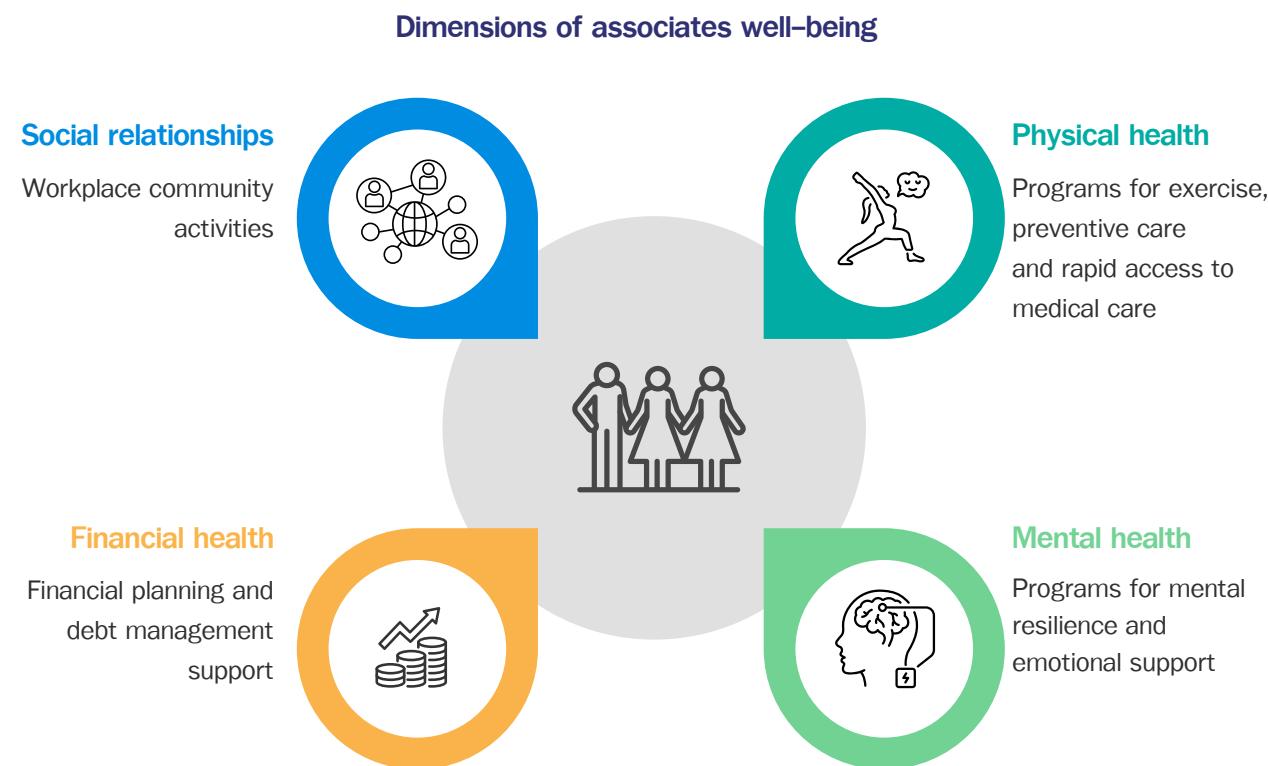
## Employee Well-Being

Employee well-being is the cornerstone of a growing and continuously developing organization. We are committed to continuously developing well-being promotion programs to enhance employees' physical health, mental health, financial health, and social relationships, enabling them to grow both in their work and personal lives in a balanced and sustainable manner.

In 2024, we elevated this commitment through strategic collaborations, expanding health promotion programs, and adopting comprehensive approaches. These initiatives reflect our intention to develop an organizational culture that continuously promotes and cares for employees' well-being.

### Dimensions of Integrated Well-Being

Thai Wah adheres to the concept of "Integrate, Live Well, Work Better," focusing on four key dimensions of well-being to support employees in maintaining good health and growing with the organization:



#### Physical Health:

- Enhancing employees' health through preventive care and access to advanced health solutions
- Various health promotion programs, including badminton and football clubs, annual health check-ups, and annual flu vaccinations
- Providing knowledge on nutrition and appropriate exercise for different age groups and goals
- Offering care for office syndrome by both Western and Chinese medicine practitioners
- Relaxation and therapeutic massages by visually impaired therapists



#### Mental Health:

- Promoting mental resilience and creating an open culture to address mental health issues
- Various programs such as 24-hour counseling services and mental health workshops
- Introducing a special benefit, Heal Day Leave: Employees can take one day off per year to rejuvenate their minds and return to work refreshed.

This benefit is effective from January 1, 2025

#### Financial Health:

- Supporting financial knowledge, financial stability, and future planning to help reduce financial stress
- Collaboration with SG Capital to provide debt management advice and appropriate financial planning to enhance employees' financial health

#### Social Relationships:

- Building workplace relationships and a sense of belonging through community-promoting activities
- Relationship-building activities to enhance employee engagement within the organization, including monthly activities such as:
  1. Celebrating birthdays every month throughout the year
  2. Celebrating Chinese New Year
  3. Valentine's Day activities
  4. Songkran Festival activities
  5. Activities to foster love and attachment to the organization
  6. Team-building activities focusing on the organization's new DNA: Stronger, Faster, Better (SFB), and instilling the nine core behaviors: 1) Flexibility and determination, 2) Building trust and respect, 3) Prioritizing effectively, 4) Agility and speed, 5) Cross-team collaboration, 6) Innovation and challenging the status quo, 7) Promoting decision-making, 8) Open communication, 9) Continuous development
  7. Activities to educate about the organization's products, including savory and sweet dishes made from cassava flour
  8. "Thai Wah Well Being Day" activities to promote holistic well-being for employees, including health education and inspiration in all dimensions: 1) Smart nutrition: Tips to energize from the inside out, 2) Overcoming stress: Facing mental challenges with confidence, 3) Unlocking financial future: Debt management tips for a stress-free life, 4) Energizing life: Inspiring success
  9. Loy Krathong Festival activities, promoting online krathong floating through digital systems, aligning with eco-friendly concepts and environmental sustainability
  10. Celebrating Thai New Year
- Introducing a special benefit, Birthday Leave: One special day off per year for employees to celebrate their birthdays with family or loved ones, enhancing relationships and personal happiness. This benefit is effective from January 1, 2025.

## Activities and Collaborations for Employee and Community Well-Being

Thai Wah's approach to health and well-being is rooted in the belief that continuous development leads to sustainable success. Through collaborations with BeDee by BDMS and SG Capital, we have provided modern resources to help employees improve their physical, mental, and financial health.

### Health and Well-Being Collaboration Projects in 2024

#### BeDee by BDMS:

- Thai Wah collaborates with BeDee, a leader in health management, to provide comprehensive health services.
- Employees can access high-quality health solutions certified by international standards through an easy-to-use application.
- Activities include personal health assessments, mental health workshops, and preventive health measures.

#### SG Capital:

- Collaboration with SG Capital provides employees with financial advice and debt management tools.
- This assistance helps reduce financial stress and promotes future financial stability for employees.
- Debt management programs: Personalized plans help employees manage financial issues effectively.
- Financial literacy workshops: Enhance knowledge and skills in budgeting, saving, and future planning.

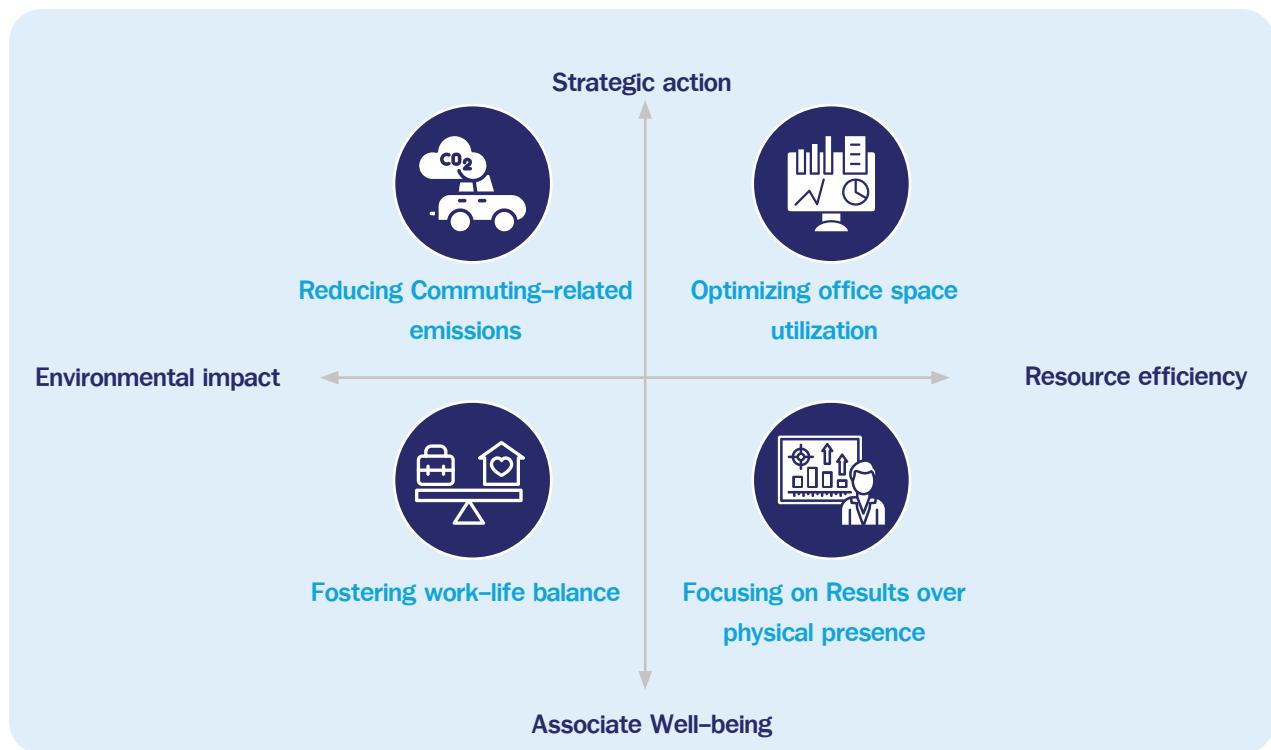
#### Foundation for the Promotion and Development of the Quality of Life of the Blind:

- Collaboration with the Foundation for the Promotion and Development of the Quality of Life of the Blind provides employment for people with disabilities and therapeutic massages for employees to restore physical health.

Access to health, financial, and social relationship resources will help improve employee performance. Employees will be more resilient in adapting to challenges and feel a greater sense of engagement to the organization through holistic well-being programs. These impacts can occur in the short to medium term. In the long term, continuous development of health and well-being strategies will promote sustainable growth and create a better organization for employees. This ongoing commitment to development also enhances the employer's image, making it easier to attract and retain quality personnel.



## Flexible Work Arrangement Policy



Thai Wah places importance on balancing employee well-being with optimizing organizational resources. Therefore, the Flexible Work Arrangement policy has been designed with a proactive approach to balance employee well-being with work excellence. By offering the option for employees to work from home (WFH) under clear conditions, this policy demonstrates our dedication to creating a flexible and strong workplace while using time, resources, and personnel efficiently to maintain sustainable performance at the highest standards.

The Flexible Work Arrangement policy also enhances employee well-being by reducing travel stress, increasing work-life balance, and supporting sustainable mental health care. Our organization can attract and retain talented individuals while positively impacting the environment by reducing unnecessary travel and promoting business sustainability.

### Work from Home Conditions:

#### Eligibility

This policy applies to full-time employees based at the Sathorn office, allowing roles that focus on office work to transition smoothly to remote work while maintaining operational excellence.

#### Flexible Structure

- Working from home is available as an additional option, limited to one day per week, ensuring that collaboration and work quality are not affected
- Employees must adhere to core working hours (8:00 AM – 5:00 PM) and be available through the company's communication channels

#### Approval Process:

To maintain alignment with team goals, employees must submit WFH requests at least two days in advance and receive approval from their line manager

## ESG Activities Project:

Thai Wah emphasizes continuous development to create sustainability in all dimensions through ESG Activities, organized by the Human Resources department in collaboration with the sustainability team. The main goal is to instill a sense of sustainability in all employees and encourage them to play a role in environmental stewardship and efficient resource use. Activities that help develop the organization towards greater sustainability include:

### Reusable Bag Activity:

Promoting the use of sustainable materials, reducing plastic use, and changing employee behavior towards environmental care. Reusable bags are continuously used in the office throughout the year.



### Online ESG DNA Course:

Thai Wah participates in a project with the Stock Exchange of Thailand to educate employees on the basics and importance of Environmental, Social, Governance (ESG) concepts for business and how to apply them in their work through an online course. This helps instill a sustainability DNA in all dimensions of the organization.



### Thai Wah x Eco-Friendly Community Project:

Focusing on cost reduction and improving work processes for greater efficiency.

- Reducing paper use by adopting the 3R concept (Reduce, Reuse, Recycle)
- Promoting the use of digital tools and creating a Digital Mindset through year-round training courses
- Communicating via email and running campaigns, presenting paper usage statistics to encourage employees to adapt to sustainable work practices
- Promoting waste separation by setting up waste separation points for different types of waste at the headquarters, such as recyclable waste, food waste, and hazardous waste



The ESG Activities project not only raises awareness of sustainability but also drives continuous development within the organization. All employees participate in driving change in behavior, resource use, and improving work processes for greater efficiency. This commitment helps Thai Wah meet sustainability goals at both the organizational and societal levels, continuously developing the organization towards greater sustainability in all dimensions.

## Awards and Recognition in Human Resources

In 2024, Thai Wah received various awards reflecting its operations related to organizational and personnel management. These awards are not just symbols of success but also strengthen the organization and create a work culture that supports the growth of both people and the organization with pride. This reflects the integration of Thai Wah's organizational culture as follows:

### 1. Building a Strong and Sustainable Organizational Foundation:

- These awards reflect our efforts to build a stable foundation in management, people development, and attention to employees' quality of life
- Being recognized as an excellent organization to work for shows that Thai Wah has a culture that supports the growth of personnel at all levels

### HR Asia Best Companies to Work for in Asia and HR Asia Sustainable Workplace Awards

Thai Wah received two awards from the HR Asia Awards 2024: "HR Asia Best Companies to Work For in Asia" for three consecutive years and "HR Asia Sustainable Workplace Awards." These awards reflect our commitment to creating a sustainable culture within the organization and environmental innovation. This success results from the collaboration of employees who create an excellent work environment. Thai Wah believes that employees are the most important resource. These awards recognize the success of integrating sustainability concepts into business operations, aligning with the vision of "Creating Innovation and Sustainability from Farm to Consumer."



### 2. Driving Change with Agility and Speed:

- Adapting and responding to changes in the business world and employee needs are key factors that have earned us various awards
- Creating a modern, agile work environment that supports employees to work efficiently

### 3. Creating Excellence and Continuous Development:

- The awards received reflect our commitment to developing both the organization and personnel in all dimensions, whether it is enhancing skills, balancing life and work, or participating in the organization's success
- Making employees feel proud to be part of an organization that never stops developing

### HR Excellence Awards 2024

Thai Wah won two silver awards from the HR Excellence Awards 2024: Excellence in Corporate Wellness and Most People-Focused CEO. These regional awards, organized by Human Resources Online in Singapore, reflect international recognition as a leading organization in Thailand for creating excellent wellness and caring for employees. Receiving these two awards from the HR Excellence Awards 2024 is a source of pride and motivation for us to improve employee care, create happiness at work, and provide opportunities for career growth and full potential development. Employees are the key force driving the organization's success, and Thai Wah continuously strives to elevate human resources work concretely.



## National Outstanding Establishment Award for Labor Relations and Welfare



Thai Wah's Food factory in Nakorn Pathom received the "National Outstanding Establishment Award for Labor Relations and Welfare" for the fourth consecutive year in 2024 in the large establishment category without a labor union. This award aims to foster good labor relations through a bilateral system and encourage companies to develop labor welfare to meet standards, promoting employees' quality of life, boosting morale, and fostering cooperation and efficiency at work. It also honors companies that manage labor relations and welfare well. The award is judged by a committee comprising employer representatives, employee representatives, and government representatives, reflecting excellence in human resource management, good organizational relationships, and a commitment to comprehensive employee care.

## Sedex Members Ethical Trade Audit (SMETA)

Thai Wah's Food factory in Nakorn Pathom has continuously passed the SMETA (Sedex Members Ethical Trade Audit) since 2020 and has joined SEDEX (Supplier Ethical Data Exchange) with a 4-Pillar membership: 1. Labor Standards, 2. Health and Safety, 3. Environment, and 4. Business Ethics. SMETA is an internationally recognized standard reflecting an organization that operates on good governance principles with systematic ethical practices covering fair labor practices. It shows the company's commitment to adhering to international labor standards, prioritizing safety and health, and continuous social responsibility, covering the entire supply chain from within to outside. This aligns with the organization's strategic plan to become a transparent and sustainable organization.

Receiving national and international recognition is an honor for the organization and employees and motivates us to build a sustainable organization that supports both business success and employee growth. As an organization where people want to work and an inspiring workplace, we aim to create strong relationships between the organization and personnel, building a sustainable workplace where everyone can grow with the organization, create positive change, and work together to build a sustainable future.



# Food and Finished Goods

3 GOOD HEALTH AND WELL-BEING



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



# Food and Finished Goods

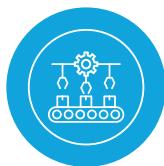
The food industry has faced numerous challenges in recent years, including the uncertainties of climate change, which impact the continuity and quality of key agricultural raw materials, as well as evolving consumer behaviors. Consumers are becoming increasingly health-conscious, opting for plant-based foods and sustainable, nutritious options with lower environmental impact. These changes require companies in the food industry to adapt to ensure future business sustainability.

Thai Wah recognizes these challenges as opportunities and has taken proactive measures to address them. The company is committed to sustainable product development, investing in research and development across the entire supply chain—from cassava cultivation and enhancing food quality and safety standards throughout the production process to delivering innovative products to customers and consumers. The goal is to promote consumer health while minimizing environmental impacts across the product lifecycle.

Ensuring food safety and security remains a top priority. Guaranteeing the safety of food products from farm to consumer is essential to promoting good health and maintaining consumer trust, contributing to a more resilient and sustainable food system. The company is dedicated to fostering a healthier and more sustainable lifestyle by offering a diverse range of plant-based food products carefully developed to enhance consumer well-being, protect the environment, and support sustainable agriculture. By leveraging the latest innovations from its research and development efforts, Thai Wah creates products that provide both nutritional and environmental benefits, reinforcing its strategy to promote consumer health and food security.

## Management Approach

Under the strategic pillar of “Food and Finished Goods,” the company integrates sustainability-focused innovation across all dimensions of its business. This approach enhances production processes and improves the quality of starch products, food products, and biodegradable plastic products.



- Innovation in Production, Products, and Services for Sustainability:** Thai Wah emphasizes creativity and innovation in production processes, products, and packaging to drive sustainability. The company aims to develop innovations and products that meet consumer needs in each country, focusing on nutritional value, convenience, and ease of cooking. Thai Wah supports research and development to create products that benefit society in terms of nutrition, food security, and the environment.



- Certification of Product Quality and Safety Standards:** Food safety and security are critical concerns for the food industry. Maintaining strict standards and adhering to quality and safety control measures help prevent contamination and ensure that food products are safe for consumption. This includes enhancing the entire production process and educating and raising awareness about food safety among relevant employees.



- Building Relationships and Communicating with Customers:** Through activities and annual satisfaction evaluations, we better understand and respond to customer needs. We are committed to continuously improving products and services through effective communication, which helps build trust and satisfaction, creating a positive and sustainable experience.



- Collaboration and Development in the Food Industry:** Sharing knowledge to achieve mutual success promotes the use of shared expertise and resources to drive innovation and growth. This collaborative approach fosters the development of new technologies, processes, and products that enhance efficiency, sustainability, and competitiveness.

## Implementations and Performance

### Innovation in Production, Products, and Services for Sustainability

#### Thai Wah Innovation Network

Thai Wah places great emphasis on creativity and innovation across its operations, production processes, and product development. To drive continuous innovation, the company has established the “Thai Wah Innovation Network” in countries where we operate factories and offices, including Thailand, Vietnam, Indonesia, the Philippines, India and China. This initiative aims to develop innovative products that meet local consumer needs, emphasizing nutritional value, convenience, and ease of use in food preparation.

In 2024, Thai Wah has seven innovation and product development centers across six countries: Innovation Hub at Chulalongkorn University – a research and development facility equipped with advanced laboratory tools for studying and testing new products. Ideation Hub at Sathorn Office – a creative space for experimenting with and developing new food concepts using Thai Wah’s products. Application Centers in Vietnam, Indonesia, the Philippines, India, and China – dedicated spaces for product trials and market testing to ensure Thai Wah’s offerings align with customer preferences in each region.

Through collaborative research and development under the Thai Wah Innovation Network, the company continues to introduce healthy and convenient products to the market, providing consumers with better choices while enhancing its competitiveness in the ever-evolving food industry.



#### Starch and Starch-related Products Business

Thai Wah’s starch business offers a wide range of high-performance food ingredients to continuously meet diverse customer needs. Our texture solutions product portfolio includes, tapioca starch, modified tapioca starch, glucose syrup, rice flour, and specialty ingredients, with a strong commitment to innovation through the development of high-quality, diverse product offerings for our global consumers.



By integrating cutting-edge research and development into our production processes, we ensure that our products align with customer and consumer demands. Our key product categories include:

1

### Clean Label Products



Developed with simple, natural ingredients, our clean-label solutions use innovative, non-chemically modified starches. This ensures that our products remain free from unnecessary additives while maintaining taste, nutrition, texture, and functionality, allowing for clear and transparent labeling.



2

### Healthy Solutions Products



We deliver health-conscious, reliable, and certified organic products that enhance the nutritional value of food offerings. Our solutions help customers add value to their products while gaining the trust of consumers worldwide.



3

### Functional Solutions Products



We provide innovative starch-based solutions with specialized functional properties, designed to extend shelf life, maintain desired sensory attributes, and ensure consistent texture—all while offering cost-effective solutions for our customers.



## Health-Oriented Products in the Starch Business

Category	Number of Products					
	2020	2021	2022	2023	2024	Target 2025
Clean Label Products	6	19	20	20	8	10
Healthy Solutions Products	6	19	22	22	8	10
Functional Solutions Products	55	58	63	64	42	60

In the past year, ROSE BRAND launched the ADVANSYS™ product line, marking a breakthrough in food ingredient technology. This innovative advancement revolutionizes texture and quality, ensuring premium performance and enhanced sensory experiences in food products. With cutting-edge formulation, ADVANSYS™ delivers superior texture and taste solutions while seamlessly integrating into various recipes. Our innovative products are designed to meet consumer demands for texture-enhanced solutions, providing a versatile and high-quality option for the food industry.

We are committed to continuously developing innovation to grow and serve our customers better. Through high-quality raw materials from farmers and sustainable agriculture in Thailand and Southeast Asia, we aim to promote the well-being of farmers and enhance the value of food solutions worldwide. We believe that everyone deserves access to sustainable, high-quality food for a better future.

## Food Business

Thai Wah's food business encompasses a diverse range of products, including bean vermicelli, rice noodles, Shanghai noodles, tapioca flour, sago, and various ready-to-eat products. These include instant bean vermicelli and instant noodles designed to cater to the varied cooking preferences of our customers.

Our Double Dragon Ready instant bean vermicelli and instant noodles are innovative products that stand out in the instant food market. These products have consistently received positive feedback from customers, especially our Boat Noodles flavor, which won the Breakthrough Innovation Award in Southeast Asia from NIQ BASES in 2023.

In 2024, Thai Wah's food business introduced new innovative products, continually expanding consumer options in the market. Some of these newly launched products include:



**Double Dragon Ready Instant Bean Vermicelli Mala Hot Pot Flavor**

A popular Chinese dish that's currently trending, known for its spicy and numbing taste, perfectly paired with chewy bean vermicelli. Ideal for Mala flavor enthusiasts.



**Double Dragon Ready Instant Bean Vermicelli Curry Powder with Crab Oil Flavor**

Dry-style with a rich, intense flavor and fragrant spices, giving you the experience of enjoying a restaurant-quality dish right in your cup.



**Instant Bean Vermicelli Boat Noodle Flavor Double Dragon Ready Brand**

Building on the success of the cup version, now available in pouch packaging, offering a generous portion that's as delicious as if you were eating at the restaurant.



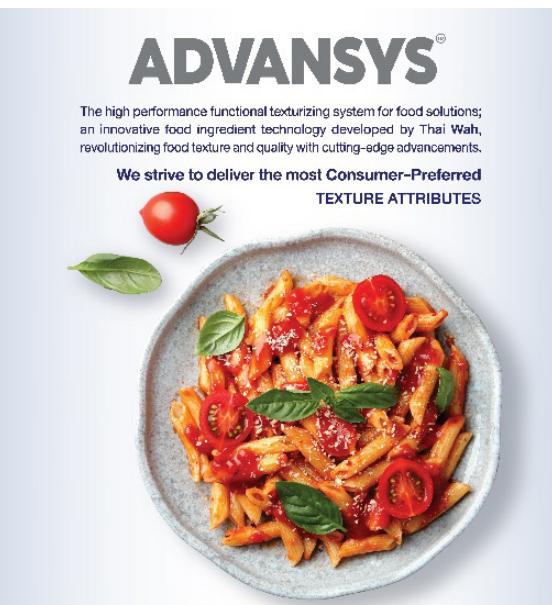
**Instant Rice Noodles Boat Noodle Flavor Double Dragon Ready Brand**

Building on the success of the cup version, now available in pouch packaging, offering a generous portion that's as delicious as if you were eating at the restaurant.



**Double Kirin Vietnamese Rice paper**

Convenient to use without the need for cutting. Just dip in water for 5-8 seconds, giving you soft and chewy texture. The rice paper maintains moisture and softness.



**ADVANSYS®**

The high performance functional texturizing system for food solutions; an innovative food ingredient technology developed by Thai Wah, revolutionizing food texture and quality with cutting-edge advancements.

We strive to deliver the most **Consumer-Preferred**  
**TEXTURE ATTRIBUTES**

Unparalleled Benefits in Functionality, Process Improvement and Cost Efficiency

- Smooth and flowable
- Excellent stability
- Selective mouthfeel tailored
- Full flavor release
- Optimized cost in use
- Good dispersibility





### Double Dragon Asian Inspire Organic Rice Noodles and Organic Rice Vermicelli

Our noodles and vermicelli are made from carefully selected organic ingredients, certified by EOS/NOP standards. These products are free from chemicals and offer nutritional value, making them perfect for health-conscious families who want to enjoy a wholesome and sustainable meal.

### Thai SELECT Award

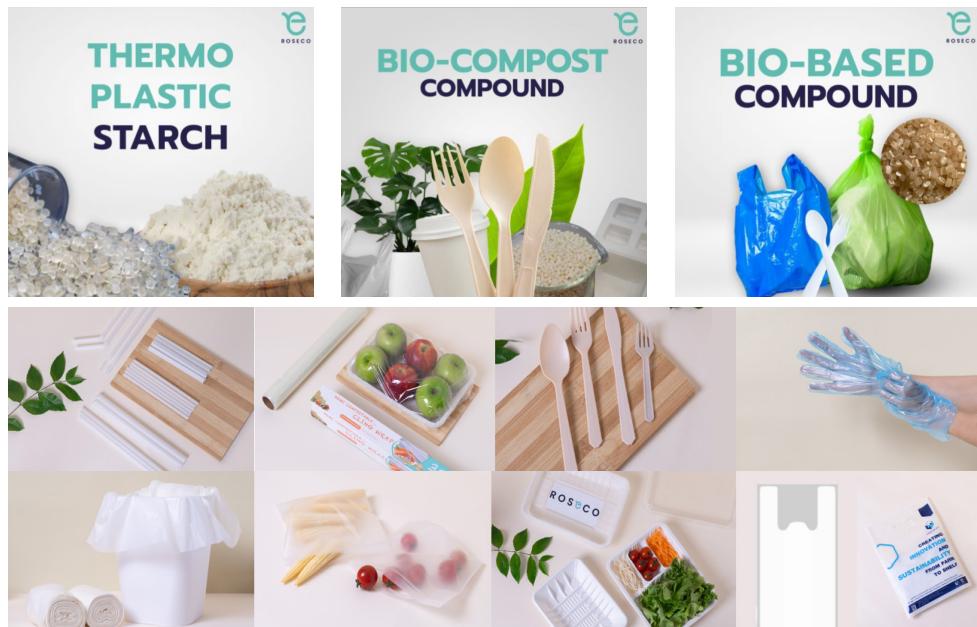
Two new products from Thai Wah have been awarded the “Thai SELECT” symbol for the year 2024 (2nd edition) by the Department of Agricultural and Industrial Trade Promotion. The awarded products are Instant Bean Vermicelli Boat Noodle Flavor Double Dragon Ready Brand and Instant Rice Noodles Boat Noodle Flavor Double Dragon Ready Brand. The Thai SELECT symbol serves as a certification of high-quality Thai food products that are ready for export, ensuring they meet international standards while preserving the authenticity of Thai cuisine.



## ROSECO Biodegradable Products

Our ROSECO line of biodegradable products promotes sustainable, zero-waste solutions for a better world. These responsible solutions are “from nature, for nature.” The ROSECO series includes Thermoplastic Starch, Bio-compost Compound, and Bio-based Compound, which can be used in various applications such as bags, trays, mulch films, and consumer goods.

By using naturally biodegradable materials, these products meet the growing demand for environmentally-friendly alternatives to fossil-based plastics. These products support consumer use while also helping to reduce carbon emissions.



Every year, people around the world dispose of massive amounts of plastic, leading to large volumes of waste in landfills and pollution in soil, air, and water. ROSECO has succeeded in pioneering sustainable bioplastics, offering biodegradable alternatives to conventional petrochemical plastics that are safe for the environment and help reduce reliance on fossil resources.

One of our successful products is biodegradable mulch films and bags. These products not only help reduce plastic waste and mitigate environmental impact, but they also contribute to achieving the United Nations Sustainable Development Goals by promoting sustainable agriculture and soil conservation.



**ROSECO Pioneer success  
in Sustainable Bioplastics**

In 2024, Thai Wah conducted a Life Cycle Assessment (LCA) for its ROSECO brand products, including cassava starch-based plastic pellets and their various applications, such as soil films, trash bags, shopping

bags, food packaging, trays, straws, and cutlery. This study employed a Cradle-to-Grave approach, which analyzes the environmental impacts of products from raw material sourcing, production, transportation, usage, and disposal at the end of their life cycle.

The focus of the LCA was on assessing the Global Warming Potential (GWP) of ROSECO products in comparison to traditional fossil-based or petroleum plastics. The study's results revealed that using ROSECO products can reduce the GWP by up to 60%. For example, replacing 1 million plastic trash bags with biodegradable ROSECO trash bags can reduce carbon dioxide equivalent ( $\text{CO}_2\text{e}$ ) emissions by over 1.1 million kilograms.

These findings highlight the environmental benefits of using ROSECO products and underscore Thai Wah's commitment to combating climate change and promoting more sustainable practices in the packaging industry. The initiative is a significant step toward developing environmentally friendly materials and supporting the Circular Economy, aligning with Thai Wah's ongoing dedication to sustainability and innovation in product development.



## Sustainable Packaging

Thai Wah recognizes the significant role packaging plays in the supply chain, affecting everything from design and material selection to transportation and disposal. Packaging decisions directly influence product efficiency, usage, and transport. Adjusting packaging practices helps the company improve transportation efficiency, reduce greenhouse gas emissions, minimize unnecessary packaging materials, and cut production costs.

In 2024, Thai Wah made several key improvements to make packaging more environmentally friendly:



- **Reducing Paper Use in Packaging:**

Thai Wah changed its packaging methods, cutting the use of non-recyclable paper in packaging boxes by 7 tons per year. This adjustment not only helps save resources but also enhances efficiency and reduces transportation costs.



- **Reducing Plastic Use in Food Packaging:**

To lessen environmental impact and promote sustainable practices, the company reduced plastic usage in packaging by 4.5 tons per year. This reduction also led to energy savings in transportation due to the decreased weight.



- **Designing Efficient Packaging for Flour Products:**

In the past, packaging flour in pillow-shaped bags made it difficult to optimize pallet stacking. To address this, Thai Wah redesigned packaging for flour products, focusing on improving transport efficiency, stability during handling, reducing labor costs, and meeting customer needs.

## Product Quality and Safety Certifications

Food safety and security are significant global concerns. Ensuring standards and adhering to strict safety measures and quality inspections help prevent contamination and ensure that food products are safe for consumption. This approach not only promotes good health but also builds and maintains consumer trust. Consumers need to have confidence that the food they purchase and consume meets high safety standards. Therefore, continuous improvement in food safety practices and compliance with international standards is essential.

Thai Wah places great importance on product quality and safety, ensuring that every step of the production process adheres strictly to legal requirements and regulations, both nationally and internationally. The company's dedication to quality is reflected in its robust QA and QC capabilities, which have earned certification under ISO/IEC 17025 by the Ministry of Public Health. This certification is a testament to the company's unwavering commitment to maintaining the highest standards of quality and safety across all its products.

This achievement reinforces the company's confidence in delivering top-quality products to its customers. Furthermore, Thai Wah strives to promote good nutrition awareness among the public, ensuring consumers are well-informed about current nutritional standards. The company aims to establish itself as a leading producer of safe and health-conscious food products that consumers trust.

To guarantee that its food products consistently meet the highest quality and safety standards, Thai Wah has implemented a rigorous quality management system throughout the production process, conducting ongoing quality inspections across the entire supply chain.

In 2024, the company received various certifications from both national and international standards, further validating its commitment to excellence in food safety and quality.

Starch and Starch related business*	FSSC22000, ISO 14001, ISO 9001, GHPs, HACCP, HALAL, KOSHER, Organic, Green Industry
Food Business	Food Business BRC, ISO 45001, ISO 14001, ISO 9001, GHPs, HACCP, HALAL, KOSHER, SMETA, Organic, Green Industry Level 3
Biodegradable Products Business	DIN Home and Garden Compostable, DIN Industrial compostable, Seedling, TUV OK compost INDUSTRIAL, FDA, EU 10/2011, RoHS, REACH

\*The standards achieved vary across different factories.

## Building a Culture of Food Quality and Food Safety

Thai Wah places a strong emphasis on food quality and safety. To support this focus, the company organizes activities to promote the culture of food quality and food safety to employees on World Food Safety Day, observed on June 7th every year. The focus is on three hazards: 1) Physical Hazard, 2) Chemical Hazard, and 3) Microbiological Hazard. The aim is to raise awareness about preventing, inspecting, and managing food-related risks, to encourage recognition and promote behavior changes related to quality control, and to help monitor quality. This ensures that all employees understand the importance of maintaining food quality and safety at every stage of our production process.





In addition to providing education on World Food Safety Day, the company also organizes ongoing activities to raise food safety awareness among employees, including:

- Providing training to enhance knowledge of food safety and the prevention of contamination risks, such as proper hygiene practices, pest management, and allergens.
- Activities to motivate employees to improve hygiene behaviors, ensuring food safety and rigorous quality checks to reduce complaints, as well as products that do not meet specifications.
- KYT Food Safety – A competition between departments, where points are accumulated and exchanged for prizes, aimed at inspiring improvements in work practices. This is held weekly to maintain alertness and continuous awareness of food safety.

### Product Labeling and Marketing Communication

Displaying accurate nutritional information on food product packaging is essential for effective communication with consumers. As a manufacturer and distributor of food products, it is Thai Wah's responsibility to ensure that consumers have the most up-to-date and reliable information, enabling them to make informed decisions. Thai Wah places great emphasis on providing clear and comprehensive nutritional information through the use of nutrition labels and marketing communication. All Thai Wah food products display information on the recommended daily intake or Guideline Daily Amount (GDA), allergy warnings, cooking instructions, and other relevant details. We ensure that all information regarding our food products complies with applicable laws, regulations, and standards.



In addition, Thai Wah organizes comprehensive training activities for personnel in the relevant departments. These training sessions cover operational levels and details about nutrition labeling, proper labeling standards, and other related information. This ensures that our team has the knowledge and awareness of the importance of providing complete and accurate product information to consumers.



Example of food packaging with GDA nutrition labeling

## Building Relationships and Communicating with Customers

Building relationships and communicating with customers are key to our business success. At Thai Wah, we believe that having strong relationships and effective communication with customers is the key to building trust and satisfaction. A good relationship with customers not only allows us to respond to their needs better but also helps create loyalty and confidence in our brand. We are committed to developing products and services that continuously meet customer needs while creating positive and lasting experiences, so that customers can feel our care and commitment to building sustainable relationships and effective communication.

### Thai Wah XpreLationships

Thai Wah organized the XpreLationships event for the first time in 2024 to promote collaboration and trust with customers through a visit to the Thai Wah Open House and Co-Creation of Experience. The event strengthened relationships with customers by providing in-depth understanding of our operations, values, and commitment to innovation and sustainability, as well as the features of products and food created from Thai Wah products. Additionally, attending customers had the opportunity to discuss and communicate sustainability operations and products with the Thai Wah team, which served as an opportunity for both customers and Thai Wah to learn about each other's product and sustainability needs and goals, which could be further developed together in the future.



### Customer Satisfaction Assessment

Thai Wah highly values creating customer satisfaction in all of its products and services. Therefore, the company conducts an annual comprehensive customer satisfaction assessment to gather in-depth insights into customer needs and behaviors. The results of the assessment help the company develop products and services, as well as create effective promotional strategies, while continuously expanding the market and global reach of its products.

In 2024, Thai Wah expanded the scope of the assessment with an online survey by Nielsen IQ to gain a deeper understanding of customer needs and interests, focusing on three key product categories: starch products, food products, and biodegradable products. This commitment ensures that all products and services meet the highest standards to continuously satisfy customer expectations at the highest level.

## Starch and Starch-related Business

### Survey topics include:

1. Product quality
2. Product packaging
3. Product variety
4. Service and support
5. Delivery service
6. Information and communication services
7. After-sales service
8. Purchasing decision factors
9. Satisfaction and Net Promoter Score (NPS)
10. Feedback on sustainability



Starch and Starch-related Business achieved a Net Promoter Score (NPS) of 55, which is considered excellent, with an overall customer satisfaction score of 87% from key clients. Key factors influencing customer purchase decisions include product quality, communication with the sales team, and after-sales service. Additionally, sustainability management remains a critical factor, impacting 77% of key customers' purchasing decisions. These results reflect the company's ability to develop and offer innovative, safe, clean, and high-quality products, which has increased trust among consumers.

Thai Wah always values customer feedback, recognizing its importance in driving the company's growth. The survey results indicate that communication, response time in sales, and after-sales service are the most critical factors for customers. In response, the company has improved its digital and commercial platforms, such as its LinkedIn and Facebook pages, to communicate and meet consumer demands as quickly as possible, supporting the growth of its global customer base.

The company has set goals and plans for continuous and sustainable customer satisfaction improvement in 2025, focusing on developing products that meet customer needs, enhancing communication speed and efficiency, and providing up-to-date information to offer quick and accurate responses to B2B clients. This aligns with the demands of the flour industry and food and beverage components. Furthermore, the company will strengthen all aspects of after-sales service by consistently developing and improving services such as product quality care, safe and high-standard packaging, and timely delivery to ensure customer confidence at every business step. The company is committed to creating the best experience and maximum satisfaction for B2B customers, focusing on quality, reliability, and services tailored to the specific needs of each customer group.

## Food Business

### Survey topics include

1. Product quality
2. Product packaging
3. Product variety
4. Communication with the sales team
5. Delivery service
6. Promotional campaigns
7. Marketing activities
8. Information and communication services
9. After-sales service
10. Purchasing decision factors
11. Satisfaction and Net Promoter Score (NPS)
12. Feedback on sustainability



The food business achieved an impressive Net Promoter Score (NPS) of 77, indicating an exceptional level of customer satisfaction, with an overall satisfaction score of 95%. Key factors influencing customer purchasing decisions include product quality, communication with the sales team, and product diversity. Additionally, sustainability management continues to play a significant role in the purchasing decision process, with 83% of customers considering it. This outcome reflects the company's ability to develop and deliver innovative, safe, clean, and high-quality products, increasing trust among consumers.

The survey results highlight that the top priorities for the company's food business customers are product quality, effective communication with the sales team, and product variety—these are the main factors influencing their decision to choose our services. In 2025, the company will not only maintain high standards of product quality and excellent communication from the sales team but will also focus on continuously developing new products to meet customer needs promptly, enhancing the customer experience and building long-term trust in the brand.

Thai Wah dives deep into customer and consumer feedback to understand concerns related to our food products, enabling us to deliver the best possible experience. We work proactively with internal teams—including product development, marketing, sales, production, and support teams—and collaborate with key partners to ensure quick and targeted improvements and developments. This internal and external collaboration, with a shared goal, allows us to respond to customer needs swiftly and efficiently.

## Biodegradable Products Business

### Survey topics include

1. Product quality
2. Product packaging
3. Product variety
4. Service and support
5. Purchasing decision factors
6. Satisfaction and Net Promoter Score (NPS)
7. Feedback on sustainability

### Biodegradable Products Business

#### Overall Satisfaction Score



The Biodegradable Products Business achieved a Net Promoter Score (NPS) of 67, which is considered excellent, with an overall customer satisfaction score of 92%. Key factors influencing customers' purchasing decisions include product quality, technical support, and product variety. Additionally, sustainability management continues to play a significant role in the purchasing decision-making process. This result reflects the company's ability to develop and deliver innovative, safe, clean, and high-quality products, thus building greater trust among consumers.

The Biodegradable Products team has planned to tap into new markets and expand its customer base by focusing on industries such as food and beverage, retail stores, supermarkets, and food delivery businesses. The team is also strengthening business partnerships, including collaborations with packaging companies and environmental organizations, to increase sales opportunities and develop solutions better suited to the market. Furthermore, the team is expanding into international markets, focusing on countries with laws promoting the use of biodegradable packaging, such as the European Union, the United States, Japan, and Australia. Thai Wah has expanded its marketing opportunities from B2B to B2C, catering to end consumers and brand owners who are looking for environmentally friendly packaging and products.

## B2C Market Expansion Goals:

1. Increase access to eco-conscious consumers – supporting the growing demand for biodegradable and compostable products.
2. Support brands aiming to reduce their carbon footprint – enabling brand owners to use environmentally friendly packaging to meet sustainability goals.
3. Reduce the impact of global warming – promoting green consumption and supporting sustainability goals.

The approach to achieving these goals includes expanding sales channels through online platforms, such as E-commerce, and launching a DTC (Direct-to-Consumer) website for ROSECO products. Additionally,

the team is developing products suitable for the B2C market, such as smaller packaging for household use and products like biodegradable trash bags and ready-to-use food packaging.

Moreover, the company is enhancing its marketing and brand building through a Green Marketing Campaign, emphasizing the environmental benefits of its products. Collaborations with influencers and eco-conscious communities are also in place, along with building partnerships with organizations and agencies that support sustainability. This includes working with NGOs and environmental agencies to promote the use of biodegradable products and supporting Zero Waste and Circular Economy initiatives.



Channels to follow Thai Wah news and information

## Collaboration and Development in the Food Industry

Collaboration and development in the food industry demonstrate the positive outcomes of sharing knowledge and business approaches to achieve mutual success. By working together, businesses can leverage shared expertise and resources to drive innovation and growth. This collaborative approach promotes the development of new technologies, processes, and products that can enhance efficiency, sustainability, and competitiveness. Through partnerships and joint efforts, it helps foster progress and the overall potential of the food industry. Ongoing collaboration and learning allow the industry to adapt to changing market demands, promote food production standards, improve food security, and encourage sustainable practices.

Ms. Patcharin Wachiraworakam, Senior Assistant Vice President of the Food Business Group at Thai Wah, participated as one of the speakers for the “Enhancing SMEs Capability for Competitiveness” event under the FAST SMEs project. This initiative is a collaboration between the Thai Chamber of Commerce, the Federation of Thai Industries, the Thai Bankers Association (TBA), and the Thailand Management Association (TMA).

Ms. Patcharin shared her insights with the participants on pricing strategies for food and beverage products. She

provided in-depth knowledge on planning appropriate pricing strategies aligned with product offerings and target audiences to ensure quick market access and positive reception. She explained these strategies in line with consumer expectations and changing market conditions, emphasizing the importance of shared knowledge within the industry. The session also provided a comprehensive analysis of understanding cost structures, expected profits, market demand, and the competitive landscape, offering guidance for SMEs to strategically set prices to foster future growth. Her commitment to sharing expertise and offering valuable perspectives helps other businesses grow in a complex market and showcases the power of knowledge sharing to achieve mutual success.



# Appendix



# About this report

Thai Wah Public Company Limited (TWPC) reports its sustainability performance annually. This report serves as a medium to convey the organization's commitment to sustainability to the stakeholders by sharing crucial operational performance data on sustainability, which affects the company's business operations and stakeholders, as well as economic, social, and environmental impacts. The Company reports key indicators, targets, and improvements in operations from its comprehensive sustainability strategy, which is related to organizational practices and responsibilities that align with the core values of innovation development and sustainability of the company. All of this is an effort to develop sustainability throughout the value chain from farm to consumer.

## Reporting Period and Guidelines

The Report covers the period from January 1 to December 31, 2024, and in accordance with the Global Reporting Initiatives (GRI) Standard 2021, as well as the Sustainable Development Goals (SDGs). It serves as the official Communication on Progress (COP) to the reporting stakeholders. The Report outlines the achievements in the 10 Reporting Principles of the United Nations Global Compact (UNGC), within its sphere of influence, as well as enhancing other environmental and social initiatives of the sustainable development goals. The content of the report aligns with the company's sustainable development strategy and sustainability material topics within the context of its business operations, emphasizing stakeholder engagement in identifying and defining sustainability material topics.

## Reporting Assurance

The key content of the report has been reviewed and approved by the management of each business unit to ensure accuracy and responsiveness to stakeholders. In terms of financial performance, it has been audited by EY Office Company Limited, details of which can be found in the auditors' report section in the Company's Annual Report 2024.

## Access to Sustainability Reports

The Sustainability Reports for the year 2024 and previous years, as well as the GRI indicators and sustainability performance data of the company, are available on the company's website under the "Sustainability" section.

## Contact

### Sustainability Department

Thai Wah Public Company Limited

21/11, 21/13 Thai Wah Building 1, 6<sup>th</sup> Floor, South Sathorn Road, Thung Mahamek Sub-District, Sathorn District, Bangkok 10120

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# GRI content index

## Statement of use

Thai Wah has reported in accordance with the GRI Standards for the period 1 January 2024 to 31 December 2024.

## GRI 1 used

GRI 1: Foundation 2021

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			Mapped to SDGs
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	

## General disclosures

GRI 2: General Disclosures 2021	2-1 Organizational details	Sustainability Report 2024 Front cover, Back cover, and Page 8 Annual Report 2024 Page 31-32				
	2-2 Entities included in the organization's sustainability reporting	Sustainability Report 2024 Page 109				
	2-3 Reporting period, frequency and contact point	Sustainability Report 2024 Page 109				
	2-4 Restatements of information	Sustainability Report 2024 Page 109				
	2-5 External assurance	Sustainability Report 2024 Page 109				
	2-6 Activities, value chain and other business relationships	Sustainability Report 2024 Page 9				
	2-7 Employees	Sustainability Performance Data 2024 (Human Capital)				
	2-8 Workers who are not employees	Sustainability Performance Data 2024 (Human Capital)				
	2-9 Governance structure and composition	Sustainability Report 2024 Page 30-31 Annual Report 2024 Page 97				
	2-10 Nomination and selection of the highest governance body	Sustainability Report 2024 Page 29-30 Annual Report 2024 Page 13				
	2-11 Chair of the highest governance body	Annual Report 2024 Page 8				
	2-12 Role of the highest governance body in overseeing the management of impacts	Sustainability Report 2024 Page 16, 30-31 Annual Report 2024 Page 106				
	2-13 Delegation of responsibility for managing impacts	Sustainability Report 2024 Page 16, 30-31 Annual Report 2024 Page 99-100				
	2-14 Role of the highest governance body in sustainability reporting	Sustainability Report 2024 Page 16, 30-31 Annual Report 2024 Page 106				
	2-15 Conflicts of interest	Annual Report 2024 Page 102				
	2-16 Communication of critical concerns	Annual Report 2024 Page 79				
	2-17 Collective knowledge of the highest governance body	Annual Report 2024 Page 15-19, 111-112				

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			Mapped to SDGs
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
	2-18 Evaluation of the performance of the highest governance body	Annual Report 2024 Page 89–90				
	2-19 Remuneration policies	Annual Report 2024 Page 88–91				
	2-20 Process to determine remuneration	Annual Report 2024 Page 88–91				
	2-21 Annual total compensation ratio			Confidentiality constraints		
	2-22 Statement on sustainable development strategy	Sustainability Report 2024 Page 2–5				
	2-23 Policy commitments	Sustainability Report 2024 Page 18				
	2-24 Embedding policy commitments	Sustainability Report 2024 Page 18				
	2-25 Processes to remediate negative impacts	Sustainability Report 2024 Page 35 Annual Report 2024 Page 77				
	2-26 Mechanisms for seeking advice and raising concerns	Sustainability Report 2024 Page 35 Annual Report 2024 Page 77				
	2-27 Compliance with laws and regulations	Sustainability Report 2024 Page 30				
	2-28 Membership associations	Sustainability Report 2024 Page 15				
	2-29 Approach to stakeholder engagement	Sustainability Report 2024 Page 12–15				
	2-30 Collective bargaining agreements	–		Not applicable		

## Material topics

"GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainability Report 2024 Page 16–17				
	3-2 List of material topics	Sustainability Report 2024 Page 16–17				

## Economic performance

GRI 3: Material Topics 2021	3-3 Management of material topics	Sustainability Report 2024 Page 16–21				1
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Sustainability Report 2024 Page 16–21 Annual Report 2024 Page 26				1

## Indirect economic impacts

GRI 3: Material Topics 2021	3-3 Management of material topics	Sustainability Report 2024 Page 39, 46				1, 2
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Sustainability Report 2024 Page 46				1, 2
	203-2 Significant indirect economic impacts	Sustainability Report 2024 Page 46				1, 2

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			Mapped to SDGs
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Procurement practices</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 36–37				12
GRI 204: Procurement Practices 2016	204–1 Proportion of spending on local suppliers	Sustainability Report 2024 Page 36–37				12
<b>Anti-corruption</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 34–35				16
GRI 205: Anti-corruption 2016	205–1 Operations assessed for risks related to corruption	Sustainability Report 2024 Page 34–35				16
	205–2 Communication and training about anti-corruption policies and procedures	Sustainability Report 2024 Page 34–35				16
	205–3 Confirmed incidents of corruption and actions taken	Sustainability Report 2024 Page 34–36				16
<b>Water and effluents</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 62–63				6
GRI 303: Water and Effluents 2018	303–1 Interactions with water as a shared resource	Sustainability Report 2024 Page 65–68				6
	303–2 Management of water discharge-related impacts	Sustainability Report 2024 Page 65–68				6
<b>Emissions</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 63–65				7, 8, 11
GRI 305: Emissions 2016	305–1 Direct (Scope 1) GHG emissions	Sustainability Report 2024 Page 63–65, Sustainability Performance Data 2024 (Environment)				12, 13
	305–2 Energy indirect (Scope 2) GHG emissions	Sustainability Report 2024 Page 63–65, Sustainability Performance Data 2024 (Environment)				12, 14
	305–3 Other indirect (Scope 3) GHG emissions	Sustainability Report 2024 Page 63–65, Sustainability Performance Data 2024 (Environment)				12, 15
<b>Waste</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 62–63				
GRI 306: Waste 2020	306–1 Waste generation and significant waste-related impacts	Sustainability Report 2024 Page 62–63, 65–67				12, 13

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			Mapped to SDGs
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
	306-2 Management of significant waste-related impacts	Sustainability Report 2024 Page 62-63, 65-67				12, 14
	306-3 Waste generated	Sustainability Report 2024 Page 62-63, 65-67				12, 15
	306-4 Waste diverted from disposal	Sustainability Report 2024 Page 62-63, 65-67				12, 16

### Supplier environmental assessment

GRI 3: Material Topics 2021	3-3 Management of material topics	Sustainability Report 2024 Page 36-37				12
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Sustainability Report 2024 Page 36-37				12

### Employment

GRI 3: Material Topics 2021	3-3 Management of material topics	Sustainability Report 2024 Page 71				5, 8
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Sustainability Performance Data 2024 (Human Capital)				5, 8
	401-3 Parental leave	Sustainability Performance Data 2024 (Human Capital)				5, 8

### Occupational health and safety

GRI 3: Material Topics 2021	3-3 Management of material topics	Sustainability Report 2024 Page 55				8
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Sustainability Report 2024 Page 55-62				8
	403-2 Hazard identification, risk assessment, and incident investigation	Sustainability Report 2024 Page 55-62				8
	403-3 Occupational health services	Sustainability Report 2024 Page 55-62				8
	403-4 Worker participation, consultation, and communication on occupational health and safety	Sustainability Report 2024 Page 55-62				8
	403-5 Worker training on occupational health and safety	Sustainability Report 2024 Page 55-62				8
	403-6 Promotion of worker health	Sustainability Report 2024 Page 55-62				8
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Sustainability Report 2024 Page 55-62				8
	403-8 Workers covered by an occupational health and safety management system	Sustainability Report 2024 Page 55-62				8
	403-9 Work-related injuries	Sustainability Report 2024 Page 55-62				8

GRI STANDARD/ OTHER SOURCE	DISCLOSURE	LOCATION	OMISSION			Mapped to SDGs
			REQUIREMENT(S) OMITTED	REASON	EXPLANATION	
<b>Training and education</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 71, 79–83				5, 8, 10
GRI 404: Training and Education 2016	404–1 Average hours of training per year per employee	Sustainability Performance Data 2024 (Human Capital)				5, 8, 10
	404–2 Programs for upgrading employee skills and transition assistance programs	Sustainability Report 2024 Page 79–83				5, 8, 10
	404–3 Percentage of employees receiving regular performance and career development reviews	Sustainability Performance Data 2024 (Human Capital)				5, 8, 10
<b>Diversity and equal opportunity</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 71, 72–75				5
GRI 405: Diversity and Equal Opportunity 2016	405–1 Diversity of governance bodies and employees	Sustainability Performance Data 2024 (Human Capital) Annual Report 2024 Page 98–99				5
<b>Marketing and labeling</b>						
GRI 3: Material Topics 2021	3–3 Management of material topics	Sustainability Report 2024 Page 103				3, 12
GRI 417: Marketing and Labeling 2016	417–1 Requirements for product and service information and labeling	Sustainability Report 2024 Page 103				3, 12





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