

# 2021 Sustainability Report

Thai Wah Public Company Limited

Creating Innovation and  
Sustainability from

**Farm to Shelf**





## Vision

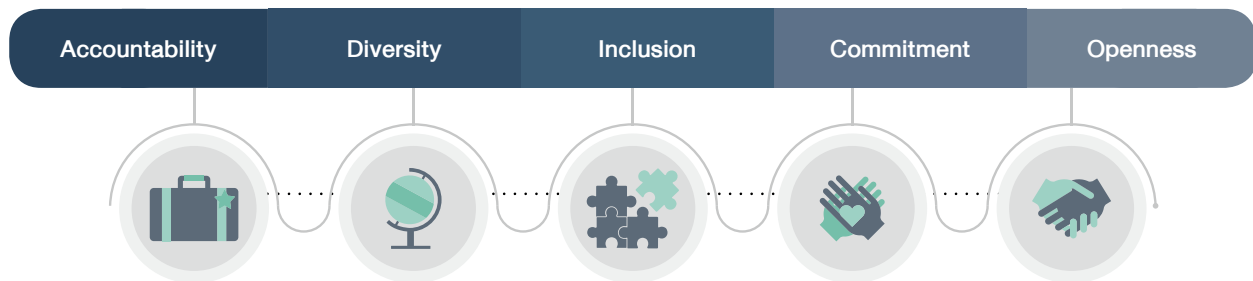
To be a regional leader in starch and starch-related food products



## Mission

We will produce premium quality products to satisfy our customers,  
and work with pride, integrity and consistency

## Core Value



We take **PRIDE** in everything we do as individuals and as one team, to do our very best

We lead with **INTEGRITY** and the highest values of excellence, honesty and transparency

We act with **CONSISTENCY** to always improve and learn every day

# Awards and recognition in 2021



Received an “Excellent CG Scoring” rating in for our corporate governance performance from the Thai Institute of Directors (IOD) for 2 consecutive years



Listed in the “Thailand Sustainability Investment (THSI)” from the SET for 3 consecutive years



Received CSR-DIW Continuous Award 2021, Social Responsibility of Organization



Achieved the “Green Initiative Award Category” at the Asia Corporate Excellence & Sustainability Awards (ACES) 2021



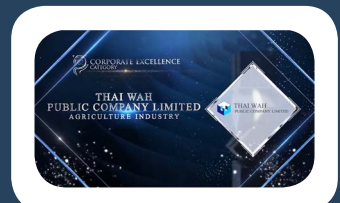
Win “Sustainability Disclosure Award 2021” from Thai Pat Institute for 3 consecutive years



Renew Member of Private Sector Collective Action Coalition against Corruption (CAC)



Listed in the “FTSE SET Shariah Index (FSTSH)”



Win the Corporate Excellence Award category under Agriculture Industry of the Asia Pacific Enterprise Awards (APEA) 2021 Regional Edition



Received “Outstanding Support Organization for Persons with Disabilities” award with an Excellent Level from Department of Empowerment of Persons with Disabilities of the Ministry of Social Development and Human Security





# สร้างสรรค์โมเมนต์ดีดี อร่อยยากครั้งไปกับ



ฉันทานอาหารมังกรคู่  
บิ๊คกี้ เม้าส์  
และผองเพื่อน



Disney  
**MICKEY**  
AND FRIENDS





# Contents

## 01

### Thai Wah's Business Overview

|     |  |
|-----|--|
| 004 | Message from Chief Executive Officer                   |
| 008 | Thai Wah's Business Overview, Value Chain and Products |

## 02

### Thai Wah's Sustainability Strategy

|     |   |
|-----|---|
| 016 | Summary of Key Performance in 2021              |
| 018 | Thai Wah Sustainability Development             |
| 019 | Supporting Sustainable Development Goals (SDGs) |
| 022 | Materiality Analysis and Boundary               |
| 024 | Stakeholder Engagement                          |

## 03

### Good Corporate Governance

|     |   |
|-----|---|
| 031 | Corporate Governance for Sustainability and Risk Management |
| 037 | Anti-Corruption   |

## 04

### Farmer Development

|     |  |
|-----|--|
| 044 | Sustainable Development and Management of Supply Chain |
| 046 | TWPC Sustainable Agriculture                           |
| 056 | Responsible Supply Procurement                         |

## 05

### Green Factory and Community

|     |  |
|-----|--|
| 064 | Safety and Occupational Health                           |
| 068 | Efficient Energy Usage throughout the Production Process |
| 081 | Social and Community Development                         |

## 06

### Family Work and Life Balance

|     |                             |
|-----|-----------------------------|
| 085 | Human Resources Development |
|-----|-----------------------------|

## 07

### Organic Food and Healthy Food R&D

|     |  |
|-----|--|
| 098 | Innovation on Process, Products and Services |
| 109 | Enhancing Quality and Food Safety            |

## 08

### Appendix

|     |                                  |
|-----|----------------------------------|
| 116 | About this Sustainability Report |
| 120 | GRI Content Index                |
| 127 | SDGs Content Index               |

## Message from the Chief Executive Officer

Dear Friends and Family of Thai Wah,

Over the course of the last 12 months, we continue to embrace the Covid-19 new normal into the way we work, play, live and collaborate as a shared community. While much of our efforts in the first year of Covid was around keeping our teams, associates and factories safe, 2021 was marked by a year of unprecedented change in achieving some of our company's core milestones in growth and transformation.



As we approach our 75th year and a milestone in the company's history and journey, Thai Wah continues to strengthen our extensive Asia-Pacific network and capabilities now totally 15 locations in 5 countries as we continue to develop a global sales and marketing strategy from a uniquely Southeast Asia production base across the crops of tapioca, mung bean, rice, sweet potato and others. 2021 has been an exceptional year for us in terms of results delivery and business performance, as we delivered new record highs in revenue, sales growth, margin delivery and significantly improved absolute dividend that we seek to sustain in coming years. Group Revenue grew by almost 30%, and EBITDA more than tripled compared than 2020.

We continue to embark on our continuous transformation to be a higher valued added players in the agri-food space, now with a much deeper and broader network of offices and deep go-to-market capabilities in Thailand, Vietnam, China, Cambodia and Indonesia. We have become far more customer-centric than ever before – enabled by Covid to lay in place strong digital, supply chain and distribution capabilities. Building these capabilities pre-Covid has served us well, as witnessed by strong revenue growth for 30% in our starch business, 79% in our Vietnam Food Business, and 25% in our Food export business. Commercial excellence and go-to-market capability remain a key focus for us in the medium terms, as we strive to serve our customers faster and better. Our R&D and Technical Service capabilities – now accounting for more than 25 people globally across 4 offices, continue to play a key role in how to deliver creative and comprehensive food solutions to our customers in global markets. Building and integrating strong, passionate and talented technical and commercial teams have been integral over the last 12 months.

Covid 19 has revealed the core importance of brand trust – in the Thai Wah brand and corporate reputation, and our product brands Double Dragon, Phoenix, Double Kilin, Rose and now RosEco across all B2C and B2B consumer product and solutions. Many of our product brands have been in the market for decades – and the strong growth over the last 2 years reminds us of the need to continue to execute with the highest standards of excellence possible, and now working seamlessly to drive digital

excellence into how we serve our customers from Farm to Shelf. The entire enterprise is now enabled on SAP, Microsoft 360 and Salesforce as our business and enterprise tools, and we have doubled down on our digital marketing and webinar capabilities by 2X compared to 2020.

Our Food business delivered strong results driven by growth in Modern Trade, Van Sales, and Exports. Our export markets grew over 25% and our Vietnam food business doubled for the second year in a row. We will relentlessly continue to strengthen the offers in our product portfolio to serve convenience segment with high-quality noodles and Ready-to-Eat solutions. The Food Business profit improved year on year by 23% driven by the strong demand for high quality, trusted brand in noodle and food solutions, testament to the strength of our brands and our commercial excellence. Underpinning this sales growth is also a continuous LEAN transformation program across all our production facilities and plants, where this year is the first for us to conceptualize TBS Thai Wah Business System as a key enterprise-wide platform to drive operational excellence across Safety, Quality, Cost and Delivery.

Agriculture and Food are cornerstone elements of the Southeast Asia Economy and we continue to play a key leadership role in catalyzing change and innovation in this space. In 2021, we partnered with several of the leading collaboration platforms in the region such as Future Food Asia, Asia Pacific Agri Innovation Summit, and looking forward to 2022 we will be hosting the first ever Southeast Asia Agfood roundtable. Operationally, our deep commitment and collaboration seeking to empower smallholder farmers with sustainable practices and innovation has begun with over 10 pilot projects over the last 2 years, as we strive to develop SEA as a key global center for Agri Bio tech hub for the region.

With a journey that originated pre-Covid, in 2021 we marked a double launch of Thai Wah Bioplastics and Thai Wah Ventures. Our bioplastics brand RosEco is the first of its kind in Southeast Asia. It is fully plant-based with other biopolymers and is fully biodegradable. This first generation of tapioca-bioplastics will be cost effective and highly functional as a compound solution to many aspects of sustainable film and flexible packaging. We have also launched Thai Wah Ventures as the first B2B Food and Agriculture Venture Innovation platform focused on Southeast Asia, focusing on key themes such as Farm Tech and Innovation, B2B Supply Chain and Analytics, Novel Ingredients and Bioplastics. This is just the beginning of our efforts to create a novel ecosystem platform for us to partner and drive disruptive change in the coming decade.

With strong performance in 2021 compared to previous year and strong cash position and balance sheet, we continue to invest with discipline by measuring Returns on Invested Capital and our policy on generating long term equity value for shareholders, focusing on improving operating cash flow as one of our key performance metrics. This filters down to the way we manage supply chain, working capital, maintenance and renovation and new capital expenditure. Overall, our net operating cash flow improved in 2021.

All-in-all, the Company's net profit for the period from 1 January to 31 December 2021 based on its consolidated financial statements amounted to Baht 323 million (Baht 0.37 / share). On this note, the Board of Directors has resolved to recommend a dividend payment of THB 0.2159 per share in respect of the full financial year ended December 31, 2021 which is subjected to shareholder's approval at the



Company's Annual General Meeting on 22 April 2022.

We are also proud to announce that Thai Wah was selected to list on the “Thailand Sustainability Investment (THSI)” in 2021 by the Stock Exchange of Thailand (SET) and were awarded the Sustainability Disclosure Award by Thaipat for the third consecutive year. We were also awarded the award for Asia Corporate Excellence and Sustainability Awards (ACES) with special recognition in the Green Initiative category in 2021. This is driven by how we embed sustainability targets in farming, environment, safety and health standards and strive to operationalize our sustainability framework. In addition, we won the Winner of The International Innovation Awards (IIA) 2021 for Bean Vermicelli Double Dragon Balance (DD Balance) product by Enterprise Asia and received the Outstanding Disability Employer Awards of the year 2021 from the department of Social Development and Welfare for the 4th consecutive year. We are proud to have received “Excellent CG Scoring” rating for the second year in 2021 for our corporate governance from The Thai Institute of Directors Association (IOD). These awards are testament to our passion to drive change, accountability and transparency across our entire value chain.

Finally, we embrace diversity in the best possible ways. One-third of our independent directors are female, 50% of our leadership team are female, 40% are non-Thai, and 60% of our top 25 leaders are female. Half of our leadership team is now under 45 years old, signifying the leadership, talent and energy needed for the next decade, as we strive to create a world-class One Thai Wah Team.

The transformation journey that began in 2015 will continue into this coming decade. Our Thai Wah family remains focused and committed to catalyze and drive change with a vision to create sustainability and innovation from Farm to Shelf. As we forge our future and our path into the next decade, the enduring Thai Wah spirit to be bold, creative and passionate endures. We celebrate our 75th anniversary this year and I am personally grateful to the dozens of pioneers, leaders and associates who have built Thai Wah to what it is today. We forge the future into the coming decade from a position of strength and exceptional momentum.

Keep Safe, and I look forward to seeing many of you in the coming weeks and months hopefully face to face!



**Mr. Ho Ren Hua**  
**Chief Executive Officer**



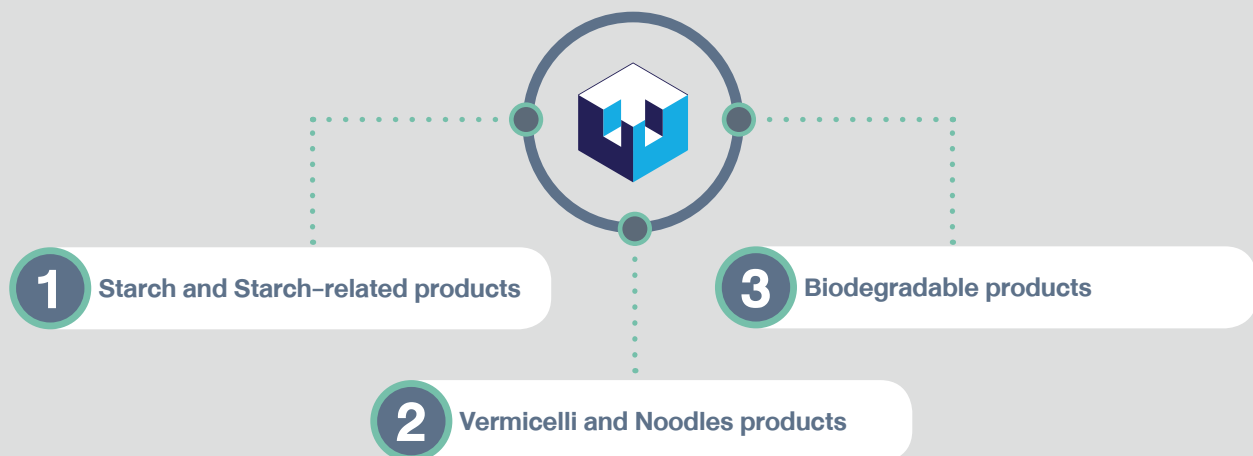




# Thai Wah's Business Overview, Value Chain and Products

Thai Wah Public Company Limited or TWPC has been in the agricultural and food industry for more than 75 years. We are one of the largest vermicelli and noodle manufacturers in Thailand and Vietnam, serving nearly 1 million consumers across the region. For the tapioca starch business, the Company operates in a business-to-business (B2B) trading model to deliver tapioca starch which is an ingredient in various foods. We are also moving forward to a new business that reduces the plastic waste problems. At present, the Company divides its business into three main businesses, namely flour business, food business and new business.

The Company's value chain involves and connects with various stakeholders ranging from business partners, society, customers, and consumers. Therefore, we pay attention to business management, according to international standards, and apply modern technology throughout the production process to produce quality products that are safe for consumption, as well as friendly to the community and the environment. In addition, we are committed to developing strong business growth while creating sustainable value with stakeholders.





## Our Factories



China Business – serving consumer and ingredient market with high quality product with sales close to 2 billion baht



Vietnam business – Stronger distribution platform in both B2B and B2C with sales close to 1 billion baht



Thailand business – Main core business for food and starch business with sales over 6 billion baht

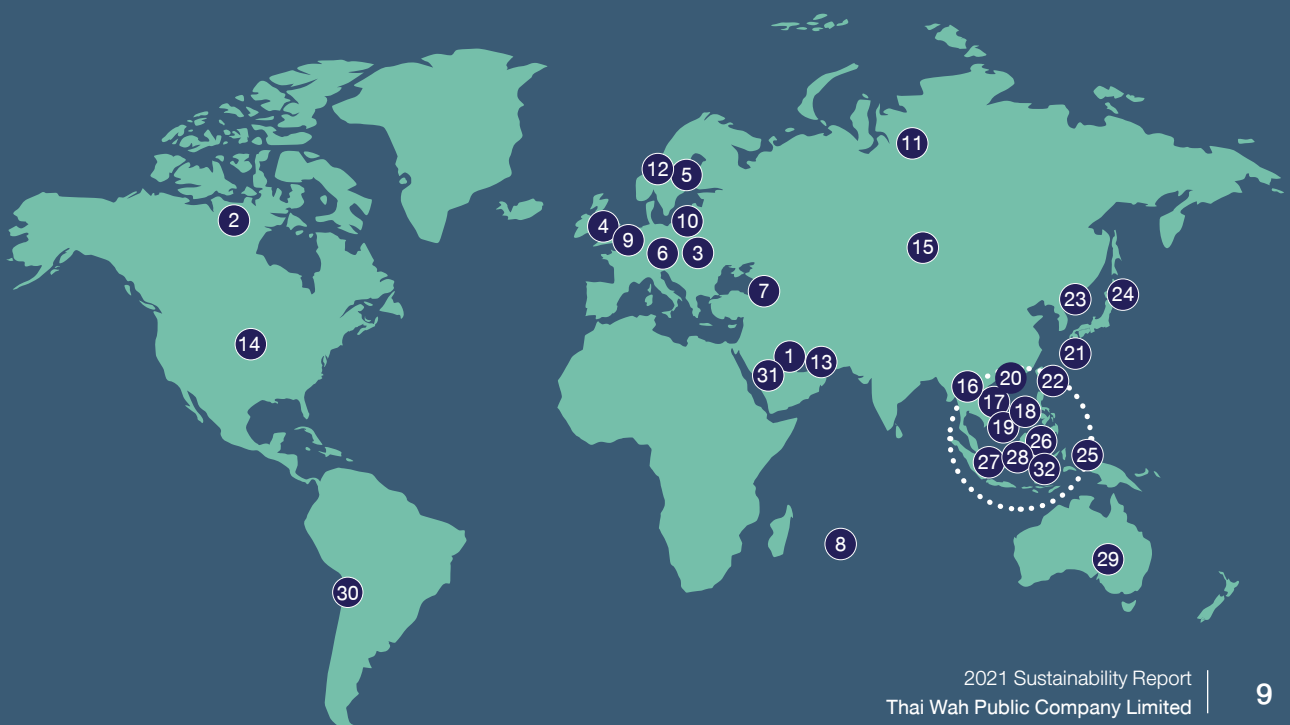


Indonesia and specialty business – medium term potential with 1 billion baht target

## Export Countries

Thai Wah expands its business to various countries depending on the opportunities and the potential of each country. Currently, the Company operates in 5 countries and exports to more than 32 countries worldwide

|  |                  |  |                 |
|--|------------------|--|-----------------|
|  | 1 Bahrain        |  | 17 Thailand     |
|  | 2 Canada         |  | 18 Laos         |
|  | 3 Czech Republic |  | 19 Cambodia     |
|  | 4 England        |  | 20 Vietnam      |
|  | 5 Finland        |  | 21 Taiwan       |
|  | 6 Germany        |  | 22 Hong Kong    |
|  | 7 Israel         |  | 23 Korea        |
|  | 8 Mauritius      |  | 24 Japan        |
|  | 9 Netherlands    |  | 25 Philippines  |
|  | 10 Poland        |  | 26 Brunei       |
|  | 11 Russia        |  | 27 Malaysia     |
|  | 12 Sweden        |  | 28 Singapore    |
|  | 13 UAE           |  | 29 Australia    |
|  | 14 USA           |  | 30 Chile        |
|  | 15 China         |  | 31 Saudi Arabia |
|  | 16 Myanmar       |  | 32 Indonesia    |



# Value Chain and Groups of Key Stakeholders



1 Farmers

7 Government Agencies and Social Enterprises

2 Partners

5 Communities and Society

|                    | Procurement   | Manufacturer  | Logistic  | Marketing & Sale   | Services   |
|--------------------|---|---|---|--|--|
| Value for THAI WAH | <ul style="list-style-type: none"> <li>Secure supplies of high quality raw materials</li> </ul> | <ul style="list-style-type: none"> <li>Improve product quality &amp; community relationships</li> </ul> | <ul style="list-style-type: none"> <li>Optimize production</li> <li>Lower manufacturing &amp; distribution costs</li> </ul> | <ul style="list-style-type: none"> <li>Expand market variety of products- Enter new &amp; emerging markets</li> <li>Good corporate image and Branding</li> </ul> | <ul style="list-style-type: none"> <li>Achieve competitive shareholder returns</li> <li>Sales growth- Market leader</li> </ul> |



## 6 Shareholders and Investors

## 4 Employees

## 3 Customers and Consumers

Procurement

Manufacturer

Logistic

Marketing & Sale

Services

### Value for STAKEHOLDERS

- |  |   |   |  |  |
|--|---|---|--|--|
| <ul style="list-style-type: none"> <li>• Quality of life</li> <li>• Have quality output</li> <li>Improved yields &amp; income)</li> <li>• Educate farmers to use and embrace technology</li> </ul> | <ul style="list-style-type: none"> <li>• Experiment with different types of crop variety, seed variety, and crop development</li> <li>• Local economic development</li> </ul> | <ul style="list-style-type: none"> <li>• Create jobs in local communities</li> <li>• Reduce negative impact to the environment</li> </ul> | <ul style="list-style-type: none"> <li>• Widen access to nutritional products</li> <li>• Consumer preference (for health and wellbeing)</li> </ul> | <ul style="list-style-type: none"> <li>• Consume quality product</li> <li>• Generate local investment and economic growth</li> </ul> |
|--|---|---|--|--|



# Thai Wah's Business Overview and Products

## 1 Starch and Starch-related business



## 2 Food business



NEW  
GRADE  
เครื่องหมายการค้าจดทะเบียน



DOUBLE DRAGON®  
ASIAN INSPIRED



## 3 New business



ROS ECO

## Strategic Goals (Short-Term and Long-Term)

**ROSECO**

Bioplastic products under Roseco brand

**THAI WAH  
VENTURES**

Thai Wah Ventures, investment expansion to startup or business with potential growth and support the core business. The investment target valued more than 500 million baht within 2-3 years



Grow core business both in B2C and B2B, enable digital, farm tech, digital supply chain, etc.

Potential M&A and new greenfield to study more in 2022, in order to be in line with post Covid-19 business trends

### Investment Plan over the Next 3 Years



## Roadmap to 2030 to Reposition for SEA's Green Economy



**1** Farm Tech and Innovation

**4** Specialty-focused  
Innovation on bioplastics,  
sustainable packaging for  
circular economy

**2** Healthy, delicious,  
ready-to-eat food

**5** TW Ventures as a catalyst  
for new innovation and  
ecosystem partnership

**3** B2B Food Solutions and  
Ingredients





## New Products in 2021



### Bean Fettuccine

- Flat, crunchy, bouncy, tasty
- Not sticking
- Well-absorbed to sauce
- No bleaching, chemical-free
- Gluten-free



### Double Kirin Rice Noodle Large

- Gelatinous, soft, tasty
- Not sticking, not easily broken
- New oil use in every production
- Sealed packaging, no leaked oil
- Clear manufactured and expired date



### Double Dragon, Phoenix, and Double Kirin Bean vermicelli

- Added to 550g



### Double Dragon Bean vermicelli, Disney Version 40g

- Gelatinous, soft, tasty
- Not messy or sticky if long boiled
- Good for all menus

### Double Dragon Bean

#### vermicelli, Disney Version 80g

- Gelatinous, soft, tasty
- Not messy or sticky if long boiled
- Good for all menus



## Product Labels



# Summary of Key Performance in 2021

**FARMER**  
Farmer Development

## Our performance for sustainable growth

- Revenues 9,105 million baht
- EBITDA 969 million baht
- Dividend 190 million baht
- Revenue contribution by country  
Thai 5,188 million baht /  
Vietnam 1,374 million baht /  
China 2,410 million baht
- Revenue contribution by business  
Starch Business 7,356 million baht /  
Food Business 1,773 million baht

## Good corporate governance

- Received an “Excellent CG Scoring” rating for our corporate governance performance for 2 consecutive years
- Listed in the “Thailand Sustainability Investment (THSI)” for 3 consecutive years
- Member of Private Sector Collective Action Coalition against Corruption (CAC)



- Production of disease-free X20 613,000 seedlings per year



- Supported AG Technology



- Supported compost members instead of using chemicals



- Organize training on vocational skills and agricultural knowledge



- Green procurement, procurement of environmentally friendly products and services, accounting for 16 percent of the total procurement budget
- Add value to agricultural products through bioplastic production







- Join the National Science and Technology Development Agency (NSTDA), public, private, and educational sectors in the “Quality of life improvement through science Technology and innovation in the Thung Kula Ronghai area” program
- Become a member of the Carbon Neutral Thailand Network (TCNN)
- Become a member of the RE100 Thailand Club

## Sustainable Development Partners



## FACTORY

### Green Factory and Community

- 
  - Proportion of wastewater treatment accounted for 100%
- 
  - Amount of electricity being reduced from biogas power plant was 31,571,928 unit
  - Accumulated electricity from Solar Roof Top for 1,405 kWh which costs 12.3 Million Baht
- 
  - Strategy towards Zero Waste
- 
  - Disclose carbon footprint (CFO) of 2 factories and set Carbon Neutral and Net Zero target together with TCNN
  - Sustainable material production target 100% (Bioplastic)

## FAMILY

### Family Work and Life Balance

- 
  - Average training of all employees was 1 person/1 day/ year
- 
  - Proportion of male employees to female employees was 1:1
  - Women's Empowerment Principles (WEPIs) signatory
- 
  - Total number of employees was 3,269 employees
  - Implementation of Human rights and Good Labor Practices to the entire company
- 
  - Ratio of persons with disabilities to all employees were 1:100

## FOOD

### Organic Food and Healthy Food R&D

- 
  - Research and development expenditure accounted for 33.8 Million Baht
- 
  - Innovation for an environment-friendly society, includes new business

# Thai Wah Sustainability Development

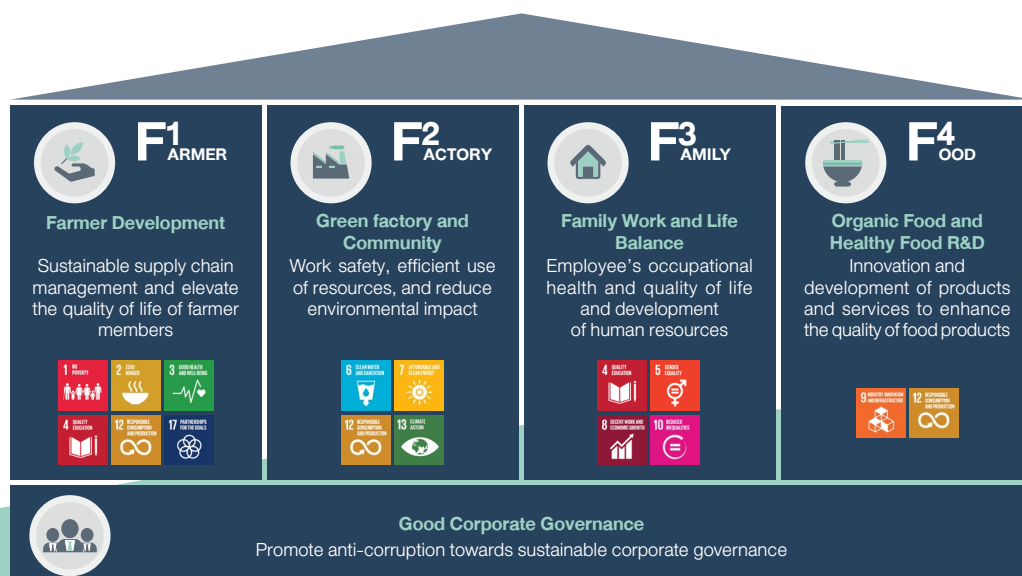
Amidst an era that people are adapting to cope with rapid changes in lifestyle and technology, the environment and sustainable development have become a significant part in driving business growth. As being in the agriculture and food industry, the Company is committed to business operations with its core strategy of delivering food products to consumers of worldwide economy, society, and environment by creating innovation and sustainability from farm to shelf. In particular, the social responsibility towards sustainable development is an important strategy for the potential of Thai Wah's business and growth to achieve the Company's vision as a regional leader in tapioca starch and starch food products.

Realizing that the Company's policy may have a more or less impact to stakeholders, the Company thus focuses on its main strategy to not only deliver products and services that are valuable and safe to customers and consumers, but also has a role and responsibility for setting social and environmental standards for all aspects of operations in the supply chain. Thai Wah's operations under the sustainability strategy support and drive changes in various fields to promote sustainable development in terms of economy, society, and environment according to its good corporate governance. Moreover, the Company has guidelines to implement the strategy of social responsibility towards sustainability, starting from the procurement of raw materials until the ready-to-consume products.

Thai Wah developed a sustainability development report under the framework of Create Shared Value (CSV), which helped us explicitly identify goals, and create the most corporate values. The Company has set 3 sustainable development goals as follows:

- Develop sustainable plants and raw material sources
- Foster thriving, resilient communities with environmental-friendly impact
- Enabling healthier for Modern Life

The Company sets the operational mission into 4 key strategies includes Farmer Development, Green Factory and Community, Family Work and Life Balance, and Organic Food and Healthy Food R&D. These strategies create appropriate benefits for shareholders, enhance consumer health, as well as occupational health and livelihood of employees, business partners, society, and community in a sustainable manner.





## Supporting Sustainable Development Goals (SDGs)

Thai Wah integrates the United Nations Sustainable Development Goals (SDGs) into its business sustainability strategy for the alignment of implementing and identifying sustainability goals to be in compliance with international standards towards continuous growth and development of the organization. Sustainability strategies emphasize on business operations which enable the organization to achieve both short-term and longterm goals as part of its everyday's business and growth together with the society in a sustainable way of the combined sustainability strategies and strong business fundamentals. This then transforms into Thai Wah's main sustainability strategy to develop farmers, factories, and green communities, as well as the quality of life of its employees and their families in line with food research. Additionally, Thai Wah announces its intention to achieve a goal of effective Net Zero Greenhouse Gas Emission by 2050-2070, enhancing the benefits of sustainable development from the factory level to the international level.

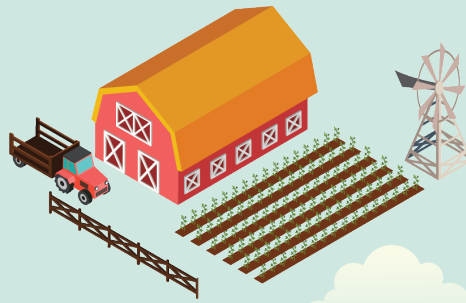
To sustain the organization to effectively identify key areas for maximizing positive impacts or mitigating negative impacts, Thai Wah integrates the sustainable development goals into its business operations. The emphasis is placed on the identification of those goals based on business impacts, key indicators, and performance analysis, both the corporate business and the related production chain. Thus, the real impacts can be reflected as part of defining the core strategy within the organization to enhance a capacity in risk and cost management, as well as develop innovations towards higher efficiency in business operations.

The Company also integrates materiality issues with the Sustainable Development Goals (SDGs) by focusing on two approaches: the assessment of human and environmental risks arising from its business operations, both positive and negative, and the evaluation of guidelines for products, services, or investment to possibly support the effective goals of sustainable development. In the meantime, other than its internal operations, the Company believes that sustainability cannot be achieved by one person. Every organization has its role to play in supporting the sustainable development goals. The involvement of both internal and external stakeholders can contribute to the systematic and sustainable development of innovations in the manufacturing and government sectors as well as the whole society.

Thai Wah commits to use our knowledge, capability, experience, and expertise in supporting 13 of the 17 Sustainable Development Goals (SDGs), which are relevant with the Company's capacity and potential, to mobilize sustainable development in all steps of our production process, uplift quality of life and wellbeing of the stakeholders, and to promote the nation's sustainable economic growth.

## Farmer Development

- Climate Change & Plague
- Farmer Development
- Sustainability Supply Chain & Procurement
- Good Corporate Governance



## Green Factory and Community

- Social and Community Development
- Water Management
- Waste Management
- Performance of Machine & Production Process
- Safety & Occupational Health



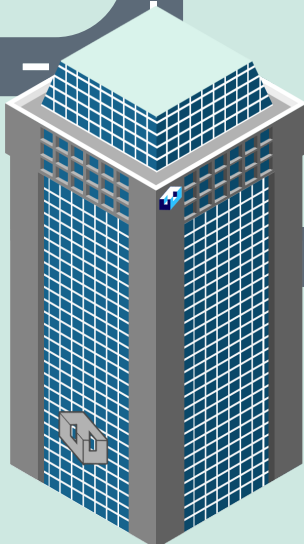
## Organic Food and Healthy Food R&D

- Innovation
- Quality & Food Safety
- Brand Trust



## Family Work and Life Balance

- Human Rights & Labor Law
- Anti-Corruption & Anti-Bribery
- Human Resource Development





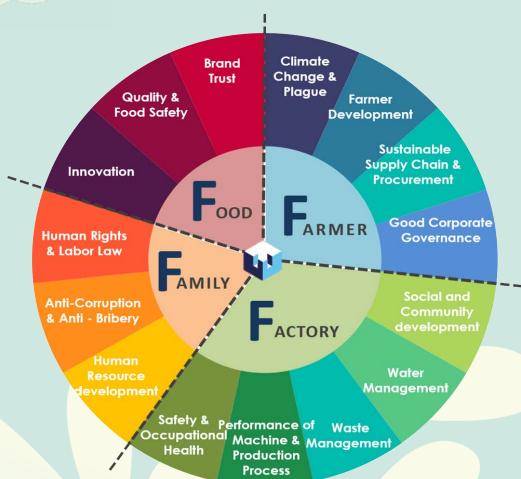
United Nations  
Global Compact

CREATING INNOVATION  
AND SUSTAINABILITY FROM

# FARM TO SHELF



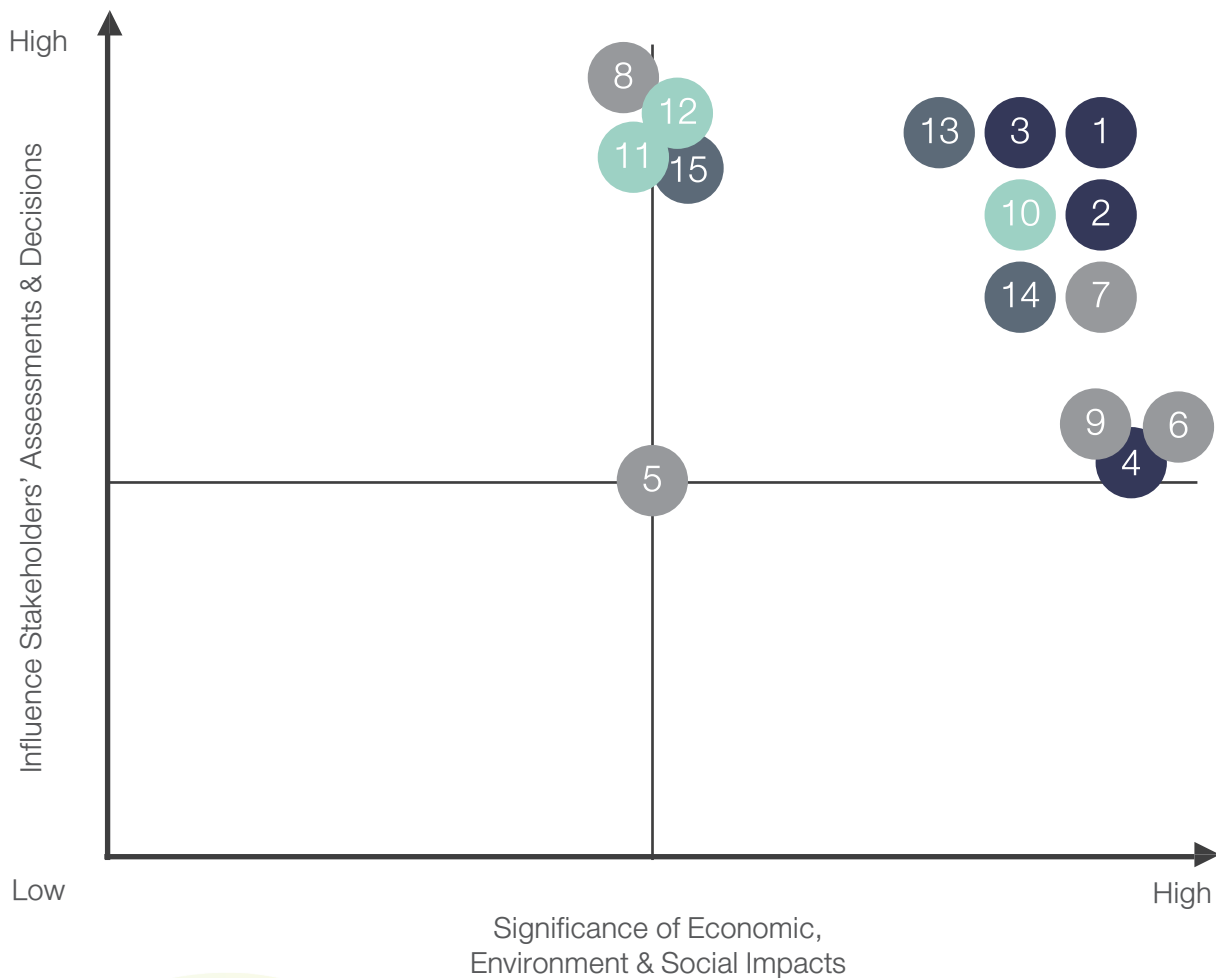
For over 75 years of its operations, Thai Wah has been committed to improving the quality of life of people and the sustainability of the society, including business partners, communities, employees, and consumers, with the principles of creating innovation and sustainability from farm to shelf. The Company pays attention to farmers who provide main raw materials, as well as the environment of the factory and surrounding communities for their well-beings, the potential development of employees, and the safety of foods to be passed on to consumers. The Company has an intention to contribute in the value creation of agricultural products by upgrading innovations, controlling the production and product quality, while being responsible for establishing standards to social, environmental, and economical operations in all operations and the entire supply chain in compliance with a good corporate governance and support to the needs of stakeholders towards positive changes in the entire industry and a better future among business partners and surrounding communities for their prestige products.





# Materiality Analysis

The materiality analysis presented within this report is assessed through collaboration with internal and external stakeholders, and from both of the Company's internal and external factors. We consider relevant issues in economics, social, and environmental aspects to evaluate sustainability materiality and stakeholder inclusiveness according to the GRI Standards as well as prioritization of sustainability risks and proper preparation of response plan. The Company's process for assessing the material sustainability aspects is as follows:





| Dimension                         | Sustainability Issues   | Stakeholders and boundary |   |
|-----------------------------------|---|---------------------------|---|
|                                   |   | Internal                  | External  |
| Farmer Development                | 1. Climate change and plague  |                           | Farmers<br>Government Agencies                                    |
|                                   | 2. Farmer development   |                           | Farmers<br>Government Agencies                                    |
|                                   | 3. Sustainability supply chain development and efficient supply procurement |                           | Farmer<br>Partners  |
|                                   | 4. Good corporate governance  | Employees                 | Farmer<br>Partners<br>Shareholders and Investors                  |
| Green Factory and Community       | 5. Social and community development   |                           | Communities and Societies   |
|                                   | 6. Water management   | Employees                 | Communities and Societies   |
|                                   | 7. Waste management   | Employees                 | Communities and Societies   |
|                                   | 8. Safety and occupational health   | Employees                 | Communities and Societies   |
|                                   | 9. Performance of machine and production process                            | Employees                 | Partners  |
| Family Work and Life Balance      | 10. Human resource development  | Employees                 |   |
|                                   | 11. Anti-corruption   | Employees                 | Partners<br>Shareholders and Investors                            |
|                                   | 12. Human rights and labor laws   | Employees                 | Government Agencies   |
| Organic Food and Healthy Food R&D | 13. Innovation  |                           | Partners<br>Customers and consumers<br>Shareholders and Investors |
|                                   | 14. Quality and food safety   |                           | Partners<br>Customers and consumers<br>Shareholders and Investors |
|                                   | 15. Brand trust   |                           | Partners<br>Customers and consumers<br>Shareholders and Investors |
|                                   |   |                           |   |

# Stakeholder Engagement

Thai Wah believes that stakeholder engagement is an essential component for its strategic planning, covers the economic, social, and environmental dimensions, toward a sustainable organization. Analysis and prioritization of stakeholder groups have been continuously executed to assess positive and negative impacts, both external and internal, from Thai Wah's business operation.

In formulating the 2021 Corporate Sustainability Report, the Company compiled stakeholders' feedbacks and views, as well as their needs, opinions, concerns, and suggestions, for improvement of compliance approach, in line with fair and appropriate sustainability operation. We also conducted satisfaction surveys with representatives from stakeholder groups including capital market developers, business partners, communities, and customers to gather their views which will also be used to shape the report content.




|  | Engagement Channels  | Needs or Expectations Issues  | Company Responses  |
|--|--|---|--|
| <b>Farmers</b><br>   | 1. Thai Wah Farmers Network program<br>2. Farmer development activities<br>3. Mobile application<br>4. Thank You Farmer Day<br>5. Improve farmers' quality of life program | <ul style="list-style-type: none"> <li>Support quality of life for farmers</li> <li>Introduce technology to farmers</li> <li>Good corporate governance</li> </ul>                                     | <ul style="list-style-type: none"> <li>Promote, support, training for farmers to increase the ability in management and cultivation processes</li> <li>Fair Trade</li> <li>Support cultivation tools to help reduce labor and time.</li> <li>Establishment of the Farm Development department to directly corporate with farmers networks</li> <li>Improve farmers' quality of life program</li> </ul> <p>See more details at the chapter "Farmers Development" and "Water management for sustainable agriculture"</p> |
| <b>Partners</b><br> | 1. Partner meeting<br>2. Partner visiting<br>3. Social media channels, such as Website, Facebook, Youtube, LinkedIn, and Line@<br>4. Webinar                               | <ul style="list-style-type: none"> <li>Support quality of life of partners</li> <li>Promotion and marketing activities</li> <li>Food quality and safety</li> <li>Good corporate governance</li> </ul> | <ul style="list-style-type: none"> <li>Promote, support, training for business partners to increase sell</li> <li>Develop a variety of products to match the needs of the market</li> <li>Develop promotional activities and marketing activities to meet the needs of consumers</li> </ul> <p>See more details at the chapter "Enhancing Quality and Food Safety"</p>   |



## Customers and Consumers

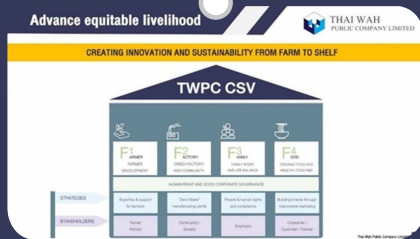


| Engagement Channels  | Needs or Expectations Issues  | Company Responses  |
|--|---|--|
| <ul style="list-style-type: none"> <li>1. Customer satisfaction survey</li> <li>2. Customer complaint center</li> <li>3. Social media channels, such as Website, Facebook, Youtube, LinkedIn, and Line@</li> </ul> | <ul style="list-style-type: none"> <li>• Access to healthy food and good nutrition</li> <li>• Food quality and safety</li> <li>• Food innovation</li> <li>• Marketing and Labeling</li> <li>• Clarity and progress in driving the organization towards sustainability</li> </ul>  | <ul style="list-style-type: none"> <li>• Communication for consumers to understand about nutrition and product label</li> <li>• Increase communication channels of sales promotion</li> <li>• Develop products and services to meet the standards of quality and safety</li> <li>• Offer alternative healthy products</li> <li>• Development of promotion and marketing activities to meet the needs of consumer</li> </ul> <p>See more details at the chapter "Innovation on Process, Products and Services" and "Enhancing Quality and Food Safety"</p>  |
| <h2>Employees</h2>    | <ul style="list-style-type: none"> <li>1. Employee engagement survey (PULSE survey)</li> <li>2. Intranet and E-newsletter, mobile application (TimeMint) / TW Wander newsletter</li> <li>3. Human relations in organization</li> <li>4. CEO Town Hall</li> <li>5. Annual performance review (PMS)</li> <li>6. Online Training Programs to develop the potential of employees</li> <li>7. Employee stewardship and satisfaction survey of organization's management during the Covid-19 situation</li> </ul> | <ul style="list-style-type: none"> <li>• Safety and Occupational Health</li> <li>• Career Path Development Program</li> <li>• Payment, benefits and welfare</li> <li>• Employee engagement</li> </ul> <ul style="list-style-type: none"> <li>• Analyze potential development plans and evaluating employee career paths via Performance Management System (PMS)</li> <li>• Improve in the system for evaluating work behavior to be more consistent with the work function</li> <li>• Thai Wah Leadership Academy (TLA), analysis and training program for employees at all levels</li> <li>• Employee stewardship during COVID-19</li> </ul> <p>See more details at the chapter "Safety and Occupational Health", "Human Resources Development"</p> |

|  | Engagement Channels  | Needs or Expectations Issues  | Company Responses   |
|--|--|---|---|
| <b>Communities and Society</b><br>                      | 1.Community relations activities<br>2.Complaint center<br>3.Community visiting   | • Job creation and community economic development<br>• Reducing the environmental impact to the community                                   | • Provide a project to promote health and quality of life for the community, such as basic health check<br>• Develop the project to raise awareness for the young generation to love agriculture<br>• Establish clearly energy management policies and waste management<br>See more details at the chapter “Social and Community Development” |
| <b>Shareholders and Investors</b><br>                  | 1.Annual General Meeting (AGM)<br>2.Analyst Meeting in every quarter<br>4.Opportunity Day / Roadshow through online platform<br>5.Exclusive Interview<br>6.IR Website, email, telephone  | • Good corporate governance<br>• Transparent, accurate and timely information disclosure<br>• The Company strategies towards sustainability | • Implementation of good corporate governance principles<br>• Transparency and equality of shareholders<br>• Establish clearly operating strategies especially during Covid-19 situation<br>• Establish clearly risk management strategies<br>See more details at the chapter “Good Corporate Governance”                                     |
| <b>Government Agencies and Social Enterprises</b><br> | 1.Disclose information about business operations<br>2.Report and disclose Greenhouse Gas Emissions. Join the national commitment of achieving net zero greenhouse gas emissions (Net Zero) by 2050-2070<br>3.Cooperate and support the project on relevant issues<br>4.Join relevant seminar<br>5.Join as a panelist in relevant seminar | • Compliance with relevant laws and regulations<br>• Good corporate governance  | • Operation in accordance with relevant laws and regulations<br>• Support government projects on relevant issues<br>• Disclose Greenhouse gas emission and provide efficient solution strategy<br>See more details at the chapter “Good Corporate Governance”   |



SD Professional Sharing – Sustainability and Business Integration



UN Food systems summit 2021 – Action Track: Role of private sector in supporting sustainable food system development



Social Value Matters 2021 – Social Value Leaders: Call to Action



Thai Wah x SE Thailand – Social Enterprise Thailand Forum 2021: “Where Profit Meets Purpose”



UN GC Virtual Leaders Summit 2021 – “SDG Ambition: Mobilizing Ambitious Corporate Actions Towards the Global Goals”



Thai Wah X Roots Incubation Program - New Generation Preparation Project for Homeland Return: Driving the Economy Through Community Business



Thai Wah x GIS BUU – “Applied innovation of geospatial technology: Farm Management Robot Drone and Mechanize”

# Sustainability Activities in 2021



ESG Materiality: Key factors under ESG of each business sector



GCNT Forum 2021: A New Era of Accelerated Actions –Leadership Summit to promote business sustainability to tackle with global warming



GCNS Virtual Summit 2021 – “Designing Our Future: Powering the Decade for Decisive Action”



# Thai Wah Fight Covid-19 Together

- Thai Wah is part of sending care and help to those affected by the COVID-19 pandemic

The company provided financial support and necessary equipment for the well-beings and prevention of the COVID-19 to foundations, hospitals, medical personnel, and those who suffered in the communities to encourage and fight with this epidemic crisis together.



Donating 1,500,000 baht to the Chaipattana Fund for Fighting COVID-19, and providing a total of 2,400 boxes of foods to the communities, hospitals, and field hospitals, in collaboration with Banyan Tree Hotel Group, Bangkok.



Donating 250 boxes of medical masks to the Red Cross, Nakhon Ratchasima Province.



Donating Thai Wah products amounted 1,615,484 baht to hospitals, communities, and centers across the country.



Donating 5,000 kilograms of rice noodles, Double kirin brand, to support and encourage the noodle shop entrepreneurs via Facebook page of Double Kirin.

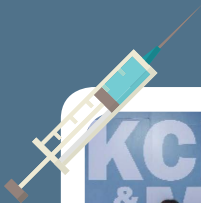




Donating the ready-made vermicelli noodles of Reddy Double Dragons, amounted 1,100,000 baht, to 46 communities in Bangkok and its vicinities, in cooperation with “the Story Sharing Project”.



Donating 300 paper beds to hospitals and field hospitals across the country.



Donating 1,000,000 baht to support the ChulaCov19 mRNA development fund for Thai people, on behalf of Thai Wah and the Ho family.



Donating medical equipment amounted 50,000 baht to Ban Chang Hospital, Rayong Province.



Donating 70,000 baht to Udon Thani Hospital and Home Hug Center, Khok Sa-at Sub-district, Udon Thani Province.

Moreover, the Company has also provided financial support and equipment to prevent the spread of the COVID-19, medical equipment, and survival kits for communities, hospitals, and centers in various provinces across the country.



## Good Corporate Governance

Conducting businesses with responsibility to society, the environment and stakeholders under good corporate governance and business ethics is very important for the Company to achieve its operating goals, to build confidence for its investors and to increase competitiveness together with sustainable social and environmental stewardship. The Company's corporate governance process covers directors, executives and employees as well as other stakeholders. The Company respects the rights of all groups of the Company's stakeholders, takes care and acts appropriately, equitably and fairly. The Company believes that good corporate governance which takes the Company's stakeholders into account is a key foundation leading the organization to have sustainable growth and success while gaining confidence and trust from all stakeholders. With that, the Company is committed to conducting businesses with participation and responsibility under good corporate governance with fairness, transparency and accountability.





# Corporate Governance for Sustainability and Risk Management



In our pursuit for sustainable growth in the future, the Company's Board of Directors has made approval to the renaming of the Audit and Risk Committee to read the "Audit, Risk and Corporate Governance Committee" on August 6, 2019 and change in the scope of duties and responsibilities of the Audit, Risk and Corporate Governance Committee, by increase the scope of duties and responsibilities, as follows:

- To supervise the performance of management to strictly comply with the Company's good corporate governance policy;
- To review the corporate governance policy and code of business conduct of the Company at least once a year;
- To oversee the anti-corruption policy to ensure its sufficient and appropriate for the Company's business; and
- To supervise and offer advice related to the operation concerning the Company's sustainable development

Moreover, the Company's Board of Directors has made approval to the policy on corporate governance and business code of conduct which has been adhered as guideline by all company executives, and employees, and regularly monitored, evaluated, and organizational control, which include the promotion of justice, anti-corruption, respect to human rights, and equitable treatment to workers

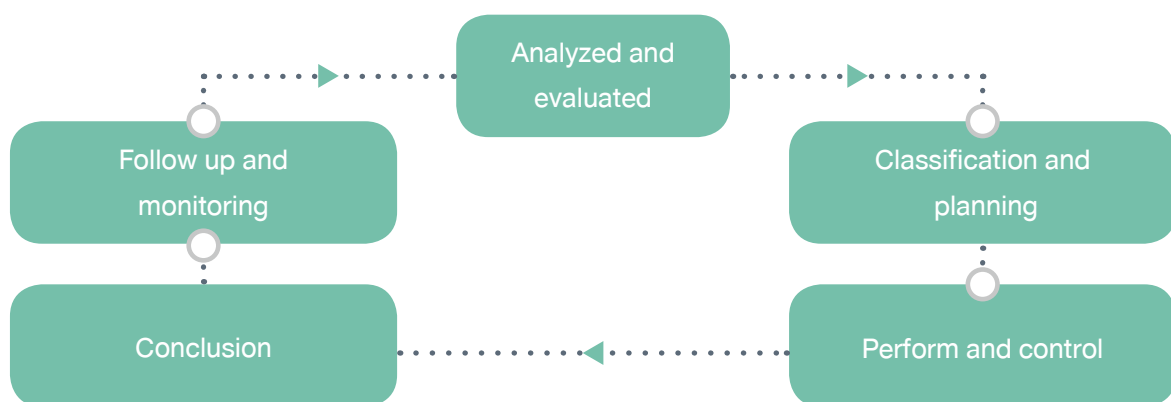
From the commitment in strong business operation towards sustainability and transparency in 2021, Thai Wah rated “Excellent” in the Corporate Governance Report of Thai Listed Companies (CGR) Program 2021 by the Thai Institute of Directors (IOD) for a second consecutive year. On February 18, 2021, the Company’s senior management has reported to the Audit, Risk and Corporate Governance Committee (ARCG) on corporate sustainability performances and the Company’s performances on engagement with stakeholders in the year 2021 to review Thai Wah’s operation regarding stakeholder engagement, and to identify and prioritize stakeholders throughout the business chain in a comprehensive manner. Efficient and proper approaches to the issues our stakeholders have placed importance on have also been identified.

## Risk Management

In order to ensure that Thai Wah risk management be in line with the international standard, that is, the COSO’s enterprise risk management (ERM) framework, the following components have been put in place:

### 1. Supervisory Structure

Thai Wah Board of Directors places importance on internal control and risk management for the Company’s sustainable growth and value addition to our stakeholders. A special unit has been set up as the risk management liaison office under the Risk Management Committee to liaise with representatives of each of the divisions, and plants, and form a risk management working group.



### 2. Strategy and Objective Identification

The risk management working group is tasked to ensure compliance with laws and regulations of the business operation, and to analyze the broader scope of changing trends in both economic, social, and environmental dimensions which may impact the industry or business operation in the next 3-5 years. This is in order to mitigate and contain risk, that may affect business operation, to an acceptable level or at the level where the impact is of no significance. The working group also adequately and properly supervises subsidiaries and transactions with conflicted persons or related parties, in a bid to ensure business operation efficiency and effectiveness in accordance with the set policies and goals, and to establish accountability and accuracy of the Company’s financial report.

### 3. Risk Management Process

Thai Wah conducts sufficiency evaluation with the management, various divisions and units, and plants in accordance with the guideline prescribed in the Internal Control Sufficiency Evaluation Form, as well as risk management approach of the Securities and Exchange Commission, to maintain business operation efficiency.

### 4. Review and Improvement

The Company conducts sufficiency evaluation of the internal control system and risk management on an annual basis.

### 5. Following up, Report, and Evaluation

Thai Wah's internal audit unit has been assigned to follow up, audit, review, and report the results directly to the Audit and Risk Committee on an annual basis.

The Company's Board also places importance on risk management planning to address both inherent risks, control risks, and emerging risks, e.g., safety and health risks, risks brought about by insurance liability limit adjustment, etc.

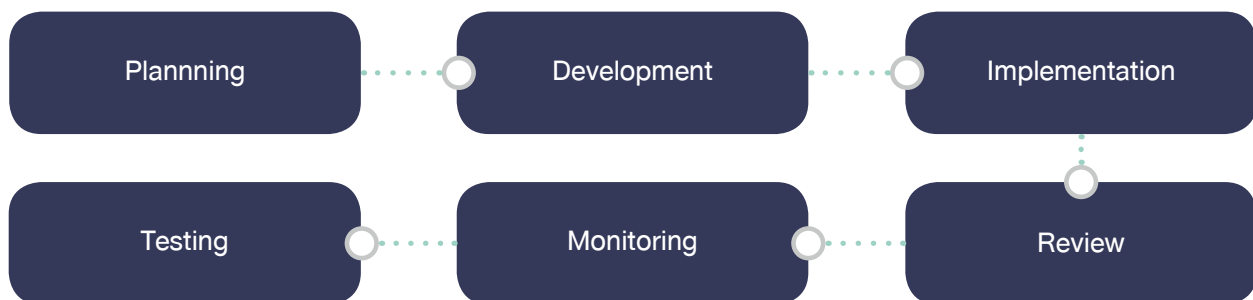
### 6. Building Risk Culture

Thai Wah's risk management planning includes communication and awareness building on risk management among the Board of Directors, executives, and all employees, as well as workers at the operation level, to promote risk management as the Company's core value. In 2020, the Company organized trainings for plant managers and heads of divisions and units to create common understanding on the importance of risk management planning and organization-wide risk assessment. Each year, we plan to provide knowledge and create understanding among employees of all levels on implementation of risk management approaches. Priority is placed on choosing appropriate strategies that respond to the Company's vision, missions, and operation in order to achieve the goals and objectives, and in accordance with national or organizational strategies. Risk management performance will be designated as KPIs of the organization or a particular unit, or as one of the criteria for the development or approval of new investments.

In addition, the Risk Management Committee has established key risk indicators (KRIs) in 2021 which covered dealing with the cassava mosaic disease (CMD), flood situations in Thailand and the COVID-19 outbreak. The Risk Management Department set objectives and risk factors which would cause the Company not to be able to achieve the objectives for use in assessing the key risks of each department. The Risk Management Department has also established the Business Continuity Management (BCP Team) to prepare and review the business continuity plan (BCP) covering both the head office and factories in which the head office and factories assigned teams with roles and responsibilities for each department,



organization structure, scope and responsibilities for relevant personnel from management to staff at different levels of the departments to have action plans to be ready for the crisis. This is to have an up-to-date crisis management plan that can be applied in the event of a disruption of operations. A crisis drill plan would be conducted at least once a year to help departments exercise crisis preparations so that once the crisis happens, it will not affect the businesses and stakeholders of the Company and also to monitor the performance of the BCP team which would be summarized and reported to the Board of Directors.



## Emerging Risk

The Company has taken into account emerging risk factors that may contribute to significant impacts on business operations over the next three to five years by analyzing potential risks that can affect businesses and operations in order to prepare to deal with those risks. The new risks in 2021 were as follows:

1. Expansion of the global supply chain
2. Climate change
3. New technology products
4. Raw material shortage
5. Social mobility
6. Political risk that affects policies and regulations
7. Volatility in the financial markets
8. Network offenses and data theft
9. Natural disasters

The Company focuses on emerging risk factors that may affect the business in the short term, medium term and long term. To do so, the Company has continuously monitored the situation and trends of external factors, review the concept and framework of risk management operations regularly, and also monitors key current global issues that may affect Thai Wah to be considered as emerging risks. The Company has internal risk management and control in place to manage risks to be within the acceptable limit. This is a warning system that can be used to take proactive measures to prevent risks that will occur ahead and to build opportunities for business growth, and this helps the organization to operate continuously and sustainably in the long term.

Besides, the Company has established measures to deal with risks effectively (Mitigations & Opportunities) and continuously monitor various emerging risks in the medium to long term to reduce the impact of emerging risk factors and also to help the company to achieve goals according to the strategies and directions as defined as follows.

#### Risk management plans to be considered in 2022



1. Cybersecurity
2. Data Privacy (PDPA)
3. Social and Environment sustainability (Safety, Health and Environment)
4. Climate Change
5. Fluctuation of Commodity price

## Cybersecurity and Data Protection System

The COVID-19 epidemic has led to the increasing use of digital platforms. Thai Wah has taken into account benefits and risks of using the platforms for communication, participation and product offerings to our customers and other stakeholders, as it can be seen from the fact that we have set “Cybersecurity” and “data protection and privacy” as one of the major risk factors. The Company is committed to protecting its cybersecurity system, personal data and customer privacy with respect to the rights to access customer information in order to comply with relevant regulations and laws.

To keep personal data secure and confidential in accordance with provisions of the Personal Data Protection Act, B.E. 2562 (2019) (“Personal Data Protection Act”), the Board of Directors has established a privacy policy by appointing a Data Protection Officer (DPO) to work with the management team to regulate compliance with such law.

In 2021, the Company did not receive complaints on the cybersecurity system and data privacy. In case of receiving a complaint, it will be verified and managed in accordance with the Company’s privacy policy. In addition, Thai Wah is committed to marketing and communicating appropriately, and respecting the privacy of customers. Also, Thai Wah publishes “Privacy Notice Internal” on the Company’s website which describes policies and practices regarding all personal information of employees, business partners, vendors, third parties or any other person under the Company’s control covering a definition of types of information the Company collects from such individuals, how data is used, marketing communications. Those individuals reserve the rights to opt-out of receiving information at any time. Besides, Thai Wah plans to conduct a risk analysis that the system may be attacked by proceeding vulnerability assessment and penetration test 1-2 times a year.



Establish the PDPA policy, procedures and guidelines



Manage the personal data



Ensure that all stakeholders understand the Personal data and determine the required information for personal data



Follow up and check various actions relating to personal information;



Determine the rights and methods for accessing to the owner's information



Risk assessment of personal data;



Seek consent from the data owner (Consent Management)



Appoint a Data Protection Officer (DPO)

Moreover, the Company has a training plan for employees during February until March 2022. The training will be divided into 2 formats.

1. Training by PWC to all departments online via MS Team and
2. Training for operational specific units by personnel department and related departments

## Types of personal data

### General personal data

Any personal data that is not sensitive personal data

Example: first and last name, date of birth, age, gender, nationality, address, email, phone number, educational information, financial information, etc.

### Sensitive personal data

Any personal data that requires a higher level of protection, because the nature of such information may pose a significant risk to fundamental rights and freedoms

Example: race, religion, health information, genetic information, biological information, political opinions, etc.

# Anti – Corruption

## Anti – Corruption Policy

The guideline for Thai Wah Public Company Limited’s business operation has been established under the principle of good governance, while adhering to social and environmental responsibility, and anti-graft and corruption. Following our participation in the Private Sector Collective Action Coalition Against Corruption (CAC) on February 21, 2017, the Company has intensively elevated our anti-corruption standard, focusing on transparency and accountability of the operational system. Information technology has been developed in order to better communicate with the employees on the Company policies, to build their awareness, and for efficient data recording.



**TWPC**  
**Anti-Corruption**  
ไทยร่วมต่อต้านคอร์รัปชัน

## E-Learning TWPC Anti–Corruption The Series System

We believe that promoting employees’ awareness on organizational transparency is the key to creating sustainable core value. Thai Wah sets an anti-corruption policy as an operational guideline and clear compliance approach for the Board, executives, and all the employees, to ensure efficiency, integrity, transparency, and fairness of our anti-corruption endeavor, as well as to achieve our goals. Anti-Corruption curriculum has been developed in the form of a VDO animation via the e-learning system to create common understanding among the Board, executives, and all the employees on Thai Wah’s anti-corruption policy and guideline, and for them to realize true definition of “corruption”, learn about related laws, and how to prevent corruption, as well as to be aware of Thailand’s current corruption situation. The VDO Animation, called “Thai Wah Anti-Corruption the Series”, is aimed to reach out to employees of all levels, through animated characters that represent the Company’s anti-corruption endeavor. These characters are:

### Mr.T

representing Thai Wah, has the characteristics of modernity, loyalty to the organization, and strong belief for righteousness and transparency.









### Pi Anti

representing integrity and righteousness, is a character developed from the gesture of ‘thumbs up’, which means ‘excellent’. Its color, blue, is the symbol of transparency.



TWPC Anti-Corruption The Series will consist of 6 topics as follows

-  What's corruption ?
-  Fraud prevention and related laws
-  The corruption situation in Thailand
-  Thai Wah and Anti-Corruption Policy
-  Practices guidelines for Thai Wah Employees
-  Adjudication and accepting gift policy



In 2021, the Company provides anti-corruption training and test for the board of directors, management, and employee, including newcomer as follows:

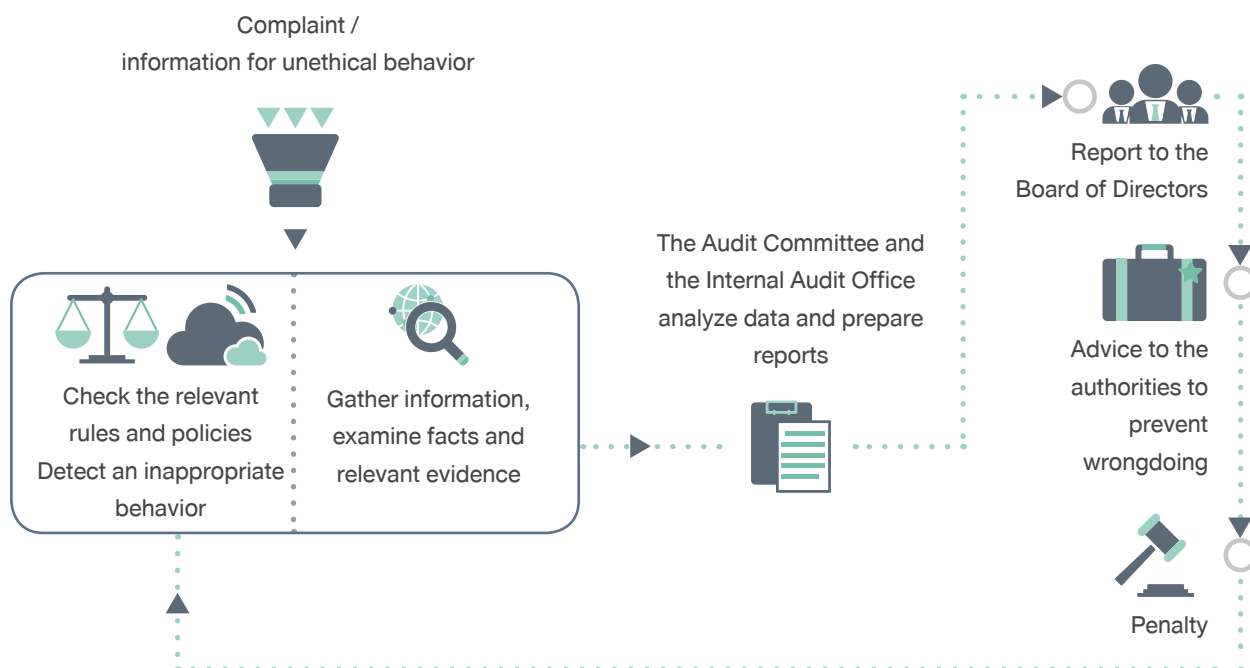
| Employee Level | Person     | Percentage |
|----------------|------------|------------|
| Directors      | -          | -          |
| Management     | 11         | 100        |
| Employee       | 367        | 96         |
| <b>Total</b>   | <b>378</b> | <b>96</b>  |

## Complaint Management

In addition, Thai Wah has initiated channels for whistleblowers and filing of grievances of any kind of behavior that is deemed inappropriate and unethical, as well as for receiving feedbacks and suggestions from the employees. The Company provides fair treatment and protection to employees who deny involvement in any misconduct, and those who report any corrupt act associated with the Company. In 2021, Thai Wah received 3 cases of grievances related to fraudulent act and operation via different channels that were sent to the internal audit department and risk management committee. From the investigations, the misconducts did not have any significant impact on Thai Wah's reputation nor profits, and wrongdoers have already been taken disciplinary actions in accordance with the Company's regulations.

| Type  | Case |
|---|------|
| Corruption  | -    |
| Action against the Company's regulations or as inappropriate behaviors                              | 3    |
| Proportion of cases that underwent disciplinary action in accordance with the Company's regulations | -    |

## Processes of Ethical Considerations in Business



### Whistle Blowing Channel

#### Board of Directors

Email : [bod@thaiwah.com](mailto:bod@thaiwah.com)  
 Facsimile : 0-2285-0268  
 Post : **Board of Directors**  
 Thai Wah Public Company Limited  
 Thai Wah Tower 1, 6<sup>th</sup> Floor 21/11, 21/13  
 South Sathorn Road, Tungmahamek, Sathorn, Bangkok 10120

#### Audit and Risk Committee

Email : [arc@thaiwah.com](mailto:arc@thaiwah.com)  
 Facsimile : 0-2285-0268  
 Post : **Audit and Risk Committee**  
 Thai Wah Public Company Limited  
 Thai Wah Tower 1, 6<sup>th</sup> Floor 21/11, 21/13  
 South Sathorn Road, Tungmahamek, Sathorn, Bangkok 10120

#### Internal Audit

Email : [ia@thaiwah.com](mailto:ia@thaiwah.com)  
 Facsimile : 0-2285-0268  
 Post : **Internal Audit**  
 Thai Wah Public Company Limited  
 Thai Wah Tower 1, 6<sup>th</sup> Floor 21/11, 21/13  
 South Sathorn Road, Tungmahamek, Sathorn, Bangkok 10120

## Risks from the Company's Partners

Effective supply chain management is essential in driving the organization towards sustainable development. Due to risks occurring throughout the supply chain might affect the continuity of the Company's business operations, such as raw material shortages, the Company has assessed risks arising from trading partners which covers economic, social and environmental aspects, in order to identify potential risks and to prevent them, and to work with the partners to achieve sustainability.

- A list of significant partners has been compiled for analysis and risk assessment on social and/or environmental aspects, such as human rights, worker and labor care, business ethics, compliances with environment-related laws, etc.
- Annual performances of key partners have been summarized. The Company, through our internal units, also has a policy to continuously enhance capacity of key partners in various areas.
- Development of fair procurement procedure under which all the business partners are treated equally, and selection of products and services certified under environmental standards.
- Support for the use of products that utilize renewable and non-polluting resources, such as, the green-label products, or products under waste reduction program, etc.
- All business partners are informed of the Company's anti-corruption policy

## Sustainable Procurement Policy

Thai Wah Company establishes a procurement policy under the socially responsible business strategy by incorporating economic, social and environmental issues, as well as promotion of the use of products and services environmental-friendly and safe for workers, and conformance of partner's operations with the Company's Supplier Code of Conduct as criteria for selecting and monitoring trading partners. Sustainable procurement policy includes risk assessment of partners to reduce the impact to the organization and environment, and benefit creation for the society and economy.

### Supplier Code of Conduct

#### Environment



- Comply with environmental, health and safety requirements
- Promote development of safety and environment
- Take into account quality and safety of the products
- Use resources efficiently. reduce waste to be released to the environment
- Reduce negative impacts on biodiversity, climate change and water shortage

#### Society



- Respect human rights, counter forced labor and child labor
- Allow freedom of association and rights to collective bargaining
- Conform to laws regarding to minimum wage, working hours, and guarantee wage compensation
- Free from discrimination
- Be open to reporting unlawful practices
- Protect life and health of employees and surrounding communities

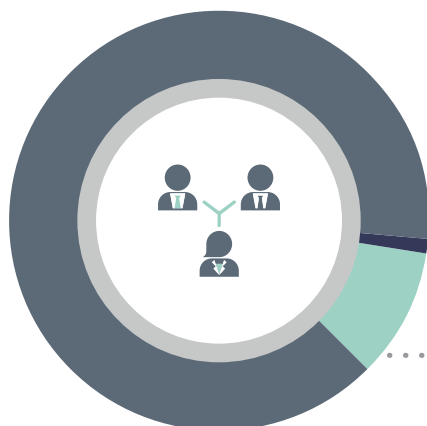
## Governance



- Conduct business with integrity, ethics and honesty
- Uphold applicable laws and incoterms
- Prevent all forms of corruption
- Refrain from accepting gifts
- Respect privacy and confidentiality of information

The Company focuses on procurement with domestic partners, including sourcing raw materials from farmers to support the farmers who grow cassava locally and to help shorten transportation time of raw materials. In 2021, the Company did local sourcing from local farmers which accounted for 53 percent of the total domestic procurement budget. And from the operations under the Green Procurement Policy, the procurement of products and services that were environmentally friendly accounted for 16 percent of the total domestic procurement budget. All procurements are divided into cassava starch and food businesses as follows:

|  | 2020 | 2021 | Target 2022 | 3-Year Target |
|--|------|------|-------------|---------------|
| Proportion of procurement of local suppliers (local sourcing)                                | 51   | 53   | 55          | 60            |
| Proportion of procurement of environmentally friendly products and services (Tapioca starch) | 1    | 3    | 5           | 10            |
| Proportion of procurement of environmentally friendly products and services (Food)           | 10   | 13   | 15          | 30            |



3%

Environmental-Friendly Partners in Starch Business

13%

Environmental-Friendly Partners in Food Business



### Risk Management Plans to be Considered in 2022

The Company is in the process of developing a process for managing business partners of the organization for Sustainable Supply Chain so that all businesses have the same practice guidelines. by incorporating environmental, social and governance issues which covers various operations as follows:

- Supplier Screening
- Supplier Assessment and Identification
- Performance Assessment
- Supplier Retention
- Monitoring
- Reporting

In addition, as regards the Anti-corruption policy, the Company has clarified the policy to business partners since 2018 and has continued to clarify business partners every year.



## Farmer Development

Farmers are an important part in driving the global economy, the originator of the 4 factors of mankind: food, clothing, housing and medicine. At present, Thailand is considered one of the producers of the agricultural commodities which are the most important exports in Southeast Asia and the key to sustainable economic development.

Thai Wah is a manufacturer and exporter of flour and starchy food products. Farmers are the main suppliers of the raw materials. We are committed to improving lives throughout the food production from upstream to the downstream supply chain. With the intention to create value together with innovation and sustainability for the continuity of food production to meet the needs of consumers, professional raw materials management is therefore required. The promotion of good agriculture is an important factor.

Throughout the years, the Company has focused on the development of farmers as a policy and clearly set a goal to provide farmers with the knowledge and access to resources through modern and smart agricultural technology and innovation in the present day. In addition, Thai Wah has applied various technologies and innovations as an agricultural tool to help find solutions for farmers and help develop the potential of the Thai agricultural sector to reach better standards. In 2021, Thai Wah adopted the principles of TWPC Sustainable Agriculture and accepted international standards as a direction of promotion for the Thai Wah Farmer Network in order to support farmers to cultivate in a more sustainable manner according to international principles. It covers 3 dimensions of the country: society, economy and environment. Therefore, customers and consumers can be assured of quality and safety at the beginning of the raw materials procurement, as well as production and handling to consumers.

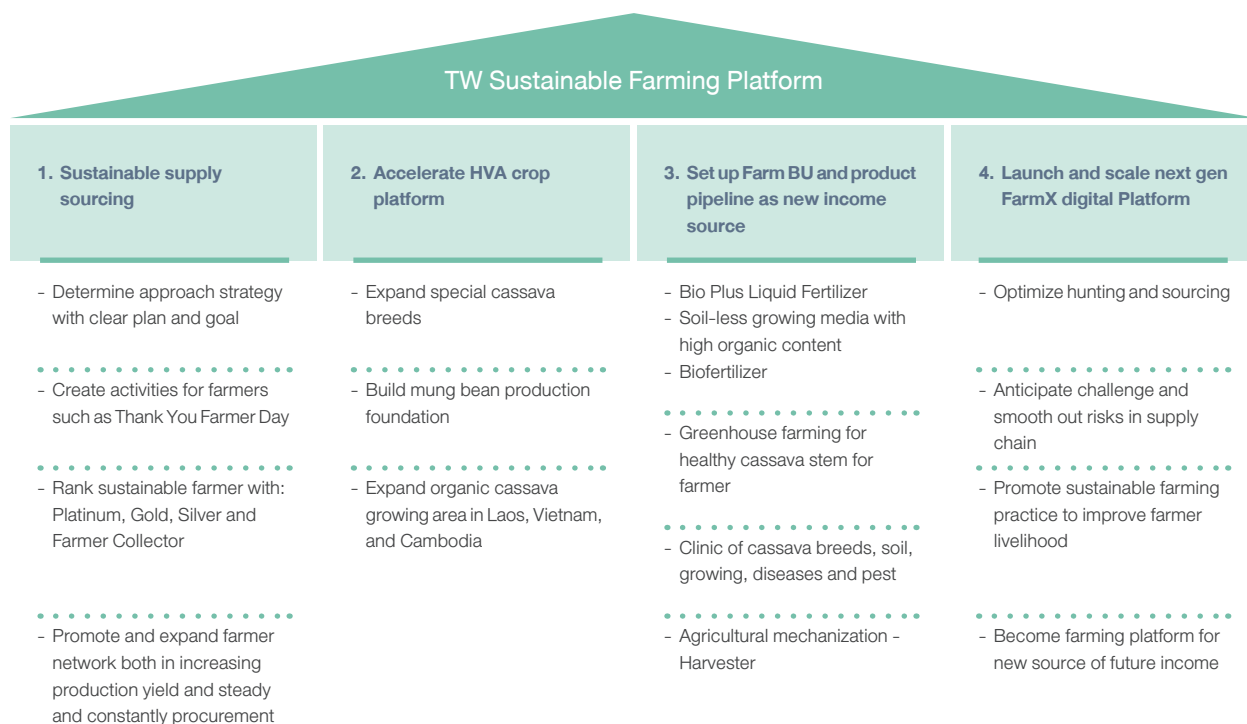
Despite the continuous business growth and the wider network of the supply chain, Thai Wah remains committed and fully developed to encourage farmers to produce the agricultural products responsibly by focusing on promoting the participation of business partners through cooperation with network partners in various sectors such as the government, private sector, community and the NGOs, etc.

## **Sustainable Development and Management of Supply Chain**

Amidst the rapidly changing business environment, economic challenges, increase in population, and limitation of natural resources, which have significantly affected the quantity and quality of agro products, Thai Wah is well aware of the need to manage and develop a supply chain in a sustainable manner as we believe that supply chain is the key to business efficiency and success. The focus has been made in all related procedures, from the supply of raw materials and production processes to sales of products in a responsible and environmental-friendly manner. The Company also strives to conserve and rehabilitate watershed areas in a bid to promote natural resource security that is fundamental to people's livelihood, and maintain balance and sustainability of our business operation, as well as to develop innovations and technologies to enhance the capacity of agricultural and associated food supply chains.



## Strategic Plan and Model towards Agricultural Sustainability



## Sustainable Agriculture





# TWPC Sustainable Agriculture

Nowadays, the world's trends are changing all the time at a high speed. A wide variety of agricultural products around the world have evolved into sustainable agriculture. As in Thailand, sugar cane and oil palm business, as well as fishery and ready-to-eat food, have been mainly brought up as important issues that are able to affect the business potential both in production and marketing, including trade restrictions that banned exports to other countries where highly strict environmental regulations are applied.



For many years, Thai Wah has been highly aware of its social and community responsibility. Thus, there has been an action for sustainable agriculture through cooperation with various organizations recognized and supported by global constituents. Being a developer of terms of use as a guide in sustainable agriculture (FSA), Thai Wah has used such terms of use as a direction in the implementation of sustainable development projects for Thai Wah farmers by providing them with the knowledge and technology in order to develop their own areas and communities and building a business foundation for the new generation of farmers who want to return to their homeland for development. It is considered a pro-active approach to address these needs at the national level such as global warming, climate change and various current disasters of the world. It covers the acceleration of the enforcement of many related laws such as Forest Invasions, No Child Labor or Forced Labor and prohibition of the use of highly hazardous agrochemicals, etc.

To raise the standards of Thai agriculture to be accepted by worldwide consumers, Thai Wah has collaborated with many partners in driving agricultural sustainability: enhancing knowledge and technology for farmers to develop their lands and communities in accordance with international principles and laying a business foundation for the new generation of farmers who want to return to develop their homeland. TWPC Sustainable Agriculture Project is implemented by covering 3 dimensions of issues: society, economy and environment.

## Thai Wah Sustainable Agriculture Collaboration



- **Farmers' Life Improvement Project Through Science, in collaboration with National Science and Technology Development Agency (NSTDA)**

In order to improve the quality of farmer's lives including helping reduce environmental impact and the risk of agricultural products shortage in the future, Thai Wah is one of the private sector companies that have cooperated with NSTDA, government network, educational institutions and civil society. In 2021, the Thung Kula Ronghai area was chosen as the target area (Area base), owned by the governor of 5 provinces, namely Surin, Sisaket, Maha Sarakham, Roi Et and Yasothorn. This project has incorporated all 3 elements of sustainability into an action plan. It aims to find approaches to drive the improvement of the quality of farmer's lives, enhance career and income, alleviate inequality issues and lead to sustainable poverty amelioration through the use of scientific knowledge technology and innovation transfer as a driving tool and integrated work for better productivity. Especially promoting the cultivation of mung beans of Thai Wah, it can be a crop generating income for each household. Normally, after 4 months of farming, the area will be abandoned for another 8 months. Therefore, the mung bean is a plant that can improve the area in order to make more use of the land. The Company encourages farmers to sow the seeds immediately after the farmers have harvested the rice.

In 2021, more than 500 farmers participated in the project, with cultivation area totaling over 3,000 hectares, resulting in farmers earning an additional 2,200 baht per rai from farming alone. In addition, mung bean plants help nourish the soil to be more fertile, reduce the use of chemical fertilizers and save costs sustainably. It is a project that received a lot of attention in the initial stage. Thai Wah plans to expand to tapioca in 2022, with the total area of cultivation at 10,000 rai.

Under the promotion, agricultural scientists at the Thai Wah Company have embedded knowledge on sustainability and encouraged to find cost reduction factors, created groups that help each other in the knowledge exchange as well as new innovations applied. These lay the foundation for farmers to ultimately arrive at sustainability principles.



On November 8-12, 2021, the executives and related teams of the Company traveled to the Thung Kula Ronghai area in each province for joint discussions with the NSTDA, government sector network, institutions and civil society in order to find an approach to drive the improvement in the quality of farmers' lives in the Thung Kula Ronghai area.

The program has a duration of 3 years and the following indicators:

1. Upgrade the targeted poor in the economic dimension of Thung Kula Ronghai area at least 50 percent to have their incomes crossing the poverty line (with more than 38,000 baht per person per year)
2. Approximately 20,000 farmers in the Thung Kula Ronghai area have access to technology/begin to enhance the production efficiency of local produce.

- **The Tapioca Farmer Community Education, Tapioca Production Technology in Non-degree Course Project, Kalasin University**

The objective of the project is for tapioca farmers in Kalasin province, which consists of 4 districts, namely Don Chan, Nong Krungsri, Namon and Samchai, where 80 farmers participate in the class as students. The courses cover new innovative technologies, varieties, suitable cultivation method, water system, fertilization, pest control, market access and demand and supply principle. The university with Thai Wah Company creates the courses for the farmers and students to comprehend the subjects at upstream and downstream production, as well as the sustainability philosophy of tapioca cultivation.

- **Plang Yai Cassava Community Enterprise Establishment Project at Non-Sa-at District for Sustainable Agriculture**

For the large community enterprise for tapioca at Non-Sa-at District, 16 committee members in the enterprise had a meeting with a resolution to join Thai Wah Company's sustainable agriculture project. The working plan initiated on tapioca production standards, refined agriculture, grouping for strength and accounting. The staff from both agricultural academics and marketing department are mentors. There is also a plan to cover all 3 dimensions of sustainability in a concrete manner.

- Sustainability Project Under the Cooperation of the Office of the Agricultural Council of Tak Province

Poverty, low production prices, drought, and land of farmers in 9 districts of Tak province were brought up by the Office. Farmers affected by these issues gathered to find solutions and raised the sustainable quality of life for farmers in Tak Province, which is the poorest area of the country after Mae Hong Son Province. The action began in 2021 by listening to the problems, limitations, and opportunities of farmers in different areas of Tak Province. Therefore, there was an initiation with the support that could be done immediately such as the tapioca planting for price insurance project, water system for agriculture, fertilizer promotion project for soil improvement and mung beans planting with price insurance, etc.



### Empowering Young Farmers for A New Generation

Changes in agriculture at the youth level will also affect the level of national security in the future as the young people are the main force of the country in driving, developing, creating and transforming strong and well-being communities, able to adapt under the changing world. Therefore, Thai Wah has placed an importance on supporting the development and promotion of youth agricultural careers, beginning with embedding good consciousness in farming, creating food sources and key sources of life energy. It is especially the creation of an attitude for the young to love their homeland and community as a driving force for the development of the local and national agricultural sector in the future.



Agricultural promotion for the young people is to create an attitude base for agriculture in the right approach by learning and following the Philosophy of Sufficiency Economy in integrated farming, safe agriculture and organic agriculture. It also supports the young people to have a good quality of life, linking them to the community by creating a strong and self-reliant community. It is also the cultivation of consciousness, providing the new generation a better understanding of agriculture with an inspiration for farming and economic stability in the community and society. These can affect the security of the nation and in accordance with the government's policy guidelines and the national economic and social development plan.

Currently, none of the organization can work alone on sustainability. It must arise from cooperation among the various sectors to make more positive impact on the community faster and reduce risks in future business operations (License to Operate). It is very crucial that the private and public sectors work together to drive the development of new innovations with various social sectors like Thai Wah. We are working with government agencies, business alliances, research institution, leading universities in Thailand in creating economic, social and environment as follows:

#### Objective

1. Encourage the new generation of farmers to have a better understanding of agriculture, able to continue to develop knowledge in the community
2. Improve the image of agriculture for children and the youth, provide knowledge of mixed plant cultivation and include the use of various agricultural technologies

#### • Thai Wah Sustainable Agriculture Project (Model Farm at School)

This project aims to encourage the new generation to have and access knowledge in integrated farming, safe agriculture and organic agriculture, able to be further developed as a model for farmers in the community for planting area development and bringing potential farmers back to the community. The approach is to apply the knowledge learned from the project and agricultural technology to develop products, coupled with the use of smart farming technology (Smart Farm). It begins with the youth in schools and expands to families and communities, respectively, in order to strengthen the agricultural industry of the country. Thai Wah is ready to provide funding throughout the project and has selected a secondary school in Mae Sot District, Tak Province as a pilot community in 2021.

Due to the situation of the COVID-19, students are unable to take care of agricultural areas continuously. Therefore, the Company has a plan to work with experts to develop better agricultural plots and prepare to expand the project to other areas.

- **Cooperation to Transfer and Exchange Knowledge on Sustainable Agriculture**

Thai Wah has partnered with leading universities in the field of agriculture in Thailand such as Kalasin University, Faculty of Geoinformatics and the GIS Innovation Center, Burapha University, Faculty of GSSE, Thammasat University, School of Global Studies, Thammasat University (SGS) as speakers in sharing knowledge and training on agriculture: harvesting, innovative application of spatial technology, farm management robot drone and tapioca cultivation for dissemination and further development to farmers in the area. In addition, the Company has given students the opportunity to learn how to work in a realistic manner in order to exchange knowledge and skill from different perspectives.

In addition, Thai Wah has developed a platform called “SD Journey by Thai Wah”, the path of sustainable development. The purpose is to tell a story of Thai Wah’s journey towards sustainability, including the development path of working with farmers for more than 75 years that Thai Wah has been committed to be a part of supporting the Thai agricultural sector to be strong with sustainable growth together. It is another knowledge base for transfer and dissemination to the public. The content we would like to share with everyone through this page are stories of the way of life of the new generation of farmers who returned to farming in their hometowns, agricultural technology that helps increase productivity, health, nutrition and natural resources awareness. We let everyone participate in this journey.



**“ At Thai Wah, we want everyone to move towards sustainability together.”**

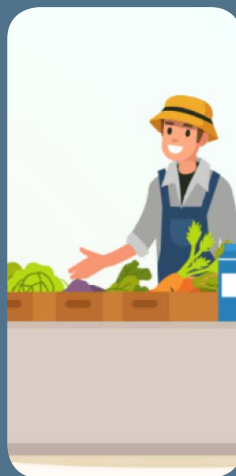
**Thai Wah supports Thai farmers towards “Sustainability”**



Agri-Tech



Medd-Paan-Kla



Healthy Food



Work-Life Balance



Save Earth

- **New Generation Preparation Project for Homeland Return: Driving the Economy Through Community Business (Roots Incubation Program)**

Today, more people choose to migrate to work in the city for more income and better quality of life. However, data from the World Cities Report 2020 by UN-Habitat reveals that Thailand ranked 3rd among the most urbanized countries. There are 35.7 million urban dwellers, or 51.4 percent of the country's total population and there will be a trend of continuously high rates. This is considered an important factor that causes problems such as the increasing inequality of people in society, infrastructure shortage and environmental issues.

Therefore, in order to find solutions for the issues in urban society and develop communities, Thai Wah has supported the Roots Incubation Program to provide opportunities for the new generation, who feel whole-hearted for their homeland and want to make a change, come and learn from real business experience. The Company is ready to support the development of business ideas that will help drive the dream come true. In the project, there are experts who share their experience and advice in various fields to help strengthen the creativity of each participating team and further develop knowledge by taking into account the impact on society and basing on sustainability through 5 topics: 1. Discovering Yourself – understanding oneself from the inside before changing the outside world 2. Business Building – building business ideas with understanding and focusing on values 3. Creating Impact – seeing the impact on society and environment with all-around perspectives 4. Branding & Digital Marketing – practicing communicating ideas to the target audience with satisfaction and 5. Community Leadership - heading towards leadership that will make the homeland better with our hands.

Roots Incubation Program has an intention to design and implement projects in order to prepare the new generation to be able to bring the knowledge, skill and experience gained for project development or business establishment at home as one has dreamed of.





- Where Profits Meets Purpose in Social Enterprise Thailand Forum 2021

The Company joined with the Social Enterprise Thailand Association (SE Thailand) in the Social Enterprise Thailand Forum 2021 under the theme “Where Profits Meet Purpose” in the form of an online seminar. This purpose of this forum was to invite leaders from international organizations, government agencies, the private sector and social businesses, who wanted to drive social change together, come to talk and exchange activities that promoted social entrepreneurship and social strategy adjustment of business organizations. Experience, challenges and business opportunities that can make real changes could be shared and business problems were discussed together in order to gain success.

In this time, the Company was honored by various agencies involved, including NSTDA, Governor of Sisaket Province, Rajamangala University of Technology Isan and representatives of farmers from the National Farmers Council, who participated as speakers at the said event about the topic “Sustainable Agriculture for a Better Life.”





## Coping with Climate Change and Disease Outbreak

Climate change has an inevitably impact on every business sector in an unpredictable way, the Company, thus, focuses on promoting resilience to mitigate risks that may impact our security for sourcing of agricultural raw materials and production process. Thai Wah has established both short-term, medium-term, and long-term strategic management plans to enhance resilience to the climate change, i.e., research and development on new durable varieties and raw material substitutes, and identification of additional raw material sources, etc., to diversify risks related to climate change and the outbreak of diseases, which may impact current sources of raw materials.

Mr. Umnat Sukprasongphol, Managing Director of Starch Business attend a tapioca trade information exchange event situation of tapioca and starch production trade trends in cassava production in Thailand and neighboring countries, including the situation of cassava mosaic disease. So that the members of the association acknowledge the current situation of cassava trade and future trends. The meeting was held at the Thai Tapioca Trade Association (TTTA) every quarter.

- **Thai Wah Cassava Research and Multiplication Program**

Greenhouse farming project for urgent production of cassava seedlings has been implemented to tackle the spread of cassava mosaic disease (CMD) in Thailand, Vietnam, and Cambodia, which has occurred since 2018, seriously damaged cassava farm and cassava industry in the country. An inadequacy of disease-free seedlings for cultivation, caused a significant reduction in productivity. Thai Wah, in collaboration with the Thai Tapioca Development Institute (TTDI), implemented the project to provide our farmer-members, with technology and knowhow for urgent production of cassava seedlings.

In 2021, there were 613,000 plants of x20 seedlings, which were bred and distributed to the farmers in the network. The number was less than 2020 due to the limitations of COVID-19. However, we have 539,000 more farming areas for cassava from the mentioned seedlings than in 2020. In 2022, the company also aims to construct 12 open-air greenhouses near the factories all over the country, covering both Vietnam and Cambodia. As a result, this project can help reduce the cost of cultivation for farmers from the purchase of and seedlings, no less than 600-1,000 baht per rai. This is to ensure sufficiency of disease-free seedlings for farmers during the next cassava planting season.

Thai Wah also strives to help generate incomes and uplift quality of life of the farmers by propagating new variety of waxy cassavas, of which its agronomic traits are higher quality and higher yield, to increase crop values. This is also in line with the Company's strategy to establish Thailand's role in the global tapioca starch industry through increase of economic values and exportation.

|  | 2019    | 2020    | 2021    | Target 2022 |
|--|---------|---------|---------|-------------|
| Number of Greenhouse farming (place)               | 3       | 10      | 10      | 12          |
| Production of disease-free X20 per year (seedling) | 174,454 | 362,151 | 613,000 | 750,000     |

X20 multiplication of CMD-free cassavas is an easy process. Twenty disease-free seedlings will grow from one stem in a month, instead of 4-5 seedlings per stem as before.



## Responsible Supply Procurement

From the company's strategies for sustainable agriculture, effective materials sourcing could help smoothen the business operations continuously. Moreover, materials sourcing with responsibility could help the business grow sustainably together with the farmers and communities. The company has indicated the strategic guidelines for materials management, such as exploring the major materials sources of production of the company, in order to help in analyzing the materials management for the factories to make it sufficient for both present and future production. Apart from agricultural materials sourcing, which is our main material, we also realize the essence of materials management of other types, including packaging, warehouse and transportation.

The company is determined to support the communities in the long term by the innovation of supporting sustainable communities. The initiative for our agricultural communities is to build the "Thai Wah Farmer Network," which is the place to present the knowledge about modern agriculture and agricultural technology, such as scalable agriculture and the best solution for smart farms in the region by Thai Wah, to the farmers. The research and collaboration to develop the stated knowledge and technology are for the purposes of supporting people's health; improving the global overall supply chain to respond to the future needs; and enhancing farmers' living. Key operation plans include:

### THAI WAH FARMER NETWORK



- Secure sourcing supply
- Transfer knowledge & Technology to farmers
- Build strong regional Farm network

### AG TECHNOLOGY



- Co-develop technology for precision farming
- Enhance analytics capability to predict yield, supply, and price

### SMART FARMING SOLUTIONS



- Farming solution package for farmers for multiple crops
- Service through financing, education, marketplace
- Innovate agricultural inputs to improve yield and promote regenerative agriculture

### ROOT STATIONS



- Get higher fresh roots at source
- Provide convenience for farmers
- Keep good relationships with farmers
- Fair price was calculated based on quality of starch content
- Cash card payment



## Thai Wah Farmer Network

Thai Wah valued farmers as business partners. We provide support and assistance to the farmers in a systematic manner through the adoption of modern technologies and useful agricultural-related knowhow, for them to grow and develop in accordance with the international standard. The Company believes that the mutual growth of business partners is a key to enable business stability. We give priority on knowledge transfer, together with sharing of experiences with our business partners. This is also to enhance production capacity and upgrade our agro products in a responsible manner, which will ultimately lead to the stability of agro-industry in the long run.

In 2021, the company adjusted the strategy to improve the effectiveness of cassava root stations management, from the previous 5 stations to the remaining 2 stations. The company had adjusted the plan supporting farmers to create groups and networks of strengthened farmers. The officers from the department of farmer support of the company together with Kalasin University, the local university, would be the assistants and advisors for the group, in order to strengthen the group to be effectively independent. During this year, there were 2 groups of farmers joining the sustainable development program with Thai Wah, which caused the company to collect more produce than in the previous year for 14% or 200,000 trees. The increasing proportion from the farmers in the network of major support was approximately 140,000 tons and from the collection of root stations, who were the alliances sending to the company every year, were approximately 60,000 tons. The Company also managed to enhance trust and maintain a good relationship with the farmers. Raw material buying has been conducted fairly with the fresh cassava roots being priced according to the amount of starch content, and the payment has been made through an electronic cash card system. Aside from the fact that the Company managed to reduce the cost of raw material, the root stations have made it more convenient for the farmers to sell their products and help reducing transportation costs and time.

The Company promotes knowledge and understanding of cassava planting techniques and correctly increases yield of cassava, as well as supports cassava seedlings with certified standards for farmers members of Thai Wah Farmer Network. In 2021, the company has organized training courses for Thai Wah members such as increasing productivity by improving soil, using certified seedlings and the use of modern machinery, the use of mobile applications to track the weather, and cultivation.

## Thai Wah Learning Center







## Thai Wah Thank You Farmer Day

Thai Wah treats our farmers as partners and as a long-term part of Thai Wah strategies and growth. Thai Wah is delighted to partner with the local communities and local farmers to see how we can collaborate together for the sustainable development in a long-term through “Thai Wah Thank You Farmer Day” to thanks all the farmers that always deliver cassava roots which is a raw material to our starch factory. The Company has paid dividends of profits from doing business back to farmers in quarterly Phimai district, Nakhon Ratchasima province, Muang district, Udonthani province, and Tha Khantho district, Kalasin province.

## AG Technology

Thai Wah took part in the development of precision agriculture, through which digital farming technologies, i.e., tools and devices (hardware/software), IT services (global positioning system, remote sensors, variable rate technology, etc.), and applications (measurement and assessment of weather condition, yields, and terrains, and waste management, etc.), have been applied in a bid to increase analysis efficiency, productivity, and yield quality which would lead to product competitiveness enhancement at the global level. In implementing precision agriculture, water, fertilizer, and pesticides have been input at the precise amount and accurate timing to maximize efficiency. It is a cropping practice that optimizes resources at the plot/greenhouse level. Overall, farmers who adopted precision agriculture in their cultivation were able to increase yields four times as much comparing to traditional farming.

## Smart Digital Agriculture

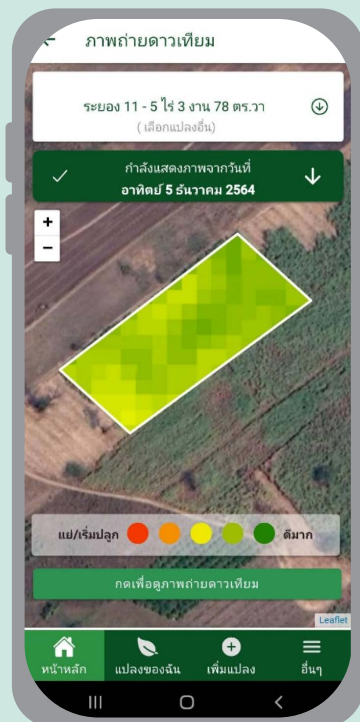
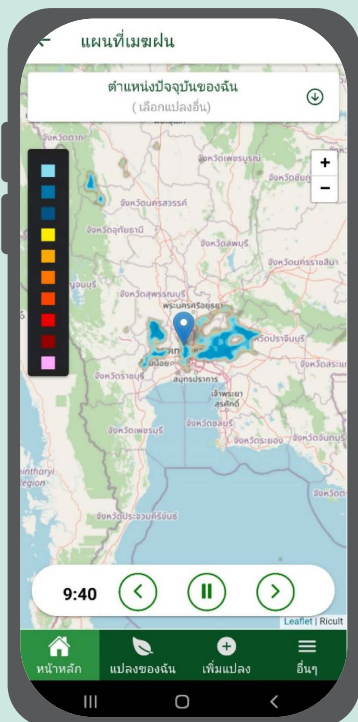
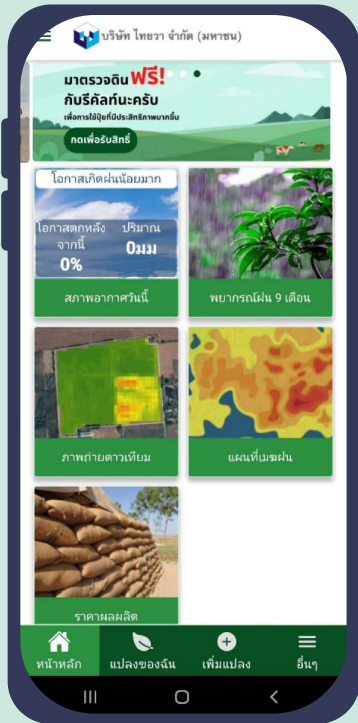
Thai Wah continues to recruit new farmer members via the digital platform, starting with Thailand, in order to promote digital platform services for farming. The Company also conducts platform update, especially in terms of data accuracy, and expand our services, such as personal loan and fund acquisition.

In 2021, farmer and cultivation database on Thai Wah's digital platform has regularly been updated, from which growth analysis system was developed based on the vegetation index and cultivated area survey. Satellite images with over 90% accuracy is also used for crop monitoring. The database has also been used to analyze and forecast daily/weekly/monthly rainfall, which could be conducted up to 9 months in advance. In addition, in 2021, analysis model for yield forecasting, productivity, and yield quality (% of starch content) with more than 75% accuracy than the 1st phase which continue being developed to reach 90% accuracy. The benefits gain from the model allow farmers to plan harvesting timeline for the best yield and price which is in line with the company's production plan.

In 2022, the Company places great importance on soil management and soil conservation for the sustainability of continuous cultivation of farmers. There is a plan to collect soil data into the platform in order to analyze and determine the soil management model for proper cultivation, as well as to create Crop Advisory to provide advice on cultivation, care and cultivation account into the platform.

All these digital platforms will contribute to the Company's planning for sustainable raw material sourcing. We also strive to help prepare Thai Wah farmers for technological changes and improve their decision making on tapioca cropping through the adoption of digital platforms to ensure efficiency and maximize effectiveness.

# Mobile Application



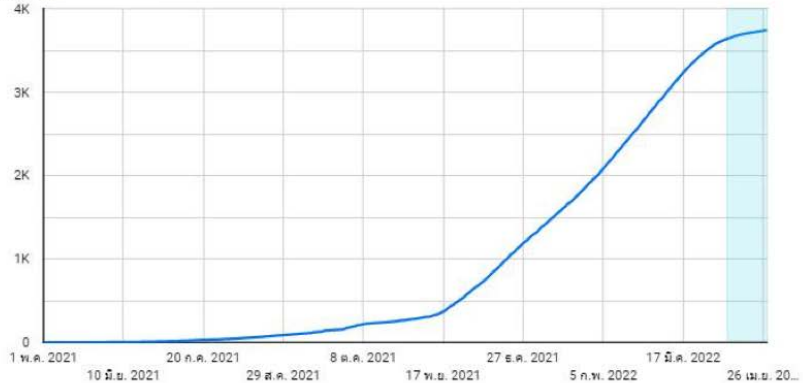


## การประเมินผลผลิตและช่วงเก็บเกี่ยว



ชื่อแปลง: แปลง 1  
ชนิดพืช: มันสำปะหลัง ระยะ 5  
พื้นที่: 6.5 ไร่

กิโลกรัม



| นิยาม 2564              | พยากรณ์อากาศ นิยาม 2565 | นิยาม 2564              | พยากรณ์อากาศ นิยาม 2565 |
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| ปริมาณสูงสุดที่คาดการณ์ | ปริมาณสูงสุดที่คาดการณ์ | ปริมาณสูงสุดที่คาดการณ์ | ปริมาณสูงสุดที่คาดการณ์ |
| 46 มม                   | 33 มม                   | 0 มม                    | 232 มม                  |
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### ช่วงเริ่มการเก็บเกี่ยวที่เหมาะสม

8 - 20 เมษายน พ.ศ. 2565 (ควรดูพยากรณ์ฝนอีกครั้งเมื่อใกล้ช่วงเก็บเกี่ยว)

### การประเมินปริมาณผลผลิต

|                     |              |               |           |
|---------------------|--------------|---------------|-----------|
| 16 มีนาคม พ.ศ. 2565 | 3.20 ตัน/ไร่ | ทั้งหมดประมาณ | 20.80 ตัน |
| 1 เมษายน พ.ศ. 2565  | 3.56 ตัน/ไร่ | ทั้งหมดประมาณ | 23.14 ตัน |
| 16 เมษายน พ.ศ. 2565 | 3.70 ตัน/ไร่ | ทั้งหมดประมาณ | 24.05 ตัน |

### หมายเหตุ

ข้อมูลการประเมิน ณ วันที่ 16 ธันวาคม พ.ศ. 2564

ข้อมูลการประเมินข้างต้นสามารถคลาดเคลื่อนได้ ทั้งนี้ขึ้นอยู่กับความขึ้นต่อกันของข้อมูลของเกษตรกร

|   | 2018  | 2019  | 2020   | 2021   | Target 2022 |
|---|-------|-------|--------|--------|-------------|
| Number of farmers membership on digital platforms (person)            | 121   | 501   | 1,242  | 7,500  | 50,000      |
| Total planting areas on digital platforms (rai)                       | 2,950 | 9,577 | 39,992 | 52,683 | 80,000      |
| Proportion of the total cultivated area of Thai Wah farmers (percent) | 2     | 6     | 25     | 35     | 50          |
| Monthly Active User (person)  | N/A   | N/A   | 70     | 84     | 400         |



- **Smart E-Money Card Project**

The Company also accepted advance registration for farmers to reserve cassava sales queues under the “Happy Farmers, Selling Faster and No Need to Wait” scheme. The mobile application system for queue reservation is being developed for the farmers to be assured that their products will be accepted and sold. The payment of cassava will be made via e-money card of the banks the Company enrolled with. The Company will also be able to plan for cassava supplies and collect cultivation-related data consistently.

Currently, e-money card system and advance registration system have been up and running for 2 years at our tapioca starch factories in Nakhon Ratchasima’s Pimai district, Kalasin’s Tha Khantho district, Rayong’s Ban Chang district, and Udon Thani’s Thai Nam Tapioca. In 2021, there were 1,953 active users e-money card users. Total amount of money the company paid was 821,715,698 baht. Thai Wah helped reduce the number of farmers under the poverty line<sup>1</sup> and supported farmers to have a better quality of life. The Company also plans to implement the scheme in other factories in the future as well.

|  | 2019*       | 2020*       | 2021*         |
|--|-------------|-------------|---------------|
| E-money card active users (person)               | 2,888       | 5,392       | 2,676         |
| Total amount of money paid by the company (baht) | 646,181,718 | 996,971,162 | 1,119,109,285 |
| Cassava weight (kg)                              | 287,642,457 | 470,330,343 | 459,962,753   |
| Farmers above poverty line (person)              | N/A         | N/A         | 1,650*        |

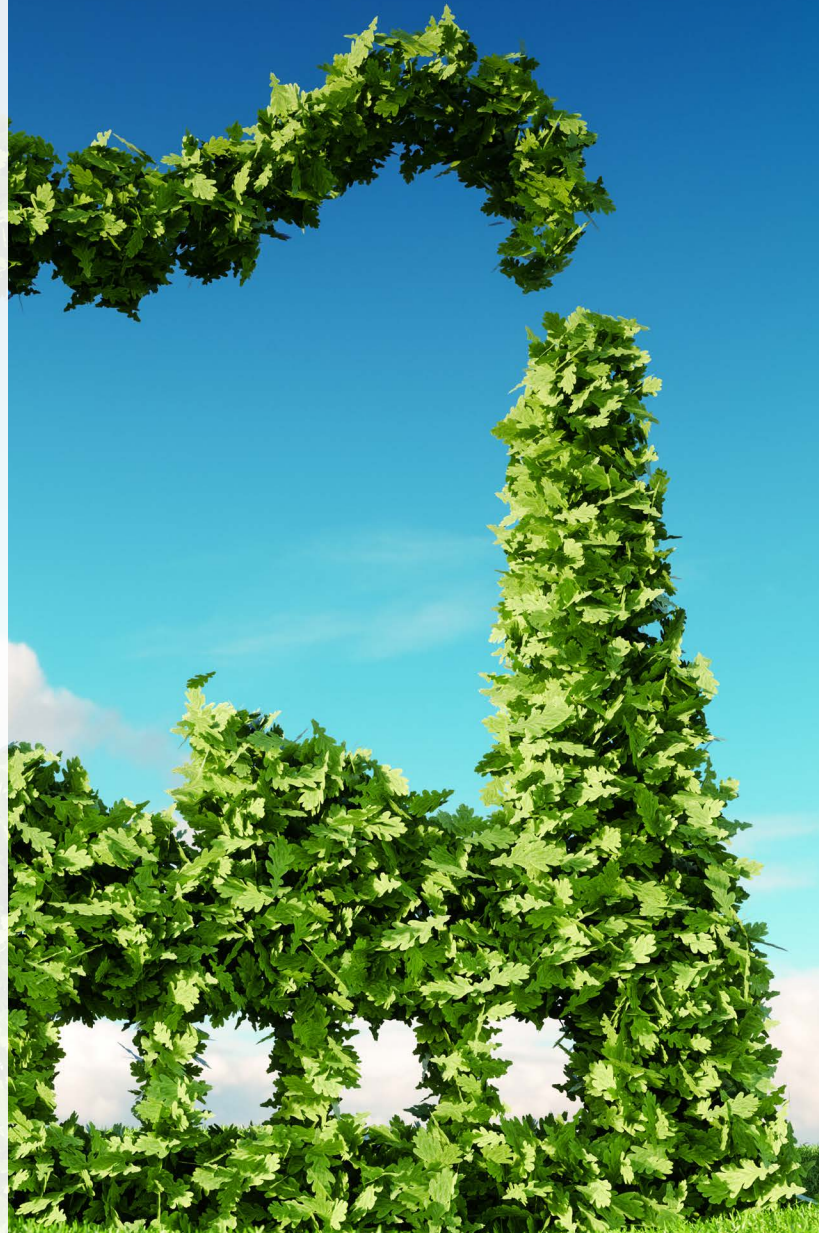
\* Poverty line in 2020 was 2,762 baht per person per month (Source: Office of the National Economic and Social Development Council)

\*\* Tapioca starch factories in Nakhon Ratchasima’s Pimai district, Kalasin’s Tha Khantho district, and Udon Thani’s Thai Nam Tapioca

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## Green Factory and Community

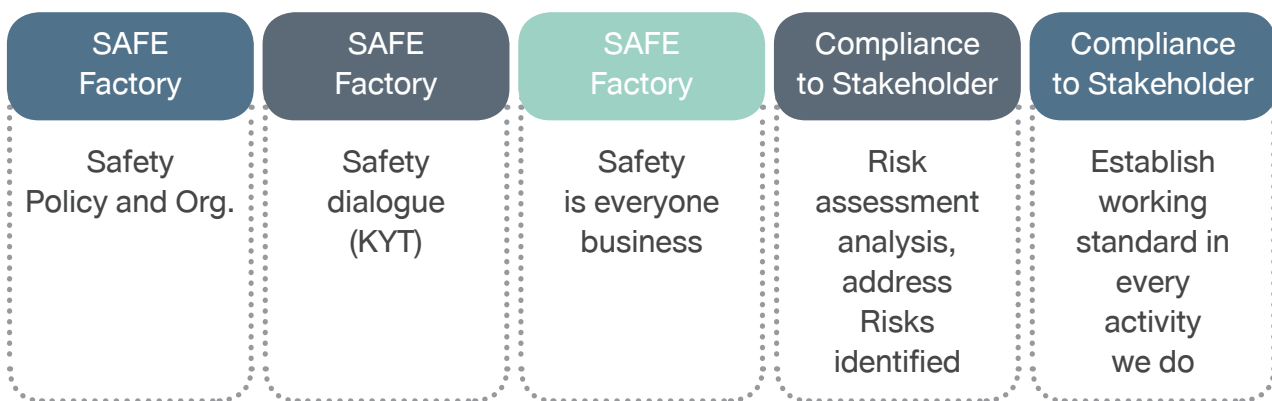
The provision of occupational health and safety for the employees and the business partners cautiously is the beginning of the successful operation in the factories. The Company has organized training with employees and regularly manages the factory area's environment to follow international standards. Apart from managing the area within the Company, Thai Wah also emphasizes relationship establishment and sustainable development of the operation with the communities with responsibility towards the society and environment sustainably. And from the severe impacts from climate change, the Company considers the urgency in cooperation to solve problems from the factory management system to prevent the effects on the environment. The Company also reduces the impacts towards the communities, such as using a solar energy and biogas system, which are renewable energy, and the effective water system and wastewater treatment management. In addition, we also promote education, funds, local communities' development, and innovation development, which encourages sustainability and strength for communities, leading to the establishment of a foundation for communities to stand by themselves in the long run.



# Safety and Occupational Health

Recognizing the significance of occupational health and safety, both for individuals and in the production process, the Company strives to ensure that our employees and business partners perform their duty at full capacity in a safe and pleasant work environment and occupational health. We have strictly complied with all applicable laws, and national and international standards, as well as our related regulations and policy, in a bid to avoid risks associated with the working environment as well as occupational health and safety. The Company also sets a role model and promotes awareness on corporate social responsibility as well as encourages personnel to be satisfied in the long-term.

To become a zero-accident organization, Thai Wah has made sure that all operational units operate in compliance with the laws and SHE Standard. An executive committee for safety, health, and environment has been set up to oversee proper implementation of the OHSAS 18001 and TIS 18001 standards, and to regularly review the objectives and goals concerning the working environment and occupational health and safety. By assessing risks and opportunities covered throughout the operation process, including analyzing the results from these processes to improve the management of occupational health and environment safety.



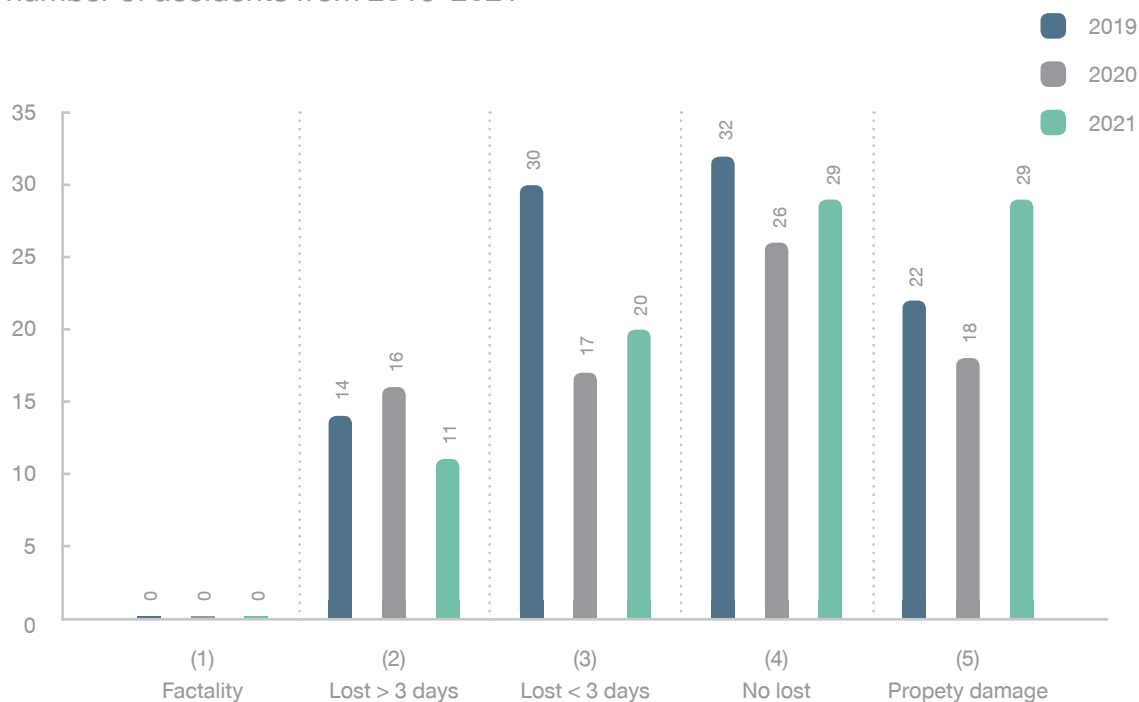
As assigned to oversee proper implementation of the Safety Health Environment or SHE standard in compliance with the laws, the committee of safety, occupational health, and environment meets monthly to follow up on the implementation progress, and regularly communicate with the employees and other concerned parties on the outcome of the meetings regarding the SHE standard. The committee for safety, occupational health, and environment are composed of representatives from all manufacturing plants run by Thai Wah Public Company Limited and our subsidiaries.

The Company regularly identifies performance indicators for our safety operation based on Lost-Time Injury Frequency Rate (LTIFR), Incident Severity Rate (ISR), and Fatality rate to be used in the analysis of operational efficiency in each and every procedure as below;

|   | 2019 | 2020 | 2021 | Target 2022  |
|---|------|------|------|--|
| Lost-Time Injury Frequency Rate (LTIFR)     | 9.7  | 8.2  | 7.9  | All types of accidents decreased by 50% compared to 2020 with the hope of reducing to zero accidents by 2025 |
| Incident Severity Rate (ISR)                | 13.1 | 39.9 | 65.9 |  |
| Fatality as a result of work-related injury | 0    | 0    | 0    |  |



Total number of accidents from 2019–2021



The Company has organized training concerning safety and environment for employees of all levels including the daily staff to establish the safety culture. This training focuses on the participation of the employees, giving suggestions, and creating awareness to the employees on the work process and safety in each procedure. The training goal is for the employees to be able to indicate risks and dangers that may occur during work, including being able to make decisions and stop the operation when witnessing potentially dangerous events. The implementations are as follows:

#### Training programs organized in 2021

1. Occupational health and work environment for new employees
2. Safety officers at the supervisory and management level
3. Committee for safety, occupational health, and environment
4. Environmental worker
5. Basic firefighting and evacuation
6. Hazardous chemical safety
7. First aid
8. Techniques for teaching work and being a supervisor
9. Safety for work with chemicals
10. Driving a forklift with safety
11. Changing behavior by using BBS (Behavior Based Safety)
12. Job Safety Analysis
13. Hazard warning technique with KYT
14. Environmental management consciousness
15. Arc welding technique level 1





The proportion of trainees for various courses in 2021 and goals in 2022 are as follows:

| Course  | 2020 | 2021 | Target 2022 |
|---|------|------|-------------|
| Safety according to legal requirements such as work safety officers and basic fire fighting | >90% | >93% | >98%        |
| Promoting safety such as BBS and creating a safety culture                                  | >50% | >60% | >80%        |

Apart from work safety, the Company also emphasizes the employees' health. This includes the preparation of employees' health schemes and regularly tracking employees' health check-ups.

### Improving factory environment and safety



Attach labels indicating hazardous chemicals and their protection.



Install a toiletry bag lifter to enhance ergonomics.




Dig wells to improve the environment and resolve odor complaints from nearby communities.



Install a lifeline for working at height to prevent dangerous accidents during work.


COVID-19 Prevention

Due to the third wave of COVID-19 outbreak in 2021 and lockdown in various areas across the country, including some areas in Thailand and abroad where the factories are located, the Company has realized the risks of the mentioned situations. Thus, the Company has created measures, for example, temperature measurement devices, screening, together with building an infirmary, spraying disinfectant inside and outside the factory area, publicizing and managing keeping distance among the employees in the public spaces. The measures taken during the outbreak are as follows:




**DAILY COVID BCP CALL**

At 8 a.m. daily, the EXCO and the executives from various agencies gather together for meeting, updating the status and improving the crisis management plan closely.



**VACCINATED**

99% of our employees have already received their first dose of vaccine. The Company also prepares alternative vaccines to share with the family members of the employees.



**BUBBLE AND SEALED**

The Bubble and Seal implementation follows the disease control guidelines for four canteens in Thailand and Vietnam to prevent and control the COVID-19 outbreak.

Risk and Control under Bubble and Seal Principle

1. COVID-19 Test

- + Employees are separated into small groups (approximately 10 people per group) and tested with a rapid test and a PCR test before entering the factory
- + Weekly COVID-19 rapid test



2. Vehicles and Drivers

- + Disinfecting vehicles
- + Drivers remain in the vehicles
- + Separate portable toilets for drivers in front of the factory's gate



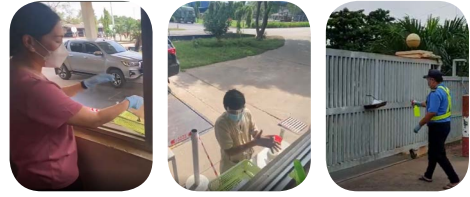
3. Tapioca Sellers

- + Use QR code system for registration
- + Separate waiting zone and walkway
- + Use 5K rule: wear mask-disinfect-keep distance-no gathering-disclose health information



#### 4. External Food and Documents

- + Store food in plastic bags
- + Spraying disinfectant
- + Well-cooked food



#### 5. External Communication Without Control

- + Use dormitory rules, rewards and punishments
- + Legally binding affidavits
- + Public relations team
- + Disease prevention and screening team
- + Supporting team
- + CCTV cameras

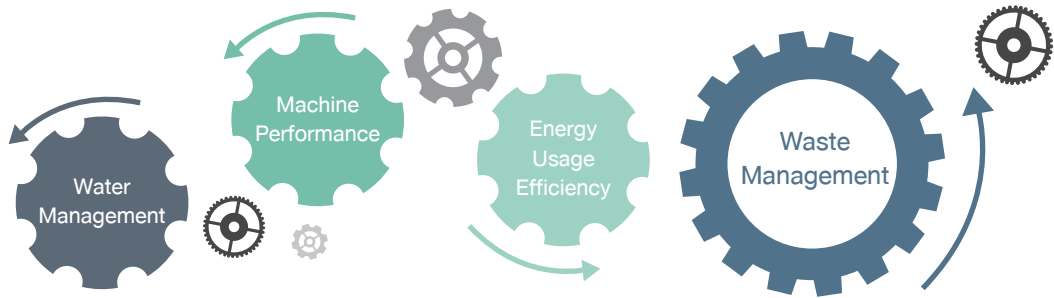


## Energy Usage Efficiency throughout the Production Process

Climate change nowadays is an issue that requires cooperation from every agency to slow the rising average temperature of the Earth, which has resulted in many natural disasters in the past years. The causes of the mentioned crisis are due to several factors, including population growth, economic expansion, and technological advancement. The Company realizes that being a part of managing the use of natural resources effectively and preserving the abundant nature is the key factor in driving the economy and developing society with responsibility.

The Company has set management guidelines under law, standards, and various regulations in the environmental aspect. By recognizing sustainable responsibility towards natural resources and the environment, the Company is determined to maintain and reduce the environmental impacts, control the management throughout the value chain, as well as cooperating with the national organizations. The Company starts from the factory management system to mitigate environmental impacts and uses the limited resources to the most significant advantage through water management, energy management, waste disposal and/or pollution from the production process, and general usage by using efficient technology and close monitoring. This includes promoting and implementing energy conservation, using renewable energy, such as solar energy and biogas system, together with the effective water system and wastewater treatment management. It can reduce energy usage and reduce greenhouse gas emissions effectively to enhance the industry and society to grow together sustainably. The Company also calibrates and discloses information on greenhouse gas emissions, and sets a target to reduce corporate greenhouse gas emissions according to the national target.

In addition, the Company also promotes and develops water management for agriculture effectively and sustainably, for example, efficient waste system and wastewater treatment to promote access to water resources of the communities, reducing conflict in water usage with the communities. The Company also cooperates in the development, restoration, and conservation of water resources in the communities to optimize the efficiency in using water resources for maximum benefit.



The Company’s endeavor for energy conservation and greenhouse gas emission reduction, within the framework of the carbon footprint certification from the Greenhouse Gas Management Organization and TIS 14001-2548 (ISO 14001: 2004) for our products, is aimed to create organizational awareness on the importance of environmental management and development, in parallel with business development. The focus has been made on pollution prevention and continuous improvement. The Company strives to mobilize environmental management systematically, with consistent evaluation and review. We have been certified level 3 of the “Green Industry” (Green System), which is the Ministry of Industry’s system to promote environmental-friendly business operation.

Eco-friendly innovations and technologies not only help break through limitations and enhance business capabilities, but also uplift social livelihood and maintain environmental and eco-balances. Thai Wah has continuously collaborated with business partners, both domestic and overseas, to develop different innovations related to machinery efficiency and manufacturing process with an aim to promote economic, social, and environmental balances continuously.

### Development of Machineries and Manufacturing Process

To implement our policy on reduction of energy use and greenhouse gas emission, the critical index we use to measure energy efficiency and greenhouse gas emission is the concentration or efficiency of energy utilization. Amount of reduced fuel oil consumption in the production process per production volume will be compared and measured.

|  | 2019 | 2020 | 2021 | Target 2022 |
|--|------|------|------|-------------|
| The fuel oil usage by the Company (Liters per ton) | 0.40 | 0.36 | 0.34 | -3% YOY     |

- Covered Lagoon Bio Reactor (CLBR)**

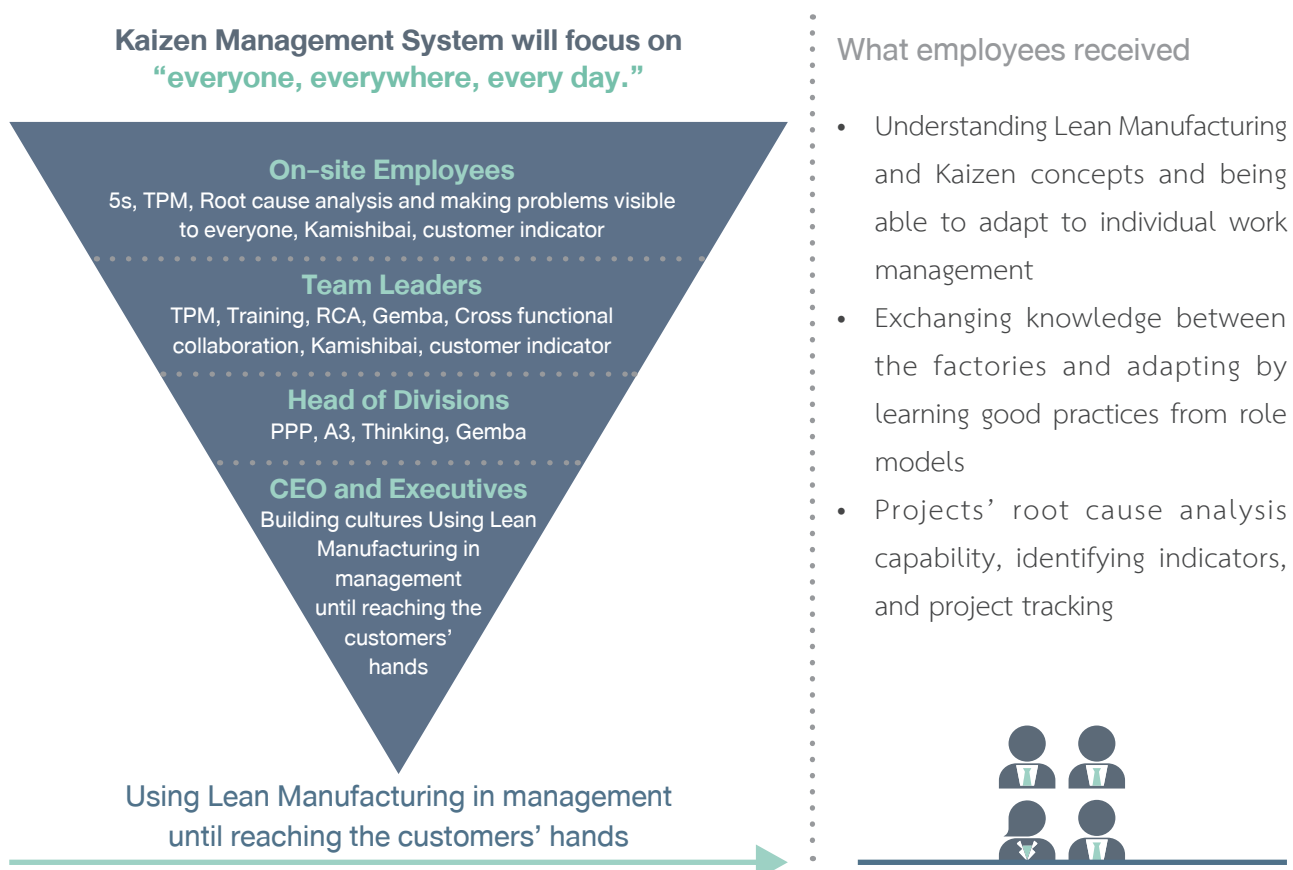
Thai Wah opted for Covered Lagoon Bio Reactor (CLBR) for our biogas production system. The technology has been developed to ensure high capability, stability, and cost reduction, and can be



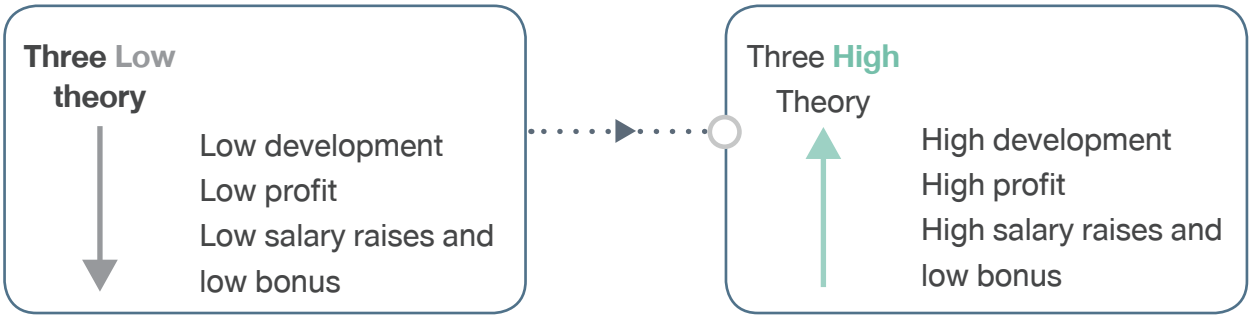
used for both biogas production and wastewater treatment. In addition to cost reduction, which is direct to the Company's benefits, the technology managed to reduce environmental impacts. For instance, CLBR treated wastewater will have a decrease of 95 to 97 percent in the concentration of organic compounds, which will help reduce greenhouse gas emission and unpleasant odor and uplift the healthiness of employees and nearby communities.

- **Kaizen Project**

Nowadays, the competition in the market is higher, and increasing sales might not be enough to make a profit. Reducing costs is one of the keys in the production line to help the Company make a profit. To reduce costs, it has to begin with planning the work process and creating understanding with all employees, from on-site employees to the executives, to achieve the common goal. The Kaizen project is one of the strategies used in improving the work process to reduce costs. It focuses on increasing efficiency and improving the management to be more efficient, promotes innovation development within the organization, and provides a process to continuously encourage development and improvement within the organization. Furthermore, the participation methods have been improved to suit all employees and personnel at all levels and cooperate to find new approaches to improve work methods continuously. The Company has used a Kaizen-style work improvement system at a factory in Bang Lane, Nakhon Pathom. In 2021, the factory was able to reduce costs by approximately 6 million baht through the whole work process improvement in 19 projects and enhanced the quality of the products, for instance, reduced manufacturing error, reduced operating time, reduced loss, reduced energy usage and leakage, as well as enhancing the production efficiency.



Using Lean Manufacturing and Kaizen to adapt within the organization shall affect the Company to change from Three Low theory to Three High Theory.



- Aiming for Net-Zero Greenhouse Gas Emissions

In 2021, the Company joined with the Thailand Greenhouse Gas Management Organization (TGO) as a pilot plant in the project to expand the promotion on providing Carbon Footprint from Operation (CFO) organized by the Water and Environment Institute for Sustainability, the Federation of Thai Industries. The two factories involved were the starch factory in Udon Thani province and the glass noodle factory in Nakhon Pathom province. On 26 August 2021, The Company calibrated the corporate greenhouse gas emissions report. In addition, Thai Wah has become a member of the Thailand Carbon Neutral Network (TCNN), UN Global Compact, and RE100 Thailand Club (RE100TH) in order to show the intention of determination and work together to drive the industrial sector towards the goal of reducing greenhouse gas emissions, aiming for carbon-neutral and net-zero carbon emissions in accordance with the national goal. It aims to solve the global warming problem and maintain the capability in enhancing Thailand’s competitiveness and net-zero carbon emissions by 2050.



Thai Wah has set a short-term goal which is to increase the usage of renewable energy in order to reduce greenhouse gas emissions by at least 25% by 2025 and 50% by 2030, respectively. The long-term goal is to aim for net-zero greenhouse gas emissions by 2050–2070. There is also a goal to measure and calibrate the greenhouse gas emissions in every factory by the beginning of 2022 (the Company is in the process of planning and preparing data collection for assessment and calibration of the greenhouse gas emissions report of the other four factories and expects to disclose the information by the end of 2022) to disclose regularly and be able to set the goal of reducing greenhouse gas emissions in the long run and strive to solve the problems of greenhouse gas emissions effectively.

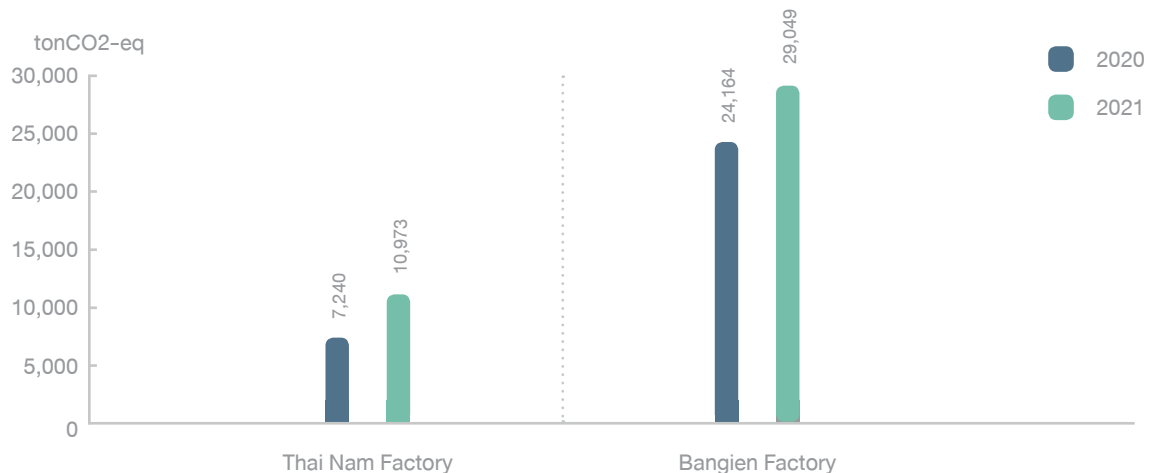
| Greenhouse Gas Emissions (tCO <sub>2</sub> e) | 2020     |         | 2021    |         |
|---|----------|---------|---------|---------|
|   | Scope 1  | Scope 2 | Scope 1 | Scope 2 |
| Thai Nam Factory, Udonthani province          | 1,119*   | 6,121*  | 1,934   | 9,039   |
| Banglen Factory, Nakorn Pathom                | 20,056** | 4,108** | 24,495  | 4,554   |

\* Verified by Lloyd's Register International (Thailand) Limited

\*\* Verified by Center of Excellence on Environmental Strategy for Green Business Kasetsart University



## Greenhouse Gas Emission (Scope 1 + Scope 2)



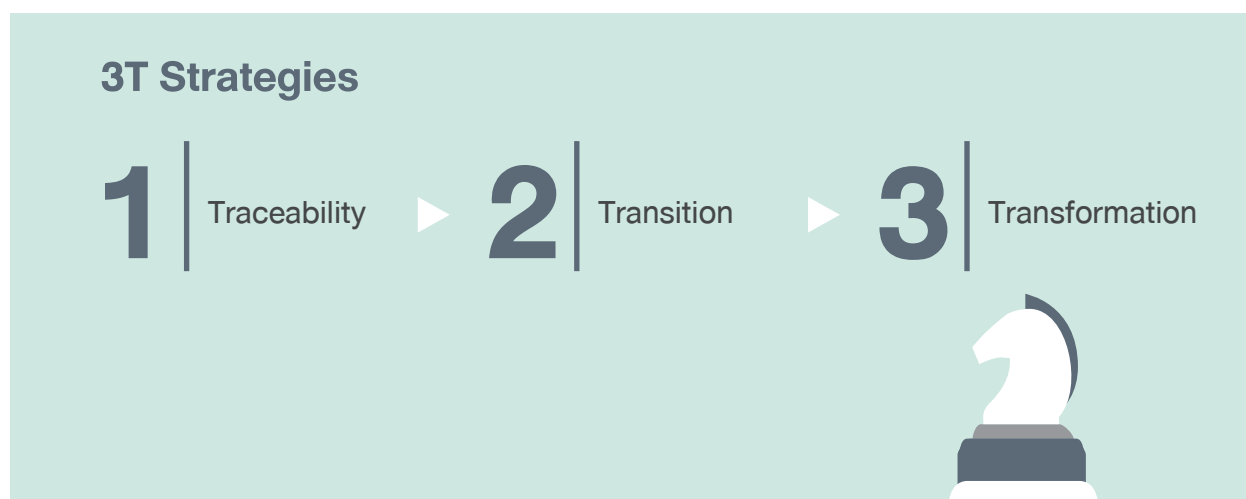
Greenhouse gas emission in year 2021 is higher than in 2020 in both factories as a result of increase in production. However, based on the results of data collection and calibration of corporate greenhouse gas emissions, the Company can indicate the organization's sources of greenhouse gas emissions along the value chain and consider the management approaches. The significant sources of greenhouse emissions are as follows:

| Sources of Greenhouse Gas Emissions           | Details  | Management Guidelines  |
|---|--|--|
| Purchased Raw Materials (Tapioca)             | The greenhouse gas emitted from agricultural activities, including the use of chemical fertilizers | <ul style="list-style-type: none"> <li>- Study on reducing greenhouse gas emissions in agricultural and technological spheres</li> <li>- Promote Thai Wah farmer-members project in organic farming, modern agricultural system, and so forth</li> </ul> |
|   | Transport of raw materials to the factory  | <ul style="list-style-type: none"> <li>- Find nearby tapioca planting areas</li> <li>- Promote contract farming to increase the effectiveness of root stations</li> </ul>  |
| Production Process and General Implementation | Coal Energy Consumption  | <ul style="list-style-type: none"> <li>- Increase the efficiency of coal energy consumption by replacing low calorific value (LCV) coal with high calorific value (HCV)</li> <li>- Use natural gas or renewable energy, for example, biogas</li> </ul>   |
|   | Electricity Consumption  | <ul style="list-style-type: none"> <li>- Increase the efficiency of electricity consumption from renewable energy, for example, biomass power plant and solar rooftop</li> </ul>   |
| Freight                                       | Freight and Distribution Distance  | <ul style="list-style-type: none"> <li>- More effective logistic system management and planning</li> </ul>   |
|   | Transportation Vehicles' Fuels   | <ul style="list-style-type: none"> <li>- Select the vehicles which use the fuels that reduce greenhouse gas emissions</li> </ul>   |



To move towards Net Zero emission in the long run, Thai Wah has been managed to reduce GHG emissions through 3T Strategies:

- **Traceability:** Being able to identify and reduce carbon emissions along on whole value chain, key factors right now include NPK source, method and fertilization at farm level, diesel oil trucks and tractors as well as global ocean freight.
- **Transition:** Transition for all our factory production systems to be carbon-neutral by 2030 with the implementation of renewable energy: solar energy (solar rooftop), biogas (biogas power plant from production waste), minimize coal and diesel oil, and also try to be carbon negative by planting more trees, or regenerative agriculture.
- **Transformation:** Putting our customers at the core of our sustainability and innovation strategy, for example, help them use more plant-based ingredients instead of meat, select chemical-free starch (waxy), improve their packaging solutions to bioplastics, and develop new innovation like biofertilizers, bio-packaging.



In addition, the Company has registered to participate in a project to promote greenhouse gas reduction in the business sector using a Science-based target (SBT). This project is organized by the Thailand Greenhouse Gas Management Organization (Public Organization) and ECEE (Excellent Center of Eco-Energy) in 2022 for operational planning, which follows the goal of controlling global greenhouse gas emissions with no more than 1.5 or 2 degrees Celsius.

| Organization Target*              | Year      |
|-----------------------------------|-----------|
| Use renewable energy at least 25% | 2025      |
| Reduce GHG emission at least 50%  | 2030      |
| Reduce GHG emission 100%          | 2050-2070 |

\* Cover scope 1 and 2

- Thailand Voluntary Emission Reduction Program (T-VER)

The Company's project established by the Greenhouse Gas Management Organization since 2017 to verify GHGs reduction capacity of the biomass power plant in Nakhon Ratchasima's Pimai district. The implementation was in accordance with ISO 14064-2 and ISO 14064-3, intending to reduce GHGs emissions, a significant cause of global warming. We aspire to contribute to the nation's effort in reducing GHGs and promoting sustainable economic development. In 2021, the Company was able to sale Carbon Credit amounting of 3,735,180 baht.

| Greenhouse Gas Emissions<br>(tCO <sub>2</sub> e) | 2019   | 2020   | 2021   | Target 2022 |
|--|--------|--------|--------|-------------|
| Phimai Factory,<br>Nakhon Ratchasima province    | 49,145 | 51,722 | 51,722 | 53,000      |
| Tha Kan Tho Factory,<br>Kalasin province*        | N/A    | N/A    | 12,037 | 12,037      |

\* COD on 17 August 2021



- **Solar Rooftop Saving Project**

Thai Wah has a policy on energy conservation and has a greenhouse gas emission reduction target by using more renewable energy. “Solar energy” is an alternative energy source that is naturally renewable. It is a clean energy that can be used in both large-scale industrial plants and at home which can help reduce this global environmental issue.

The Company installed 1 MW Solar Rooftop Phase I at Vermicelli Factory, Banglen, Nakorn Pathom, in 2019, under the concept of energy conservation and intention to share with other factories an awareness on fossil fuel energy reduction. Solar Roof system converts solar energy into clean and inexhaustible power supply. This is in a bid to promote the use of alternative energy for utmost interest of the Company’s plants and nearby communities. In 2021, the Company has expanded Solar Rooftop Phase II with 1.44 MW to increase the electricity produced from renewable sources which is estimated to be COD in March 2022. In addition, the Company plans to invest in a solar rooftop project at one more tapioca starch factory.

In 2021, Solar Rooftop produced electricity equivalent to carbon offset 2,643 metric tons per year or equal to planting 563 acres of pine forest.

|  | 2019 | 2020  | 2021  | Target 2022 | 3 Years Target |
|--|------|-------|-------|-------------|----------------|
| Electricity Generated by Solar Rooftop (kWh)           | 589  | 1,405 | 1,406 | 3,381       | 16,800         |
| Electricity Generated by Solar Rooftop (million baht)* | 2.13 | 5.08  | 5.09  | 12.2        | 60.8           |

\* Calculated at the electricity rate of 3.62 baht/kWh

- **Replacing Coal with Biomass Fuel Project**

At the end of 2021, the Company began the test using biomass fuel, replacing the coal fuel as the biomass fuel is renewable energy, which does not negatively affect the environment. The Company has set the goal of replacing the use of coal fuel with biomass fuel at least 80% in the factory in Bang Len district in 2022.

- **Environmentally Friendly Packaging**

At present, the Company has applied 100% green carton to food products, delivering to customers, which is a paper box that was invented to save the environment. This can help reduce the use of production resources by at least 25 grams per square meter, while being strong enough to support a stack, stack weight and better protection by 4-25% than a general packaging. In addition, its been certified by SCG Eco Value and ISO 14021 as truly sustainable packaging solutions.

Green Carton packaging is an invented paper packaging, which is developed according to the environment-friendly concept of the production process as paperless, lightweight, and strength, which can help to reduce the production costs, freight, and promoting a positive corporate image of the environment. In addition, it has been certified by SCG ECO VALUE as an environmental product and meets the needs of all related parties in sustainable business development.

|  | 2019 | 2020 | 2021 | Target 2022 |
|--|------|------|------|-------------|
| The number of Green Carton used as an alternative to the original cardboard boxes.<br>(Million pieces) | 1.48 | 1.50 | 1.99 | 2.00        |

## Water Management

The water resources are essential to the production process of the business in both quantity and quality usage. Since Thai Wah is a business in the agricultural and food industry, the Company must therefore always be aware of water resources preservation throughout the value chain, whether it be the use of water for agricultural products or the use of water in the production process, including the impacts towards the surrounding communities to create continuity in business operation and to minimize water shortage of the global population. Integrative water management and promotion of technology and innovation to enhance water management efficiency have been focused, i.e., water usage in manufacturing process, and fair sharing of access to quality water sources with the communities.

- Water Risk Management**

The Company attaches importance to the water risk assessment with a determination to manage water sustainably (including the usage of water from water resources, recycling water, and reusing water) through the water management policies and strategies, which complies with the law and environmental regulations. There is regular communication/coordination with local regulators/water suppliers to monitor the situation and mitigation measures, as well as using water responsibly. This also includes monitoring the water consumption, measuring the amount and our water discharge regularly while considering the impacts that might occur towards the surrounding environment with the aim to improve efficiency, which has the annual assessment. Due to a large amount of water used in the production process, the Company is aware of the necessity of deciding the necessary infrastructure risk management measures along with promoting the reduction of water usage and the development of efficient water consumption.

Thai Wah focuses on the efficient use of water, reduces waste disposal into nature, and improves the wastewater treatment system. Furthermore, a system to control the aeration of wastewater treatment is also installed. Now, 100% of wastewater goes through the treatment process to ensure that the quality of the water meets the standards of public wastewater as required by law. There is also a measure to save water with the goal of reducing the amount of water used at least 10% every year with the 3Rs: Reuse, Reduce, Recycle principle, enabling the treated water to be reused in the form of utilities and production process and so forth.



## Examples of management on increasing effectiveness and reduced usage of water

### Reduce

Use technology to produce starch, which reduces water usage in the process

### Reuse

Treat wastewater from the production process with sludge treatment

### Recycle

Recycle treated wastewater through the AS system to be used in cleaning tapioca process or transfer to farmers to use in agricultural activities

| Food Factory                              | 2019        | 2020        | 2021        | Target 2022 |
|---|-------------|-------------|-------------|-------------|
| Total water consumption (liter)           | 719,622,000 | 750,643,000 | 747,558,000 | 725,131,260 |
| Total water consumption reduction (liter) | 38,338,000  | 31,021,000  | 3,085,000   | 22,426,740  |
| Total wastewater (liter)                  | 172,894,000 | 177,951,000 | 176,933,000 | 170,405,846 |

| Starch Factory                            | 2019 | 2020 | 2021          | Target 2022 |
|---|------|------|---------------|-------------|
| Total water consumption (liter)           | N/A  | N/A  | 5,764,899,000 | -10% YOY    |
| Total water consumption reduction (liter) | N/A  | N/A  | N/A           |             |
| Total wastewater (liter)                  | N/A  | N/A  | 5,764,899,000 |             |

## Waste Management from the Production

Thai Wah sets a strategic goal for waste reduction through optimizing the use of raw materials and existing resources and minimizing waste throughout the production process. We also reuse and recycle waste into new products, such as selling cassava pulps as raw materials for animal feeds to animal feed mills, producing organic fertilizers, and energy from waste.

The Company's waste reduction scheme, as well as reuse and recycle program, have helped reduce cost (such as electricity cost, etc.), and increase the Company's benefits.

We also have production waste treatment systems installed to reduce pollution to the standard level set by Ministry of Industry under the "3R" strategy (Reuse, Reduce and Recycle), for instance, Activated Sludge System of 12,000 m<sup>3</sup> /day, air treatment system with Wet Scrubber and Cyclone Scrubber to trap dust and exhaust before being ventilated out of the factories. The Company's waste treatment systems have been monitored, and maintained by our engineers and experts around the clock.

|                                    | 2019   | 2020    | 2021   | Target 2022 |
|------------------------------------|--------|---------|--------|-------------|
| Cassava pulp used for biogas (ton) | 49,676 | 103,084 | 65,392 | +10% YOY    |

- Waste Segregation Program**

The Company has also engaged the employees in the factory waste management process through a waste segregation program, first implemented at the tapioca starch plant in Kalasin province. The aim is to improve workplace quality of life, and provide knowledge on proper waste management, especially food wastes, office wastes, and hazardous wastes. Thai Wah would like to create awareness and responsibility among our employees on waste sorting, which could help minimize waste volumes in the Company, reduce waste management cost, and earn extra revenues from selling wastes for recycle.



- Biogas Power Plant**

Our plants have implemented several energy managements measures to maximize energy use, i.e., efficiency enhancement of production process and techniques, and electricity generation from wastewater and cassava pulps, which is the by-product from our production. Three biomass power plants have been constructed in Udon Thani's Mueang district, Kalasin's Tha Kan Tho district, and Tak's Mae Sot district, each with a capacity of 2.826 MW, 2.996 MW, and 1 MW respectively. Another plant has been planned in Nakhon Ratchasima's Pimai district in 2022.

At present, approximately 75% of tapioca waste enters the biogas system to generate electricity. And the Company is studying the possibility, including the additional investment, of entering 100% of tapioca waste to generate electricity in the future.



|   | 2019       | 2020       | 2021       | Target 2022 |
|---|------------|------------|------------|-------------|
| <b>Amount of electricity produced (units)</b> |            |            |            |             |
| Thai Nam Factory,<br>Udon Thani Province*     | 14,579,100 | 19,199,100 | 17,251,928 | +5% YOY     |
| Tha Kan Tho Factory,<br>Kalasin Province      | 5,558,348  | 18,177,280 | 14,320,000 | 18,000,000  |
| <b>Electricity saved (baht per year)**</b>    |            |            |            |             |
| Thai Nam Factory,<br>Udon Thani province*     | 44,087,415 | 77,440,000 | 55,206,169 | +5% YOY     |
| Tha Kan Tho Factory,<br>Kalasin province      | 16,808,527 | 73,318,466 | 57,280,000 | 72,000,000  |

\* Thai Nam factory biogas power plant has started COD on 31 August 2017 and Tha Khan to has started COD in September 2020

\*\* Calculated at the electricity rate of 3.62 baht/kWh

# Social and Community Development

Considering its role in contributing to food security and environmental balance, the Company attaches great importance to social development and building sustainable relationships with the surrounding communities and respecting stakeholders' rights. The Company operates with sustainable social, environmental and sanitation responsibilities based on legality and non-violated human rights of others in the communities and society. This also includes cooperating with various agencies to improve the quality of life of the communities and developing the economy with social and environmental responsibilities in the long run.

The Company has a policy to improve the quality of life of the people in the communities. This includes the development of farmers' careers, the support of technology, know-how and tools or equipment for agricultural activities, innovation development that promotes the local communities' sustainability, education support, and necessary skills for improving the quality of life and well-being. The policy is prepared to encounter poverty problems or economic instability, enter an ageing society, as well as social inequality. This is part of our commitment to support the United Nations Sustainable Development Goals (SDGs) on poverty and hunger eradication, good health and well-being, and quality education. Building a solid foundation for these communities is vital as Thai Wah is committed to maintaining and developing along with business operations.

We make it our responsibility to provide fundamental needs regarding health, education, income, housing, and basic livelihood values. Poverty or economic insecurity as a consequence of the increase of population and social disparity remain the challenges that impact the quality of life of people in the society, and national economic growth and development as a whole. At the same time, Thailand and the global community are entering the aging society which will significantly lessen the number of working-age population. Building a solid foundation for the community is therefore important that Thai Wah is committed to caring and developing along with business operations.

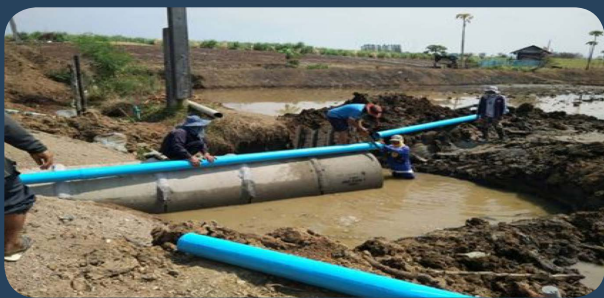
- **Water Management for Sustainable Agriculture**

Thai Wah has cooperated with our partners to enhance community access to water sources in a bid to maximize water resource efficiency. Water is an essential resource for human life, and the Company is well aware of the importance in having access to clean water sources sufficient for everybody in a community. Thus, the cooperation with partners from various sectors to promote and develop community's sustainable access to water sources was initiated.

We establish a guideline for water management and implement a risk management plan on a yearly basis under the principle "Water & Reuse to farm". The procedure ranges from analyzing and setting proper approaches to ensure water sufficiency, collaborating with and providing support to risk-prone business partners in mitigating water shortage risk, and engaging communities to voice their concern and opinion on utilization of water resources. Our endeavors, which include a project on diversion of treated wastewater for sustainable agriculture through installation of natural wastewater treatment system, and promotion of drip irrigation system for cultivation among Thai Wah members, not only enhance farmers' cultivation efficiency but also mitigate drought during the dry season for the present and in the future.



Thai Wah also conducts study on direct and indirect negative impacts arisen from the Company's current and future operation, follows up, resolves, and improve to mitigate the impacts against communities and society. We also join forces with the communities every year to implement proactive measures to store water, alleviate and delay drought, and add moisture to farming soil during the dry spell or the drought season in order to ensure adequate amount of water for community consumption and for sustainable agriculture, and to be genuinely in line with social needs and problems.



Implementing "Treated Wastewater for Farmers" project, covering the area of 2,556 rai in Mae Sot district, Tak province



Pumping Lam Pao water into Tha Khantho Municipality Reservoir for people in communities and factories to use in the dry season



Implementing factory wastewater diversion for agricultural continuity and sustainability project to address agricultural water shortage. Wastewater sewer pipes and pumps have been installed on the farming area of 1,200 rai in Muang district, Udon Thani province. The plan is to install 2,000 meters of sewer pipe, accommodating 100 rai of farming areas, each year



Donating used sacks on a yearly basis to Champa village, Chiang Yuen sub-district, Muang, Udon Thani province to be used as sandbags in the construction/restoration of agricultural check dams to mitigate community people's plight arisen from low water level in Lam Huay Luang Canal, and to ensure sufficiency of water for farming and fishery.



Providing dredging equipment and machines for canal dredging project to assist community farmers during the dry season every year in containing water for use throughout the year in agricultural and fishing activities



Implementing a project to convert plant waste materials into floating foam barriers for control of invasive water hyacinths in public water sources used in producing tap water in Muang district, Udon Thani province. As a result, the communities managed to save 40,000 Baht, earlier allocated for purchasing of 4 plastic boats and floating barriers.

- **Community biogas plants**

After a pilot project with Ban Nong Lord community in 2020, the company has expanded the network to other households in the community at least 2 households which could save their household use of LPG from 12 to 4 cylinders per year, or 3,200 Baht per year.





## Family Work and Life Balance

Covid-19 continued through 2021 and is more intense now than last year. There have been many changes that have never happened before with a faster pace. The readiness of the organizational structure and the employees to cope with such changes are things which drive the organization to move forward efficiently and sustainably. Moreover, the organizations must be capable of recruiting potential personnel who are best suited with the organizational structure. In addition to the development of working efficiency and the employees' adjustment to the situation, Thai Wah takes care of and is committed to improving the quality of the employees' lives; from the workplace, environment, and atmosphere to the welfare, including respect for human rights and gender equality. This helps create a sense of security at work for employees. Taking care of employees in every aspect will benefit both the individuals in terms of work and the organizations in terms of progress towards sustainability.



Each employee is considered the foundation and heart of the Company's endeavor to promote competitive advantage and sustainable growth. All employees are parts of one family. Thai Wah upholds the critical principles of justice, integrity, and transparency in taking care of our family members. We have placed priority on creating a learning organization where all employees are encouraged to develop their potential and capability and to learn together continuously. Thai Wah strives to promote a creativity-based learning environment and freedom in a bid to create bonding among all employees, for them to take pride in being part of Thai Wah.

## Human Resource Development

Employee is a crucial resource of the company, thus, in creating and retaining employees' talents, the Company focuses on developing knowledge and skills, providing opportunities for life-long learning, promoting career advancement, and preparing employees for changes under a working atmosphere where diversity is respected. This is for the happiness of all employees, and the Company's competitiveness enhancement at the international level.

The Company has laid out a strategy for sustainable human resource development by creating a Competency Management System in accordance with the strategy and the main goals of the business. This is to establish the foundation and develop an organizational culture for success by emphasizing communication to create understanding among personnel at all levels to comprehend the professional development system. Also, it encourages participation in designing competency according to the line of work in a concrete way.

- **Corporate Culture toward Success**

A solid foundation for implementing strategic plans is an organizational culture where sustainability is considered to be a part of and is the basis for the future success of the organization. Thai Wah encourages employees to play a role in participation or propose ideas for organizational sustainability. Therefore, Thai Wah focuses on creating an environment which supports learning and stimulates free creativity and innovation. At Thai Wah, "We are committed to continuous development, encourage new creativity and believe in the benefits of the power of innovation."

In everyday work, we welcome feedback from our work in order to make improvements for more efficiency. This will enable us to work towards the set objectives. The key to success is that the employees understand the business objectives and believe in the value of working together. Being treated equally gives them the courage to express their creativity to develop the organization together towards success. We strive and encourage creativity that leads to new innovations in order to improve and increase work efficiency and set such approach as a working standard. This will be a tool to support Thai Wah to develop and move towards the goals set.



- **Innovation in Organization**

Innovation is a driving force of the business. Therefore, the Company needs to understand the customers' needs and create new innovations in order to resolve problems for customers and be able to compete in the market. The new innovation is not only the product or service, but also of the operating structure within the company to the process of giving to customers. Choosing the approach that is most suitable for the company and the available resources is regarded as the heart of success. Thai Wah strives and encourages creativity that leads to new innovations within the organization and set such approach as a working standard. This will be a tool to support Thai Wah for further development.

Creation and development of innovation within the organization happen by building on the foundation of an organizational culture such as creating a creative environment, a safe space where employees dare to think, speak and express new ideas, along with receiving support from supervisors and executives. Employees at all levels in the organization are provided with the opportunities to do new things including continuous self-development through various seminars that encourage the use of creativity for development and new invention such as products, services and processes, etc. to enhance the quality of life and livelihood of the stakeholders throughout the supply chain. Economic, social and environmental dimensions are also taken into account. In addition, frequent innovation and technology development in the organization can create value or growth for the company or reduce costs for the organization in the long term as well. Our commitment to develop the skills of personnel and the support from executives are crucial factors that will drive the organization to grow steadily.



#### **PRIDE**



#### **INTEGRITY**



#### **CONSISTENCY**

Thai Wah places importance on and strives to develop core competencies, leadership and work capability for all employees to suit the current business direction and support future growth. We believe that individual capabilities can be achieved through the development of individual skills, knowledge and attitudes (behavior). These are important factors that will lead the organization to stable success in the long term. Thai Wah encourages employees to achieve their goals effectively by enhancing the ability of each employee to be consistent with their skills and the strategic direction of the organization, including communicating the expectations about such ability to create understanding and incentives for employees such as

- Creating shared values of Thai Wah.
- Building mutual understanding between employees and supervisors for jointly enhancing the value of work
- Focusing on the development of each employee to suit the assigned tasks.
- Establishing a relation between compensation, rewards and career growth in accordance with competence and values that will lead the organization to success
- Being as a guideline for employees, supervisors and behavior in every working situation

Implementing a system to develop the ability of each employee in the organization is a crucial tool in building the overall potential of the organization which will ultimately lead to value creation and success. This year, Thai Wah is ready to implement the employee competency development system for its management, with support from executives and cooperation from all of us. We believe that this system will steadily lead Thai Wah to success in the future.

#### Innovation sharing space within the organization



- TW WANDER, a monthly internal newsletter, telling new stories and information to employees such as success story from the individual employee to the corporate level including innovation promotion related to work, products or agriculture.
- Weekly/monthly meetings of each department and monthly product development meetings which are held on a regular basis. Employees are always able to present their ideas or innovations in the meetings, whether or not they are related to process, marketing or technology.

- Competency Management System

Thai Wah has developed a strategy for sustainable development of human resources through the implementation of Competency Management System, which is composed of:

1. **Core Competency** means skills and qualifications required in everyone under the organization. It is the foundation that contributes to vision achievement
2. **Leadership Competency** means competencies, skills, and essential qualifications required in supervisors and team leaders, which have been defined in order to achieve the vision, values, and strategic direction of the organization
3. **Functional Competency** means similar knowledge, skills, competencies, and qualifications shared under a “Job Family”, a group of jobs that involve similar works/functions, career development and management

## Core Competency



**Upholding Standards**



**Taking Action**



**Exploring & Embracing Change**



**Developing Expertise**



**Team Working**

## Leadership Competency



**Develop Strategies**



**Influencing & Convincing People**



**Empowering Individuals**

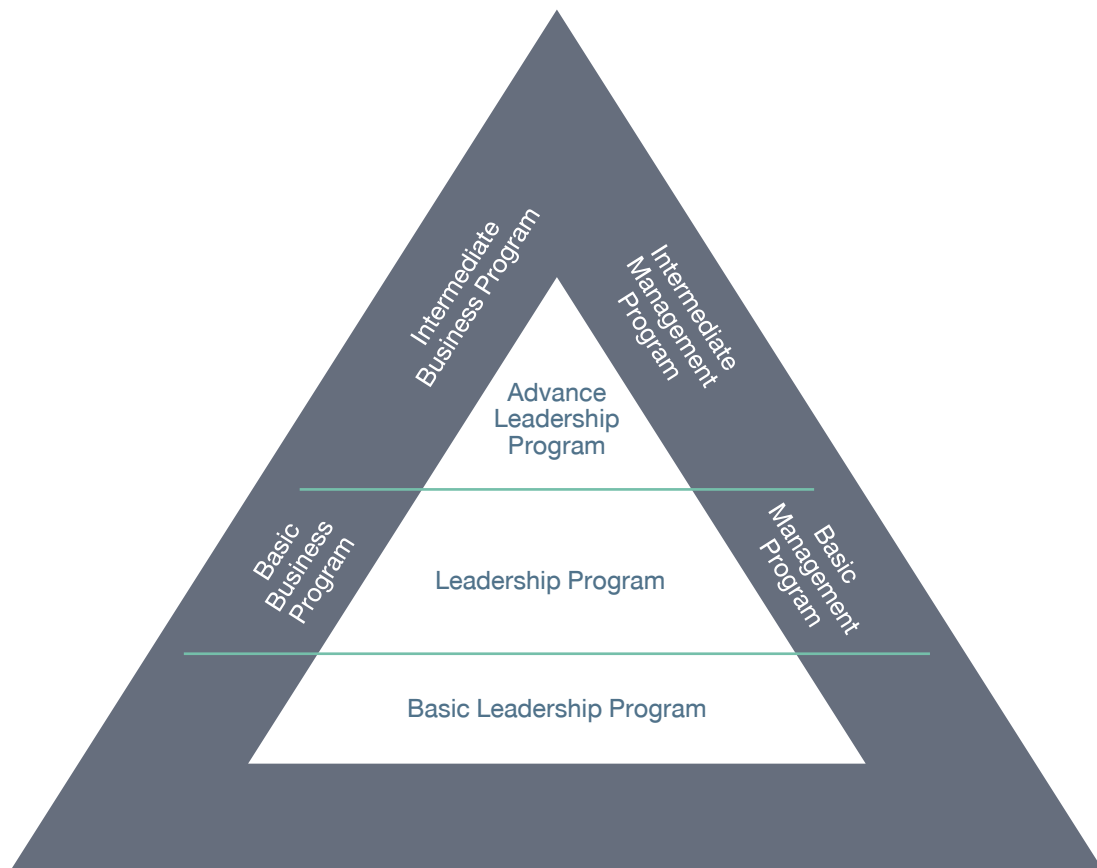
D.I.C.E



# Career Development Program

The Company views that human resources are a factor that is necessary to the organization. Therefore, the Company creates a systematic approach for career development as well as the foundation of a new human resource management system to accommodate changes in many aspects of the Company that is expanding rapidly. As a plan for the career development of employees, the Company has begun to analyze the competence of employees (Competency) for analyzing their true potential by developing Functional Competency by analyzing the skills that are needed in the future. Then, the Company will prepare it as a development plan project in 2022. In any case, the Company emphasizes the development and promotion of skills related to the Company's Values constantly to develop the true potential of the personnel.

This will be carried out by communicating to employees at all levels to understand the objectives of the staff development structure in a systematic way regarding the development of competency according to the career path, as well as the organization's expectations towards the development of employees to realize their potential and be able to create successors for replacement. The Company has developed courses in collaboration with leading consulting firms which arrange for a development structure in accordance with the position structure within the organization for sustainable development. For the development in the past, we had focused on developing all leaders in order to support personnel in the future with the same direction throughout the organization. For example, there was an offer in the form of an online training program that has partnered with SEAC, providing a new kind of training that can be learned on demand about development on the Empathic Leadership subject to increase the capability of the leader in enhancing the participation of the team.

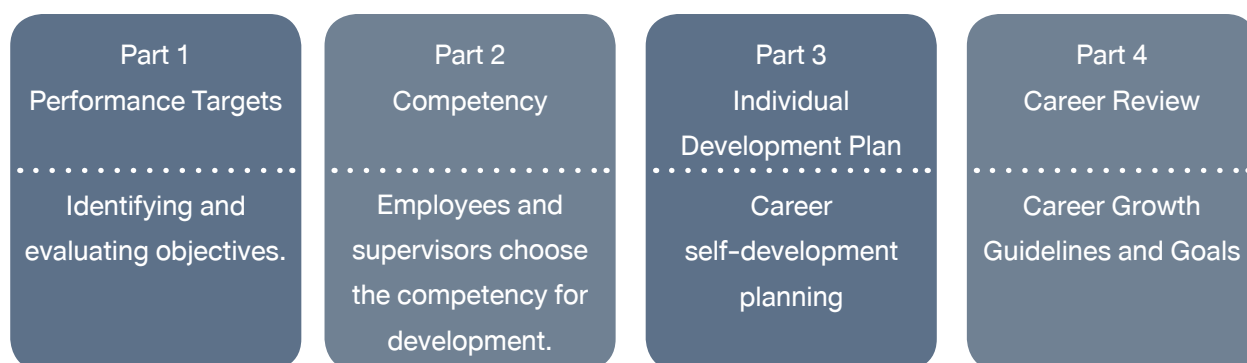




- **Performance Management System: PMS**

All employees have their own performance appraisal each year. This is a communication with the supervisor about the objectives, self-development plan and career path, including professional self-development by encouraging employees to assess and set goals that are consistent with their competency; both core and leadership competencies. This will be done through the evaluation system and it will be used as data for the analysis of a training pattern to develop employees' potential as appropriate and on which the company currently develops a digital system project for the efficiency of the assessment system and data analysis for systematic development planning.

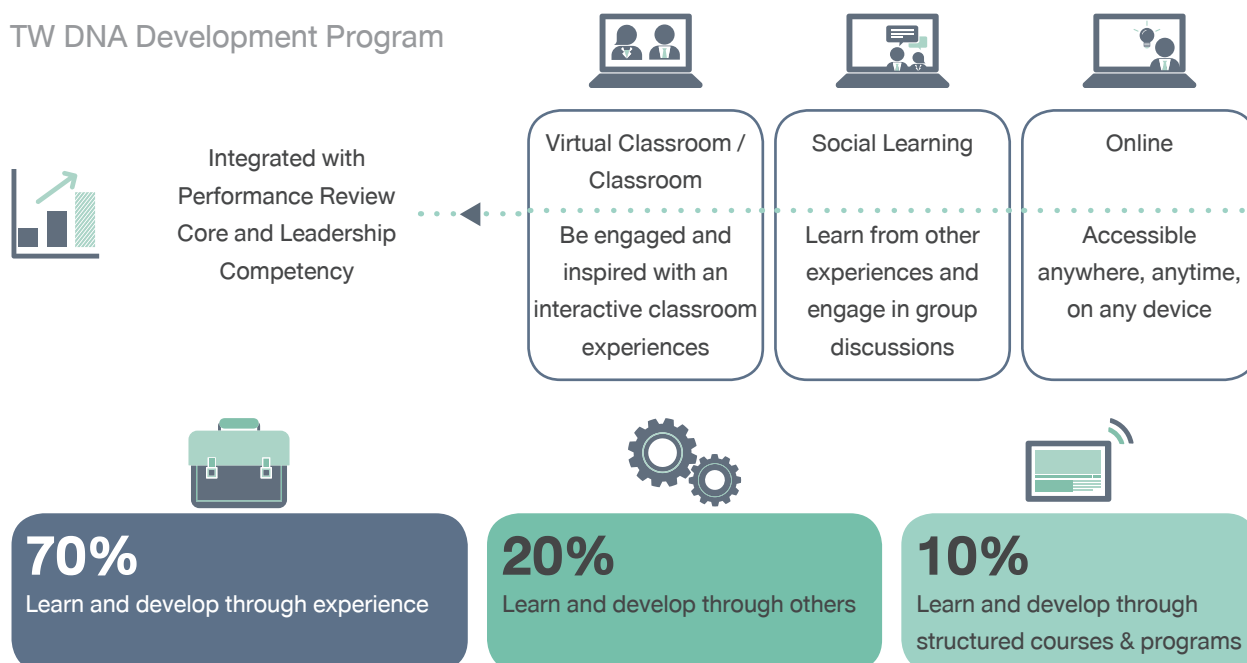
Filling in purpose information is divided into 4 parts as follows:



- **Thai Wah Leadership Academy (TLA)**

The building of new generation executives is also a goal the Company must place great importance on. Thai Wah Leadership Academy (TLA), is thus, designed to develop potential employees to become new generation management through the heredity of DNA, that is, transfer of success and experiences from the former and current generation executives, which have been designed to maximize learning capacity based on the principle of 70-20-10, as follows:

#### TW DNA Development Program



According to the Covid-19 situation, Thai Wah Leadership Academy (TLA) has been developed to TLA DNA Development Program to encourage employees to learn and develop skills through virtual classes to enhance their leadership and be prepared for the changing of business environment. TLA has been designed to develop the organization's human resources and innovation with the contents that are in line with the current global situation.

| No | Mandatory Course   | Time | Upholding Standard | Taking Action | Team Working | Exploring & Embracing Change | Developing Expertise | Developing Strategies | Influencing & Convincing People | Empowering Individuals |
|----|--|------|--------------------|---------------|--------------|------------------------------|----------------------|-----------------------|---------------------------------|------------------------|
| 1  | Adopt an Agile Mindset                                     | 30   | •                  |               |              |                              |                      |                       |                                 |                        |
| 2  | Agile employees: learning to develop skills                | 30   |                    |               |              |                              | •                    |                       |                                 |                        |
| 3  | Agility in Action  | 40   |                    | •             |              |                              |                      |                       |                                 |                        |
| 4  | Change Management  | 40   |                    |               |              | •                            |                      |                       |                                 |                        |
| 5  | Resilience   | 40   | •                  |               |              |                              |                      |                       |                                 |                        |
| 6  | Tomorrow's working methods                                 | 60   |                    |               |              |                              |                      |                       |                                 | •                      |
| 7  | Tools for Transformation                                   | 35   | •                  |               |              |                              |                      |                       |                                 |                        |
| 8  | Work Efficiency: Applying Agile Principles                 | 60   |                    |               |              |                              |                      |                       |                                 | •                      |
| 9  | The Fundamentals of Risk Management                        | 60   |                    |               |              |                              |                      | •                     |                                 |                        |
| 10 | Communicate Effectively to Improve Collaboration           | 45   |                    |               | •            |                              |                      |                       |                                 |                        |
| 11 | How to give and receive feedback                           | 30   |                    |               |              |                              |                      |                       |                                 | •                      |
| 12 | Preparing and managing complex negotiations                | 60   |                    |               |              |                              |                      |                       | •                               |                        |
| 13 | Psychology & Communication Techniques                      | 60   |                    |               |              |                              |                      |                       | •                               |                        |
| 14 | Anticipating & Managing Tensions in a Team                 | 20   |                    |               | •            |                              |                      |                       |                                 |                        |
| 15 | How to Improve Team Performance                            | 25   |                    |               | •            |                              |                      |                       |                                 |                        |
| 16 | The Principles of Emancipatory Management                  | 60   |                    | •             |              | •                            |                      |                       |                                 |                        |
| 17 | Initiate and Organize a Project                            | 40   |                    | •             |              |                              |                      |                       |                                 |                        |
| 18 | Problem Solving: Crack Complex Problems with the 4S Method | 50   |                    |               |              |                              |                      |                       |                                 |                        |
| 19 | Working Efficiently: The 9 Tools You Need to Know About    | 45   |                    |               |              |                              | •                    |                       |                                 |                        |
| 20 | Bringing Out Your Inner Entrepreneur                       | 60   |                    |               |              |                              | •                    |                       |                                 |                        |
| 21 | Master Design Thinking to Become More Agile                | 60   |                    |               |              |                              |                      | •                     |                                 |                        |
| 22 | Unleash Your Inner Creativity                              | 40   |                    |               |              | •                            |                      |                       |                                 |                        |
| 23 | Data: An Impactful Yet Simple Methodology for Business     | 20   |                    |               |              |                              |                      | •                     |                                 |                        |

TLA or Thai Wah Leadership Academy has been implemented to develop potential employees to become new generation management through heredity of DNA, that is, transfer of success and experiences from the former and current generation management.

| Employee Level | Core Competency | Functional Competency | Leadership Competency | Managerial Competency |
|----------------|-----------------|-----------------------|-----------------------|-----------------------|
| Management     | ●               | ◐                     | ◐                     | ●                     |
| Supervisory    | ●               | ●                     | ◐                     |                       |
| Operation      | ●               |                       |                       |                       |

● Develop all level

◐ Develop some level

Learning activities under the TLA program are constantly designed and adjusted, emphasizing on learning related to the work (Work-Integrated Learning Program) and learning activities to develop leadership in various dimensions such as administration, communication, innovation development, creativity and team management. In any case, this is to achieve sustainable development of personnel and the organization simultaneously through teaching and the various courses are designed to meet the needs. Skills and new knowledge obtained can be practically applied.

In addition, the Company also encourages employees to design an Individual Development Plan that is consistent with their competency; both core and leadership competencies. This will be done through the evaluation system and it will be used as data for analysis of a training pattern to develop employees' potential, as appropriate. We believe that leadership development is a key factor in enhancing the personnel engagement to use the potential to drive the organization effectively.

|  | 2019 | 2020 | 2021 | Target 2022 |
|--|------|------|------|-------------|
| Average training time of all employees per person per year | 1    | 1    | 1    | 1           |

In 2021, there were 1,969 employees participating in the career / potential development project, representing 75 percent of the target with a satisfaction score of 4.25 out of 5.

We place importance on laying out the employee structure that ensures proper development and succession, taking into account the diversity in age and professional levels.

| Diversity of Employee               | 2019  | 2020  | 2021  | Target 2022 |
|-------------------------------------|-------|-------|-------|-------------|
| <b>Classified by level (person)</b> |       |       |       |             |
| High-level management               | 6     | 6     | 6     | 6           |
| Middle-level management             | 73    | 73    | 82    | 85          |
| Management                          | 103   | 103   | 122   | 135         |
| Officer                             | 115   | 115   | 183   | 200         |
| <b>Classified by age (person)</b>   |       |       |       |             |
| <30 years old                       | 1,096 | 1,096 | 1,123 | 1,150       |
| 30-50 years old                     | 1,565 | 1,565 | 1,684 | 1,650       |
| >50 years old                       | 149   | 149   | 462   | 460         |

\* Employees in Thailand only

- Employee Engagement Assessment**

In 2021, the Company conducted a survey called PULSE SURVEY for the first year. Due to the COVID-19 situation being more virulent than last year, there has been a change in the work pattern such as work from home to a higher degree and online communication. Therefore, the survey format was adjusted to be more suitable for the situation.

|                                | 2019 | 2020 | 2021 | Target 2022 |
|--------------------------------|------|------|------|-------------|
| Employee engagement scores (%) | 80   | -    | -    | 85          |
| PULSE SURVEY (%)               | -    | -    | 84   | -           |
| Turnover rate (%)              | 16   | 19   | 20   | 15          |

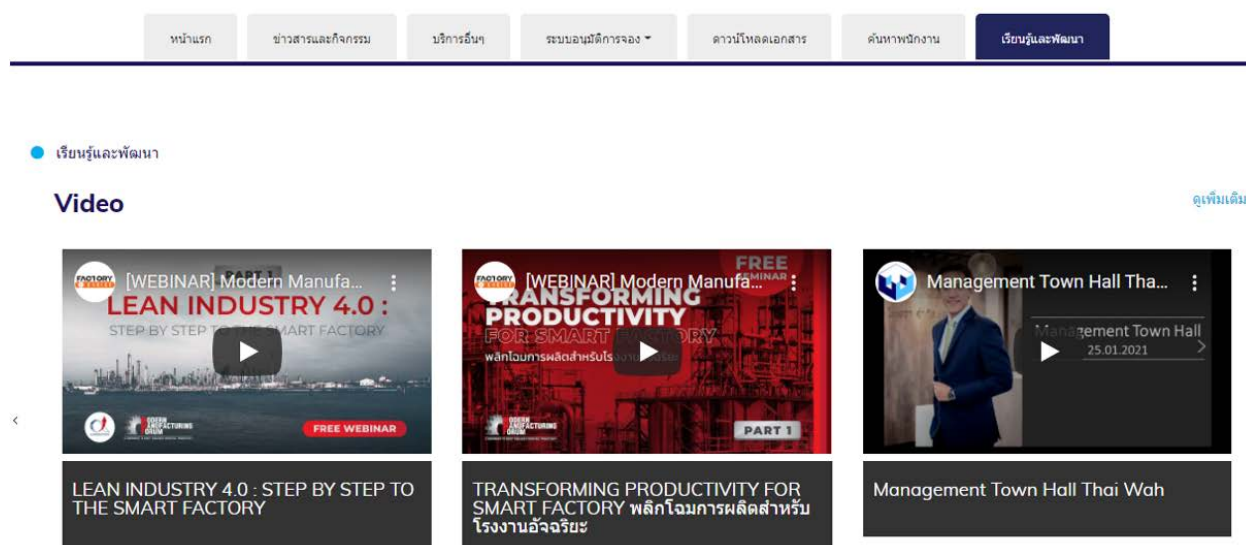


This PULSE SURVEY assessment was conducted entirely online. The overall employee satisfaction score was 84%, with 3 areas receiving the highest scores as follows;

- I have confidence in the top management of the organization.
- I get help when I need it from my supervisor during the COVID-19 epidemic.
- I believe that the health and well-being of employees is what the company prioritizes.

## • HR Information System (HRIS)

The Company has been developing an HR Intranet System intending to reduce work process, enhance operational efficiency, and minimize the use of paper within the organization. The HR integration system was established to create operational data linkage and facilitate access of all the employees to various systems via “One Gateway”. Data damage prevention system has also been put in place. The development of related systems, i.e., pay slip online, HR intranet, leave online, air ticket online, e-learning, and e-search and file online.



## • Complaints Handling Process

The Company has established a complaints channel and handling process including establishing a responsible department where employees can file complaints with their supervisors, human resource, or internal audit department via email: ia@thaiwah.com or telephone: 02-285-0040.

In addition, in order to demonstrate our commitment to supporting gender equality, on August 13, 2021, Mr. Ho Ren Hua, Chief Executive Officer of the Company, signed the Women’s Empowerment Principles (WEPPs).

“The Company has placed priority on fair treatment to all associates on the basis of international human rights standards, with the clear policy on nondiscrimination in the process related to recruitment, employment, compensation and benefit payment, trainings, job assignment, and promotion. We also support and promote female employees’ career development and leadership with the standard evaluation. The Company commits to provide facilities necessary for their work and promote safe and healthy work environment. Participatory culture is equally encouraged for the development of all associates’ quality of life and value, and public mind, thus, enabling our people to have a sense of their worth and reach their full potential”

Ho Ren Hua

Chief Executive Officer

In support of

**WOMEN'S  
EMPOWERMENT  
PRINCIPLES**

Established by UN Women and the  
UN Global Compact Office

Thai Wah also has the policy to hire and promote the employment prospect of people with disabilities to enhance their quality of life, empower them, and support the people with disabilities in realizing their full potential. In 2021, the Company hired disabled people in accordance with the law, which requires a company to hire 1 disabled person for every 100 employees hired.

|   | 2018    | 2019    | 2020    | 2021    | Target 2022 |
|---|---------|---------|---------|---------|-------------|
| The ratio of persons with disabilities to all employees | 1 : 100 | 1 : 100 | 1 : 100 | 1 : 100 | 1 : 100     |
| Proportion of male employees to female employees        | 2.5 : 1 | 2.5 : 1 | 2.5 : 1 | 1 : 1   | 1 : 1       |
| Number of all employees (person)                        | 2,040   | 2,810   | 2,866   | 3,269   | 3,300       |

The Company has provided various channels to receive opinions and suggestions from the employees, such as the intranet and suggestion box.

- **Employee Stewardship during Covid-19**

During the Covid-19 pandemic, the Company has set up the “Core BCP Team”, of which the members include EXCO and Risk Management Team, since year 2020. The team objective is to be the central data center to assess related impacts and determine measures and directions in providing support to the employees. Measures implemented include working from home, provision of hygienic masks and alcohol gel to all the employees, COVID-19 screening for employees and visitors, regular office disinfection during the outbreak, COVID-19 insurance coverage for all employees, manage and provide vaccines to employees, provision of temporary shelter for employees in the risk groups, and flexible working hours for employees, who have to come to the office, to avoid congestion during rush hours. The Company

also supplied necessary resources for the continuation of business operation during the crisis, such as providing laptops to the employees to work from home, subsidizing their internet fees, and setting up Microsoft teams and Zoom for teleconferences, etc.

Thai Wah strive to mitigate employees' plight as a result of the Covid-19 pandemic. All employees are being maintained in accordance with the Company's personnel care policy with no layoff nor salary reduction. The Company also paid for COVID-19 test for our employees who are in the risk groups, and paid during their 14-day quarantine leave. Screening stations have been set up at the entrances to ensure normal body temperature and proper mask-wearing, while alcohol gels are also placed in several spots, provided Antigen-test-kit (ATK). Teleconferences have been conducted every morning with members of Thai Wah's 15 factories, and twice a week with our domestic and overseas operation bases, to receive updates on the latest situation, communicate, and provide prompt advices and assistance.

Due to health and the safety of all employees is the most important matter, the company has therefore accelerated the of the Covid-19 vaccine acquisition to all employees includes factories in Thailand, Vietnam, China, and Indonesia. Currently, more than 99% of our employees have received their first and second dose of Covid-19 vaccine. The company is helping to provide the Covid-19 vaccine booster all employees.

In addition, the company recognizes the importance of employees' families. Therefore, the company prepare to get alternative vaccines for family members of employees as well. This is the company's responsibility to society to reduce the risk of spreading Covid-19 and support herd immunity in Thai society in the near future.



The background of the page is a detailed photograph of various breads and wheat stalks. In the upper left, there are round buns topped with sesame seeds. To the right, a large, braided loaf of bread is visible. Below it, several stalks of wheat are tied together. In the foreground, there are more breads, including a long, golden-brown loaf and a smaller, round one. The entire scene is set against a rustic, burlap-textured background.

## Organic Food and Healthy Food R&D

The spread of the COVID-19 pandemic brought about changes in all business groups as well as changes in consumer behaviors. As for Thai Wah, which is in the agriculture and food business, we must cope with the safety throughout the entire process as consumers have turned to give priority to cleaner, safer, and healthier food. Thai Wah is an international food producer and exporter, who exports to ASEAN countries as well as more than 32 countries worldwide. We are committed to building consumer confidence and producing or developing products that are up to date and meet the market demands that are always adjusting.

With our expertise and experience in tapioca flour and food products made from flour, we pay meticulous attention starting from selection of raw materials that goes through quality selection process, supervision of production process, and final quality inspection before delivering products into the hands of customers and consumers worldwide. As a business leader in the agriculture and food industry, the Company gives great priority to improvement of quality and safety levels throughout the entire process with the ongoing intention and commitment in the development of consumer's good health. In 2021,



the Company continuously collaborated with its business partners, research institute, and Chulalongkorn University on research for new food innovations in order to achieve good products, that are delicious, convenient, have nutritional value and are good for health so as to maintain the sustainability of its leadership in the food business.

## Innovations on Procedures, Products, and Services

Quick changes that occurred today have several aspects which can affect business performance, both in terms of risk and opportunity. As for Thai Wah, which is in the business related to agriculture and food industry, changes in consumer consumption behaviors is thus considered an important matter by the Company. The Company emphasizes being part of the support for good living and daily life of consumers, as good health starts with the consumption of food with complete nutritional values according to the correct nutritional principle. For this reason, the Company is greatly aware of its responsibility in conducting research and development of innovative products for consumers' good health as well as continuing its operation in reducing the use of natural resources and reducing the effects on the environment.

Thai Wah therefore places great importance on the research of new innovations in order to promote the better well-being of consumers and meet the needs of consumers of all ages. The Company has planned to develop innovations that are friendly to society and the environment as a guideline in advancing the development of healthy food and as an organization which will help to improve the well-being of consumers in society. We aim to present new alternatives to consumers by having product development process with standard, safety, and richness in nutrients that meets the needs of each group of consumers. We also intend to create knowledge and understanding of products for better health as well. The Company has the goal of having products for health and consumers' well-being being created from at least 50 percent of the Company's Research and Development Project on Innovations.

The main factors which are under consideration in the process of developing health products consist of increasing nutritional quality that is convenient to consumers, creating diversity of products by using local raw materials and ingredients, having appropriate price, and meeting market and consumer trends. In 2021, the Company developed a new product, that is, food made from plants as food ingredients in order to promote food products from plants which is the world food trend. Not only it is good for health, but it is also for conservation of the environment as well as for promotion of sustainable agriculture. Thai Wah has thus started to deliver and/or sell prototype products to targeted groups of customers, both domestically and internationally, in order for them to try. During the past year, a total of five new products has been introduced, of which 70 percent of the total products had been through the product development process with emphasis on nutrition, health, and good well-being of consumers.

## Product Performance innovations focus to improve nutritional outcomes

|  | 2020 | 2021 | Target 2022 |
|--|------|------|-------------|
| Number of consumer health and wellness products                          | 5    | 5    | 5           |
| Developed products that focus on health and wellness to new products (%) | 50   | 70   | 85          |

## Thai Wah and World Trend 2021



### Virtual Everything Is Here To Stay

Many companies have changed the way they work by being connected via internet, and by not meeting face to face. Thai Wah has also brought technology into the way we work such as meeting via MS Teams, using GoPro cameras for live broadcast from production lines, and attending worldwide meetings through digital channels. In 2021, virtual communications will be developed and will be more widely used. Another tool which will play a role on present day work is Data Analytics. It can be used in analyzing and predicting things that may occur in the business more precisely.



### The Future of Food

**Air protein:** Protein from air, which has been synthesized from carbon dioxide. A start-up, under the name of “Air Protein,” received capital of more than 32 million US dollars from ADM Ventures Barclays and Google Ventures in its product development for sale to consumers.

**Cell-based food:** Production of plants and meats from laboratory by tissue culture from plant or animal cells, in order to achieve sustainability of raw materials in food production in the future.

**Plant-based meat:** It has been predicted that the synthetic meat market will have growth of 14 percent due to more consumption, of which the most important factor is that it is good for body and health, better than consumption of real meat.



### Regenerative agricultural

The regenerative agricultural system is an agricultural system that enhances soil abundance and soil biological base, along with increasing production efficiency. It is an agricultural system which has high economic and biological stability, reduces the destruction level of the ecosystem outside the farm, reduces the use of chemical fertilizers, and can be linked to the development of the company’s social responsibility towards activities that have effects on society and the environment.

- **Organic products**

The New Normal era has affected the consumers' behaviors. They take more care of their health, have more concerns about family health, and look for safe and healthy food. Consequently, the consumption and selection of organic products have grown more popular among consumers nowadays. It is likely that consuming more organic or natural food that does not contain chemicals will continuously gain more popularity. "Determined to deliver the best to consumers" is our main strategy because of the health benefits associated with the selection of goods for consumption. Therefore, Thai Wah continues to focus on producing healthy and nutritious products.

We, Thai Wah, believe that rice, cassava and other relevant ingredients are more than just agricultural products. They are regarded as fundamental factors in people's lives as well as parts that drive economic development and help save the environment. Our company is committed to developing innovations to deliver clean and nutritious products for sustainable consumption according to the mission of Thai Wah. Currently, Thai Wah is certified ECOCERT® for its products: glutinous rice starch, rice starch, dry rice noodle, dry vermicelli noodle, and tapioca starch. For exports to the United States and Europe, organic certification will increase the opportunity of "Thai Wah" to compete in the world market such as:

- Add value to agricultural products
- Grow in new markets such as organic food market, and market with its food for health-loving customers who are concerned about food safety
- Expand customer base to USA and EU
- Establish a bond of trust with customers and consumers





Organic products refer to products made from raw materials, and come from organic agriculture or agriculture that does not use chemicals that are harmful to humans or the environment, including Non-GMOs. These products are safe for consumers and the environment. In addition, accreditation is required for the production process, harvesting, processing and packaging.

## Organic Agriculture

Nature friendly-planting and production



No  
fertilizer, no chemical



No  
pesticides



No  
hormones use

## Why organic products are good for us



“Building sustainability from the ground up”





- Healthy Food and Environmentally Friendly Food



### Double Dragon Balance

#### Benefit

- Premium mung bean
- Low GI, balance blood sugar level
- No bleaching, gluten-free, chemical-free
- Received International Taste Institute, 2-star since 2020



### Food Ingredient Products

#### Benefit

- Flour for baked and fried food, gluten-free
- Plant fiber, balance blood sugar level



### Waxy Tapioca Starch

#### Benefit

- 100% plant-based
- Gluten-free
- Non-GMO and chemical-free
- High elasticity and transparency, can be used as modified starch alternative
- High amylopectin, higher viscosity compared to other type of starch
- Low temperature during production process to increase efficiency, reduce waste and reduce carbon dioxide from the process.

**“An excellent texturizer with its high moisture retention and expansion properties”**

<https://www.rosestarch.com/expertise/Waxy-tapioca-starch>

# Our Expertise



## Bakery

High performance for delicate applications

CASSBAKE™ 101

CASSMAX™ 20

## Batter and breading

Appetizing appearance with built-in functionality

AMYROSE™ 738RF

CASSBIND™ 321P



## Meat

Cost-effective solutions for yield and texture

CASSTEX™ 13

CASSBIND™ 365P

AMYROSE™ HV600



## Dairy Products

Dependable stability with clean flavor

CASSFLO™ 500

AMYROSE™ 184RS

CASSMAX™ 23



## Noodle

Consumer satisfaction with processing ease

CASSTEX™ 22

CASSTEX™ 54

AMYROSE™ 200GF



## Soup, sauce and dressing

Process specific functionality for perfect texture

CASSFLO™ 500

AMYROSE™ 184RS

CASSMAX™ 23

## Snack

Stand out snack foods with creative textures

CASSTEXTM 31

CASSLITETM 100

AMYROSE CRISPTM



## Others

Serving up tasty drink with tapioca pearls add texture to bubble tea



- **Bioplastic products from tapioca starch**

Apart from food research and development, the Company has been conducting research and development of new product which is environmentally friendly and meet the consumer behavior of using more food packaging. The Company initiates news business, i.e., bioplastic, creating value for tapioca starch Bioplastic can be 100% biodegraded, which are used for packaging and agricultural usage to reduce non-biodegradable plastic.

**ROSECO**



Thai Wah is the first tapioca starch-derived bioplastic under ROSECO brand to add value to agricultural products which is in line with our key sustainable strategy. We also commit to develop the business sustainably and take part in protecting and solving environmental issues such as plastic waste and global warming. Bioplastics are considered to be one of the key innovations in the contribution to biological ecosystems to address waste reduction and sustainable packaging solutions.

- Increase the amount of recycled material for more than 50 percent.
- Reduce carbon dioxide emissions and reduce waste disposal.
- Reduce costs

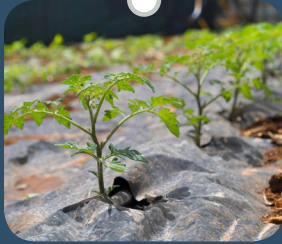
In addition, innovative technologies of bioplastics are in line with “Circular Economy” or one of the key models driving the BCG Economy to prepare for the transition to a new economic system that will lead to sustainable development in the future. Bioplastics technology also brings benefits to the development of Thai industry. It can be used to produce products that are biodegradable, such as disposable packaging e.g., bags, glass straws and used in the agricultural industry, such as biodegradable mulch.





# “A Sustainable zero-waste solution for the better world”

An effective way to reduce Food Insecurity and Plastic Waste



Mulch film



Cutlery



Garbage bags



Food container



Straw



Net



Shopping bags



Cup

Many global consumer goods manufacturers have pledged to minimize the use of fossil-based plastics and support bioplastics and compostable plastics. The demand for these products is growing strongly which influence the business investment and expansion around the world, especially China, Korea and Japan, ready to be a leader in Asia. There are millions of investors in expanding local bioplastics production capacity.

**Engaging New Solutions to Meet Sustainability Commitments**

**RETHINKING MATERIALS**  
FROM MAY 19-20, 2021

**Sonalie Figueras**  
Founder and Editor-in-Chief  
GREEN QUEEN

**Hugo Menillo**  
Global Foods Packaging Director  
UNILEVER

**Kory Noak**  
VP Packaging R&I  
DANONE

**George Thomas**  
CEO, The Americas  
EARTHFIRST FILMS BY PSI

**Ho Ren Hua**  
CEO  
THAI WAH

**Daphna Nissenbaum**  
CEO and Co-Founder  
TIPA

**Markus Pfanner**  
Group VP Sustainability  
TETRA PAK INTERNATIONAL SA

rethinkingmaterials.com

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# Sustainable BioPlasticsAsia

19 January 2022, 15:00 SGT (GMT +8)



**SPEAKERS**

  
**HO REN HUA**  
CEO  
Thai Wah PCL

  
**IAN TOH**  
Commercial Director, APAC  
NatureWorks Biopolymers

  
**RICHARD HORNE**  
Chief Commercial Officer  
Polymateria

  
**DR. KEVIN (YIHU) YANG**  
CEO  
Shenzhen eSun Industrial Co.

  
**ROWAN WILLIAMS**  
Regional Market Development Manager  
Asia Pacific, Biopolymers ecoflex & ecovio  
BASF Australia

  
**DR. LONG LE THANG NGUYEN**  
Deputy CEO  
An Phat Holdings  
General Director  
PBAT AN PHAT

  
**KITTI WANGIWATSILP**  
Assistant Vice President  
Packaging R&D and Innovation  
CPF Food Research & Development  
Center Co. Ltd



## • Innovation Hub

For the past 2 years, Thai Wah has been cooperate with an Innovative Research Center at the Faculty of Science, Chulalongkorn University to support research and development on food and health, as well as R&D of products for sustainability, in the forms of research grants or joint researches with the Faculty of Science or other faculties of Chulalongkorn University. The aim is to produce more of the researchers who are specialized in the fields that match the Company's needs, and to conveniently build upon the research results for commercial purpose. In addition to the Innovative Research Center, there are Ideation Hub at Headquarter, Sathorn and Application Hub at Shanghai, China. Thai Wah has also forged cooperation network with other public and private research institutes to jointly conduct R&D for the manufacturing of new healthy products into the market.



Innovation Hub at Chula



Application Hub at Shanghai



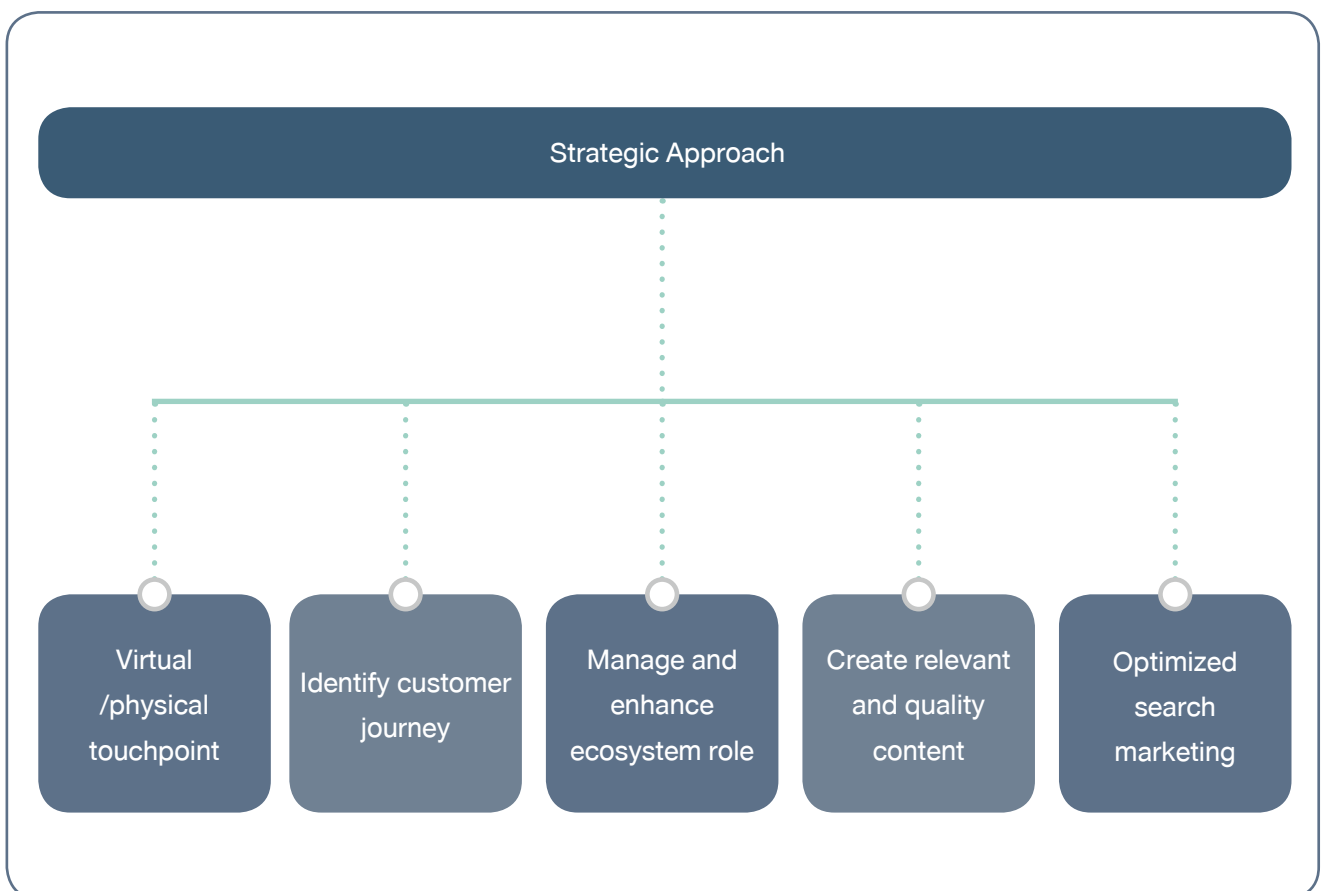
Ideation Hub at Sathorn

|  | 2019 | 2020 | 2021 | Target 2022 |
|--|------|------|------|-------------|
| Research and Development Expenses            | 22.8 | 24.5 | 33.8 | 37.2        |
| Number of Research and Development Personnel | 11   | 14   | 14   | 15          |
| Number of Patents and Petty Patents          | -    | -    | -    | 1-2         |

- **Digital Marketing Technology and Sustainability**

One of the rapid changes that has been occurred currently is the technological advancement. An outbreak of COVID-19 pandemic and the consequential social distancing measure have caused disruptive change to global digital technology trend and consumer behavior, prompting consumers to adjust themselves into the so-called New Normal. COVID-19 is a catalyst that forces all sectors to reshape daily-life behaviors, work, consumption, and shopping habits. Most consumers turn to online shopping for their safety and convenience. They also become more aware of their own health and opt for behaviors that contribute to social sustainability.

With the rapid change in businesses and e-commerce, Thai Wah has finetuned our business and service direction to be in line with the changing consumer behavior. Such finetuning has helped reduce cost and expenses, and reflected the Company's transparency and social and environmental responsibility, as well as our commitment to conduct business responsibly. Online advertisement via various social media platforms, i.e., the Company's website, Facebook, YouTube, LinkedIn, and Line@, has been undertaken in order to communicate with and receive feedbacks directly from the consumers, promote customer engagement through digital marketing, and enhance capacity and diversity of communication platforms. This is for brand recognition and growth, both in terms of the corporate image and increased sales. The Company also has a marketing strategy that meet the changes.





[www.thaiwah.com/](http://www.thaiwah.com/)



<https://web.facebook.com/Thaiwahofficial>



[www.youtube.com](http://www.youtube.com)  
Thai Wah Public Company  
Limited



[www.linkedin.com](http://www.linkedin.com)  
Thai Wah Public Company  
Limited



[www.rosestarch.com/](http://www.rosestarch.com/)



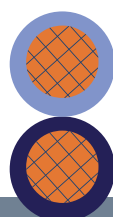
<https://doubledragonbrand.com/>



Stay home and order online  
at Lazada and Shopee



<https://vn.doubledragonbrand.com/en/>



[www.thaiwahventures.com/](http://www.thaiwahventures.com/)



@ThaiwahStarch  
@Thaiwahlovenoodles



[www.knowde.com/stores/ThaiWah](http://www.knowde.com/stores/ThaiWah)

# Enhancing Quality and Food Safety

Thai Wah has been aware of the safety measures in every single production process and focus on the employees' safety awareness with efficient traceability system and production validation through use of scientific methods and modern and standardized equipment. The Company's food manufacturing process is operated in accordance with HACCP and GMP management systems to ensure safety of our food products and comply with laws and regulations of both Thailand and partner countries on food safety. Moreover, in May 2021, Vermicelli and Rice Noodle Factory in Banglane, Nakorn Pathom province, is approved in "IPHA – Industrial and Production Hygiene Administration" to emphasize the confidence in safety measures to cope with Covid-19.

The Company's internal control procedure has continuously been improved to ensure that related data and information be accurate, complete, and can be explicitly disclosed to concerned parties. We have a policy to manufacture high quality and standard products through adoption of efficient and modern technologies and product quality traceability system at all production stages, as a result of which the Company has been certified with many international standards as follows:

## Starch Factory



## Food Factory



Covid-19 situation influence consumer behavior around the world which reflect priority on food quality and safety, especially nutritional food with safe production process in addition to taste, diversity, and convenience. Priority has been placed on product research and development to meet the need of consumers for adequate access to food and healthy nutrition. This challenging situation is an important opportunity that the Company have to constantly develop our products. Our laboratory capacity has been enhanced, and as a result, the Company has been certified with ISO/IEC 17025 from Ministry of Public Health.

In addition, the Company is committed to maintaining and developing quality management systems throughout the organization to produce quality products and safe for consumption, controlling quality throughout the value chain, and instilling knowledge and awareness on good nutrition among the public to keep up with the changes.



## Product and Service Labelling

The Company has been aware of the importance in accurately displaying product information and made it an obligation to attach the packages and/or labels of all Company's products with the information on nutrition, proper cooking instruction, and any other information that is in line with related laws, regulations, and international standards. This is in order for the consumers to get the most out the use of company products. The Company also organize training for employees to understand relevant standards and importance of displaying product information which is to promote employees' working efficiency.

The Company commits to produce quality, safe, and healthy products which are delivered on time to meet consumer's satisfaction. Quality and production control have been regularly implemented on par with the international standard. Customer satisfaction is our performance indicator based on which product quality and services are further improved and developed.

## Brand Equity

The Company believes that our mission is to create quality products with nutritional values through food quality analysis process in a bid to gain trust from our customers across the globe. In order to sustain our product leadership, we strive to continuously collaborate with regional business partners in R&D and development of different innovations.

- Marketing Communication and Customer Privacy

The company commits to produce quality, safe, and healthy products which are delivered on time to meet consumer's satisfaction. Quality and production control have been regularly implemented on par with the international standard. Customer satisfaction is our performance indicator, based on which product quality and services are further improved and developed.

The company annually conduct customer satisfaction evaluation on Thai Wah's products and services. The results have been submitted to the management every year for further product and service development, as well as planning of sales promotion. The development plans, formulated based on the customer satisfaction evaluation in 2021 can be summarized as follows:

### Development and Improvement Plan Year 2022

Revise the packaging to be more convenient and meet the needs of users

Develop original products and new products to answer the needs of customers better

Revise formats of marketing activities to better meet the needs, both in terms of price and profit

Allocate activities to be appropriate with each channel and consider revising activities to be more balanced

Furthermore, the Company also has online channels in communicating with consumers through Facebook pages of Double Dragons and Double Kirins. In 2021, the Company has adjusted the format of prize-winning activities to be in the form of accumulated scores through the Line official account, under the name of “Thai Wah, Noodle Lovers,” in order for customers to participate in the activities more conveniently. This Line official account is also another channel for the Company to use in communicating and disseminating different stories to customers. All customer data will be strictly kept confidential according to the Company’s security maintenance policy.

• **Improvement of Product Quality and Service from Evaluation Results**

From the results of the Customer Satisfaction Survey, the topic which customers would like to have improved is the long waiting period for product pickup at the factory. The warehouse department and sale department have planned to improve this matter by creating a system in which appointment can be made in advance. Date and time for product pickup can be specified and there will be no more waiting. The number of personnel will be managed appropriate to the quantity of products that have to be loaded onto the vehicles each day. In the case where customers have to actually wait for the products, a separate reception room has been prepared for convenience during the wait for product pickup. As for the packaging, of which the bag type has the problem of being ripped or broken, a test for the bag’s transportation has been performed. Another drop test also has been performed in order to ensure that the packaging can withstand the actual working condition.

Customers can be divided into 5 groups



**Questionnaire Topics**

|   |   |
|---|---|
|  | Overall satisfaction of the product   |
| .....   |   |
|  | Overall quality of the product  |
| .....   |   |
|  | Overall quality of the packaging  |
| .....   |   |
|  | Overall satisfaction of product delivery  |
| .....   |   |
|  | Overall satisfaction of service and coordination from sale employee   |
| .....   |   |
|  | Overall satisfaction of marketing activities  |
| .....   |   |
|  | Overall satisfaction of sale promotion program  |
| .....   |   |
|  | Prize winning activities, The more you buy, the more you earn, The more it is sold, the more it is worthwhile, 2021 |

- Customer satisfaction scores

|                 | 2018 | 2019 | 2020 | 2021 | Target 2022   |
|-----------------|------|------|------|------|---|
| Starch Business | 86   | 90   | 83   | 83   | 84  |
| Food Business   | 85   | 84   | 86   | 86   | Increase the level of customer satisfaction by being at least 88.5% |

- Food Business

|                               | 2018       | 2019        | 2020         | 2021        | Target 2022 |
|-------------------------------|------------|-------------|--------------|-------------|-------------|
| Brand Awareness               | 43% / 22%* | 35% / 20%** | 33% / 19%*** | 37%/23%**** | Maintain    |
| TOM Brand Penetration (share) | 66% / 31%* | 47% / 33%** | 56% / 40%*** | 70%/39%**** | Maintain    |

\* Double Kirin in fresh vermicelli / Double Dragon in dry vermicelli brand measure from U&A Consumer Study by Nielsen Research in 2016

\*\* Double Kirin in fresh vermicelli / Double Dragon in dry vermicelli brand measure from U&A Consumer Study by Nielsen Research in 2019

\*\*\* Double Kirin in fresh vermicelli / Double Dragon in dry vermicelli brand measure from U&A Consumer Study by Nielsen Research in 2020

\*\*\*\* Double Kirin in fresh vermicelli / Double Dragon in dry vermicelli brand measure from U&A Consumer Study by Nielsen Research in 2021

- An Increase of Customer Engagement for Sustainable Growth

### Public relations assistance provided to restaurant entrepreneurs

In 2021, Double Kirin brand of Thai Wah PCL. has an idea wanting to help promote street food operators that are our customers by having them share their stories of how they were able to overcome difficulties during the COVID-19 crisis, as well as their success secrets in operating restaurants. By sharing their experiences, this will help to encourage one another. This is because it is the belief of Thai Wah that learning from actual experiences will help other entrepreneurs to be able to build on their existing street food businesses. In addition, it is another channel of public relations that will help promote the restaurant to be widely recognized.

A man with a mustache and goatee, wearing a dark blue tank top, holds a white sign in front of his chest. The sign has Thai text written on it. He is standing in what appears to be a shop or a stall, with various items and posters visible in the background.

2021 Sustainability Report  
Thai Wah Public Company Limited



## Webinar by Rose Brand



Our first webinar has been successfully launched to share with our valued customers as well as support our sell team to obtain a deeper understanding of the products. In 2021, there are 3 webinars with the topic as follows:

- **Waxy Tapioca Starch:** ROSE BRAND AMYROSE series, the most sustainable and versatile, natural ingredient around
- **Rice Flour & Rice Starch:** A natural based ROSE BRAND AMYROSE rice product series
- **The Future Alternative of Free-From:** ROSE BRAND simple & natural cassava flour, CASSBAKE101

Our first webinar has been successfully launched to share with our valued customers around the world from the USA, Thailand, Vietnam, Malaysia, Cambodia, Canada, Indonesia, Netherlands, Singapore and France. A great event for our new and longstanding valuable customers to obtain a deeper understanding of the properties and benefits of Waxy Tapioca Starch, Rice Flour & Rice Starch, and Cassava Flour which are new and innovative, naturally, sustainably sourced ingredient. This webinar provides product information to customers, thereby increasing the engagement of customers and consumers. The company also bring suggestions for further research and development of products to meet consumers' needs.

Moreover, Thai Wah also exchanged insights on innovations, trends and opportunities, which are important for the food and beverage industry. We have gained an in-depth understanding to drive the business forward. We had an opportunity to connect with other participants and exhibitors, including people who are interested in our products. We will continue to develop innovative ROSE BRANDS products and will continue to launch a webinar program to share our knowledge with customers and to support our sales team.

Thai Wah we also join and contribute in several global event

In addition to the events organized by the company, Thai Wah also participated in various events related to the Company's business to be part of food development and innovation, exchange knowledge and experience with many experts, including creating ecosystems and expanding food business networks to move towards sustainable food development and food security around the world.







## Appendix

### About this Report

Thai Wah Public Company Limited reports on its sustainability every year, aiming to be a channel for communicating the Company's business sustainability commitment to the public through the dissemination of its performance on the critical issues to business operations and stakeholders, as well as economic, social, and environmental impacts. The Company has disclosed key indicators, goals, and operational improvement from the integrated sustainability strategies with business practices and responsibilities according to Thai Wah's core values towards innovation development to promote sustainability from farm to shelf.



## Reporting Period and Boundary

The Sustainable Development Report 2021 covers complete operations of both the Company and subsidiaries throughout the year from January 1, 2021 to December 31, 2021, covering the Company's three main businesses include 1) flour and related products, 2) vermicelli and noodle products, and 3) biodegradable products.

## Reporting Cycle

Annually

## Report details and reporting references

This report is the 4th Annual Sustainable Development Report of Thai Wah Public Company Limited. This report has been prepared in accordance with the GRI Standards: Core option. Also, the organizational operations are considered with the Sustainable Development Goals (SDGs).

## Guidelines for report contents

The report contents are linked to Sustainable Development Strategy and consistent with Thai Wah's important sustainability issues. The Company adheres to stakeholder engagement and sustainability contexts as a key in the process of identifying and defining report contents. There are four steps as follows:

1. Select and improve reporting issues from the workshops with senior management, while considering important factors such as the interests of stakeholders both inside and outside the organization, including key issues of group companies in the same industry.
2. Bring the issues to be analyzed and prioritized by considering important impacts of business operations to the economy, society and environment as well as external stakeholders.
3. Submit the issues to the Audit Risk Management and Corporate Governance Committee (ARCG) for a yearly review and approval of significant sustainability issues within the scope of internal and external impacts.
4. Disclose information in the sustainability reports continuously, including provision of channels for opinions, points of view, and suggestions of external stakeholders, as well as recommendations on the organization's sustainability guidelines for further development and improvement of the organization's operating model.

## Third Party Certification

The financial performance is reviewed by EY Office Company Limited, as detailed in the auditor's report for the Company's Annual Report 2021.

## Access to Sustainability Reports

Sustainability Reports for the year 2021 and others, including the Company's GRI Content Index and Sustainability Performance Data, are available on the Company's website in the sustainability section.



## 2021 Sustainability Report



<https://sdjourney.thaiwah.com/en/downloads/sd-report>

## Contact

The Company welcomes opinions and suggestions to develop and improve the organization's operations and performance reports in the following years. The contact can be done through the following channels:

- **Corporate Communication and Sustainability Department**

Thai Wah Public Company Limited

Telephone : 02-285-0040

Email : [sd@thaiwah.com](mailto:sd@thaiwah.com)

- **Feedback Survey of the Sustainability Report 2021**



Scan the QR Code to answer the questionnaire, suggest or comment on the sustainability reports.

**GRI**



# GRI Content Index

## GRI 102: General Disclosures

| GRI                             | Disclosures   | Page / Website / Omission  | External Assurance |
|---------------------------------|---|--|--------------------|
| <b>Organizational Profile</b>   |   |  |                    |
| GRI 102:<br>General Disclosures | 102-1 Name of the organization                                      | Front cover and back cover   |                    |
|                                 | 102-2 Activities, brands, products, and services                    | 8  |                    |
|                                 | 102-3 Location of headquarters                                      | Annual Report 7  |                    |
|                                 | 102-4 Location of operations  | 9  |                    |
|                                 | 102-5 Ownership and legal form                                      | Annual Report 7  |                    |
|                                 | 102-6 Markets served  | 9  |                    |
|                                 | 102-7 Scale of the organization                                     | 16-17, Annual Report 10  |                    |
|                                 | 102-8 Information on employees and other workers                    | 93, 95   |                    |
|                                 | 102-9 Supply chain  | 10-11  |                    |
|                                 | 102-10 Significant changes to the organization and its supply chain | 8, 12, 13-14   |                    |
|                                 | 102-11 Precautionary principle or approach                          | 34-38, 42  |                    |
|                                 | 102-12 External initiatives   | 16, 71   |                    |
|                                 | 102-13 Membership of associations                                   | 16   |                    |
| <b>Strategy</b>                 |   |  |                    |
| GRI 102:<br>General Disclosures | 102-14 Statement from senior decision-maker                         | 4-6  |                    |
|                                 | 102-15 Key impacts, risks, and opportunities                        | 24-26  |                    |
| <b>Ethics and Integrity</b>     |   |  |                    |
| GRI 102:<br>General Disclosures | 102-16 Values, principles, standards, and norms of behaviour        | After cover page   |                    |
| <b>Governance</b>               |   |  |                    |
| GRI 102:<br>General Disclosures | 102-18 Governance structure   | 31, Annual Report 115<br><a href="https://www.thaiwah.com/en/about-thai-wah/organization-structure">https://www.thaiwah.com/en/about-thai-wah/organization-structure</a>                           |                    |
| <b>Stakeholder Engagement</b>   |   |  |                    |
| GRI 102:<br>General Disclosures | 102-40 List of stakeholder groups                                   | 10-11, 24-26   |                    |
|                                 | 102-41 Collective bargaining agreements                             | Thai Wah does not have a trade union. However, Thai Wah has its welfare committee which is composed of representatives from all levels of employees with similar responsibilities to a trade union |                    |
|                                 | 102-42 Identifying and selecting stakeholders                       | 10-11, 22-23   |                    |
|                                 | 102-43 Approach to stakeholder engagement                           | 24-26  |                    |

| GRI                             | Disclosures   | Page / Website / Omission                               | External Assurance |
|---------------------------------|---|---|--------------------|
|                                 | 102-44 Key topics and concerns raised                             | 24-26   |                    |
| <b>Reporting Practice</b>       |   |   |                    |
| GRI 102:<br>General Disclosures | 102-45 Entities included in the consolidated financial statements | Annual Report 158-174                                   |                    |
|                                 | 102-46 Defining report content and topic boundaries               | 116-118   |                    |
|                                 | 102-47 List of material topics                                    | 22  |                    |
|                                 | 102-48 Restatements of information                                | No restatements of information given in previous report |                    |
|                                 | 102-49 Changes in reporting                                       | 24-26   |                    |
|                                 | 102-50 Reporting period   | 117   |                    |
|                                 | 102-51 Date of most recent report                                 | March 2021  |                    |
|                                 | 102-52 Reporting cycle  | 117   |                    |
|                                 | 102-53 Contact point for questions regarding the report           | 118   |                    |
|                                 | 102-54 Claims of reporting in accordance with the GRI Standards   | 117   |                    |
|                                 | 102-55 GRI content index  | 120-126   |                    |
|                                 | 102-56 External assurance   | 117   |                    |

## Material Topics

| GRI   | Disclosures  | Page / Website / Omission | External Assurance |
|---|--|---------------------------|--------------------|
| <b>Economic Performance</b>                   |  |                           |                    |
| GRI 103:<br>Management Approach<br>2016       | 103-1 Explanation of the material topic and its boundary | Annual Report 11-16       |                    |
|   | 103-2 The management approach and its components         | Annual Report 11-16       |                    |
|   | 103-3 Evaluation of the management approach              | Annual Report 11-16       |                    |
| GRI 201:<br>Economic<br>Performance 2016      | 201-1 Direct economic value generated and distributed    | 16<br>Annual Report 11-16 |                    |
| <b>Indirect Economic Impacts</b>              |  |                           |                    |
| GRI 103:<br>Management Approach<br>2016       | 103-1 Explanation of the material topic and its boundary | 43-62                     |                    |
|   | 103-2 The management approach and its components         | 43-62                     |                    |
|   | 103-3 Evaluation of the management approach              | 43-62                     |                    |
| GRI 203: Indirect<br>Economic Impacts<br>2016 | 203-2 Significant Indirect Economic Impacts              | 47-49, 62                 |                    |



| GRI                                       | Disclosures  | Page / Website / Omission            | External Assurance |
|---|--|--------------------------------------|--------------------|
| <b>Procurement Practices</b>              |  |                                      |                    |
| GRI 103:<br>Management Approach<br>2016   | 103-1 Explanation of the material topic and its boundary                       | 40-41                                |                    |
|   | 103-2 The management approach and its components                               | 40-41                                |                    |
|   | 103-3 Evaluation of the management approach                                    | 40-41                                |                    |
| GRI 204:<br>Procurement practices<br>2016 | 204-1 Proportion of spending on local suppliers                                | 41                                   |                    |
| <b>Anti-corruption</b>                    |  |                                      |                    |
| GRI 103:<br>Management Approach<br>2016   | 103-1 Explanation of the material topic and its boundary                       | 37-39                                |                    |
|   | 103-2 The management approach and its components                               | 37-39                                |                    |
|   | 103-3 Evaluation of the management approach                                    | 37-39                                |                    |
| GRI 205:<br>Anti-corruption 2016          | 205-2 Communication and training about anti-corruption policies and procedures | 38                                   |                    |
|   | 205-3 Confirmed incidents of corruption and actions taken                      | 38                                   |                    |
| <b>Water and Effluents</b>                |  |                                      |                    |
| GRI 103:<br>Management Approach<br>2016   | 103-1 Explanation of the material topic and its boundary                       | 77-78, 81-83                         |                    |
|   | 103-2 The management approach and its components                               | 77-78, 81-83                         |                    |
|   | 103-3 Evaluation of the management approach                                    | 77-78, 81-83                         |                    |
| GRI 303:<br>Water and Effluents<br>2018   | 303-1 Interactions with water as a shared resource                             | 77-78, 81-83                         |                    |
|   | 303-2 Management of water discharge-related impacts                            | 77-78                                |                    |
| <b>Emissions</b>                          |  |                                      |                    |
| GRI 103:<br>Management Approach<br>2016   | 103-1 Explanation of the material topic and its boundary                       | 68-77                                |                    |
|   | 103-2 The management approach and its components                               | 68-77                                |                    |
|   | 103-3 Evaluation of the management approach                                    | 68-77                                |                    |
| GRI 305:<br>Emissions 2016                | 305-1 Direct (Scope 1) GHG emissions   | 72                                   |                    |
|   | 305-2 Energy indirect (Scope 2) GHG emissions                                  | 72                                   |                    |
|   | 305-3 Other indirect (Scope 3) GHG emissions                                   | Sustainability Performance Data 2021 |                    |












| GRI   | Disclosures   | Page / Website / Omission            | External Assurance |
|---|---|--------------------------------------|--------------------|
| <b>Waste</b>                                    |   |                                      |                    |
| GRI 103:<br>Management Approach<br>2016         | 103-1 Explanation of the material topic and its boundary                                      | 78-80                                |                    |
|   | 103-2 The management approach and its components  | 78-80                                |                    |
|   | 103-3 Evaluation of the management approach   | 78-80                                |                    |
| GRI 306:<br>Waste 2020                          | 306-1 Waste generation and significant waste-related impacts                                  | 78-80                                |                    |
|   | 306-2 Management of significant waste-related impacts   | 78-80                                |                    |
| <b>Supplier environmental assessment</b>        |   |                                      |                    |
| GRI 103:<br>Management Approach<br>2016         | 103-1 Explanation of the material topic and its boundary                                      | 40-41                                |                    |
|   | 103-2 The management approach and its components  | 40-41                                |                    |
|   | 103-3 Evaluation of the management approach   | 40-41                                |                    |
| GRI 308: Supplier environmental assessment 2018 | 308-1 New suppliers that were screened using environmental criteria                           | 41                                   |                    |
| <b>Employment</b>                               |   |                                      |                    |
| GRI 103:<br>Management Approach<br>2016         | 103-1 Explanation of the material topic and its boundary                                      | 84-96                                |                    |
|   | 103-2 The management approach and its components  | 84-96                                |                    |
|   | 103-3 Evaluation of the management approach   | 84-96                                |                    |
| GRI 401:<br>Employment 2016                     | 401-1 New employee hires and employee turnover  | 93                                   |                    |
|   | 401-3 Parental leave  | Sustainability Performance Data 2021 |                    |
| <b>Occupational Health and Safety</b>           |   |                                      |                    |
| GRI 103:<br>Management Approach<br>2016         | 103-1 Explanation of the material topic and its boundary                                      | 63-68                                |                    |
|   | 103-2 The management approach and its components  | 63-68                                |                    |
|   | 103-3 Evaluation of the management approach   | 63-68                                |                    |
| GRI 403:<br>Occupational Health and Safety 2018 | 403-1 Occupational health and safety management system  | 64                                   |                    |
|   | 403-2 Hazard identification, risk assessment, and incident investigation                      | 65                                   |                    |
|   | 403-3 Occupational health services  | 64-66                                |                    |
|   | 403-4 Worker participation, consultation, and communication on occupational health and safety | 65-66                                |                    |



| GRI   | Disclosures   | Page / Website / Omission                     | External Assurance |
|---|---|---|--------------------|
|   | 403-5 Worker training on occupational health and safety   | 65-66   |                    |
|   | 403-6 Promotion of worker health  | 66  |                    |
|   | 403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships | 65-66   |                    |
|   | 403-8 Workers covered by an occupational health and safety management system  | 64  |                    |
|   | 403-9 Work-related injuries   | 64-65<br>Sustainability Performance Data 2021 |                    |
| <b>Training and Education</b>                 |   |   |                    |
| GRI 103: Management Approach 2016             | 103-1 Explanation of the material topic and its boundary  | 85-93   |                    |
|   | 103-2 The management approach and its components  | 85-93   |                    |
|   | 103-3 Evaluation of the management approach   | 85-93   |                    |
| GRI 404: Training and Education 2016          | 404-1 Average hours of training per year per employee   | 92<br>Sustainability Performance Data 2021    |                    |
|   | 404-2 Programs for upgrading employee skills and transition assistance programs                                     | 89-93   |                    |
|   | 404-3 Percentage of employees receiving regular performance and career development reviews                          | Sustainability Performance Data 2021          |                    |
| <b>Diversity and Equal Opportunity</b>        |   |   |                    |
| GRI 103: Management Approach 2016             | 103-1 Explanation of the material topic and its boundary  | 84-96   |                    |
|   | 103-2 The management approach and its components  | 84-96   |                    |
|   | 103-3 Evaluation of the management approach   | 84-96   |                    |
| GRI 405: Diversity and Equal Opportunity 2016 | 405-1 Diversity of governance bodies and employees  | 93<br>Sustainability Performance Data 2021    |                    |
| <b>Local Communities</b>                      |   |   |                    |
| GRI 103: Management Approach 2016             | 103-1 Explanation of the material topic and its boundary  | 46-49   |                    |
|   | 103-2 The management approach and its components  | 46-49   |                    |
|   | 103-3 Evaluation of the management approach   | 46-49   |                    |

| GRI   | Disclosures   | Page / Website / Omission | External Assurance |
|---|---|---------------------------|--------------------|
| GRI 413:<br>Local Communities<br>2016       | 413-1 Operations with local community engagement, impact assessments, and development programs      | 47-49                     |                    |
| <b>Customer Health and Safety</b>           |   |                           |                    |
| GRI 103:<br>Management Approach<br>2016     | 103-1 Explanation of the material topic and its boundary  | 109-112                   |                    |
|   | 103-2 The management approach and its components  | 109-112                   |                    |
|   | 103-3 Evaluation of the management approach   | 109-112                   |                    |
| GRI 416:<br>Customer Health and Safety 2016 | 416-2 Incidents of non-compliance concerning the health and safety impacts of products and services | 109-112<br>None           |                    |
| <b>Marketing and Labeling</b>               |   |                           |                    |
| GRI 103:<br>Management Approach<br>2016     | 103-1 Explanation of the material topic and its boundary  | 109-110                   |                    |
|   | 103-2 The management approach and its components  | 109-110                   |                    |
|   | 103-3 Evaluation of the management approach   | 109-110                   |                    |
| GRI 417:<br>Marketing and Labeling<br>2016  | 417-1 Requirements for product and service information and labeling                                 | 15, 110                   |                    |



# SDGs Content Index

| SDGs  | Page/Links  |
|---|---|
|    | Smart E-Money Card Project, page 62   |
|    | Strategic Plan and Model towards Agricultural Sustainability, page 45<br>Thai Wah Sustainable Agriculture Collaboration, page 47-53 |
|    | Strategic Plan and Model towards Agricultural Sustainability, page 45   |
|    | The Tapioca Farmer Community Education, page 48   |
|   | Supporting Gender Equality, page 94-95  |
|  | Water Management, page 77-79  |
|  | Aiming for Net-Zero Greenhouse Gas Emissions, page 71-76  |
|  | Employment of people with disability, page 95   |
|  | Aiming for Net-Zero Greenhouse Gas Emissions, page 71-76<br>Innovation Hub, page 106  |
|  | Supporting Gender Equality and Employment of people with disability, page 94-95   |
|  | Sustainable Procurement Policy, page 40-41  |

| SDGs  | Page/Links  |
|---|---|
|  | Aiming for Net-Zero Greenhouse Gas Emissions, page 71-76  |
|  | <p>Sustainable Development Partners, page 16-17</p> <p>Thai Wah Sustainable Agriculture Collaboration, page 47-53</p> <p>Aiming for Net-Zero Greenhouse Gas Emissions, page 71-76</p> |

# Sustainability Performance Data 2021

## Human Capital

| GRI   | Disclosures                                       | Unit   | 2018  |        | 2019  |        | 2020  |        | 2021  |        |
|---|---|--------|-------|--------|-------|--------|-------|--------|-------|--------|
|   |   |        | Male  | Female | Male  | Female | Male  | Female | Male  | Female |
| 102-7,<br>405-1                             | Number of Employee                                |        |       |        |       |        |       |        |       |        |
|   | Total employee                                    | Person |       |        | 3,282 |        | 3,254 |        | 3,363 |        |
| 405-1                                       |   | Person |       | 1,643  | 1,639 | 1,589  | 1,665 | 1,627  | 1,736 |        |
|   | Total employee by area                            |        |       |        |       |        |       |        |       |        |
|   | Bangkok   | Person |       | 75     | 112   | 90     | 135   | 97     | 130   |        |
| 102-8                                       | Other provinces                                   | Person |       | 1,598  | 1,497 | 1,499  | 1,530 | 1,530  | 1,606 |        |
|   | Total employee by employment contract and by area |        |       |        |       |        |       |        |       |        |
|   | Permanent contract                                | Person |       | 1,574  | 1,566 | 1,445  | 1,583 | 1,440  | 1,626 |        |
| 405-1                                       | Bangkok   | Person |       | 75     | 112   | 90     | 135   | 97     | 130   |        |
|   | Other provinces                                   | Person |       | 1,499  | 1,454 | 1,355  | 1,448 | 1,343  | 1,496 |        |
|   | Temporary contract                                | Person |       | 99     | 43    | 144    | 82    | 187    | 110   |        |
|   | Bangkok   | Person |       | 0      | 0     | 0      | 0     | 0      | 0     |        |
|   | Other provinces                                   | Person |       | 99     | 43    | 144    | 82    | 187    | 110   |        |
|   | Total employee by employment type                 |        |       |        |       |        |       |        |       |        |
|   | Full-time   | Person |       | 1,574  | 1,566 | 1,445  | 1,583 | 1,440  | 1,626 |        |
|   | Part-time   | Person |       | 0      | 0     | 0      | 0     | 0      | 0     |        |
|   | Total employee by age group                       |        |       |        |       |        |       |        |       |        |
|   | <30 years   | Person |       |        | 872   |        | 883   |        | 978   |        |
| % of total employee                         |   |        |       | 26.57  |       | 26.90  |       | 29.80  |       |        |
|   | Person  |        | 453   | 419    | 427   | 456    | 475   | 503    |       |        |
|   | % of total employee                               |        | 51.95 | 48.05  | 48.36 | 51.64  | 48.57 | 14.96  |       |        |
| 30-50 years                                 | Person  |        |       | 1,840  |       | 1,807  |       | 1,848  |       |        |
|   | % of total employee                               |        |       | 56.06  |       | 55.53  |       | 54.95  |       |        |
|   | Person  |        | 914   | 926    | 889   | 918    | 878   | 970    |       |        |
|   | % of total employee                               |        | 49.67 | 50.33  | 49.20 | 50.80  | 47.51 | 52.49  |       |        |
| >50 years                                   | Person  |        |       | 570    |       | 564    |       | 537    |       |        |
|   | % of total employee                               |        |       | 17.37% |       | 17.33% |       | 15.97% |       |        |
|   | Person  |        | 276   | 294    | 273   | 291    | 274   | 263    |       |        |
|   | % of total employee                               |        | 48.42 | 51.58  | 48.40 | 51.60  | 51.02 | 48.98  |       |        |
| Total employee by employee category (level) |   |        |       |        |       |        |       |        |       |        |
| Executive                                   | Person  |        | 5     | 3      | 4     | 2      | 4     | 2      |       |        |
|   | % of total employee                               |        | 0.15  | 0.09   | 0.12  | 0.06   | 0.12  | 0.06   |       |        |
| Management                                  | Person  |        | 43    | 34     | 39    | 37     | 42    | 38     |       |        |
|   | % of total employee                               |        | 1.31  | 1.04   | 1.19  | 1.13   | 1.28  | 1.16   |       |        |

| GRI   | Disclosures                    | Unit                | 2018 |        | 2019  |        | 2020  |        | 2021  |        |
|-------|--------------------------------|---------------------|------|--------|-------|--------|-------|--------|-------|--------|
|       |                                |                     | Male | Female | Male  | Female | Male  | Female | Male  | Female |
| 401-1 | Senior                         | Person              |      |        | 102   | 123    | 132   | 160    | 146   | 158    |
|       |                                | % of total employee |      |        | 3.11  | 3.75   | 4.02  | 4.88   | 4.45  | 4.81   |
|       | Employee                       | Person              |      |        | 1493  | 1479   | 1414  | 1466   | 1435  | 1538   |
|       |                                | % of total employee |      |        | 45.49 | 45.06  | 43.08 | 44.67  | 43.72 | 46.86  |
|       | People with disability         |                     |      |        |       |        |       |        |       |        |
|       | People with disability         | Person              |      |        | 10    | 7      | 10    | 6      | 9     | 5      |
|       |                                | % of total employee |      |        | 0.30  | 0.21   | 0.30  | 0.18   | 0.27  | 0.15   |
|       | New employee                   |                     |      |        |       |        |       |        |       |        |
|       | New employee                   | Person              |      |        |       | 775    |       | 557    |       | 848    |
|       |                                |                     |      |        | 383   | 392    | 343   | 214    | 385   | 463    |
|       | New hire rate                  | % of total          |      |        |       | 0.24   |       | 0.17   |       | 0.25   |
|       |                                |                     |      |        | 11.67 | 11.94  | 10.45 | 6.52   | 11.73 | 14.11  |
|       | New employee by area           |                     |      |        |       |        |       |        |       |        |
|       | Bangkok                        | Person              |      |        | NA    | NA     | NA    | NA     | 21    | 27     |
|       |                                | % of total employee |      |        | -     | -      | -     | -      | 0.01  | 0.01   |
|       | Other provinces                | Person              |      |        | 383   | 392    | 343   | 214    | 364   | 436    |
|       |                                | % of total employee |      |        | 11.67 | 11.94  | 10.54 | 6.58   | 10.82 | 12.96  |
|       | New employee hire by age group |                     |      |        |       |        |       |        |       |        |
|       | <30 years                      | Person              |      |        |       | 476    |       | 386    |       | 581    |
|       |                                | % of total employee |      |        |       | 14.50  |       | 11.86  |       | 17.28  |
|       |                                | Person              |      |        | 224   | 252    | 277   | 109    | 274   | 307    |
|       |                                | % of total employee |      |        | 6.83  | 7.68   | 17.43 | 6.86   | 8.15  | 9.13   |
|       | 30-50 years                    | Person              |      |        |       | 298    |       | 171    |       | 267    |
|       |                                | % of total employee |      |        |       | 9.08   |       | 5.26   |       | 7.94   |
|       |                                | Person              |      |        | 158   | 140    | 66    | 105    | 111   | 156    |
|       |                                | % of total employee |      |        | 4.81  | 4.27   | 4.15  | 6.61   | 3.30  | 4.64   |
|       | >50 years                      | Person              |      |        |       | 1      |       | 0      |       | 0      |
|       |                                | % of total employee |      |        |       | 0.03   |       | -      |       | -      |
|       |                                | Person              |      |        | 1     | 0      | 0     | 0      | 0     | 0      |
|       |                                | % of total employee |      |        | 0.03  | -      | -     | -      | -     | -      |



| GRI   | Disclosures  | Unit                | 2018 |        | 2019  |        | 2020  |        | 2021  |        |
|-------|--|---------------------|------|--------|-------|--------|-------|--------|-------|--------|
|       |  |                     | Male | Female | Male  | Female | Male  | Female | Male  | Female |
| 401-3 | Turnover   |                     |      |        |       |        |       |        |       |        |
|       | Total employee turnover rate   | Person              |      |        | 1031  |        | 664   |        | 367   |        |
|       |  | % of total employee |      |        | 31.41 |        | 20.41 |        | 10.91 |        |
|       |  | Person              |      |        | 367   | 332    | 297   | 334    | 367   | 395    |
|       |  | % of total employee |      |        | 11.18 | 10.12  | 18.69 | 21.02  | 10.91 | 11.75  |
|       | Turnover rate by age group   |                     |      |        |       |        |       |        |       |        |
|       | <30 years  | Person              |      |        | 209   | 210    | 225   | 220    | 238   | 245    |
|       |  | % of total employee |      |        | 6.37  | 6.40   | 6.91  | 6.76   | 7.08  | 7.29   |
|       | 30-50 years  | Person              |      |        | 147   | 112    | 62    | 99     | 120   | 134    |
|       |  | % of total employee |      |        | 4.48  | 3.41   | 1.91  | 3.04   | 3.57  | 3.98   |
|       | >50 years  | Person              |      |        | 11    | 10     | 10    | 15     | 9     | 16     |
|       |  | % of total employee |      |        | 0.34  | 0.30   | 0.31  | 0.46   | 0.27  | 0.48   |
|       | Turnover by area   |                     |      |        |       |        |       |        |       |        |
|       | Bangkok  | Person              |      |        | 0     | 0      | 0     | 0      | 0     | 0      |
|       |  | % of total employee |      |        | 0     | 0      | 0     | 0      | 0     | 0      |
|       | Other provinces  | Person              |      |        | 0     | 0      | 0     | 0      | 0     | 0      |
|       |  | % of total employee |      |        | 0     | 0      | 0     | 0      | 0     | 0      |
|       | Parental leave   |                     |      |        |       |        |       |        |       |        |
|       | Number of employees entitled to parental leave   | Person              |      |        | 0     | 3      | 0     | 5      | 0     | 6      |
|       | Number of employees taking parental leave  | Person              |      |        | 0     | 3      | 0     | 5      | 0     | 7      |
|       | Number of employees returning to work after parental leave   | Person              |      |        | 0     | 2      | 0     | 4      | 0     | 6      |
|       | Number of employees returning to work after parental leave who were still employed for 12 months after returning | Person              |      |        | 0     | 2      | 0     | 4      | 0     | 6      |
|       | Employee returning to work retention rate  | %                   |      |        | -     | 66.67  | -     | 80.00  | -     | 100    |
| 404-1 | Employee training  |                     |      |        |       |        |       |        |       |        |
|       | Average hours of training by management level  |                     |      |        |       |        |       |        |       |        |
|       | Executive  | Hour/ person/year   |      |        | NA    | NA     | NA    | NA     | NA    | NA     |
|       | Management   | Hour/ person/year   |      |        | 116   | 116    | 140   | 140    | 95    | 95     |

| GRI   | Disclosures   | Unit                 | 2018 |        | 2019  |        | 2020  |        | 2021  |        |
|-------|---|----------------------|------|--------|-------|--------|-------|--------|-------|--------|
|       |   |                      | Male | Female | Male  | Female | Male  | Female | Male  | Female |
| 404-3 | Senior  | Hour/<br>person/year |      |        | 70    | 70     | 50    | 50     | 62    | 62     |
|       | Employee  | Hour/<br>person/year |      |        | 33    | 32     | 26    | 24     | 30    | 31     |
|       | Employee receiving regular performance and career development reviews |                      |      |        |       |        |       |        |       |        |
|       | Executive   | Person               |      |        | NA    | NA     | NA    | NA     | NA    | NA     |
|       |   | %                    |      |        | -     | -      | -     | -      | -     | -      |
|       | Management  | Person               |      |        | NA    | NA     | NA    | NA     | NA    | NA     |
|       |   | %                    |      |        | -     | -      | -     | -      | -     | -      |
|       | Senior  | Person               |      |        | NA    | NA     | NA    | NA     | NA    | NA     |
|       |   | %                    |      |        | -     | -      | -     | -      | -     | -      |
|       | Employee  | Person               |      |        | 970   | 621    | 904   | 610    | 906   | 631    |
|       |   | %                    |      |        | 29.56 | 18.92  | 27.54 | 18.59  | 27.61 | 19.23  |

SHE

| GRI   | Disclosures  | Unit                    | 2018  | 2019  | 2020  | 2021  |
|-------|--|-------------------------|-------|-------|-------|-------|
| 403-8 | <b>Work-related fatalities</b>   |                         |       |       |       |       |
|       | <b>Employee</b>  |                         |       |       |       |       |
|       | Covered by an occupational health and safety management system                   | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
|       | Covered by such a system that has been internally audited                        | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
|       | Covered by such a system that has been audited or certified by an external party | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
|       | <b>Contractor</b>  |                         |       |       |       |       |
|       | Covered by an occupational health and safety management system                   | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
|       | Covered by such a system that has been internally audited                        | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
|       | Covered by such a system that has been audited or certified by an external party | Person                  | 0     | 0     | 0     | 0     |
|       |  | %                       | NA    | NA    | NA    | NA    |
| 403-9 | <b>Fatalities as a result of work-related injury</b>                             |                         |       |       |       |       |
|       | Employees  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Bangkok  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Other provinces  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Contractors  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Bangkok  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Other provinces  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | <b>High-consequence work-related injuries (excluding fatalities)</b>             |                         |       |       |       |       |
|       | Employee and Contractor  | Case                    | 9     | 14    | 16    | 11    |
|       |  | Case/1 million manhours | 13.45 | 20.93 | 23.92 | 16.44 |
|       | Bangkok  | Case                    | 0     | 0     | 0     | 0     |
|       |  | Case/1 million manhours | 0     | 0     | 0     | 0     |
|       | Other provinces  | Case                    | 9     | 14    | 16    | 11    |
|       |  | Case/1 million manhours | 13.45 | 20.93 | 23.92 | 16.44 |

| GRI | Disclosures                                   | Unit                    | 2018  | 2019  | 2020      | 2021      |
|-----|---|-------------------------|-------|-------|-----------|-----------|
|     | <b>Recordable work-related injuries</b>       |                         |       |       |           |           |
|     | Employees Employee and Contractor             | Case                    | 48    | 30    | 17        | 20        |
|     |   | Case/1 million manhours | 71.75 | 44.84 | 25.41     | 29.9      |
|     | Bangkok                                       | Case                    | 0     | 0     | 0         | 0         |
|     |   | Case/1 million manhours | 0     | 0     | 0         | 0         |
|     | Other provinces                               | Case                    | 48    | 30    | 17        | 20        |
|     |   | Case/1 million manhours | 71.75 | 44.84 | 25.41     | 29.9      |
|     | <b>Number of Hours Worked</b>                 |                         |       |       |           |           |
|     | Employee and Contractor                       | Manhours                | NA    | NA    | 7,201,916 | 7,558,742 |
|     | <b>Loss Time Injury Frequency Rate: LTIFR</b> |                         |       |       |           |           |
|     | Employee and Contractor                       | Case                    | 57    | 44    | 33        | 31        |
|     |   | Case/1 million manhours | 65.4  | 13.1  | 39.9      | 65.9      |
|     |   | % of revenue            | NA    | NA    | NA        | NA        |



## Environment

| GRI                     | Disclosures   | Unit                | 2018 | 2019 | 2020   | 2021   |
|-------------------------|---|---------------------|------|------|--------|--------|
| 305-1<br>305-2<br>305-3 | <b>Greenhouse Gas Emission*</b>   |                     |      |      |        |        |
|                         | Total GHG emissions (scope 1 + 2)   | tons CO2 equivalent | NA   | NA   | 31,404 | 40,022 |
|                         | Direct GHG emissions (scope 1)  | tons CO2 equivalent | NA   | NA   | 21,175 | 26,429 |
|                         | Indirect GHG emissions (scope 2)  | tons CO2 equivalent | NA   | NA   | 10,229 | 13,593 |
|                         | Other Indirect GHG emissions (scope 3)                                      | tons CO2 equivalent | NA   | NA   | 47,799 | NA     |
| 308-1                   | <b>Supply Chain</b>   |                     |      |      |        |        |
|                         | Percentage of new suppliers that were screened using environmental criteria | % of new suppliers  | NA   | NA   | 11     | 16     |

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