



THAI WAH
PUBLIC COMPANY LIMITED

Sustainability Report 2019

“Creating
Value from
Farm to Shelf”



Global Compact
Network Thailand

Model Farm at School



1. Buk plot
2. Cassava plot
3. Plants nursery, fertilizer, earthworm nursery
4. Pigsty
5. Cabling greenhouses
6. Short-term vegetable plot, experiments for students
7. Banana plantation
8. Vegetable tunnel such as winter melon, bitter melon, zucchini, etc.
9. Passion fruit plantation
10. Cassava plantation
11. Fruit crops such as mango, grapefruit, etc.
12. Herb and vegetable plot such as turmeric, lemongrass, etc.
13. Vegetable plots such as cucumbers, white peas, etc.
14. Rambutan
15. Perennial plant

Phase 1 Planting seedlings of sufficiency Planting agricultural prototype in school

One of the Sustainable Supply Chain project, which aims to instill passion for agriculture among the students; and educate them on integrated farming according to the royal initiatives, safe agriculture and organic farming as a model on integrated farming according to the royal initiatives to create and develop potential farmers.





“

Vision

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

Mission

We are a regional leader in starch and starch-related food products, a pioneer in Thailand for tapioca starch, vermicelli and noodles with a commitment to innovation and operation excellence.

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Core Value



Awards and recognition in 2019

Very Good CG Scoring



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National CG Committee National CG Committee National CG Committee National CG Committee

Received a “Very Good CG Scoring” rating in 2019 for our corporate governance performance from the Thai Institute of Directors (IOD)

Anti-Corruption



Certified as a member of Private Sector Collective Action Coalition against Corruption (CAC), with a dedication to the zero-tolerance for corruption on the International Anti-Corruption Day (Thailand).

sustainability performance



The 2nd consecutive year that the Company was selected as one of the 100 companies with notable sustainability performance of environmental, Social, and Governance 100 or ESG100 which was assessed by the Thaipat Institute.

Thailand Sustainability Investment (THSI)



The 1st year that the Company listed in the “Thailand Sustainability Investment (THSI)” 2019, selected by the Stock Exchange of Thailand (SET)

Sustainability Disclosure Award



The 1st year that the Company granted the Sustainability Disclosure Award by Thaipat Institute

Superior Taste Awards



Our products received the Superior Taste Awards from the International Taste Institute, the Healthier Choice certification from the Nutrition Promotion Foundation under Mahidol University's Institute of Nutrition, and certified by the Faculty of Medicine Ramathibodi Hospital, Mahidol University that can help keeping blood sugar levels balanced (Low GI) to the body.

FSSC 22000 standard



Certified FSSC 22000 (Food Safety System Certification 22000), which is a globally recognized food safety system

International Conference



Thai Wah took part in the 7th International Conference on Bio-Based Polymers (ICBP2019), held by the Petroleum and Petrochemical College, Chulalongkorn University, under the topic "Bio-Based Polymer for Bio-Circular-Green Economy".



THAI WAH

Has operated in Thailand
for over 72 years

commitment to promote solid
business growth while joining
with our stakeholders in creating
value in a sustainable manner

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Message from Chief Executive Officer



This report commemorates our 2nd sustainability update reflecting our commitment to be globally responsible and to build better lives for Our Consumers, Our People, and Our Communities. We take pride sharing stories of our Journey and hope to inspire more to join us.

Thai Wah is driven by our core purpose to serve our global consumers as we seek to create innovation and sustainability from Farm to Shelf. As we aspire to be a leading 21st century organization with global reach to over 25 countries around the world, our stakeholder activity and commitment

across all aspects of our value chain from farm, sourcing, manufacturing, supply chain and delivery has profound impact to the community stakeholders we work with. Serving our consumer and customer base is a commitment to creating shared value, as we seek to serve our global consumers the best of tapioca, mung bean, rice, and other starch and food products from this region to the rest of the world. As we continue to expand our reach, we have rolled out 14 initiatives in 2019 related to Farm Development, Green Factory and Community, Family Work and Life Balance, and Organic and Healthy Food R&D.

Some key initiatives included kicking off the Model Farm at School project at Amphur Maesot to promote organic and socially responsible farming practices, and promoting the drip irrigation system for our Thai Wah farmer members. In addition, at the factory level, we have also installed solar roof project at our Banglane factory for cleaner energy usage, stopped using Sulphur in the production process, and expanded the use of environmentally friendly packaging. Because we operate as such an integral part of the local community from farm to operations, our level of commitment to the highest standards of food safety, quality and environment and health standards is of utmost importance. This year in 2019 we have also acted more in renewable energy, doing our part as corporate stakeholders in addressing the urgency of climate change.

As part of our pursuit of excellence, Thai Wah is proud have been listed on the “Thailand Sustainability Investment (THSI)” in 2019 by the Stock Exchange of Thailand (SET). This is due part that we were able to embed sustainability targets in farming, environment, safety and health into our daily operations, monitoring and tracking. In addition, we were awarded the ESG 100 for the 2nd consecutive year as well as received the First Sustainability Disclosure Award by Thaipat. We are proud to have received “Very Good CG Scoring” rating in 2019 for our corporate performance from IOD. These awards are testament of our passion to drive change and be better.

Agriculture and Food is one of the Southeast Asia’s most important exports and key to sustainable economic development. Our commitment to Creating Shared Value is to be able to add value, innovate and continuously improve along every step of the way. As a major partner to our farmers and local community partners, it is our imperative to ensure that all our associates, partners and stakeholders embark on this shared vision to create shared value, and it is Thai Wah’s responsibility to translate this vision into commitments, action and results.

This second publication of our SD report capitalizes on the momentum and strong effort and contribution of our team, our associates and our stakeholders. I thank you for your support, feedback and encouragement for our Thai Wah Journey. We will always strive to do better, and do more.



Ho Ren Hua
Chief Executive Officer

Thai Wah's Business Overview, Value Chain and Products

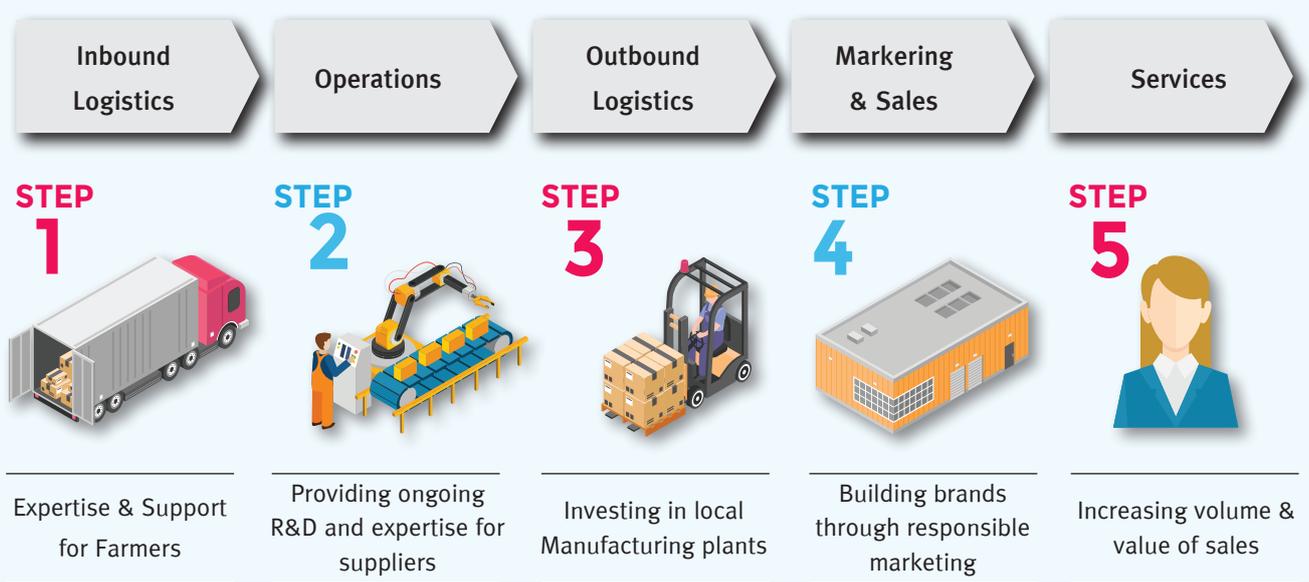
Thai Wah has operated the agriculture business and food industry in Thailand for over 72 years with a commitment to promote substantial business growth along with sustainably creating value with our stakeholders.

Currently, Thai Wah operates 2 core businesses: Tapioca starch business and food business.

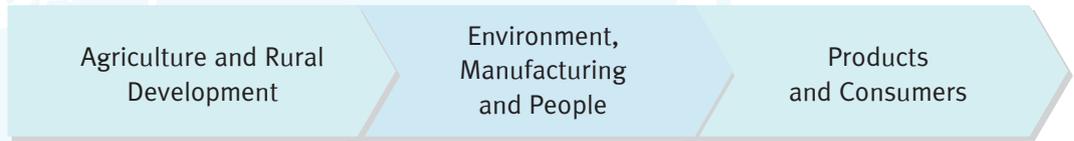
With the Company's value chain links to various groups of stakeholders, i.e., business partners, society, customers, and consumers. We have placed great importance on managing the business in accordance with the international standard and adopting modern technologies throughout the manufacturing process to produce quality, safe, community, and environmental-friendly products.



Business operations and products of the Company



Value Chain



Sustainable Farming and Rural Development

Green Factory (Water, Energy, Waste)

Consumers and Healthy Products



Expertise and Support for Farmers	Providing Ongoing R&D and Expertise	Investing in Local Manufacturing Plants	Building Brands through Responsible Marketing	Increasing Volume and Value of Sales
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Value for THAI WAH	Expertise and Support for Farmers	Providing Ongoing R&D and Expertise	Investing in Local Manufacturing Plants	Building Brands through Responsible Marketing	Increasing Volume and Value of Sales
	<ul style="list-style-type: none"> Secure supplies of high quality raw materials Good corporate image 	<ul style="list-style-type: none"> Improve product quality & community relationships 	<ul style="list-style-type: none"> Optimize production Lower manufacturing & distribution costs 	<ul style="list-style-type: none"> Expand market variety of products Enter new & emerging markets Good corporate image and Branding 	<ul style="list-style-type: none"> Achieve competitive shareholder returns Sales growth Market leader

Value for STAKEHOLDERS	Expertise and Support for Farmers	Providing Ongoing R&D and Expertise	Investing in Local Manufacturing Plants	Building Brands through Responsible Marketing	Increasing Volume and Value of Sales
	<ul style="list-style-type: none"> Quality of life Have quality output (Improved yields & income) Educate farmers to use and embrace technology 	<ul style="list-style-type: none"> Experiment with different types of crop variety, seed variety, and crop development Local economic development 	<ul style="list-style-type: none"> Create jobs in local communities Reduce negative impact to the environment 	<ul style="list-style-type: none"> Widen access to nutritional products Consumer preference (for health and wellbeing) 	<ul style="list-style-type: none"> Consume quality product Generate local investment and economic growth

Export Country and Our Factories

Thai Wah expands its business to various countries.

Depending on the opportunities and the potential of each country. Currently,

- The Company operates in 4 countries
- and exports to more than 26 countries worldwide.



COVER 4 COUNTRIES

Thailand
 Bangkok | Kalasin
 Kamphaeng Phet | Nakhon Phatom
 Nakorn Ratchasima | Udon Thani
 Rayong | Tak

Vietnam
 Cu Chi | Ho Chi Minh
 Tay Ninh

Cambodia
 Oddar Meanchey

China
 Shanghai

- | | | | |
|--|--|---|--|
|  1 Bahrain |  2 Canada |  3 Czech Republic |  4 England |
|  5 Finland |  6 Germany |  7 Israel |  8 Mauritius |
|  9 Netherlands |  10 Poland |  11 Russia |  12 Sweden |
|  13 UAE |  14 USA | | |



- | | | | |
|--|---|---|---|
|  15 China |  16 Myanmar |  17 Thailand |  18 Laos |
|  19 Cambodia |  20 Vietnam |  21 Taiwan |  22 Hong Kong |
|  23 Korea |  24 Japan |  25 Philippines |  26 Brunei |
|  27 Malaysia |  28 Singapore |  29 Australia | |

Thai Wah Sustainability Development

Social responsibility toward sustainability is essential to Thai Wah's business potential and growth. Sustainable development is a crucial strategy for the Company to achieve our vision of becoming a regional leader for starch and starch food products. Not only we strive to deliver quality and safe products and services to customers and consumers, but also to assume the responsibility of setting the social and environmental standards in all operational aspects within our supply chain. Thai Wah adopts a core sustainability value, "Creating Value from Farm to Shelf", to underscore and mobilize changes for sustainable development in both economic, social and environmental aspects, based on good corporate governance. The Company's approaches to sustainable Corporate Social Responsibility or CSR from sourcing raw materials to delivering ready-to-eat products.

Thai Wah developed a Corporate Sustainability 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 raw material sources.**
- **Help to develop communities that provide a healthier life, including recycling resources to maximize the benefit.**
- **Enhance the quality of life, which leads to better health in the future.**

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.

TWPC CSV

F¹ARMER

FARMER DEVELOPMENT

Expertise & support for farmers

F²ACTORY

GREEN FACTORY AND COMMUNITY

"Zero Waste" manufacturing plants

F³AMILY

FAMILY WORK AND LIFE BALANCE

People & human rights and compliance

F⁴OOD

ORGANIC FOOD AND HEALTHY FOOD R&D

Building brands through responsible marketing

Creating Value from Farm to Shelf

Ambitions				
Develop Sustainable raw material sources		Help to develop communities that provide a healthier life, including recycling resources to maximize the benefit		Enhance the quality of life, which leads to better health in the future
CSV Impact Areas				
Sustainable Supply Chain	Rural Development	Green Factory and Environmental Sustainability	Human Rights and Good Corporate Governance	Nutrition, Health and Wellness
How we make an impact (Issues)				
<ul style="list-style-type: none"> • Building & sharing know-how and knowledge of modern farming • Improve overall global supply chain to build sustainability and efficiency • Enhancing rural livelihoods 		<ul style="list-style-type: none"> • Safeguarding the environment • Respecting human rights • Promoting decent employment and diversity 		<ul style="list-style-type: none"> • Provide accessibility for product quality • Inspiring people to lead modern life • Sharing & applying nutrition knowledge



Stakeholder Engagement and Materiality Analysis

Thai Wah believes that stakeholder engagement is an essential component for its strategic planning, both in 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.

Partners / Farmers

Participatory Channels

1. Partner/ Farmers meeting
2. Partner/ Farmers visiting
3. Farmer Development Activities / CSR
4. Mobile Application (Recult)

Needs or Expectations Issues

- Food quality and safety
- Support quality of life for partners and farmers
- Introduce technology to farmers
- Good corporate governance

Company Responses

- Promote, support, training for business partners and farmers to increase the ability in management and cultivation processes
- Fair Trade
- Develop a variety of products to match the needs of the market

See more details at the chapter “Farmers Development” and “Water Management”

Customers and Consumers

Participatory Channels

1. Customer engagement survey
2. Customer Complaint Center

Needs or Expectations Issues

- Access to healthier food
- Food quality and safety
- Marketing and Labeling

Company Responses

- Communication for consumers to understand about nutrition and product label
- Increase communication channels of sales promotion
- Develop products and services to meet the standards of quality and safety
- Offer alternative products for health

See more details at the chapter “Enhancing Quality and Food Safety”

Government agencies

Participatory Channels

1. Disclose information about business operations
2. Cooperate and support the project on relevant issues
3. Related Seminar

Needs or Expectations Issues

- Compliance with relevant laws and regulations
- Good corporate governance

Company Responses

- Operation in accordance with relevant laws and regulations
- Support government projects on relevant issues

See more details at the chapter “Good Corporate Governance”

In formulating the 2019 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.

Communities and Society

Participatory Channels

1. Community Relations Activities
2. Complaint Center
3. Community visiting

Needs or Expectations Issues

- Job creation and community economic development
- Reducing the environmental impact to the community

Company Responses

- Provide a project to promote health and quality of life for the community, such as basic health check
- Develop the project to raise awareness for the young generation to love agriculture
- Establish clearly energy management policies and waste management

See more details at the chapter "Social and Community Development"

Shareholders and Investors

Participatory Channels

1. AGM
2. Company Visit / Site Visit
3. Analyst Meeting
4. Opportunity Day / Inbound-outbound Roadshow
5. Exclusive Interview
6. IR Website

Needs or Expectations Issues

- Good corporate governance
- Transparent, accurate and timely information disclosure
- The Company strategies towards sustainability

Company Responses

- Implementation of good corporate governance principles
- Transparency and equality of shareholders
- Establish clearly policy to reduce risk

See more details at the chapter "Good Corporate Governance"

Employees

Participatory Channels

1. Employee engagement survey
2. Intranet and E-newsletter
3. Relationship activities in the organization
4. CEO Town Hall
5. Annual performance review

Needs or Expectations Issues

- Marketing and Labeling
- Career Path
- Welfare
- Employee engagement

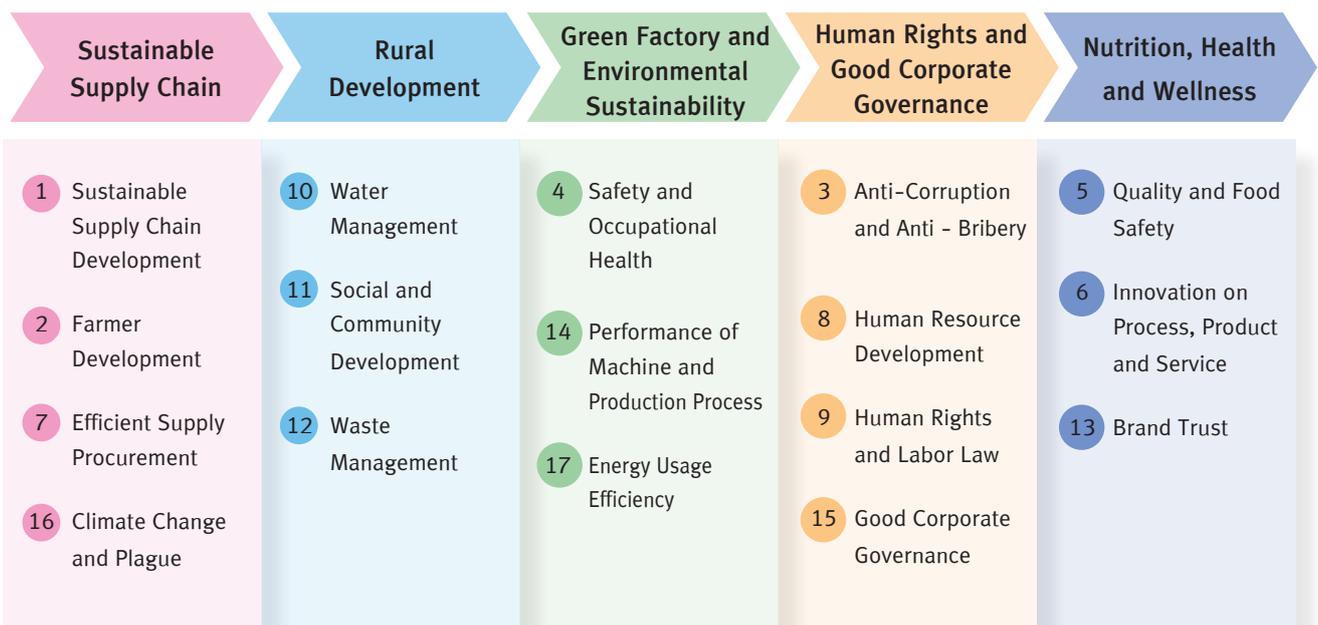
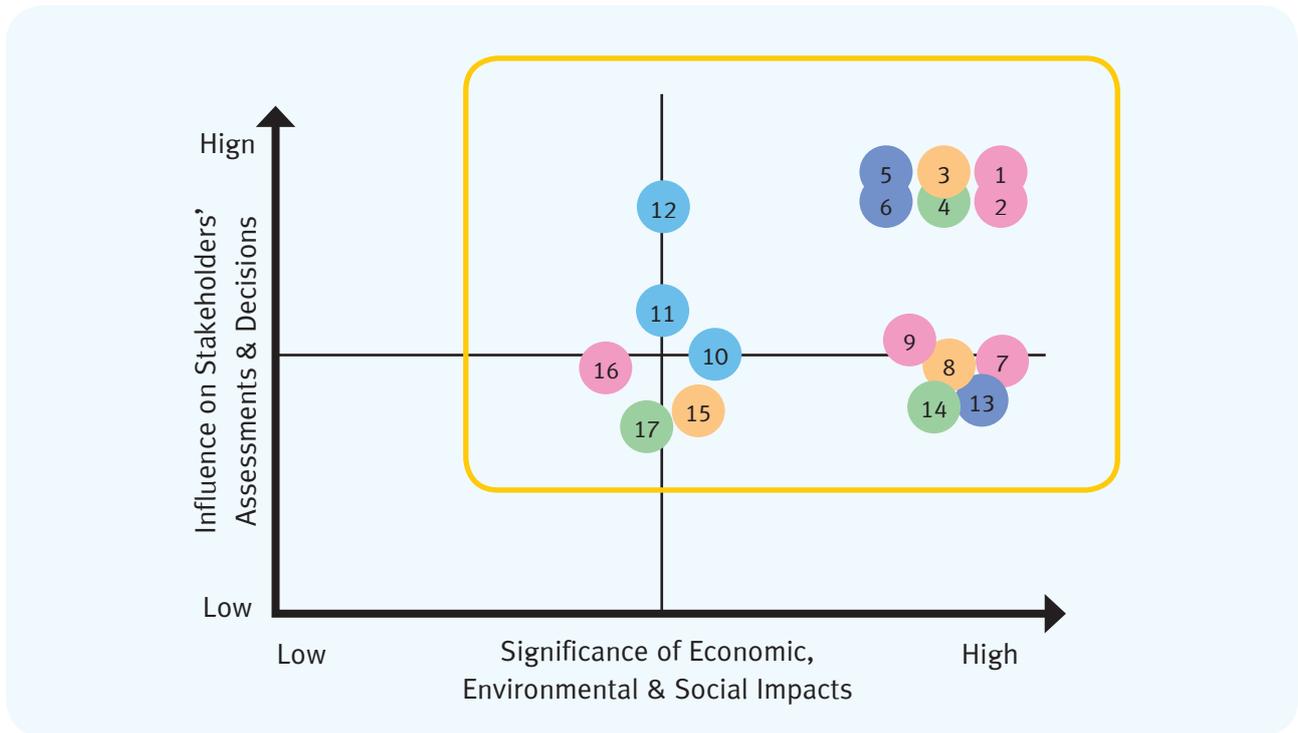
Company Responses

- Analyze potential development plans and evaluating employee career paths via TLA system
- Improve in the system for evaluating work behavior to be more consistent with the work function
- Provide training of knowledge and skills appropriate for their interests

See more details at the chapter "Safety and Occupational Health" and "Human Resources Development"

Stakeholder & 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 abide by the principles of GRI Standards including Sustainability Context, Materiality, Completeness and Stakeholder Inclusiveness, 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:



Sustainable Development Goals (SDGs)



Materiality and the Sustainable Development Goals



Farmer Development

1. Efficient Supply Procurement	●		●			
2. Climate Change and Plague		●		●		
3. Farmer Development	●	●	●	●		●
4. Sustainable Supply Chain Development						
5. Good Corporate Governance						

Green Factory and Community

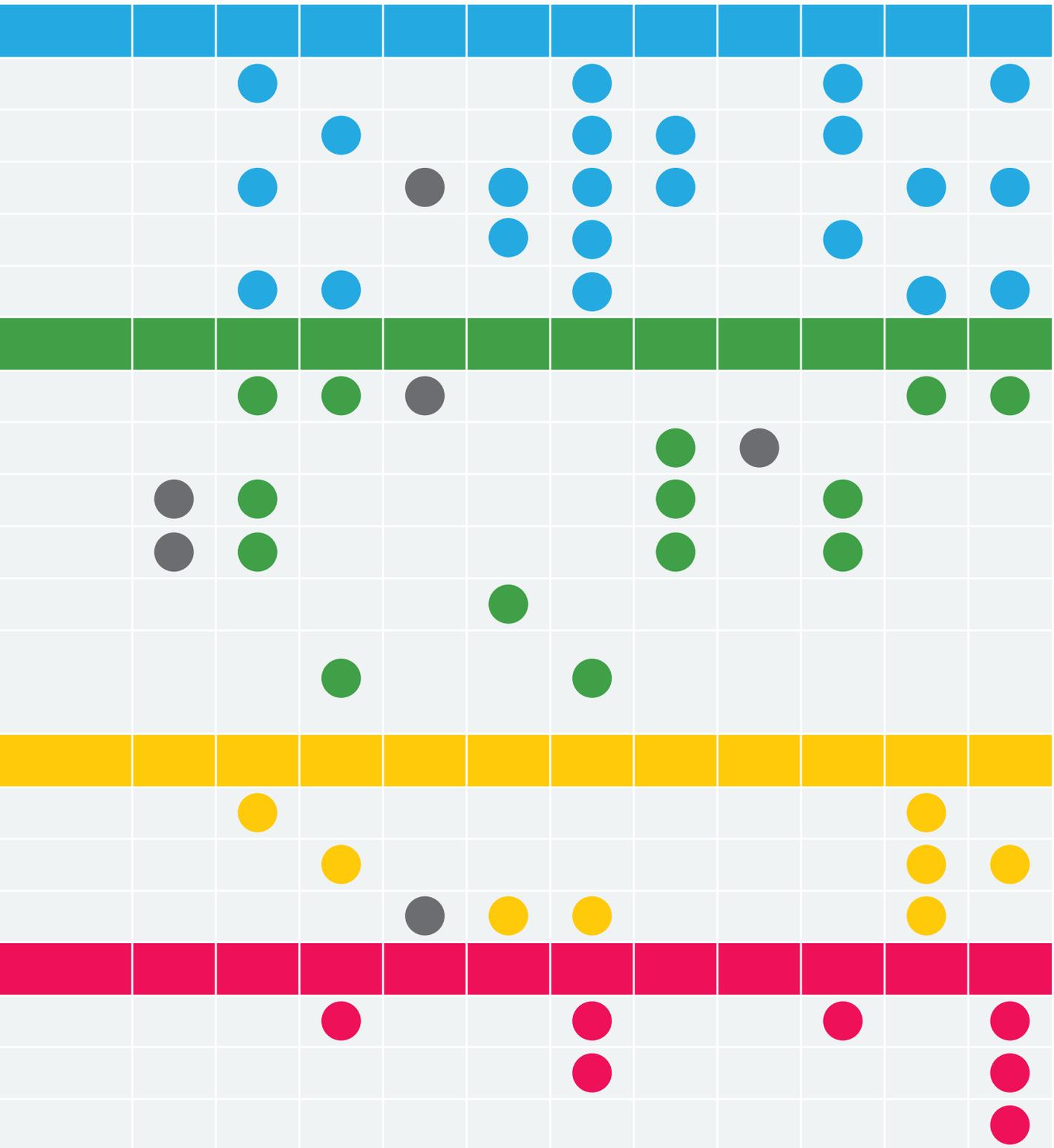
6. Social and Community Development	●	●		●	●	
7. Water Management			●			●
8. Waste Management						
9. Energy Usage Efficiency						
10. Safety and Occupational Health			●			
11. Performance of Machine and Production Process						

Family Work and Life Balance

12. Human Resource Development	●		●	●	●	
13. Anti-Corruption and Anti - Bribery						
14. Human Rights and Labor Law				●	●	

Organic Food and Healthy Food R&D

15. Innovation on Process, Product and Service			●			
16. Quality and Food Safety			●			
17. Brand Trust			●			



It has been over 72 years that Thai Wah believes in livelihood development through product innovations that promote people's quality of life and social sustainability. The Company strives to use our starch and starch food products as tools for improving the livelihood of people in the ASEAN region, and million others throughout the world, as well as business partners, communities, employees, and consumers. Our goal to become a sustainable CSR organization is inspired by the fact that we have committed to create values to our agricultural products in all aspects of the production process and to elevate the standard of social, environmental, and economical operations throughout the supply chain based on good corporate governance. The Company also strives to respond to stakeholders' needs, and mobilize positive transitions of the industry for us to be able to produce high-quality and nutritious products for the better future of business partners and surrounding communities and to deliver our products to the society proudly.

Green Factory and Community

Thai Wah has placed great importance on the industrial sector, especially the elevation of employees' work quality, safety, and environment.



Farmer Development

Thai Wah realizing the importance of raw material sustainability to ensure regular supply of raw materials at the plants, as well as the need to help elevate farmers' revenues and livelihood

Family Work and Life Balance

Thai Wah has given importance to the development of the lives and well-being of employees' families



THAI WAH
FROM FARM TO SHELF



Organic Food and Healthy Food R&D

R&D has been undertaken for continued improvement of products and production process. Thai Wah has also collaborated with business partners, food institutes, and leading universities



The Company strives to conduct our business with adherence to responsibility for society, environment, and stakeholders under the principle of good corporate governance and business ethics. We have placed priority on the rights of all groups of stakeholders who will be treated in an appropriate, equal, and fair manner, as the Company believes that good corporate governance and stakeholders are significant foundation that drives an organization towards sustainable success and helps to create stakeholder confidence and public trust. Therefore, we are committed to operating our business with adherence to good corporate governance based on fairness, integrity, transparency and accountability, as well as inclusiveness, and responsibility.



Good Corporate Governance

Corporate Governance for Sustainability and Risk Management



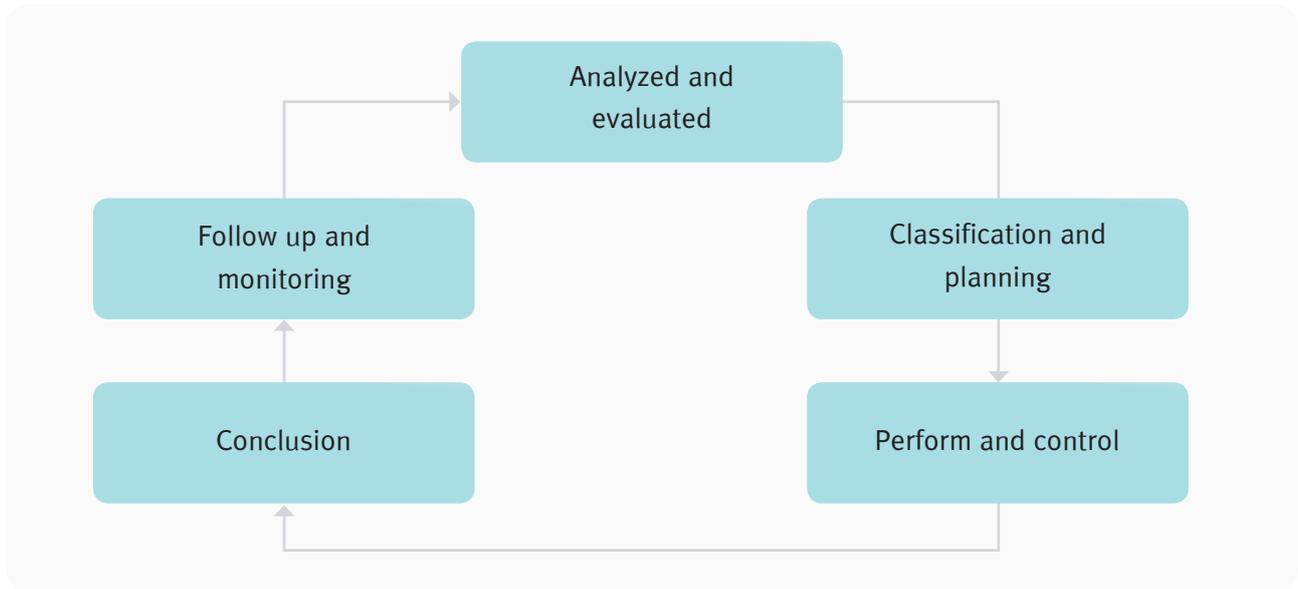
In our pursuit for sustainable growth in the future, the Company’s Board of Directors has made approval to the renaming of the Audit and Risk Committee to read the “Audit, Risk and Corporate Governance Committee” on August 6, 2019 and change in the scope of duties and responsibilities of the Audit, Risk 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 it’s sufficient and appropriate for the Company’s business; and
- To supervise and offer advices 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.

Risk Management



Internal control and risk management have been placed importance by the Company’s Board of Directors for the sake of business sustainable growth and value addition to the Company’s stakeholders. The Company has handed down a policy to all employees and assigned the risk owner for managing risk directly under the risk management committee to liaise with other departments together as a working group supervise operations in accordance with laws, rules and regulations and plants for annually assessing the Company’s internal control and risk management by way of a questionnaire on internal control and risk management, in compliance with Office of the Securities and Exchange Commission’s guideline. Methods and compliance approaches related to internal control and risk management have been determined following the guidance set by the Committee of Sponsoring Organization of the Treadway Commission – Enterprise Risk Management (“COSO-ERM”). In order to operate efficiently, the Department of internal audit and risk management is assigned to inspect, review, and report the result directly to the Company’s internal audit and risk management committee every year.

The Company’s Board of Director also recognizes the importance of risk management planning, both for inherent risks and control risks as well as emerging risks; such as environmental and natural disaster risks, information or information security risks and cybersecurity threat, climate change risks, risks from changing laws and government policies and risks from fluctuations in exchange rates, etc. These are done by considering trends of changes in economic, social and environmental dimensions, which may have an impact on the industry or business operations in the next 3-5 years to ensure that enterprise risks are being contained at an acceptable level or at a level that does not significantly affect the Company’s operation. Risk management also includes supervision of subsidiaries, transactions with individuals with conflicts of interests, and appropriately connected persons. This is for the Company to operate the business efficiently and effectively to achieve the set policies and goals, and to ensure accurate and accountable financial report in accordance with the COSO-ERM guideline.

The Company recognizes the importance of a risk management plan and strives to communicate and build awareness among the Board of Directors, executives, and all employees, including the operational level, on risk management, as part of the Core Values, such as;

- Communication from executives about the importance of risk management
- Set a form of risk assessment By using the same risk appetite level throughout the organization
- assessment, by person for risk assessment in each area
- Apply risk assessment system to new product development, as well as, new investment approval and be a part of the plan for choosing the right strategy to respond to the vision, mission, and operation
- Report the risks to the management meeting every quarter
- Establish risk management training annually

In 2019, we organized a training for plant managers, and operation unit chiefs to create common ground on the importance of a risk management plan, such as Risk and Control Self-Assessment (RCSA) and Key Risk Indicator (KRI) covered safety, health and the environment. In 2020, the Company plans to disseminate knowledge and ensure a common understanding of the employees at all levels on adopting risk management approaches. Organize training for operational staff to understand the risks better. Results of the risk assessment may later be adopted as KPIs of the organization or a department in accordance with the guideline prescribed under the new “COSO-ERM 2017” principle.

Emerging Risk

- Environmental risks
- Information or information security risks and cybersecurity threat
- Climate change and natural disaster risks
- Risks from law and government policies amendment
- Risks of disease



Anti - Corruption

Anti - Corruption Policy



In the past year, the Company has established an anti-corruption policy and related compliance approaches, i.e., anti-corruption and anti-bribery approaches, preventive measures against corruption, and associated policies and guidelines. Communication has been made via all the channels and to all levels of the organization regarding the anti-corruption policy. The Company also made clear with business partners on our commitment and appropriate practices in accordance with the Company's anti-corruption policy.

Thai Wah commits to making a clear standpoint throughout the organization against the corruption of all forms, based on the principle of corporate social responsibility. Besides, Thai Wah was certified as a member of the Private Sector Collective Action Coalition Against Corruption (CAC) since August 21, 2018

In order to ensure effectiveness of our endeavor against corruption, to promote integrity, transparency and fairness in our operation, and to be able to

achieve the Company's goals, we have established a clear operational guideline on anti-corruption policy for the Board of Directors, executives, and employees to comply with. A training course on anti-corruption was also offered via the e-learning system to enhance knowledge and understanding of the Board of Directors, executives, and employees on Thai Wah's anti-corruption policy and compliance approach, the true meaning of "corruption", preventive measures, related laws, and the current situation of corruption in Thailand.

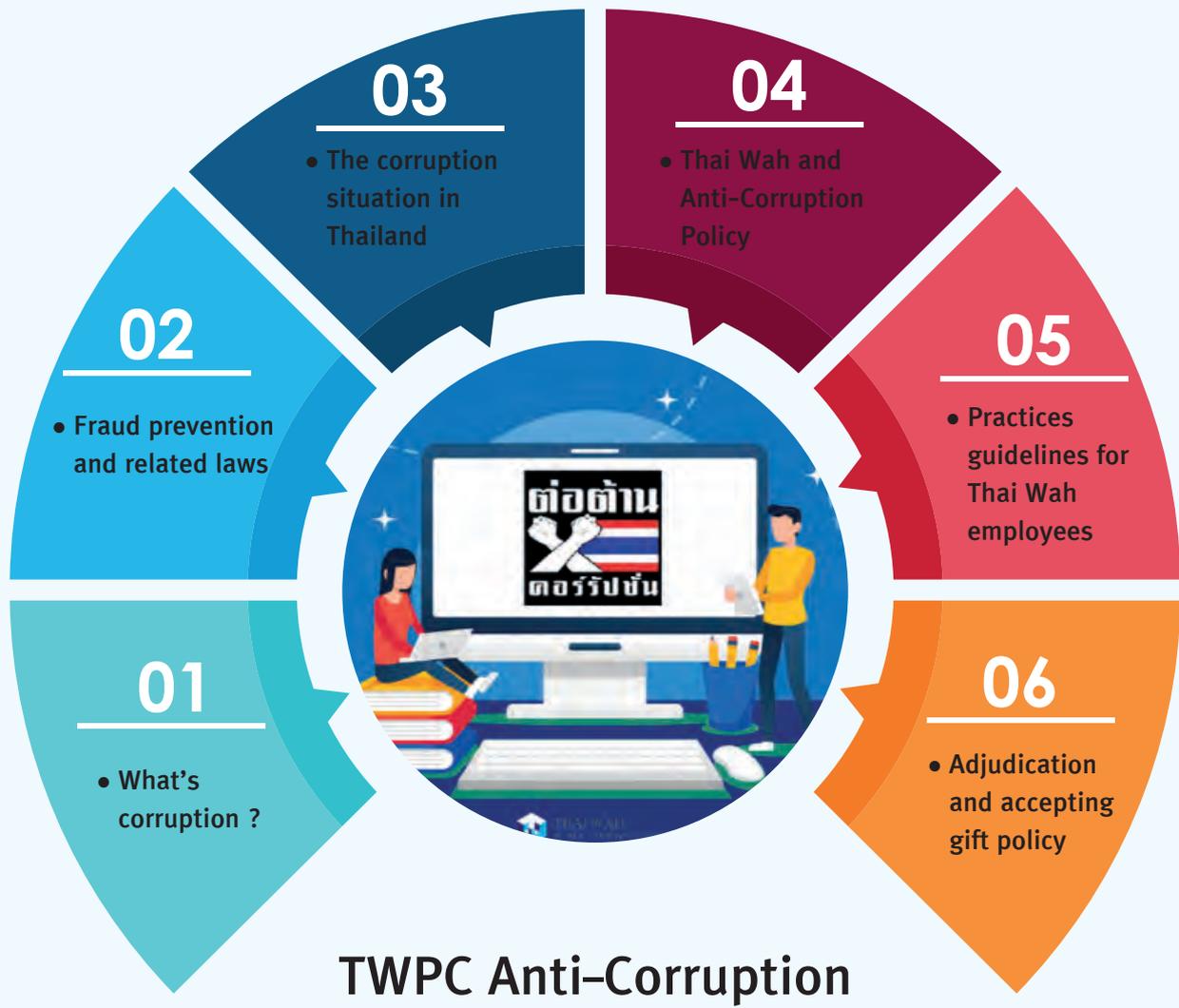
In 2019, all members of the Board of Directors, as well as 3,082 employees (accounting for 99% of all Thai Wah's employees), participated in the training and took the anti-corruption test. Electronic newsletters were sent to all the employees to disseminate information and practices related to the Company's anti-corruption policy. We also plan to communicate with our business partners regarding our anti-corruption practical guidelines in the year 2021.

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 2019, Thai Wah received 2 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 corruption act was found in 0 cases, while 2 others were taken against the Company's regulations or as inappropriate behaviors. Nevertheless, 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.



Processes of ethical considerations in business





Whistle Blowing Channel

Board of Directors

Email : bod@thaiwah.com
 Facsimile : 0-2285-0268
 Post :
 Board of Directors
 Thai Wah Public Company Limited
 Thai Wah Tower 1, 20th - 21st Floor,
 21/59, 21/63-64 South Sathorn
 Road, Tungmahamek, Sathorn,
 Bangkok 10120

Audit and Risk Committee

Email : arc@thaiwah.com
 Facsimile : 0-2285-0268
 Post :
 Audit and Risk Committee
 Thai Wah Public Company Limited
 Thai Wah Tower 1, 20th - 21st Floor,
 21/59, 21/63-64 South Sathorn
 Road, Tungmahamek, Sathorn,
 Bangkok 10120

Internal Audit

Email : ia@thaiwah.com
 Facsimile : 0-2285-0268
 Post :
 Internal Audit
 Thai Wah Public Company Limited
 Thai Wah Tower 1, 20th - 21st Floor,
 21/59, 21/63-64 South Sathorn
 Road, Tungmahamek, Sathorn,
 Bangkok 10120



Farmer Development

Efficient sourcing of raw materials, as well as sustainable management and development of supply chain, need systematic support in terms of modern technologies, proper agricultural know-how, and access to international resources and education. The support has been provided through our “Farmer Networks” to promote development throughout the supply chain, which would tangibly lead to long-term positive change.

Even with the continuous growth of our business and the broadened scope of supply chain, Thai Wah remains adamant to source agricultural raw materials responsibly and sustainably through promoting engagement of business partners and network of other partners in various sectors, i.e., public sector, NGOs, etc.

Sustainable Development and Management of Supply Chain

Amidst the rapidly changing business environment, economic challenges, increase of population, and limitation of natural resources, which have significantly affected 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.

As a private corporate in the agro-industrial sector who initiated a **“Happy Chain”**, an approach for co-working with farmers/communities for the sake of community sustainability, Thai Wah took part in a seminar on **“Designing Community Way of Life, Designing Sustainable Agriculture”** at the event **“SET Social Impact Day 2019”**, held at The Stock Exchange of Thailand.



“We strive to create the **Happy Chain** to improve quality of life of the farmers by **Create Knowledge** related to agriculture and household financial management mechanism for reduction of personal expenses and revenue increase.

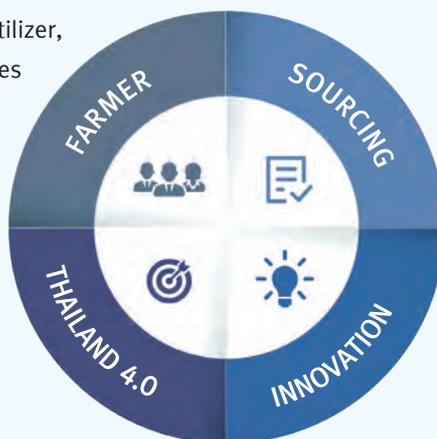


Farmer Club

- Thai Wah network services with knowledge, green compost fertilizer, planting and harvesting facilities mechanize system
- Target to increase productivity

Smart Farming

- Improve cassava yields
- Start Model demonstrate farm in 2019



Root Stations

- Get higher fresh root at source
- Create convenience and keep good relationship with farmers
- Fair price was calculated base on quality of starch content
- Cash card payment.

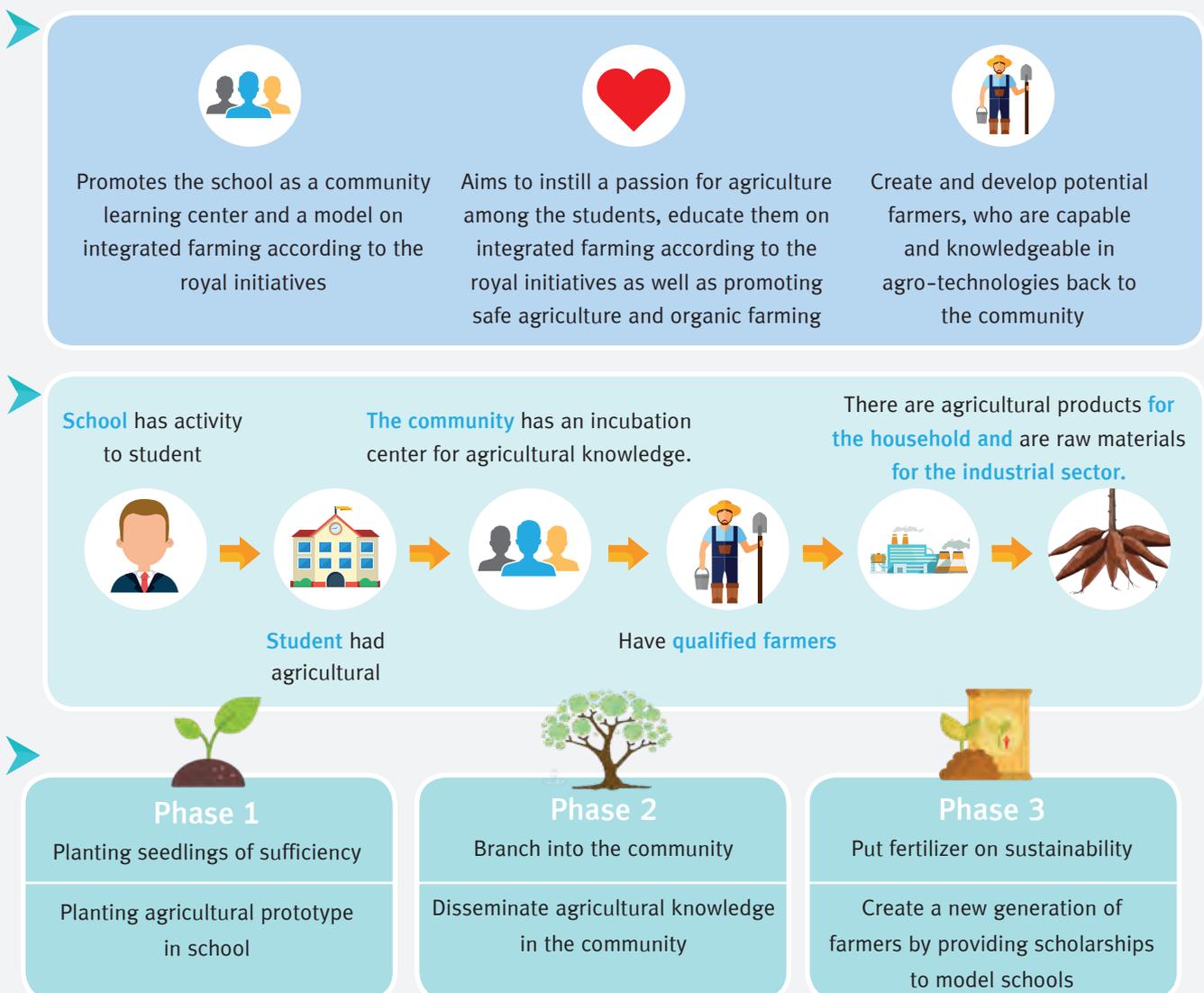
Innovation

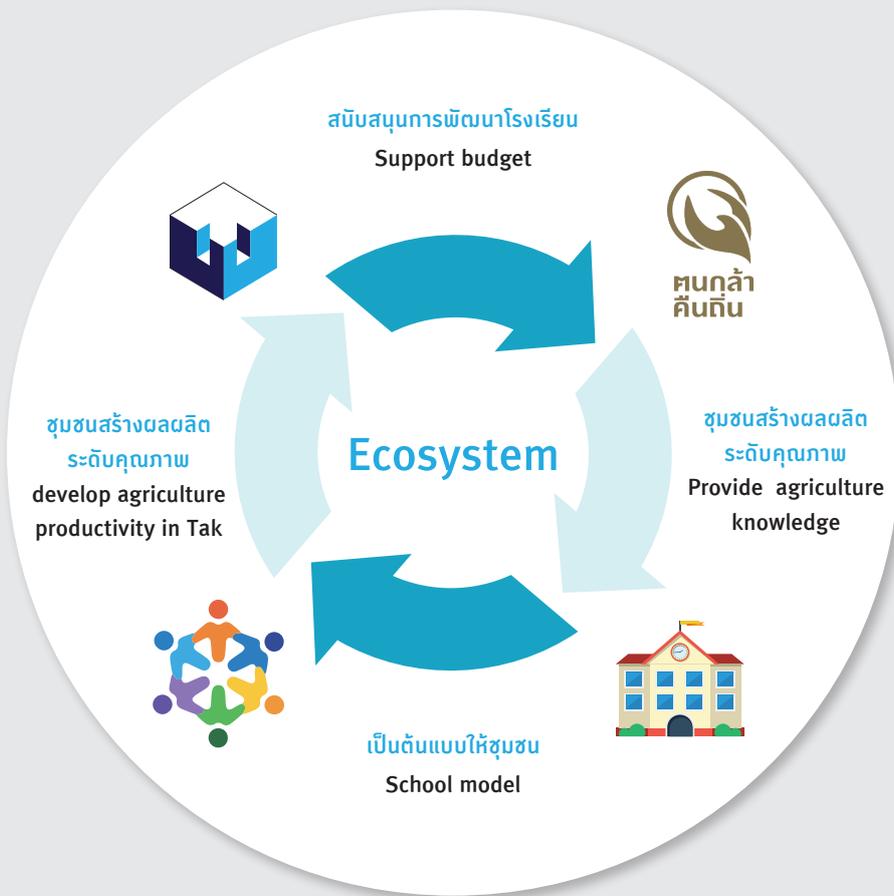
- TWPC cultivation model
- High value added cassava planting
- Mobile application for farmers (weather forecast, raining forecast, and cassava knowledge)
- Queuing system for roots selling at factory

Model Farm at School

The Company strives to promote strong organizational growth, in parallel with sustainably creating social and community value, starting from youths, as individuals, to families, and communities. We are well aware that social responsibility is vital to our business capability, and thereby implementing “**Thai Wah’s Agricultural Sustainability**” campaign for the development of green farmers, societies, and communities. The campaign is aimed to instill a passion for agriculture among the new generations, and educate them on integrated farming according to the royal initiatives, as well as on safe agriculture and organic farming, in order for them to become capable farmers and role models to other farmers in their community. Participated youths are expected to adopt agro-technology knowledge, gained from the campaign, and smart farming under Thailand 4.0 Policy in their production process. Through Thai Wah’s entire financial subsidy, the campaign will be initiated at the youth level, while the outcome will be taken forward to the family and community levels later in a bid to empower the nation’s agro-industry as a whole. A secondary school in Mae Sot district, Tak province, has been chosen for the pilot campaign

Project Objectives and Benefits

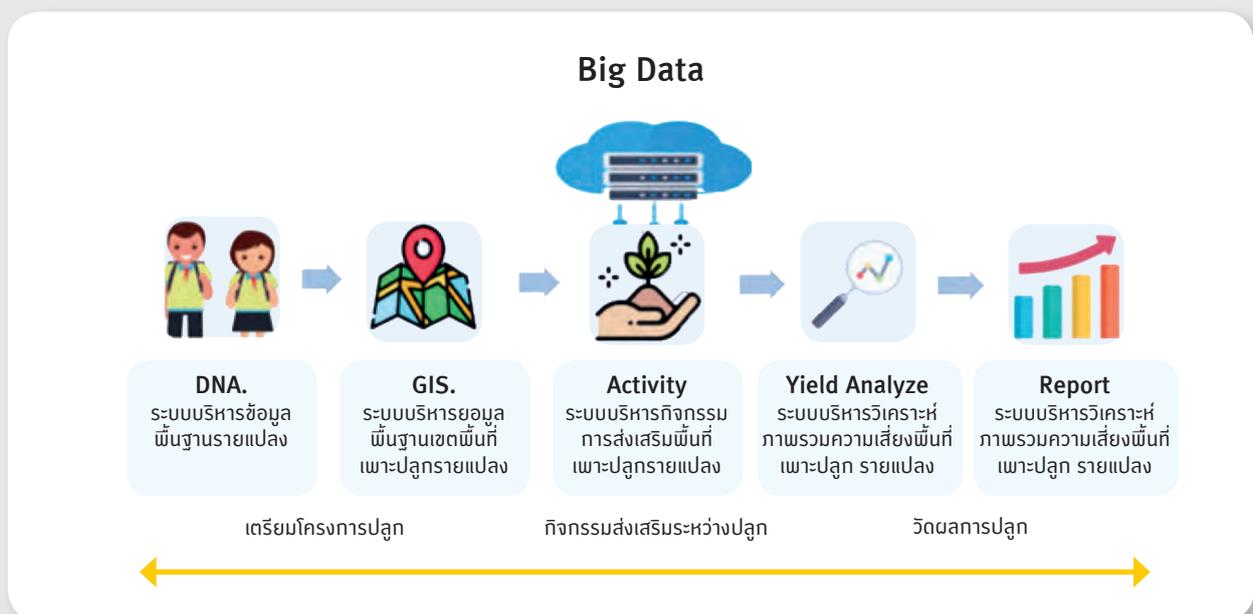




Farm Luck Smart Kid



THAI WAH Farm Luck Smart Kid Concept Requirements and Scope of Works
Farming Management Data Design Kid



Volatility of Weather Patterns and Outbreak of Diseases

In addition to bracing ourselves against the volatility of weather patterns, the Company also 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 volatility of weather patterns, i.e., R&D on new durable varieties and raw material substitutes, and identification of additional raw material sources, etc., to diversify risks related to weather volatility and the outbreak of diseases, which may impact current sources of raw materials.

Number of total plantations of new durable varieties * of Thai Wah farmer networks (Rai)

2018	2,400
2019	15,000
Target 2020	20,000

* Including farmers in the Pracharath Large-Scale Farming Scheme and members of Thai Wah farmer networks

event

Thai Wah also provided support for an event “Cassava Mosaic Virus Prevention and Eradication Day”, organized by Pimai District Agricultural Extension Office (Nakhon Ratchasima province), by dispatching cassava disease experts, providing gifts to the participants, and using agricultural drone to spray non-chemical substance to prevent whiteflies, which are major vectors of cassava mosaic disease.



Cassava Mosaic Virus

campaign to provide farmers

Thai Wah took part in a campaign to provide farmers with knowledge on control of and prevention against spread of cassava mosaic disease, organized by Kalasin Provincial Agricultural Extension Office.



Thai Wah multiplication program

Greenhouse farming project for urgent production of cassava seedlings has been implemented to tackle the spread of cassava mosaic disease in Thailand, Vietnam, and Cambodia, which has occurred since 2018, resulting in the inadequacy of disease-free seedlings for cultivation. Thai Wah, in collaboration with Tapioca Development Foundation, implemented the project to provide our farmer-members, with technology and knowhow for urgent production of cassava seedlings.

In 2019, the Company built three greenhouses for the first time in Rayong province for research and development of new seedlings. The aim is to produce disease-free seedlings of waxy cassava, or any other varieties that withstand the disease, to be distributed to the farmers for cultivation. It is expected that seedling production starts in the early part of 2020. We also have a plan to build three more greenhouses in Nakhon Ratchasima, Udon Thani, and Tak provinces, where the Company's plants are located.

In 2020, Thai Wah plans to increase disease-free seedling production and will work with the Tapioca Development Foundation in developing and breeding a new variety of waxy cassava. The agronomic characters of the new variety, which are higher yields and higher quality, will contribute to the overall increase of cassava value. The project is in line with the Company's strategy to promote Thailand's role at the global level of the cassava industry to increase more economical and export value of Thai cassava.



Research and development



A specific trait of the **waxy variety** is identified as waxy starch, which could be used in several industrial applications that require high starch paste stability. This is an agricultural innovation which would help increase the country's economic value.

Responsible Supply Procurement

With a realization that efficient supply of raw materials involves not only sourcing of agricultural raw materials, but also the management of other kinds of raw material, i.e., packages, warehouses, and logistics, the Company has implemented strategic approaches for raw material management, such as surveys on the Company's primary sources of raw material to assess and analyze the quantity of raw materials to be supplied for now and its future trend.

In 2019, Thai Wah's four root stations were in full operation, while construction of the 5th has been planned in 2020. With these root stations up and running, the number of fresh cassava roots directly received from the farmers has been increased. 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 card system. Aside from the fact that the Company managed to reduce the cost of raw material (fresh cassava roots), the root stations have made it more convenient for the farmers to sell their products and help reducing travel costs and time. In 2019, Thai Wah bought over 120,000 tons of fresh cassava roots, accounting for 10% of all fresh cassava roots required, from over 6,000 farmers at the root stations.



- Create a good relationship with farmers
- Get fresh roots at source
- Sustainable raw material
- Cash card payment with fair price

ROOT STATION

Farmer Development

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.

Volunteer Project

Project for community reforestation and release of fish breeds

Thai Wah also worked in collaboration with Ministry of Industry, and community leaders to organize a volunteering project for community reforestation and release of fish breeds in Maung district, Udon Thani. Launching of the project was chaired by Permanent Secretary to the Ministry Phasu Loharchun.



Thai Wah create and promote a new generation of agriculture according to Good Agricultural Practices (GAP)



Thai Wah responsible supply procurement



Thai Wah stand beside farmers with fair trade

Pracharat Large-Scale Farming Scheme and Modern Agriculture

Throughout the success of large-scale plantation and modern agriculture under Pracharat (public-private partnership) scheme, Thai Wah has taken part in the scheme since 2016 with the large-scale cassava plantation of 1,740 rai in Nikom Sang Ton Eng sub-district, Pimai district, Nakhon Ratchasima province. The aim is to provide trainings and knowledge to farmers for cost reduction and productivity increase through the adoption of a drip irrigation system and rainfed farming. Knowhow and technologies attained from the prototype large-scale cassava plantation have been transferred to other communities. The number of participated farmers and plantations increased from approx. 2,400 rai in 2018 to approx. 3,600 rai in 2019, and, an increase of cassava yields from 4.5 tons/rai to 5 tons/rai, or an increase of 11%.

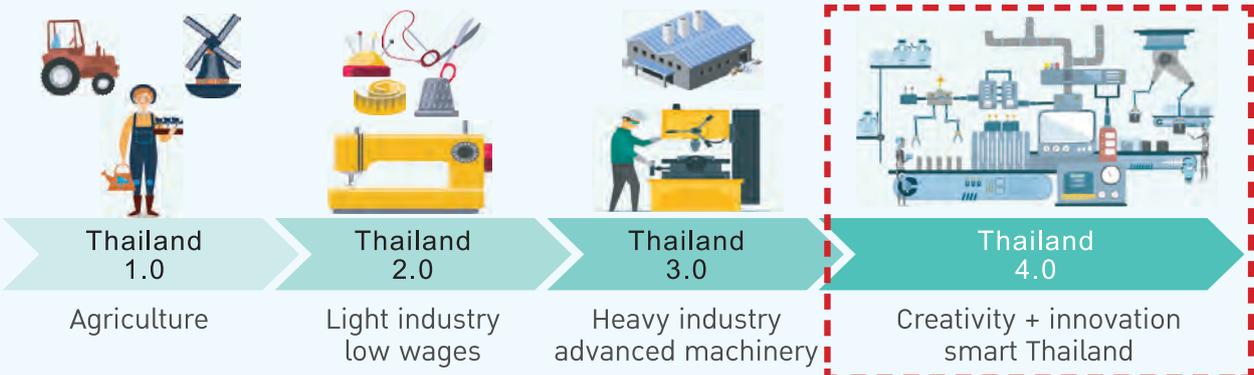
Thai Wah Thank Farmer Day

Thai Wah have demonstrated our commitment to sustainable sourcing of raw materials, and promotion of farmer’s engagement through an event “Thai Wah Thanks Farmers,” organized for the first time in 2019.



THAILAND 4.0

Smart Industry + Smart City + Smart People



Field Day

Field Day

The Company took part in a knowhow transfer project under the Pracharat large-scale farming scheme, which was held in Nakhon Ratchasima's Pimai district, and Kalasin's Tha Kantho district. The project is aimed to provide farmers with cultivation techniques and knowhow to be able to increase productivity and revenue.



We also collaborated with CIAT to organize a Field Day in Lao People's Democratic Republic (Lao PDR) to transfer technologies and knowledge to Lao PDR farmers regarding types of fertilizers, CMV virus, and other crop diseases. This was also a good opportunity for the Company to introduce ourselves to Lao PDR farmers.



Workshop

Workshops for farmers in Pimai and Chum Phuang districts, Nakhon Ratchasima provinces, and Tha Kantho district, Kalasin province.



Thai Wah Farmer Network

Thai Wah provides knowledge on safe and proper cassava cultivation and productivity increase techniques, and distributes certified cassava cuttings to the Company’s farmer-members. In 2019, we organized training courses for Thai Wah members, such as increasing productivity by improving soil, the use of certified varieties, and the use of modern agriculture machine. Including the use of mobile applications to track weather and cultivation. There are more than 250 farmers interested in participating in the training at Tha Kan Tho Plant in Kalasin province.

Currently, the number of Thai Wah’s cassava farmer-members has increased from 120 to 380, with an increase of yields from 4.5 tons/rai to 5.5 tons/rai, or an increase of 22%.



Thai Wah Farmer Network

Mobile Application

ดาวน์โหลด Trial App ได้แล้ววันนี้
Available on app store and google play

สมัครและโหลดตามรหัสองค์กร 7788

THAI WAH PUBLIC COMPANY LIMITED

Available on the App Store
Get it on Google Play

Mobile Application for Farmers (Ricult)
Provide knowledge on cassava cultivation, as well as the information related to soil management, weather forecast, and warnings against spread of crop pests, which would benefit their cultivation planning and decision making.

	2018	2019
Number of palniting areas participating in the project (rai)	2,500	6,800
Number of farmers participating in the project (people)	120	380
Average yield per rai (tons/rai)	4.5	5.5
Number of farmers participating in the training (people)	200	250
Tapioca Learning Corner	0	3 location
Supporting compost and soil improvement materials for members of farmers (tons)	370	3,400

TWPC Tapioca Cultivation Model from 5 to 8 tons per rai



The Company organized training in Chumphuang district, Nakhon Ratchasima, and Si That district, Udon Thani, to provide knowledge on how to increase productivity and quality of cassava cultivation and how to use modern technology to monitor cultivation. The aim is to increase cassava yields from 5 to 8 tons/rai. At the event, farmers learned about the cassava cultivation technique from Kasetsart University experts. At the same time, speakers from Ricult (Thailand) shared useful information on the utilization of mobile applications to monitor cultivation plots and weather conditions and demonstrated the use of modern machinery for actual cultivation in a demonstration plot.

Thai Wah strives to promote organic farming and the use of bio-organic fertilizers, i.e., green manure. The Company has implemented a compost-mixing project, “Thai Wah Compost Fertilizer”, which uses decayed organic waste from our manufacturing, such as cassava barks, and sediments left from the wastewater treatment pond, for compost production. In 2019, the Company distributed 3,400 tons of compost and soil improvements to the farmers.

In addition, in 2019, a model plot to demonstrate the increase of cassava production from 5 to 8 tons/rai was developed in Si That district, Udon Thani. The Company also produced an infographic and video clip on the Thai Wah style of “How to Increase Cassava Yield and Quality for Profitability by Yourself”, which details four steps of cultivation, that is, soil preparation, planting and maintenance, harvesting quality yields, and selling fresh cassava roots to Thai Wah.

Green compost / Fertilizer service



Planting machine service



Soil prepare service

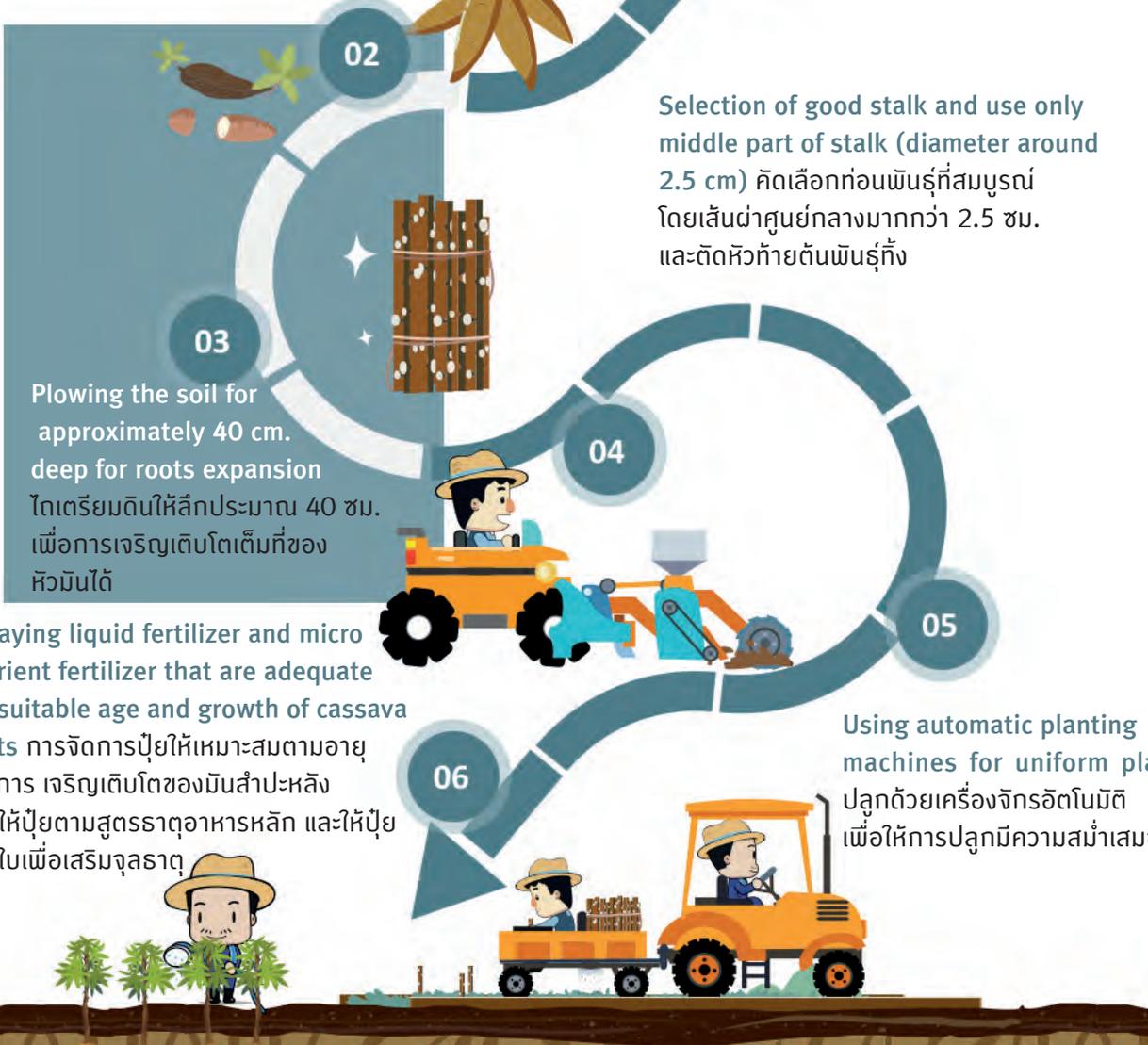


TWPC Tapioca Cultivation Model

ต้นแบบการเพาะปลูกมันสำปะหลัง เพื่อเพิ่มผลผลิตจาก 5 สู่ 8 ตัน/ไร่

Soil development with TWPC green compost 3 tons/Rai ปรับปรุงดินด้วยปุ๋ยหมักไทยวาประมาณ 3 ตัน/ไร่

Planting with High yielded varieties เลือกพันธุ์ให้เหมาะสมตามคำแนะนำ เพื่อให้ผลผลิตสูง



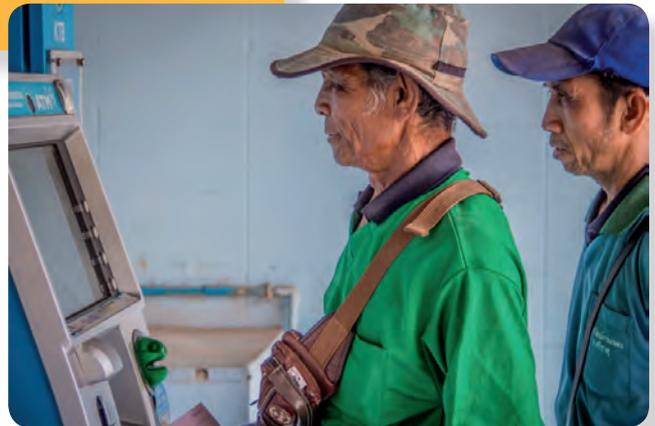
01 Selection of good stalk and use only middle part of stalk (diameter around 2.5 cm) คัดเลือกท่อนพันธุ์ที่สมบูรณ์ โดยเส้นผ่าศูนย์กลางมากกว่า 2.5 ซม. และตัดหัวท้ายต้นพันธุ์ทิ้ง

03 Plowing the soil for approximately 40 cm. deep for roots expansion ไถเตรียมดินให้ลึกประมาณ 40 ซม. เพื่อการเจริญเติบโตเต็มที่ของหัวมันได้

04 Spraying liquid fertilizer and micro nutrient fertilizer that are adequate for suitable age and growth of cassava roots การจัดการปุ๋ยให้เหมาะสมตามอายุ และการเจริญเติบโตของมันสำปะหลัง โดยให้ปุ๋ยตามสูตรธาตุอาหารหลัก และให้ปุ๋ยทางใบเพื่อเสริมจุลธาตุ

05 Using automatic planting machines for uniform planting ปลูกด้วยเครื่องจักรอัตโนมัติ เพื่อให้การปลูกมีความสม่ำเสมอ

Smart E-Money Card



The Company also accepted advance registration for farmers to reserve cassava sales queues under the **“Happy Farmers, Selling Quickly and Not Having 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. With this, the Company will also be able to plan for cassava supplies and collect cultivation-related data consistently. The payment of cassava will be made via e-Money Card of the banks the Company enrolled with.

Currently, e-money card system and advance registration system have been up and running at our tapioca starch factories in Nakhon Ratchasima’s Pimai district, and Kalasin’s Tha Khantho district, with the total of 2,888 e-money card users. The Company also plans to implement the scheme in other factories in the future as well.



Green Factory and Community

Aside from business operations, Thai Wah recognizes the importance of building sustainable relations with the community. With our sustainable responsibility and respect to society and environment, the Company's plant management system has been set to avoid environmental impact, for example, the use of clean energy (solar energy to minimize carbon emission), efficient water and wastewater treatment system, and biogas system which is the source for our alternative energy. The Company also commits to enhance our role in promoting long-term community development through developing innovations that encourage the sustainability community and providing support for education, funds, and local community development.

Safety and Occupational Health



Recognizing the significance of occupational health and safety, both for the employees 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;

	2018	2019	2020
Lost-Time Injury Frequency Rate (LTIFR)	14.25	9.7	All types of accidents decreased by 50% compared to 2019 with the hope of reducing to zero accidents by 2025
Incident Severity Rate (ISR)	65.4	13.1	
Fatality	0	0	

Injury calculation methods

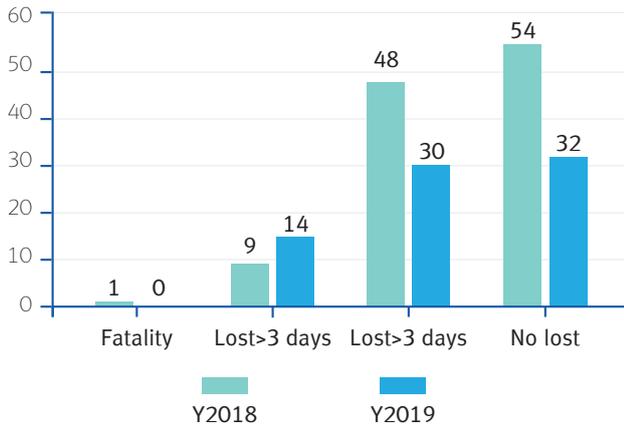
- Incident Frequency Rate = $N \times 1,000,000 / MH$
- Incident Severity Rate = $DL \times 1000,000 / MH$

N = Number of injuries in the period

DL = Number of workdays lost

MH = Number of hours worked in the period

Total number of accidents from 2018 - 2019



We also promote and instill safety culture throughout the organization with training regarding the work environment, occupational health, and safety to employees of all levels and daily workers.

Training programs organized in 2019

1. Safety risk assessment; occupational health and work environment and safety
2. Occupational health and work environment for new employees
3. Safety officers at the supervisory level
4. Committee for safety, occupational health, and environment
5. Work safety in confined spaces
6. Basic firefighting and evacuation
7. Hazardous chemical safety
8. Scaffolding and working at height safety
9. LOTO (Lock Out Tag out) safety
10. Work safety consciousness
11. Creating safety culture with KYT (Kiken Yoshi Training)
12. Environmental management system (ISO14001:2015)

In which the various organized training courses will be covered all the issues according to legal requirements and relevant safety to enhance understanding of SHE Standard, and risk management practices as stipulated by laws. Such as the training on work environment, occupational health and safety training program, guidelines on ISO 9001:2008, personal healthcare practices, plant sanitation, GMP, etc.

The proportion of trainees for various courses in 2019 and goals in 2020 are as follows:

Course	2019	2020
Safety according to legal requirements such as work safety officers and basic fire fighting	>90%	100%
Promoting safety such as safety awareness and creating a safety culture	>30%	>40%

Training

Building awareness prevents injuries and creating a safety culture by KYT (Kiken Yoshi Training)



safe work environment

Improving the safe work environment in the manufacturing



health

Good health project through the activity of “Lose weight, reduce fat”



Road Safety Network

The Company also collaborated with Tha Khantho district police station, and Kalasin Rescue Unit to organize training on promotion of traffic disciplines, compliance with road traffic rules, and reduction of road accidents to the people outside the factories, i.e., community people and farmer networks. In which, The first training was held in 2019.

Organize Road Safety Network training for farmers network and community



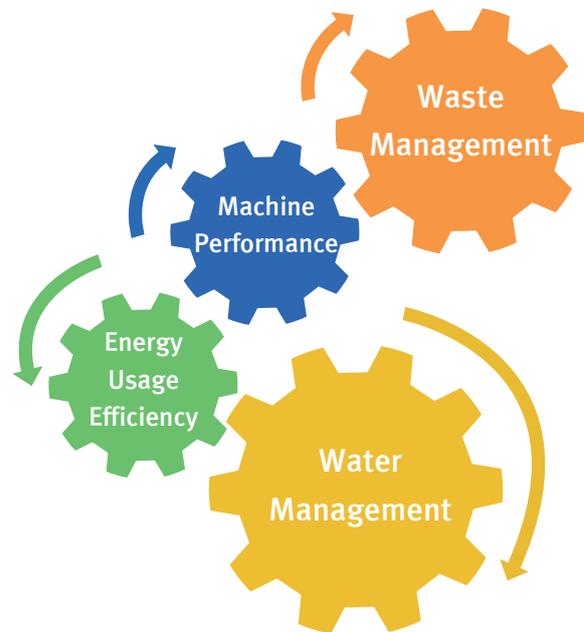
Energy Usage Efficiency throughout the Production Process

Nowadays, the global temperature rise has become inevitable due to climate change and global warming, the consequences of population increase, economic growth, and technology advancement. Thai Wah is well aware that the efficient use of natural resources and nature conservation are critical factors to economic mobilization and social development.

The Company has established guidelines for assessment and operational development throughout the value chain, from the plant management system to avoid environmental impact, to the utilization of limited resources for maximum benefits. We also cooperate with organizations at the national level to use solar energy to reduce carbon emission and enhance the efficiency of water and wastewater management systems and biogas renewable energy systems. This is for the industry to grow together with the society sustainably.

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.

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.

The decreased amount of fuel oil used by the Company (Liters per ton)



The company has the policy to stop using sulfur solid in the manufacturing process. The goal is to reduce air pollution caused by combustion, minimize workers' health hazard, and enhance the efficiency of manufacturing control. In 2019, the company managed to switch from sulfur solid to 100% liquid sulfur.



- **Thai Wah has also registered ourselves under 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 addition, the Company's target is to request T-VER certification for the three bio-power plants in Muang district, Udon Thani province, Tha Khantho district, Kalasin province, and Mae Sot district, Tak province, within the year 2021.

The Company also has set a goal to implement Carbon Footprint in our manufacturing process by 2021. As a scope of CFO implementation, Carbon dioxide (GHGs) emission activity will be assessed throughout the manufacturing process from the receipt of raw materials to the end of the manufacturing process in order for the Company to improve and develop efficiency of our energy use.

For the T-VER or Methane Recovery from Wastewater Project in Phimai district, Nakhon Ratchasima province. The Company has been certified by an external appraiser to be able to reduce greenhouse gas emissions by 49,145 tCo₂e per year.

- **Heat Energy Saving Project (Steam energy saving to reduce the use of coal fuels)**

The Company has implemented the project to promote the improvement of an increase the efficiency of heat energy by using DSM method with support from Department of Alternative Energy Development and Efficiency, Ministry of Energy. An implementing energy conservation measures by measuring and analyzing the actual energy saving results of the consultants is according to guidelines and methods for measuring and proving energy-saving results (M&V Unit), which the committee considers to support the project to promote the improvement to increase the efficiency of heat energy by the DSM method. Hence, the consultants have summarized the saving and the amount that will be actually supported.

From the implementation of measures the participation of the project "Promote improvements to increase the efficiency of heat energy using subsidies for economical results (DSM Heat) with Department of Alternative Energy Development and Efficiency, the Company can save the amount of thermal energy equal to 36,289.45 MMBTU per year (or 38,285,370 MJ per year), which can be calculated as coal saving from the implementation at 2,129 tons per year or 5,323,356.78 baht per year. Resulting in the year 2019, the Company received the subsidy from the thermal energy savings of 36,289.45 MMBTU (1MMBTU equals 70 baht), equivalent to 2,540,261.50 baht.

- **Replacement project of a Fluorescent Lights to Light Emitting Diode (LED)**

The Company has a saving energy policy by replacing fluorescent light to LED in all factories within the year 2020. In which the LED lighting when comparing in the same brightness, not only use less electricity but are also long longer. LED light bulbs use over 50% less energy than fluorescent lighting, resulting in saving about half the money compared to fluorescent bulbs. In the year 2019, the Company can save the electricity cost from the fluorescent light replacement project to LED bulbs equal to 117,870 baht. for the factory in Phimai district, Nakkornpathom province and Takanto disteict, karasin province.

The average LEDs have a rated life of up to 50,000 hours or over 5 years and use over 50% less energy than fluorescent lighting or save on electricity cost up to 10 times compared to incandescent light. In addition, the LED bulbs produce from recycle material, so that making the LED bulbs helps beat global warming, which is conserving energy.



LED		Fluorescent		Tungsten
1 Watt	≈	3 Watt	≈	15 Watt
3 Watt	≈	7 Watt	≈	35 Watt
5 Watt	≈	11 Watt	≈	50 Watt
7 Watt	≈	15 Watt	≈	70 Watt
9 Watt	≈	19 Watt	≈	90 Watt
12 Watt	≈	25 Watt	≈	120 Watt
15 Watt	≈	31 Watt	≈	150 Watt
18 Watt	≈	36 Watt	≈	180 Watt



- **Solar Rooftop Saving Project**

Thai Wah has a policy on energy conservation and would like to share with other factories an awareness on energy conservation and solution to global environmental issues through our “Solar Roof Top” program, implemented for the first time at our vermicelli manufacturing plant in Banglen district, Nakorn Pathom province. “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 through the installation of Solar Roof system, which 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.

Under this concept of energy conservation, both our starch and vermicelli plants have sought measures to reduce energy consumption and promote alternative energy, including replacing the consumption of fossil-fuel power with biogas power. A Solar Roof has been installed at Banglen Plant in response to the Company’s 2-step energy conservation approach, that is;

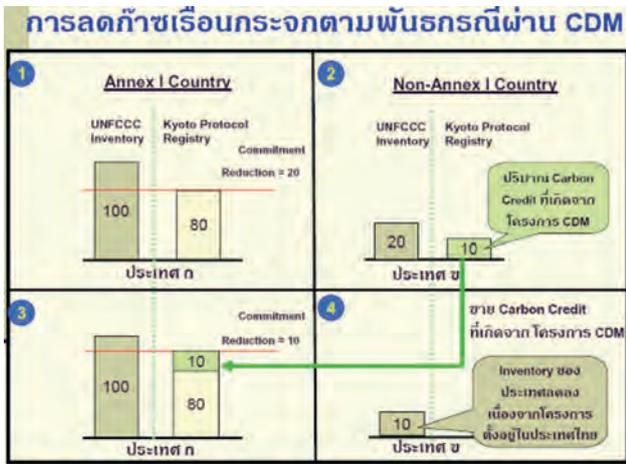
- First step** Reduces energy consumption
- Second Step** Promotes alternative energy, i.e., bioenergy, gas, and solar energy

The Company is of the view that solar energy, which is considered a non-polluting and environmental -friendly source of energy, is an answer to our effort in energy conservation and cost reduction. Solar Roof Top can reduce energy consumption by about 5 million per year, accounting for 14 percent of the energy used in the factory, thereby, reducing manufacturing cost. The money saved from energy consumption could be used in other endeavors that benefit surrounding communities.

From July until the end of the year 2019, the Solar Roof Top project can generate a total of 675,187 kWh of electricity, approximately 2.44 million baht (3.62 baht / kWh electricity rate).

It can be equivalent to Carbon offset 2,200 Metric tons per year or equal to planting 220 acres of pine forest. In addition, the Company plans to invest in a solar rooftop project at one more tapioca starch factories in the future.

- Greenhouse Project under the Clean Development Mechanism (CDM)



Clean Development Mechanism : CDM

Currently, Thai Wah’s factory in Mae Sot district, Tak province, has been certified on the CDM project from the Thailand Greenhouse Gas Management Organization since 2013 and can deliver about 15,477 – 35,688 tCO₂e. The Clean Development Mechanism or CDM is a commitment under the Kyoto Protocol, industrialised countries on Annex I countries. Commitment to reducing greenhouse gas emissions within 2008 – 2012 to be lower emissions than the amount of greenhouse gas emissions in the year 1990 approximately 5% by buying carbon credits obtained from CDM projects in non-Annex I countries or Certified Emission Reduction (CERs) in order to deduct the amount of greenhouse gas emissions of the country.

CERs are the amount of greenhouse gas emissions that CDM projects can reduce and have been certified by the CDM Executive Board, which is abbreviated CDM EB. The CDM project must be a voluntary operation to reduce additional greenhouse gas emissions from the operations as well as support sustainable development in the country in terms of resources, environment, society, economy and technology.

- Environmentally friendly packaging



The number of Green Carton used as an alternative to the original cardboard boxes. (pieces)

2018	1.12 M. pieces
2019	1.48 M pieces
Target 2020	1.5 M pieces

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.

Water Management

With the significance of water resource for continuity of agribusiness / agro & food Industry, coupling with recent drought situation which is getting worse each year as a result of global climate change, Thai Wah has placed significant priority on water shortage risk assessment, and basic utilities risk management, together with the promotion of efficient use of water. Each year, the Company joins forces with the communities in implementing proactive measures on water management, for instance, dredging of the municipal public reservoir (Kaem Ling water retention area) and subsidized a water diversion project from Lam Pao Dam to sub-district municipality in Tha Kan Tho, Kalasin province, implementing consumption of water system improvement project in Ban Wang Hin Moo 18, Phimai district, Nakhon Ratchasima province to camouflage sunlight to the clarifier and reduce the occurrence of mosses, and build dam construction and repair project at Ban Champa, Chiang Yuen subdistrict, Mueang district, Udon Thani province. The two projects are aimed to sustainably contain water for consumption and agriculture, mitigate drought, and to increase soil moisture during the dry season.

We establish a guideline for water management and implement a risk management plan on an annual 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 to divert treated wastewater for sustainable agriculture was also undertaken by natural wastewater

treatment systems installed, promotion of drip irrigation system for cultivation among Thai Wah members, not only enhance farmers’ cultivation efficiency but also mitigate drought for now and in the future.



The Company can reduce the water consumption rate for starch production (Cubic meters per ton) by 10% every year.

reservoir project

Dredging of municipal public reservoir project (Kaem Ling water retention area) to help the citizen of the community have sufficient water supply at Tha Khantho district, Kalasin province.



Subsidized a water diversion project from Lam Pao Dam to sub-district municipality in Tha Kan Tho, Kalasin province, to help the people in the community have sufficient water supply.



Weir construction and repairment project by using giveaway old sack, which could block the weir at Ban Champa, Chiang Yuen subdistrict, Mueang district, Udon Thani province



Wastewater pipes and water pumping

Wastewater pipes and water pumping for sustainable farming, installed equipment for the first group of 34 farmers to use in an area of 557 Rai in Udon Thani's Muang district. The expansion of the project has been planned for the future.



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 m³/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. In which the Company has a policy of letting waste water out of the factory Must go through a 100% healing process.



- **Biogas Power Plant**



1 cubic meter of gas saves electricity equal to 2 units or 6.80 baht

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 Khantho district, and Tak’s Mae Sot distict, each with a capacity of 2.826 megawatts, 2.996 megawatts, and 1 megawatts respectively. Another plant has been planned in Nakhon Ratchasima’s Pimai district.

In addition, the Company has also implemented preventive, corrective and monitoring measures for environmental impacts in accordance with the Code of Practice (CoP) at the biogas-power plant annually.

Electricity saving rates (Baht per year)	
2018	36,770,585
2019	44,087,415
Target 2020	73,440,000

* COD on March 2018

Social and Community Development

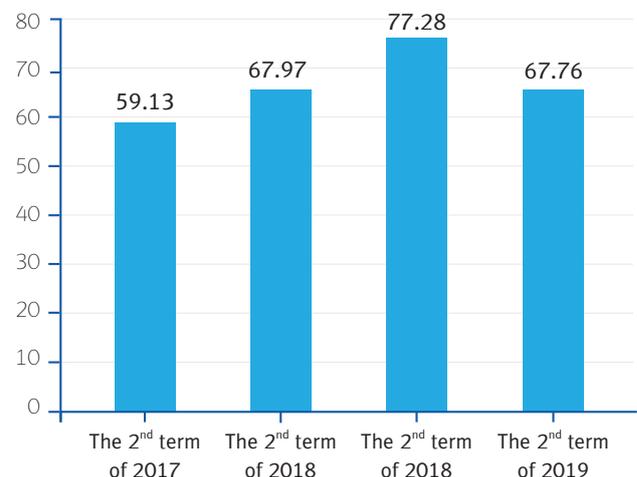
- Online English Language Learning Program



With a recognition of the importance of our role in promoting food security and environmental balances, Thai Wah has placed priority on the development of society and surrounding communities through providing educational support and essential skills for the improvement of their quality of life and promoting economic development with the sense of long-term social and environmental responsibility. The Company aims to “support business partners to grow together” while “promoting quality of life of community people” to enable them to cope with present and future challenges.

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/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.

Thai Wah, with the collaboration of leading English language schools accredited by Ministry of Education, has launched an English language learning program via an application installed in the tablets of the elementary students (Grade 1 to 6). The program features 4 hours of English language class per week to develop listening, spoken, reading, and writing skills. Technologies have been adopted to enable interaction between native language teachers and the students. In 2019, 40 students who have participated in the program. The academic test results are as following:





- **Mushroom Cultivation Program for Community Schools**

The Company commits to develop and improve the livelihood of the surrounding program This is in The Company commits to develop and improve the livelihood of surrounding communities. Our mushroom cultivation program encourages community schools to use soil debris and cassava shells, which are wastes from our manufacturing process, to grow mushrooms. This is to generate incomes in the community, and for the students to be enriched with occupational skills. Thai Wah provides financial support for training, the supply of raw materials, and building of mushroom houses. Schools can also use mushrooms as ingredients for student lunch and can sell it to the community at low prices all year round. The students will also learn to be diligent and to help out their families from the revenues earned through this program. The Company has established 2 learning centers for straw mushroom cultivation at Khok Sa-ard-Sri Burapha School, Khok Sa-ard sub-district, Muang district, Udon Thani province, and at the house of the head of Ban Na Somboon village volunteers. The total of 13 mushroom houses have been constructed in 2018 and aims to increase to 15 mushroom houses in 2020.



- **Happy Family Staff program**

The Company also organized the “Happy Family Staff” program intending to help solve family problems of our plant employees, and to guide their children in identifying life goals and how to get there. The employees and their families, altogether 30 families, were engaged in several activities that enhanced family relationship and love. The program was held on August 10, 2019 in Banglen sub-district, Nakhon Pathom province.



- **Young Master Chef THAIWAH Program**

In 2019, Thai Wah organized the 2nd Young Master Chef THAIWAH Competition at Bang Lane Witthaya School in Nakhon Pathom province. The aim is to provide opportunity for students to demonstrate cooking skills, and to use imagination and creativity in creating new menus with pride and happiness



- **Scholarship Program**

The Company provides scholarships to children of employees who excel in their study, with the intention to alleviate the burden of our employees on educational expenses and boost their morale and loyalty with the Company. The scholarship presentation ceremony for 2019 was held on December 13, 2019, in Banglen sub-district, Nakhon Pathom Province, 19 students have been granted a scholarship that day.



- **Opportunity Day for community for plant visit Program**

Thai Wah also organized the “Opportunity Day for community for plant visit” to provide an opportunity to students and teachers for a field visit, and for enhancing their knowledge and skill for future career. It is also an excellent chance to promote the Company and our products among the students. The program has been organized for students from 3-4 educational institutes each year, and in 2019, a total of 90 students participated in the program.



- **Thai Wah’s Community Health Promotion Program**

Thai Wah has collaborated with Salaya Hospital’s “Healthy community” scheme to organize a health checkup activity in the Banglen sub-district, Nakhon Pathom province, on August 22, 2019, to enhance the healthiness of the local people, and boost cordial relationship with nearby communities. A total of 6 employees participated in the program.

The background of the page features a warm, orange-toned blurred image of several paper cutouts of human figures holding hands in a circle. A large white circle is overlaid on the left side, containing the main title. The overall aesthetic is clean and professional, emphasizing human connection and balance.

Family Work and Life Balance

Amidst the rapidly changing technologies and a fiercely competitive business environment, organizations need to be well prepared and be resilient in any situation. Human resource development is a key to strengthening and promoting sustainable growth of the Company.

Human Resource Development

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.

Priority has been placed on fair treatment to the employees on the basis of human rights. We have clear policies concerning all aspects of employment and will not take any discriminatory action in the process related to recruitment, employment, compensation and benefits, training, assignment, and promotion, etc. The Company commits to provide facilities necessary for the employees' work

duty and promote safe and healthy work environment. Participatory norms are also encouraged for the development of their quality of life, value, and public mind, thus, enabling our people to have a sense of their worth and reach their full potential.

In 2019, the Company had a total of 3,110 employees. 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 2019, the Company hired 31 disabled people in accordance with the law, which requires a company to hire one disabled person for every 100 employees hired.

	2018	2019
The ratio of persons with disabilities to all employees	1 : 100	1 : 100
Proportion of male employees to female employees	2.5 : 1	2.5 : 1
Number of all employees	2,040	3,110

In addition to having capable employees who are willing to learn and create new things, and are able to manage changes to generate benefits, an organization has to attract talents whose capabilities suit the changing structure and business situation.

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.

The Company has placed priority on promoting 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 of speech in a bid to create bonding and belongingness, and for all employees to take pride in being part of Thai Wah.

- **Career Development Program**

Thai Wah has systematically initiated a career development program and restructure our human resource management to accommodate the Company’s rapid changes in various aspects. In planning for career development, employee competency has been analyzed to know their true potentiality according to the following development models:

In 2019, Thai Wah, in collaboration with leading consulting firms, has laid out and developed a curriculum structure that is relevant to our organizational structure to promote sustainable development. The focus has been made on the development of new generation management. The development has been undertaken in the same direction throughout the organization.



- **HR Intranet System (HRIS)**

In 2019, the Company developed an HR Intranet System intending to reduce work process, enhance operational efficiency, and minimize the use of paper within the organization. In the past year, 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, has helped reduce use of approximate 2,000 sheets of paper per month (24,000 sheets per year or an equivalence of 4.8 trees)*.

*3-year-old eucalyptus trees, weighs around 50 kilograms can produce about 5,000 sheets of paper





• Thai Wah Leadership Academy (TLA)

Thai Wah Management recognizes that human resources are an essential factor for organizational development, and 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:

In 2019, TLA was properly designed to develop leadership in wide-ranging dimensions, e.g., business knowledge, marketing management, development of innovations, and team management through the following eight learning activities based on the principle of 70-20-10, as follows:



TLA Thai Wah Leadership Academy (TLA) 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 .

	2019
Employee engagement scores (percent)	80
Training hours per year	1 person / day / year
Turnover rate	16%
Women return to work after giving birth (percent)	100%

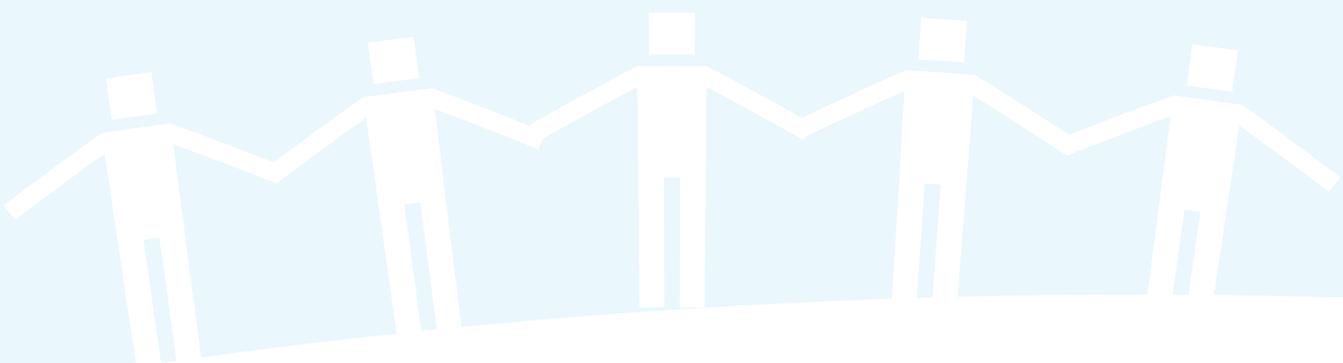
Human Rights and Good Labor Practices

The Company has placed importance on human rights management in compliance with the business code of conduct and international human rights standards. The Board of Directors and/or senior management are expected to monitor and ensure that human rights are not violated in any of the Company's activity, nor human rights violation due to any act or decision made by the Company.

The Company has formulated a policy on corporate responsibility to respect human rights. The aim is to undertake comprehensive measures related to human rights by adhering to the United Nations Guiding Principles on Business and Human Rights (UNGPs) as a framework for human rights management. The policy includes analyzing and gauging human rights risks, risk management, and constant monitoring of and reporting on related progress. Thai Wah's key human rights issues are forced labor, human trafficking, and illegal child labor.

In demonstrating consistent commitment to addressing the above issue, the Company has formulated a plan to uplift responsibility and transparency in the supply chain, disseminated policy, and practices on sustainable procurement to business partners. By providing the training and enhance knowledge of key business partners for them to conduct self-assessment on sustainability, assessed key business partners, on sustainability, and supplied main raw materials from responsible agricultural sources. Those who wish to become future partners will have to sign an acknowledgment of human rights and good labor practices and to comply with the principles set by the Company strictly. With our commitment and care, Thai Wah has also implemented workplace safety, health, and environmental policy in accordance with related laws and standards for all employees and business partners to work in a safe and happy environment.

We have continued to implement our policy on human rights and have yet to witness any case that business operation is held accountable for human rights violation. Nevertheless, the Company has provided various channels to receive opinions and suggestions from the employees, such as the Intranet and Suggestion Box.





At present, our products are manufactured and internationally distributed to ASEAN countries and over 26 countries around the world. Our quality food and starch products are made from selected raw materials through our expertise in tapioca starch and starch related food products. Another most important thing is the consistency of the quality of starch products. We pay special attention to every single detail of the production and creation process right from the farm to the hand of the consumers. As one of the leading corporates in the agro-food industry, we place extreme importance on the uplift of quality and safety throughout the whole process. We commit and strive to continue developing our products for the best hygiene of consumers and everyone in the society through the collaboration with business partners, food institutes, and leading universities to develop new innovations in starch for sustainable leadership of our products in the market.

Organic Food and Healthy Food R&D

Innovations on Procedures, Products, and Services

Consumer health starts with the right nutrition. Thai Wah places great importance on innovations that promote consumer health and respond to the need of consumers of all ages. We have formulated a plan for social and environmental-friendly innovations to develop food that promotes health and healthiness, and have intended to offer new alternatives for consumers through the development of quality and safe products that are rich in nutrients and that meet the needs of each consumer group. The Company also commits to creating public understanding and knowledge about our products, with the goal to release products for consumers' better health and healthiness. The Company is committed to innovating healthier products for our customers and has dedicated 40% of our Group R&D Innovation Projects for the cause.

The Company always commits to introducing nutritious products to the market. In 2019, Thai Wah launched a number of new products that meet the consumers' health and wellness demand, i.e., **Double Dragon Balance (DD Balance)**, which will “balance everyday life” with its soft glutinous texture. This **gluten-free organic vermicelli** is filling and healthy, and is **100% naturally** made from premium grade mung beans. The product has also been certified by the Faculty of Medicine Ramathibodi Hospital, Mahidol University for its **low-GI value**, which is a preferred choice of food as it is slowly digested and absorbed, causing the slower and smaller rise in blood sugar levels.

Product Performance innovations focus to improve nutritional outcomes

	2019	2020
Number of consumer health and wellness products	0	3
Developed products that focus on health and wellness to new products (%)	0	50%



Double Dragon Crystal Ready (DD Ready), the ready-to-cook flat vermicelli with soft and springy texture and ≤1,400 milligrams of sodium, received the “Healthier Choice” nutritional logo from Nutritional Promotion Foundation under Mahidol University’s Institute of Nutrition under the instant food category. The delectable DD Ready is ready to serve all families with style and convenience. It comes in 2 flavors: Guangdong suki, and Korean-style Hotto yentafo.

Enhancing Quality and Food Safety

Thai Wah strives to raise employees' awareness on safety measure in every single production process 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.

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 ISO 9001: 2008, Good Manufacturing Practice (GMP), Hazard Analysis Critical Control Point (HACCP), KOSHER, BRC Global Standards (Grade AA), HALAL, and FSSC 2200.

Thai Wah also strives to maintain and develop our Total Quality Management (TQM) in a bid to produce quality products that are safe to consume. Priority has been placed on product research and development to meet the need of consumers for adequate access to food and healthy nutrition. 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 to taste, diversity, and convenience, worldwide consumer behavior trends also reflect priority on food quality and safety, especially nutritional food with safe production process. This is the challenge that the Company takes on in attempt to keep up with the changes, by way of constantly developing our products, controlling quality throughout the value chain, and instilling knowledge and awareness on good nutrition among the public. In addition, the Company is committed to maintaining and developing quality management systems throughout the organization to produce quality products and safe for consumption.

International Conference



Thai Wah took part in the 7th International Conference on Bio-Based Polymers (ICBP 2019), held by the Petroleum and Petrochemical College, Chulalongkorn University, under the topic "Bio-Based Polymers for Bio-Circular-Green Economy". The conference is aimed to expand and take forward knowledge on bioplastic (biodegradable plastics made from tapioca starch) development. The Company's participation in the conference demonstrated our commitment to mobilize circular economy through promoting bio-based materials for sustainable development.

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.

- In 2019, the Company's **"Double Dragon Balance"** dried bean vermicelli product has been certified Superior Taste Awards with iTQi 2 stars by Belgium's International Taste & Quality Institute and certified by the Faculty of Medicine Ramathibodi Hospital, Mahidol University that can help to keep blood sugar levels balanced (Low Glycemic Index) to the body. Besides, **"Double Dragon Crystal Ready"** ready-to-eat vermicelli product was certified by the **Healthier Choice certification** from the Nutrition Promotion Foundation under Mahidol University's Institute of Nutrition



Superior Taste Awards (2 stars) received from the International Taste Institute for international quality assurance of food and beverage.



"Healthier Choice" is a nutritional logo from Nutritional Promotion Foundation for nutritious and healthy products that enhance consumers' health and prevent NCDs.



Low Glycemic Index is a measure that ranks foods according to their effect on blood sugar levels. A low GI value is more slowly digested, absorbed and metabolized, and helps balance blood glucose.

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 Trust



- **Marketing Communication and Customer Privacy**

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.

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.



In 2019, customer's satisfaction on Thai Wah's starch products is at the average of 89.60%. Criteria used in the satisfaction rating are 1) products, 2) services, 3) prices, and 4) other suggestions. Customer satisfaction on the Company's food products is at the average of 84.00%. Criteria used in the satisfaction rating for the food products are: 1) product preference, 2) product quality, 3) packaging quality, 4) product delivery, 5) services and coordination, and 6) marketing activities. The Company's product satisfaction scores have been reported to the management every year for further product development.

The Company also maintains various communication channels with the customers, i.e., online communication, and loyalty program. All customer data will be kept strictly confidential in accordance with the Company's security policy.

Customer satisfaction scores

Starch Business

2018	85.67
2019	89.60
Target 2020	90

Food Business

2018	85
2019	84
Target 2020	87

Brand Awareness (Top of Mind)

Food Business

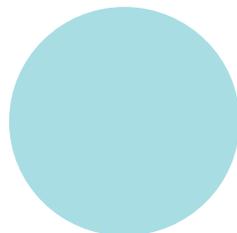
2018	40%* / 22%**
2019	40%* / 20%***
Target 2020	Maintain / Increase 2pt

Brand Penetration (Brand Share)

Food Business

2018	42%* / 32%**
2019	42%* / 31%***
Target 2020	Maintain / Increase 1pt

- * Double Kirin brand measure from U&A Food Operator Study by Market Support Research in 2017
- ** Double Dragon brand measure from U&A Consumer Study by Nielsen Research in 2016
- *** Double Dragon brand measure from U&A Consumer Study by Nielsen Research in 2019



The report is the annually Corporate Sustainability Report of Thai Wah that will be publicly disseminated. It is developed through comparison with key performance indicators and goals, identified in the Company's sustainability strategy, in accordance with its core value "Creating Value from Farm to Shelf (From Farm to Shelf)". The objective of the report is to communicate our continuous commitment in conducting business toward sustainability in both economic, social, and environmental aspects. This report discloses our annual sustainable performance from 1st January to 31st December 2019.

The Corporate Sustainability Report conforms in accordance with the Global Reporting Initiatives Standards (GRI Standards): Core option. The Company's performances have been measured in comparison with the United Nations Sustainable Development Goals (SDGs). The financial performance has been reviewed by EY Company Limited, and details are shown in the Auditor's Report in the 2019 Annual Report.

Appendix





About This Corporate Sustainability Report

Process for Defining Report Content

The process for defining the content of this report is based on our awareness of the impact of the Company's value chain against the stakeholders, including farmers, business partners, employees, customers, community, and society as a whole. The opinions of Thai Wah's Board of Directors and management were, then, sought. The material sustainability aspects presented within this report are significantly stakeholders' issues of interest, which are essential to the Company's business strategy in assessing both internal and external environments. The Company abides by the principles of GRI Standards, including Sustainability Context, Materiality, Completeness, and Stakeholder Inclusiveness. Significant issues have been formally assessed to identify and prioritize sustainability aspects that have a great impact on Thai Wah's business operation in both economic, social, and environmental dimensions. Issues that are of significance to stakeholders are also presented in this report.



Step 1 Identification

The Company identified material aspects and scope of each aspect through a workshop with high-ranking executives, based on the internal and external factors of the Organization, i.e., such as Thai Wah’s strategic Direction, Sustainability Direction, and Risks and Opportunities, as well as material aspects benchmarked against industry peers, and global sustainability trends identified from international sustainability standards.

Step 2 Prioritization

The Company analyzed and prioritized the aspects identified in Step 1 through a workshop with high-ranking executives and heads of concerned business departments. The analysis and prioritization was conducted based on two conditions: significance to Thai Wah’s business operation and to external stakeholders, i.e., business partners, customers, public sector, and social sector.

Step 3 Validation of identified aspects

The Company, through our Sustainability Development Department, primarily validated the identified material aspects, along with conducting interviews with external stakeholders, which are Capital Market Developers, and Business Partners, to gather their opinions on aspects that are significant to the sustainability of business operation, in accordance with the guideline of principles of GRI Standards. The validated material aspects were then presented to the Audit, Risk and Corporate Governance Committee (ARCG) to approve and confirm that

Step 4 Development and continuous improvement

The Company provides channel for feedback, views, and suggestions in order to develop and improve the contents for the next year’s report. We continue to adhere to the stakeholder engagement and sustainability context principles.

GRI Content Index

GRI 102: General Disclosures

	Disclosures	Page / Website / Omission	External Assurance
Organizational Profile			
102-1	Name of the organization	SD Report cover page / back page	
102-2	Activities, brands, products, and services	SD Report page 10	
102-3	Location of headquarters	SD Report back page Annual Report page 57	
102-4	Location of operations	SD Report page 12-13	
102-5	Ownership and legal form	SD Report page 72-73	
102-6	Markets served	SD Report page 12-13	
102-7	Scale of the organization	- Annual Report page 5 - http://investor.thaiwah.com/financial_highlights.html	
102-8	Information on employees and other workers	SD Report page 64	
102-9	Supply chain	SD Report page 10	
102-10	Significant changes to the organization and its supply chain	Annual Report page 32-33	
102-11	Precautionary principle or approach	SD Report page 26-27	
102-12	External initiatives	SD Report page 51	
102-13	Membership of associations	SD Report cover page / page 19	
Strategy			
102-14	Statement from senior decision-maker	SD Report page 8-9	
102-15	Key impacts, risks, and opportunities	SD Report page 18	
Ethics and Integrity			
102-16	Values, principles, standards, and norms of behaviour	SD Report page 3	
Governance			
102-18	Governance structure	- http://investor.thaiwah.com/organization_chart.html	
Stakeholder Engagement			
102-40	List of stakeholder groups	SD Report page 18-19	

	Disclosures	Page / Website / Omission	External Assurance
Stakeholder Engagement			
102-41	Collective bargaining agreements	SD Report page 65 Thaiwah does have a trade union. However, thaiwah has its welfare committee which is composed of representatives from all levels of employees. Their responsibilities are similar to a trade union	
Stakeholder Engagement			
102-42	Identifying and selecting stakeholders	SD Report page 18-19	
102-43	Approach to stakeholder engagement	SD Report page 18-19	
102-44	Key topics and concerns raised	SD Report page 18-19	
Reporting Practice			
102-45	Entities included in the consolidated financial statements	Annual Report page 34-38	
102-46	Defining report content and topic boundaries	SD Report page 74	
102-47	List of material topics	SD Report page 18	
102-48	Restatements of information		
102-49	Changes in reporting		
102-50	Reporting period	SD Report page 72	
102-51	Date of most recent report	- Our previous SD Report was published in April 2018	
102-52	Reporting cycle	SD Report page 72	
102-53	Contact point for questions regarding the report	SD Report back page	
102-54	Claims of reporting in accordance with the GRI Standards	SD Report page 72-74	
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THAI WAH
PUBLIC COMPANY LIMITED

Thai Wah Public Company Limited

21/11, 21/13 Thai Wah Tower 1, 6th Floor

South Sathorn Road, Tungmahamek, Sathorn, Bangkok 10120, Thailand

Tel. : 66 (0) 2285 0040 Fax : 66 (0) 2285 0268, 66 (0) 2285 0270-1

