บทสรุปผู้บริหาร
Executive Summary

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Study on targeted niche market opportunities for
Thai agricultural products in Australia and New Zealand

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Executive Summary

Study on targeted niche market opportunities for Thai agricultural products in Australia and New Zealand

Australians and New Zealanders are currently facing health issues and chronic diseases associated with dietary patterns. Consumers' behaviour nowadays shifts to embrace more healthy food choices. As a result, the healthy food and organic markets of Australia and New Zealand have rapidly grown for the past few years. Consumer preferences for healthy products have been the main factor driving Australia's and New Zealand's herbs and spices industries to expand for the last five years. Although the herbs and spices market's growth rate was slightly low in both countries, it was expected to increase continuously. The higher herbs and spices demand is driven mainly by Asian consumers, followed by local consumers who desire to experience new healthy dishes and the use in food services and food industry sectors. Therefore, there is an excellent opportunity for Thailand to introduce its agricultural products into Australia's and New Zealand's niche market. This study aimed to investigate the market opportunities in Australia's and New Zealand's niche markets for Thai agricultural products, focusing on healthy products, organic products and herbs and spices products. The study investigated consumer behaviours and niche market trends in Australia and New Zealand. It also gathered information on import and export statistics of related products, import conditions, and biosecurity measures. SWOT analysis was used to evaluate strengths, weaknesses, opportunities, and threats of Thai agriculture products. The practical guidelines for Thai agricultural industries improvement and market expansion strategies were derived appropriately from the analysis.

1. Australian and New Zealander consumer behaviours and trends

1.1 Australian consumers

Australian consumers have high purchasing power. They prioritise product's quality and are willing to pay more for high-quality products. Factors influencing Australian consumer purchasing decisions include food safety and health concern, ethics and sustainability, convenience and accessibility, consumers lifestyle, attitude, trust and experience. The consumers also consider how the products were made regarding environmental and social responsibility. They ask manufacturers to give back to the local community and address human slavery and animal cruelty issues. Besides, the country of origin of the product is also the primary concern among Australian consumers. The consumer more narrowly focused on prioritising Australian made products to support the local communities. However, the Asian population in Australia has been increasing. The supermarkets are now presenting more Asian products in their store in response to high demand for Asian foods and ingredients from Asian consumers and local Australians who want to explore new products.

1.2 New Zealand consumers

New Zealand consumers concern more about their food consumption patterns. There is a significant increase in the adoption of a gluten-free lifestyle among New Zealand consumers. The perception that gluten is potentially harmful to their health is the primary driver of the gluten-free lifestyle. Some consumers avoid consuming foods that contain allergens such as wheat, lactose and dairy products due to personal health issues. However, many consumers believe that avoiding food allergens would improve their overall health. Earlier, New Zealand consumers mainly demanded food products that were cost-effective, tasty, and accessible. However, they are now focusing more on product nutrition than neither its taste nor price. The first aspect that consumers would consider before purchasing is nutrition and health benefits, followed by food safety associated with allergen labelling and social responsibility. Social responsibility involves engaging in sustainability within the supply chain, no activities relating to animal cruelty, no human trafficking, as well as supporting the local community.

2. Health and Wellness Food Market Overview

This study classified healthy food products in Australia's and New Zealand's markets into five categories which were 1) free-from and natural food products, 2) fortified and functional food products, 3) vitamin and supplement products, 4) personalised nutrition, and 5) alternative protein sources.

2.1 Australia Health and Wellness Foods Market

1) Free-from and Natural food products

Australia's free-from and natural foods market is currently valued at approximately AU$7.7 billion, accounting for about 23 per cent of Australia food services revenue. Demand for free-from and natural food products is expected to grow along with population growth and a higher rate of consumers who experience food allergies and intolerance. Health-conscious consumers also support market growth. According to Commonwealth Scientific and Industrial Research Organisation (CSIRO) analysis, the domestic consumption and export opportunity for free-from and natural foods was forecasted to reach AU$4.2 billion by 2030 at around 4% per annum growth.

Free – from foods refer to food products that are normally free from some ingredients such as alcohol, preservatives, food additives, lipid, sugar, GMOs, gluten, lactose, soy and soy products, dairy products, or other allergens. Those ingredients could cause health issues if consumed in an inappropriate amount or by consumers with food allergies. Food allergy occurs commonly in Australian consumers. More than 250,000 young adults are at risk of anaphylaxis, and 1 in 10 children under 12 months have food allergies. Approximately 2 per cent of Australian adults are affected by food allergy.[1] The most common triggers are wheat, peanut, tree nuts (such as almond, Brazilian nut, Hazelnut, Walnut, Cashew nut, Macadamia, Chestnut, and Pistachio), shellfish, egg, dairy, fish, soy, sesame and lupin. Young children allergic to cow's milk, soy, wheat, or egg are most likely to outgrow their food allergy as their immune systems mature. By contrast, allergic reactions to peanut, tree nuts, sesame and seafood persist in approximately 75% of children affected. When food allergy develops for the first time in adults, it usually persists.

Natural foods refer to food products that do not contain artificial colour, artificial flavour, preservatives, and other food additives. Natural foods should have been minimally processed, which does not fundamentally alter the products. The natural products that tend to attract more consumers interest in Australia's market include hemp seed products, plant-based protein, grass-fed meat and gluten-free alternative flour, and cereals and grains. Increased awareness regarding health and well-being was identified as the significant drivers making Australia's natural food market grow. Australian consumers became aware of the health impact of pesticide residue, antibiotics, and hormone use in food production. Consequently, in 2018 Australia's organic market has grown by 88 per cent since 2012.

2) Fortified and functional food products

Demand for fortified and functional foods in Australia was expected to grow continuously to reach AU$5.5 billion by 2030, according to CSIRO. The market growth will be driven by aging population growth and a higher rate of diet-related chronic diseases. Moreover, Australian consumers' lifestyle shifting into a healthier way has also supported the market growth. Fortified and functional foods with the highest market share is milk and milk products, followed by bread and bakery products. These two categories accounted for 60 per cent of market value. Cereals breakfast came third with a 20 per cent market share. Butter and margarine products had approximately 10 per cent of the market share, and other products made up the remaining.

3) Vitamin and supplement products

Vitamin and supplement market growth has fluctuated over the past five years. The demand for vitamin and supplement products mainly were from health-conscious consumers. The average market growth rate between 2014 and 2019 was 3.5 per annum. In 2019, Australia's vitamin and supplement market valued at AU$533.5 million, increasing by 2 per cent from 2018. Two Chinese companies, Swiss Wellness Blackmores and Nature'care, held the largest market share, which accounted for around 50 per cent of the total market value. According to Australia's complementary medicine industry report 2018 by Complementary Medicines Australia, the product focusing on general health, joint and bone, heart health, digestive, and

[1] Jon Daly and Courtney Fowler. (2018). *Agricultural scientists team up with global food brands to target allergen-free food market*. Retrieved from https://www.abc.net.au/news/rural/2018-10-27/food-scientists-global-brands-target-allergy-free-market/10375374

women's health were the most prominent categories. The sports supplement industry in Australia has also expanded rapidly. It is worth close to AU$1.1 billion, the third-largest supplement industry, after the USA and UK.

4) Personalised Nutrition

Nutrigenomics has been used broadly in the personalised nutrition industry to study the effects of nutrition, exercise and lifestyle on gene expression. Personalised nutrition provides nutrition advice and services to an individual based on personal characteristics to improve overall health and well-being. The products and services include phenotype, genotype, related diagnostic testing to identify nutritional needs. Some services also provide personalised nutrition electronic-tool that can be installed on mobile devices. CSIRO expected that demand for personalised nutrition products and services would reach AU$550 million by 2020 with an average growth of 19 per cent per annum. However, personalised nutrition is an emerging market. The market growth will depend on service providers' abilities in science and innovation, data privacy management, and services effectiveness.

5) Alternative protein sources

Plant-based protein is the most popular alternative protein sources in Australia. Meanwhile, meat products produced in vitro and insect-based ingredients do not quite meet consumer preferences. According to Food Frontier's research conducted in 2018-2019, Australian consumer spent around AU$150 million on plant-based protein, AU$115 million through retail stores and AU$35 million through food services. The plant-based protein products found in Australia's market survey were mainly patties, sausages, and minced products. The product prices were much higher than traditional meat products. Also, there was an increase in demand for plant-based protein from quick-service restaurants in response to Australia' rising vegetarian and vegan trend.

2.2 New Zealand's Health and Wellness Food Market

1) Free-from and Natural food Products

Nielsen's Global Health and Ingredient-Sentiment Survey in 2016 highlighted that New Zealand consumers increasingly changed their diet patterns to the healthier way and looked for more natural products that did not contain artificial or chemical ingredients. They were also willing to pay more for foods and drinks that did not contain unwanted ingredients. The survey also revealed that almost 90 per cent of the participant consumers actively avoided specific ingredients harmful to their health. 60 per cent of consumers indicated that food additives could cause health issues and needed to avoid those additives.

Gluten-free products captured the highest demand among other free-from foods in New Zealand. The demand came from consumers with gluten intolerance and consumers who perceived that gluten-free foods are a healthier alternative. Avoiding gluten without medical advice is now a concern among medical professionals because it will lead to nutrient deficiency. Consumer demand for free-from allergen foods continuously increases, especially dairy-free products. People suffering from cow milk allergy, vegetarian and vegan consumers and consumer preference for animal welfare are the most crucial factors motivating the dairy-free foods market to grow further.

2) Fortified and Functional Food Products

There were many fortified and functional food products in the New Zealand market, claiming that the products provided health benefits beyond basic nutrition and improved health. The vast majority of functional ingredients used in food products were prebiotics, probiotics, vitamins and minerals, omega 3, antioxidants and natural ingredients with health properties. The Institute of Food, Nutrition and Human Health, Massey University, revealed that the major food categories for functional and fortified food product development were dairy products followed by cereals products, meat and poultry products and nut and seeds products, respectively. The key target function for health and wellness improvement was general well-being followed by heart health, immune system and bone health.

3) Vitamin and supplement Products

Vitamins and supplements have been prevalently used among New Zealand consumer for health and wellness improvement. Basic vitamins and supplements such as vitamin C, vitamin A, vitamin D, Fish oil, Omega, Magnesium and Calcium continue to drive the market growth. Moreover, the demand for supplements for digestion improvements such as probiotics and prebiotics has increased from consumers who adopt healthier lifestyle behaviours. Stress relief and sleep support supplements are expected to grow due to busy lifestyles.

4) Personalised Nutrition

Personalise nutrition is an emerging market in New Zealand. Personalised nutrition products and services are not widely known among New Zealand consumers. Thus, the information on market values and trend was limited. The study found some providers offering DNA and microbiome test with a personalised diet and exercise plan. This market was anticipated to develop due to the rising well-being mindset.

5) Alternative Protein sources

The research on consumer dietary attitudes by Food Frontier revealed that more than 1 in 3 of the New Zealanders, or around 1.5 million people, have reduced meat consumption over the past year. As a result, Flexitarian consumers in New Zealand increased significantly by 18 per cent in 2019. Also, approximately 24 per cent of meat consumers in New Zealand were keen to limit their meat consumption. The consumers consuming less meat said that improving overall health was the primary reason for them. The other most important reasons were environmental concerns, animal welfare, cost, and various plant-based options.

Plant-based meat products found in the New Zealand supermarket were mainly imported from Australia and the USA. However, the study found a few local producers who have launched their product in the market. Plant-based protein products in New Zealand are continuously improved by using various based ingredients other than soy. The Craft Meat Co. targeted to launch their new hemp seed-based protein into the market in 2021 after the New Zealand government allowed hemp seed to be used in food products in 2018. Other alternative protein sources developing in New Zealand are insect-based protein and recombination protein, but they have not been commercially produced.

3. Australia and New Zealand's Organic Market Overview

The World of Organic Agriculture 2019 report by IFOAM Organics International reported that global organic farmland, including in-conversion area, had increased to reach 69.8 million hectares at the end of 2017. Organic farmland in Oceania totalled 35.9 million hectares which accounted for more than 50 per cent of the global organic area. Australia had the largest area farmed organically, with 35.6 million hectares or around 50.5 per cent of the global total. New Zealand owned approximately 89,000 hectares of organic agricultural area.

3.1 Australia's Organic Market

Australia has the largest area of certified organic land in the world. Its certified organic agricultural area was forecasted to extend every year. Australian Organic Market Report 2019 highlighted that Australia's total organic land accounted for 8.6 per cent of the country. The vast majority of certified organic land was operated for livestock, fodder, fruit and vegetables. The total value of the organic market in Australia was estimated to be AU$2.6 billion, with an annual growth rate of 13 per cent since 2012. Fruit, vegetables, nuts, meat, eggs and poultry meat have shown significant growth since 2014, whereas dairy and grains have grown steadily due to the drought crisis. North America and East Asia have been the leading regional export destinations for Australia's organic products. The most important destinations were the USA, China, New Zealand, South Korea and Singapore. The main export commodities continued to be beef representing 32 per cent of total exported tonnes, followed by processed products and wine, with 18 per cent and 12 per cent respectively.

The domestic organic market total sales increased by AU$256 million from 2018 to AU$1.9 billion in 2019, showing no sign of slowing down. Organic vegetable stayed the most popular organic commodity in the domestic market. Non-alcoholic beverage came second, followed by beef and veal products. Besides, 65 per cent of Australian household purchased at least one organic product in 2018. Increased awareness regarding chemicals and the environment, personal health impacts, and animal welfare were identified as significant purchase drivers.

Organic Certification Recognition

The certification mark has a significant role in increasing the level of trust for organic products. It also influences the consumers buying decision. The Australian Organic Report revealed that Australian Certified Organic (ACO) received the highest awareness, with 51 per cent of shoppers claiming recognition. NASA mark came in second with 37 per cent. Other Australian organic certification marks were not well-recognised, achieving under 15 per cent recognition. International organic marks, particularly the EU leaf and the USDA logo, were slightly more recognised by Australian shoppers.

Australian Certified Organic mark (left) **NASAA Certified Organic mark (right)**

EU Certified Organic Mark (left) **USDA (right)**

Distribution Channel

There are many distribution channels for organic products in Australia, but supermarkets are still the most regularly used channel for organic shoppers. According to the recent Australian Organic Market Report, 62 per cent of the shoppers said they frequently buy organic products from supermarkets in 2019. The other famous retail shops for organic purchasing were greengrocer, market/farmer market, butcher, and organic shop.

3.2 New Zealand's Organic Market

New Zealand Organic Sector Report 2018 showed that New Zealand's organic market increased by 30 per cent since 2016 to a total of NZ$600 million in 2018 with a growth rate of 15 per cent per annum. Both domestic and international demands drove market growth. The total certificated organic farm area in New Zealand was approximately 88,800 hectares in 2017, rising by 17 per cent. The area in organic livestock production increased by almost 50 per cent from 43,000 hectares in 2015 to 64,278 hectares in 2017, which had a significant impact on a rise in the total organic agricultural farmland in New Zealand. In contrast, the total area in horticulture and viticulture decreased by 6 per cent to 23,943 hectares in 2017. The organic kiwi fruits area also experienced a slight decline. The domestic market's total value was NZ$246 million, with total sales through supermarkets of NZ$216 million and NZ$30 million through specialist organic shops. To promote health, better taste and concern for the environment and animal welfare were the main reasons driving organic purchase.

New Zealand's organic exports total value was estimated at NZ$355 million in 2017, increasing by 42 per cent since 2015. Europe, North America and Australia were still the primary export destinations for the country. Export values to those regions comprised almost

69 per cent of total export. Around 10 per cent of exported products were shifted to Asian countries, mainly to China, Hong Kong, and Singapore.

Organic Certification Recognition

The top 4 most recognised organic mark for New Zealanders were Fairtrade (60 per cent recognition), Biogro (30 per cent), Organic Farm NZ (32 per cent) and AsureQuality (26 per cent)

Fairtrade Mark (left) BioGro Certified organic mark (right)

Organic Farm NZ certified organic mark (left) AsureQuality certified organic mark (right)

Distribution Channel

Supermarkets dominated the domestic market, with more than 87 per cent of the market share. However, total sales of the specialist organic shop have increased continuously over the past years.

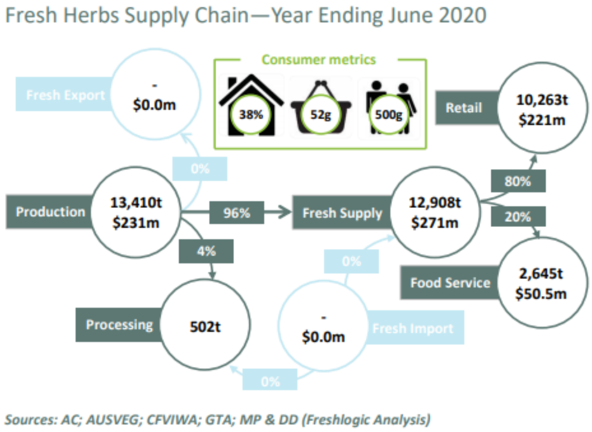
4. Australia and New Zealand' Herbs and Spices Market Overview

4.1 Australia's Herbs and Spices Market

There is a wide range of herbs and spices products selling in Australia's market. Most of the fresh products are locally produced in most states, while processed products are made from imported raw materials.

Fresh herbs and spices

Australia's fresh herbs production (Fennel, Parsley, other leafy herbs excluding garlic, ginger, chili, and turmeric) was estimated at 13,410 tonnes in 2019, valued at AU$231 million. Around 96 per cent or 12,908 tonnes of produce was fresh supplied to the market across Australia, whereas only 4 per cent of fresh herbs was sent to the processing sector. The fresh supply value was AU$271 million, with AU$221 million distributed into retail and AU$50.5 million into food service. Australian Horticulture Statistics Handbook 2019/20 revealed that Australian households purchased fresh herbs around 52 grams per one shopping, and the supply per capita was 500 grams.

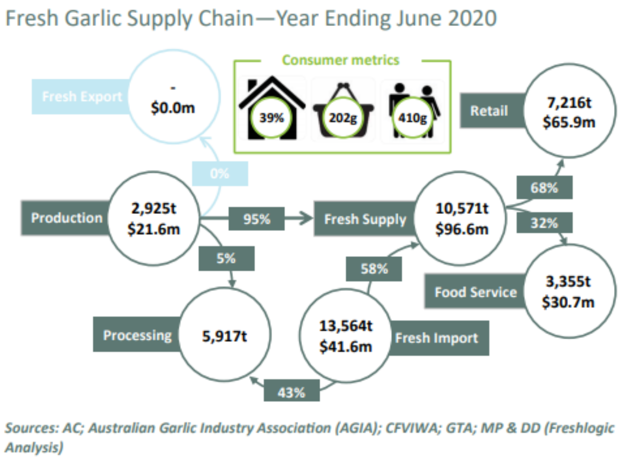


Fresh herbs supply chain in Australia

Source: Hort Innovation (2020)

Garlic

The majority of fresh garlic supply in Australia were imported from overseas. Approximately 13,500 tonnes of garlic were imported in 2019. Australia has a small garlic industry but continues to grow. Australia's garlic production in 2019 was around 2,900 tonnes, valued at AU$21.6 million. More than 10,570 tonnes of garlic were supplied to the retail and food service sectors, with 7,216 tonnes into retail and 3,355 tonnes into food services. The total garlic consumption in the country was estimated at 410 grams per capita.

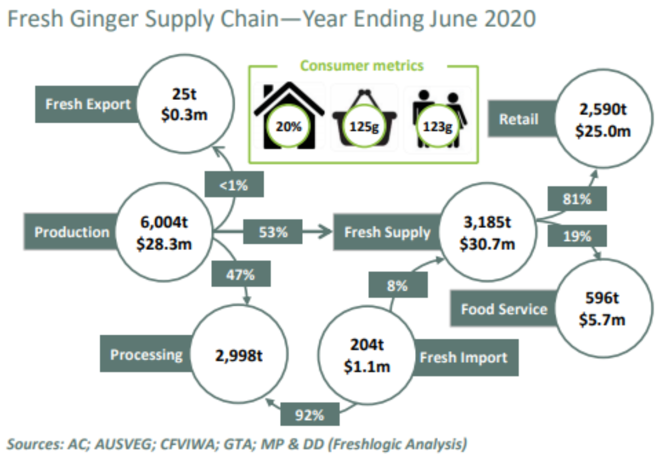


Fresh garlic supply chain in Australia

Source: Hort Innovation (2020)

Ginger

Australian ginger is grown mainly in Queensland. In 2019, Australia produced around 6,000 tonnes of ginger and imported only around 200 tonnes. More than 92 per cent of imports and 47 per cent of fresh produce, totalled 2,998 tonnes, were used in the processing industry. Approximately 3,100 tonnes of ginger were distributed to retail and food service sectors. The total ginger consumption in the country was estimated at 123 grams per capita.



Fresh ginger chain in Australia
Source: Hort Innovation (2020)

Turmeric

Australia's turmeric industry is an emerging industry. Commercial production was established for the first time in Queensland in 2016. The demand for turmeric in Australia was expected to increase due to its medical properties and consumers' health and well-being concerns. Turmeric is now widely used in alternative medicine and as a super food. However, Australia's turmeric production volume does not meet domestic demand. Turmeric import has been increased significantly for the last five years.

Processed Herb and Spices

IBIS World Herbs and Spices processing in Australia research report stated that the herbs and spices processing in Australia has expanded over the past five years. Industry revenue was AU422.5 million in 2019, with an annual growth rate of 4.1 per cent from 2015 to 2019. Australia's herbs and spices industry is expected to grow further over the next few years as consumers continue to experience new dishes and concern more about their health. Only four companies are holding the largest market share in Australia, including McCormick Foods Australia Pty Ltd, Mars Wrigley Australia Holdings Pty Ltd, Hoyts Foods Pty Ltd and Ward McKenzie Pty Ltd. The products from those companies completely dominate the market.

4.2 New Zealand's Herbs and Spices Market

The total production of herbs and spices in New Zealand was not reported. The statistics related to herbs and spices were also limited. However, the market survey found varieties of herbs and spices used in home cooking. Herbs and spices in New Zealand's market can be categorised into three groups: fresh, frozen, and processed. There were only two local producers, Superb Herb New Zealand and Tasman Bay Herbs, who supplied fresh herbs and spices to the supermarkets.

Many processed herbs and spices products could be found in supermarkets, spice shops, and grocery stores across New Zealand. Most of the products being supplied in the supermarket were imported from Australia.

5.1 Potential healthy food products in Thailand

Thailand has many varieties of healthy food products. This study selected only high potential products using the PEST Analysis method, which assesses external factors (political, economic, social and technology) influencing the product's capabilities to become more competitive in Australia and New Zealand's market. The analysis found that Thailand's most potential healthy food products were plant-based milk products, fortified and functional beverages, healthy snacks from rice, plant-based meat products, insect-based protein, and nutritious rice. The results of the SWOT analysis of these products are shown in table 1 to 6.

Table 1 SWOT Analysis of Thai plant-based milk products

SWOT	Thai plant-based milk products
Internal environment	
Strengths	➢ Diverse ranges of grains and seeds are grown in Thailand, including rice, sweet corn, beans, sesame, and job's tears. Those grains and seeds can be processed into plant-based milk products. ➢ Thai producers have the capabilities and potential to develop different types of plant-based milk products. Some products are fortified with GABA, Vitamins, collagens, and other functional ingredients. ➢ Thailand has a strengthened soymilk industry. Most of the producers have exported their products to countries across the world. ➢ There are many rice milk and corn milk producers who have the potential to export their superior products to the world market. ➢ The Thai government has continued promoting Thai agricultural products in Australia and New Zealand. Thai plant-based milk products have been introduced to the market for several years.
Weaknesses	➢ Most Thai grains and seeds have been exported as unprocessed or less processed products without value-added. ➢ The large producers with investment power are concentrated in the soymilk industry, while other plant-based milk industries comprise community enterprises and SMEs. ➢ The market price of agricultural produces has fluctuated for many years. Thai farmers have suffered from declining crop prices, especially corn and rice. Many farmers transform their land into other agriculture activities, which would result in lower raw material security for plant-based milk productions.

External environment	
Opportunities	➢ The demand for plant-based milk in Australia and New Zealand was projected to witness the fastest growth, driven by the growing awareness of health concern among the customers and rising vegan, vegetarian consumers, and aging populations. ➢ Plant-based milk product has gained interest from local consumers. ➢ Australia's soy and almond milk market have expanded continuously, with the market value at AU$237 million in 2020. ➢ There is a high demand for plant-based milk products as cow's milk alternatives from café and coffee shops across Australia and New Zealand. ➢ There are only a few rice milk, corn milk, and coconut milk products in Australia and New Zealand's market.
Threats	➢ The plant-based milk markets in Australia and New Zealand are highly competitive within both local products and imports. ➢ Australia and New Zealand consumers prioritise local products to support their communities.

Table 2 SWOT Analysis of Thai fortified and functional beverages

SWOT	Thai fortified and functional beverages
Internal environment	
Strengths	➢ Thailand has a diversity of healthy beverages, including functional and fortified drinks, fruits and vegetable juices, and herbal drinks ➢ Thai producers have a long experience in beverage production with high standard. ➢ The Thai government imposed the excise tax on sugary drinks in 2019. Thus, the Thai beverage industry is rolling out healthier and innovative products. Several manufactures are exploring new opportunities in the health product sectors. ➢ New functional drinks have been launched into Thailand's market for the last two years. The healthy drinks sector was projected to expand. ➢ Thai coconut water products are recognised for their quality and are demanded in the world market.

Internal environment	
Weaknesses	➢ Some functional drink products in Thailand do not contain certain functional ingredients claiming on the label. ➢ Thailand needs to import functional ingredients from overseas. ➢ Thailand coconut production has been unstable and tends to decline due to climate conditions. The local coconut supply cannot meet the domestic demand, so many tonnes of coconut are imported from the Philippines, Indonesia and Vietnam each year. ➢ There is some negative criticism from the animal protection groups saying that Thai coconut farms have exploited monkeys by forcing them to harvest coconuts for the industry.
External environment	
Opportunities	➢ Australia's healthy beverage market is expected to grow. The demands for probiotic beverages, high antioxidants beverages and herbal drinks are also forecasted to increase. ➢ Due to the global pandemic Covid-19, Australian consumers are now seeking products that promote their health and well-being. ➢ No added-sugar and natural fruit and vegetable juices have shown a high consumer demand. ➢ Novel functional beverages with different properties from other products are more likely to gain interest from consumers. ➢ Australia's packaged coconut water market is expected to grow. The market is driven by growing awareness associated with the health benefits of consuming coconut water, such as lowering blood pressure, maintaining blood glucose levels, rehydrating the body. ➢ Coconut water products in the Australia market, including Australian brands, are produced in Thailand
Threats	➢ Australians and New Zealanders trust their local products' quality more than imported products. ➢ There are more than 260 fruit and vegetable juice companies in Australia. There is massive competition among the local and international fruit juice manufacturers. ➢ Some customers viewed packaged fruit and vegetable juices as non-essential products. Total sale of packaged juices has been stable, while cold-pressed juices sale has witnessed the growth. ➢ Thai coconut products are facing intense competition with products from Vietnam and the Philippines.

External environment	
Threats	➢ Many Asian food products have failed analytical testing under Import Food Control Act each year, reducing the reliability of Asian products. Some failing foods contain non permitted additives or ingredients.

Table 3 SWOT Analysis of Thai plant-based meat products

SWOT	Thai plant-based meat products
Internal environment	
Strengths	➢ Thai producer has experiences in traditional textured vegetable protein production. These products have the potential to export to the global market. ➢ Plant-based meat producers in Thailand develop products using innovation and technology to improve product nutrition and taste more similar to real meat. ➢ International businesses are interested in investing in new plant-based processing plants in Thailand. ➢ Thailand is abundant in highly nutritious native plants which can be used in plant-based meat products such as Splitgrill mushroom, freshwater algae and jackfruit. ➢ Thai plant-based producers have planned to expand their production capacity in the future. ➢ Thailand can produce jackfruit throughout the year. Thailand exports its jackfruit products to many countries.
Weaknesses	➢ There are only three Thai plant-based meat producers in Thailand. Most of them are small businesses. ➢ Thai plant-based protein products varieties are limited. The producers only focus on burger patties and minced meat designed to suit Asian cuisine. ➢ Thai plant-based meat products need more promotion to receive more recognition from the customers. ➢ Soybean is the main ingredient for plant-based meat production. Local soybean supply does not meet the demand, so Thailand has to import soybean into the country. ➢ Jackfruit has usually been minimally processed. Most jackfruits were supplied for canned jackfruit production.

External environment	
Opportunities	➢ Plant-based meat is an emerging market in Australia and New Zealand, which are expected to witness significant growth in the near future. ➢ High Plant-based meat demand in Australia and New Zealand are fueled by health-conscious consumers, vegan and vegetarian consumers, as well as consumers who concern about the environment and sustainability. ➢ Vegan and vegetarian consumers are increasing in Australia and New Zealand. ➢ Food services are offering alternative meat products for customers. ➢ Jackfruits are now gaining more interest from consumers. Some jackfruit products were found in the market. ➢ Import conditions for plant-based meat products are not very strict. Products from Thailand can be imported to Australia and New Zealand.
Threats	➢ Soybean containing in plant-based meat is a food allergen. Many Australians and New Zealanders are allergic to soybean. ➢ Australia has advanced agriculture technology and innovation. The government and industry sectors collaborate to develop a new generation of plant-based meat to supply in their own market. ➢ The products from Beyond Meat are well recognised and dominate Australia's and New Zealand's market. ➢ The consumers demand plant-based meat products for western cuisine.

Table 4 SWOT Analysis of Thai insect-based protein

SWOT	Thai insect-based protein
Internal environment	
Strength	➢ Thailand has favourable climates for edible insect agriculture. ➢ The Thai government has imposed policies to support and improve commercial edible insect farming as part of the rural development strategies. ➢ The government sector plays a crucial role in the development and dissemination of cricket farming technology. ➢ Thailand is a leader in the emerging edible cricket industry. Thai cricket product has been exported to the global market. ➢ There are more than 20,000 high standard cricket farms in Thailand ➢ Edible insect export has stimulated Thailand's economic growth.

Internal environment	
Weaknesses	➢ Most edible insect exports are minimally processed products such as frozen whole insects, dried insects, and canned insects. ➢ Advanced processing and product development for edible insects need to be introduced to the industry to create more product value. ➢ Thai government are focusing primarily on the cricket industry. However, Thailand has various insect species demanded in the world market, including mealworm, silkworm pupae, bamboo worm and grasshopper.
External environment	
Opportunities	➢ The global edible insect market is expected to grow to reach US$4.63 billion by 2027. ➢ The insects have adequate protein quality and are a great source of nutrients. The insect products are likely to attract health-conscious consumers. ➢ There are some edible insect products launched in Australia and New Zealand markets by local entrepreneurs. The products are gaining consumers interest. ➢ Edible insects (dead and undergone heat treatment) can be imported to Australia ➢ The Australia and New Zealand consumers concern more on the environment. Edible insect farming has a less environmental impact as compared to livestock production.
Threats	➢ Due to the appearance of insects, consumer acceptance is the main barrier for edible insect products. ➢ Australia and New Zealand's edible insect markets are pretty small. ➢ Powdered edible insects forming high protein powders are more widely used in food products than whole insects. ➢ Australian government institutes are conducting researches around edible insects aimed at developing the national edible insect industry.

Table 5 SWOT Analysis of Thai high nutritious rice products

SWOT	Thai high nutritious rice products
Internal environment	
Strengths	➢ Thailand has a diversity of nutritious rice varieties. ➢ The Thai government has developed new rice varieties and introduced them to Thai farmers. ➢ The Thai government has promoted Thai foods in international markets to create market opportunities for Thai products. ➢ Rice industry development is given high priority by the Thai government. ➢ Thai rice has been recognised for its superior quality. ➢ Thailand's rice production greatly exceeds domestic demand. The surplus is exported to the world market and can be supplied to the food processing sector.
Weaknesses	➢ Due to low production efficiency, rice production costs in Thailand are higher than in other exporting countries. ➢ Agrichemicals are broadly used in rice cultivation in Thailand. Pesticides contamination in rice products is a critical food safety issue. ➢ Exported rice products are mostly packaged rice. Processed rice products accounted for less than 2 per cent of the total processed agricultural products export. ➢ Thailand is lagging far behind some other agricultural countries in terms of agri-technology and food innovation.
External environment	
Opportunities	➢ Riceberry and RD43 rice are well-known among Australian and New Zealand consumers because of the Thai Government's promotion. ➢ Gluten-free products used as a wheat alternative are rising in demand. ➢ There is no high nutritious rice plantation in Australia. ➢ Increasing the demand for high nutritious rice is driven by health-conscious consumers. ➢ Nutritious rice products carrying Australian brand are produced in Thailand. ➢ Supermarkets and retail shops across Australia and New Zealand are selling different types of high nutritious rice products. ➢ Free trade agreement between Thailand and Australia gives many Thai agricultural items a competitive advantage over products from other countries.

External environment	
Threats	➢ Import conditions for high nutritious rice are very strict. ➢ Australia has its own rice industry, which is constantly supported by the government sector and local consumers. ➢ There is high competition in the nutritious rice market in Australia and New Zealand, particularly among Asian rice products.

Table 6 SWOT Analysis of Thai healthy snacks from rice

SWOT	Thai healthy snacks from rice
Internal environment	
Strengths	➢ Thailand's rice production greatly exceeds domestic demand. The surplus is exported to the world market and can be supplied to the food processing sector. ➢ Thailand is the world leader in rice snack products export. ➢ Thai manufacturers have the abilities to develop various rice snack products. ➢ Research institutes and Thai university has conducted researches around processed rice product development which can be commercialised.
Weaknesses	➢ Thai producers only focus on extruded rice and rice chips production. However, Many rice products have a great opportunity in the world market, such as rice crackers, Thai crispy rolls, rice puff, breakfast cereals or energy bars. Those products are barely launched in the market. ➢ Processed rice products are unlikely to attract investors interest. ➢ Many novel rice products and innovative rice products have been developed in Thailand, but they are not commercialised.
External environment	
Opportunities	➢ Australian snack industry has experienced a significant rise in consumer preference for healthy snacks. Healthy snack products have the most considerable growth in consumption as compared to other snacks. ➢ According to Roy Morgan Research, 90 per cent of Australian consumers were categorised to be regular snackers. ➢ Rice snack is recognised as a healthier choice. ➢ Many rice snacks in Australia's and New Zealand's market are imported from Thailand.

External environment	
Opportunities	➢ Rising consumers suffering from gluten intolerance and health-conscious consumers are driving the rice snack market to grow. ➢ Rice snacks from Thailand can be imported to Australia and New Zealand without any import conditions barriers. ➢ There are many distribution channels for rice snack products, including supermarkets, health specialist shops, and grocery shops.
Threats	➢ Australia and New Zealand's snack market is highly competitive from both local products and international products. ➢ Australian products dominant the market with a wide range of rice snacks.

5.2 Thai Organic products

Most of the organic products in Thailand are fresh produce. Only a few agricultural products from Thailand are allowed to enter Australia's and New Zealand's market because of their strict biosecurity measures. As a result, there is a window of opportunity for processed agricultural products in Australia's and New Zealand's organic market. Thai producers and exporters should focus on expanding the export of organic processed products rather than fresh produce to avoid biosecurity issues. Thai organic agricultural products showing high potential are processed organic fruits and vegetables, organic rice and organic tea and herbal tea. SWOT Analyses of those products are shown in table 7 to 9.

Table 7 SWOT Analysis of Thai processed organic fruits and vegetables

SWOT	Thai processed organic fruits and vegetables
Internal environment	
Strengths	➢ Thai processed fruit and vegetable producers have strong experiences in producing high-quality products. ➢ Thai producers have introduced a wide range of processed fruit and vegetable products in both local and international markets. ➢ Thailand has a variety of fresh produce being supplied all year round. ➢ Thailand is one of the leader exporting countries for canned fruits and vegetables and packaged fruit and vegetable juices. ➢ Thai tropical fruits are popular in Australia and New Zealand. ➢ The Thai government has devised a roadmap to develop organic products and targeted to increase the country's share of the world organic market.

Internal environment	
Weaknesses	➢ The vast majority of organic agriculture land in Thailand are used for organic rice production. There is only a few organic fruit and vegetable cultivation in Thailand. Most fresh organic produce is supplied to the domestic market and imported freshly to Europe and some countries in Asia. ➢ There is no integrated organic food manufacturer in Thailand. ➢ Processed organic food producers have to source organic raw materials from overseas. ➢ Organic farming requires 12 to 18 months of conversion periods for domestic and 2 or 3 years for export. During that period, the growers' incomes decline because their products are not certified. Only some growers are interested in organic farming.
External environment	
Opportunities	➢ There are only a few processed organic fruit and vegetable products in Australia's and New Zealand's markets. The markets competition levels are not high. ➢ Consumers prefer organic products that are undergone minimal processing. That means the production of this kind of products does not require innovation nor high technology. ➢ Processed fruit and vegetable products are perceived as natural products. ➢ Australia and New Zealand organic markets have enjoyed significant growth. ➢ Import conditions for processed fruit and vegetables are practical.
Threats	➢ Thailand organic standard is not recognised in Australia and New Zealand. In order to succeed in those markets, products need to be certified by international organic certification bodies. ➢ There is a high competition level in Australia's and New Zealand's markets from local organic produce.

Table 8 SWOT Analysis of Thai organic rice

SWOT	Thai organic rice
Internal environment	
Strengths	➢ Organic rice area accounted for almost 60 per cent of the total organic agriculture area in Thailand. Approximately 96 per cent of Thai organic exports are organic rice. ➢ Organic rice production is expected to increase as a result of the government's organic rice development strategy. ➢ The Thai government has set many policies and strategies to promote and support organic rice cultivation for several years. ➢ Thailand is a perennial global leader in rice exports. Thai rice is well recognised at the international level.
Weaknesses	➢ Organic rice production is still at the beginning stage compared to conventional rice production. ➢ The production costs of organic rice are much higher than conventional production costs. ➢ The Thai government has encouraged the farmers to apply for Organic Thailand Standard certification, but the Organic Thailand Standard is recognised only in Thailand. It also can reduce the competitiveness of Thai organic rice product in the global market.
External environment	
Opportunities	➢ Australia's organic rice market was valued at AU$31 million in 2019, increasing by 200 per cent from 2013. Organic rice is one of the top ten products that showed the highest growth rate. ➢ There are very few organic rice products in Australia and New Zealand Markets. ➢ Australia and New Zealand consumers demand organic high nutritious rice and organic low glycemic index rice. ➢ Australian rice producer has imported rice products from Thailand. ➢ New Zealand and Australia were the only two countries out of the 25 organic markets in the world that have voluntary organic standards instead of mandatory standards.
Threats	➢ Import conditions for high nutritious rice are strict. ➢ Consumers are likely to support local products. ➢ Australia and New Zealand are expected to introduce their mandatory national organic standards soon. ➢ Organic Thailand Standard is not recognised in Australia and New Zealand.

Table 9 SWOT Analysis of Thai organic tea and herbal tea

SWOT	Thai organic tea and herbal tea
Internal environment	
Strengths	➢ Tea is a new economic crop for Thailand. The Thai government are supporting the farmers in the northern provinces in Thailand to produce high-quality tea products. ➢ Thai Herbal tea has health properties. ➢ Thailand is the host of many herbs. Some Thai herbs can be processed into healthy herbal tea products.
Weaknesses	➢ Thailand produces only a small quantity of tea each year which are mainly supplied to the domestic market. ➢ Thailand's tea and herbal tea industry are relatively small. Most of the tea producers are a small and medium-sized enterprise or family business. ➢ Although the Thai government has promoted tea and herbal tea products in Australia and New Zealand, It could not create Thailand's export opportunities for Thai exporters.
External environment	
Opportunities	➢ Tea is a staple food for Australia and New Zealand's household. ➢ Thai organic tea and herbal tea gained much interest from Australian consumers. ➢ Tea drinkers are more interested in high-quality products with specific health benefits, which have driven demand for healthy green, functional botanical tea and herbal blends. ➢ There are not many organic tea products in Australia's and New Zealand's markets. ➢ Customers are showing strong preferences for functional botanical blends. ➢ Herbal teas consumption has increased continuously, driven by health-conscious consumers and consumers who avoid caffeine in regular tea.
Threats	➢ domestic tea company emphasises its sustainability and local origin to appeal to Australian consumers. ➢ Sri Lankan premium tea export brand "Dilmah" has positioned as one of Australasia's most popular Ceylon tea brands and has recently launched an organic herbal range across Australian market.

External environment	
Threats	➢ Thai tea and herbal tea products could not attract importer's interest, although the products have been promoted in Australia and New Zealand markets for many years.

5.3 Potential herbs and spices products

The study focused on culinary herbs and spices in Australia and New Zealand, which do not include herbs and spices used in supplements, cosmetic and pharmaceuticals industries. Both western European and Asian herbs and spices were found in Australia's and New Zealand's markets. Most fresh herbs and spices were produced locally while the processed ones were imported. Although Thailand is not the world's leader in herbs and spices production, many Thai herbs and spices have gained popularity in both markets. Thai herbs and spices showing high potential in Australia's and New Zealand's markets are frozen herbs and spices products, pickled or fermented herbs and spices products, and ready-to-use herbs and spices products. These three types of product can be categorised as processed herbs and spices. SWOT Analyses of those products are shown in table 10.

Table 10 SWOT Analysis of Thai processed herbs and spices

SWOT	Thai processed herbs and spices
Internal environment	
Strengths	➢ Thai herbs and spices are recognised for their uniqueness and health benefits. ➢ Thailand has a wide range of herbs and spices production. Frozen herbs and spices products are commonly produced in Thailand, which does not require advanced technology in processing. ➢ Large quantities of Thai culinary herbs and spices such as chilli, ginger, garlic, turmeric, galangal, kaffir lime leaf, lemongrass, holy basil and Thai basil are produced in Thailand throughout the year. ➢ Most of the commercial Thai herbs and spices productions have implemented the GAP and GMP certification schemes. ➢ Thai producers in the herbs and spices industry have experiences in export. ➢ The Thai government has actively promoted Thai foods and cuisine in Australia and New Zealand. Thai herbs and spices have been introduced to the market for a long time.

Internal environment	
Weaknesses	➢ Many herbs and spices growers in Thailand rely on chemical products to improve crops' yield. Chemical residue in the products is the primary concern among consumers. ➢ Most fresh herbs and spices are supplied for local markets. Only a small amount is supplied to the food processing sector. ➢ The frozen and prickled products are commonly ginger, garlic, chilli, lemongrass, and finger root. Some herbs and spices cannot be processed with freezing or pickling. ➢ Thai curry paste production needs to adopt food innovation. The current products are mainly canned or packaged curry pastes which require complicated methods to cook.
External environment	
Opportunities	➢ There is a high demand for frozen herbs and spices in the food services sector and food processing industries in Australia and New Zealand. ➢ Processed herbs and spices products from Thailand can be imported into Australia and New Zealand. ➢ The rising immigrant Asian population is expected to increase the demand for Thai herbs and spices. ➢ Thai foods are popular in Australia and New Zealand because of their complex flavours and health benefits. ➢ The tariffs on imported herbs and spices from Thailand were eliminated under the Free Trade Agreement, which benefits the price competitiveness of Thai's products.
Threats	➢ Processed herbs and spices markets in New Zealand and Australia are highly competitive. ➢ Many preserved chilli, garlic and ginger products are produced in Australia and receive supports from local consumers. ➢ Thai processed herbs and spices have not been able to penetrate supermarket. The primary distribution channel for Thai products is Asian grocery. ➢ Australian food processors have launched a wide range of curry paste and herbs and spices seasoning for Thai foods. ➢ Thai curry paste products made in India are more innovative and convenient to use than products from Thailand.

6. Guidelines on the improvement of agricultural products and niche market expansion strategies

According to SWOT analysis and TOWS matrix, the practical guidelines and strategies were recommended below:

6.1 Strategies for Thai plant-based milk products

SO strategies

- Soy milk products should be exported more into Australia and New Zealand. The exporters should target various distribution channels other than Asian groceries. Supermarkets, retailers, and coffee shops should be the main target channels for the exporters.
- Small and medium-sized enterprises should build up business partnerships with Australian's and New Zealand's importers to increase their exports. At the beginning stage, Thai small and medium businesses should focus on Asian groceries and then enter the retail sector. Also, the products should be actively promoted in food trade shows across Australia and New Zealand to create their recognition.
- Plant-based milk product should be packaged in a 1-litre carton or bottle. Consumers prefer bulk packaged products to small ones.
- The Thai government should continuously promote Thai products in Australia and New Zealand.

WO strategies

- The Thai government should encourage using Thai cereals and grains such as rice, sweet corn, and job's tears in plant-based milk production.
- The food manufacturers and farmers should develop reasonable contract farming. Contract farming can also enable farmers to learn new skills, increase their productivity, improve product quality, and reduce price risk. At the same time, investors can benefit from reliable production and more consistent product quality.
- The Thai government should invest more in agricultural science, research and innovation, increase collaboration between industry and researchers to find the solution for agricultural issues. Also, the government should support Small and medium-sized enterprises initiatives such as accessibility to innovation and technology, loan scheme, and marketing.

ST strategies

- The producers should develop new products that meet consumer demand in niche markets. For instance, if the main target is coffee shops, plant-based milk products should be heat-resistant. The products should not change their properties when exposing to high temperature. If the main target is health-conscious consumer, the products should have health benefits or contain high nutrients such as germinated brown rice milk and germinated Riceberry rice milk.

- Thai soy milk products need to be improved by fortifying various functional ingredients, such as GABA, collagen, calcium, vitamins and minerals, to increase competitiveness.

WT strategies

- The government sector and industry sector should enthusiastically collaborate on agriculture science, technology and innovation.
- Researches on plant-based milk products development using local Thai grains and cereals should be encouraged by the government and entrepreneurs.

6.2 Strategies for Thai healthy beverages

SO Strategies

- The government and entrepreneurs should continuously promote Thai healthy drinks and beverages in Australia and New Zealand.
- Thai healthy drinks and beverages exporters should actively approach Australia's and New Zealand's importers to find a trading opportunity for their products.
- The exporters should focus more on expanding their current healthy drinks and beverages sales to other distribution channels, especially supermarket and health specialist shops.
- Probiotics, high antioxidant and herbal beverage products should be encouraged to increase the exports in Australia's and New Zealand's market.

WO strategies

- The producers of fortified drinks and beverages should maintain high production standards to ensure that the products contain the same amount of vitamins and minerals as the product's label.
- The complaints about using monkeys labour in coconut harvest in Thailand by the People for the Ethical Treatment of Animals (PETA) in 2020 devastated the image of Thai coconut products. The producers should ensure that the production does not involve in animal cruelty.

ST strategies

- Coconut producers in Thailand should create business relationships with Australia's and New Zealand's entrepreneurs to be their Original Equipment Manufacturer (OEM) in producing coconut products under their brands.
- Healthy drinks and beverages should be developed to have genuine health benefits and remain high in nutrition.

- Thai coconut water producer should maintain high production standards to obtain the trust of consumers.

WT strategies

- The Thai government should regularly inspect the quality of Thai fortified drinks and beverage in the market to ensure that the products do not have false or misleading claims.
- The Thai government should encourage coconut productions in potential areas. The government should also consider coconut sector development as part of the rural areas development plan. At the same time, coconut growers should adopt good agriculture practices and establish pest control management to increase production efficiency.
- Healthy drinks and beverages producers should develop new products using Thai natural functional ingredients such as Thai herbs.

6.3 Strategies for Thai plant-based meat

SO Strategies

- The existing plant-based products in Thailand, such as minced plant-based meat and plant-based burger should be introduced more in Australia and New Zealand through important trade shows or Thai food promotion events. Participating in trade shows is an excellent opportunity for producers/exporters to promote their products to accelerate customer’s demand effectively.
- The plant-based meat producers/exporters should actively seek business partnerships and work closely with the importer to bring current products into other distribution channels, especially supermarkets and health specialist shops.
- Processed jackfruit producers should not focus only on canned products. Jackfruit can be developed into different products, including seasoned jackfruit, pulled alternative meat, jackfruit meat for burger and taco or jackfruit meal. These products gain a lot of consumer’s interests in Australia and New Zealand
- Jackfruit products should highlight their nutrition and health benefits as a strong selling point to capture health-conscious customers interests.

WO Strategies

- Plant-based meat producers should develop new products that suit Australia’s and New Zealand’s food culture. There is a high demand for plant-based burger, sausage, ham, breadcrumbed products that are easy to cook.
- The producers should develop plant-based meat products that are quite similar to traditional meat in terms of sensory and nutrition aspects. The products must also be lower price, more convenient and higher in nutrition value.

- The government, industry sector, and research institutions should collaborate to conduct research on plant-based protein products innovation and development to make Thailand ready to tap the plant-based boom in the global market.

ST Strategies

- The producers should develop new products using local ingredients in Thailand, which can ensure high nutrition and health benefits, such as seaweed, algae, seeds and grains, mushroom or even jackfruit. It also helps minimise the risk of soybean shortage and allergen issue.
- At the first stage, Thai producers/exporters should penetrate Thai restaurants in Australia and New Zealand with the existing products. Most of the Thai restaurants are offering vegan choices for customers.

WT Strategies

- The Thai government should allocate an annual budget for agricultural technology development and innovation to enable small and medium businesses to access the modest technologies in plant-based production.
- The producers could form a joint venture with foreign investors to exchange knowledge and technology in plant-based meat production. The joint venture allows businesses to access more superior new technology and to engage with new markets and distribution networks as well.

6.4 Strategies for Thai edible insect products

SO Strategies

- Thailand has currently exported some fried edible insect products to Thai and Asian groceries in Australia. However, the products are only well-known among Thai consumers. Edible insect products were announced by WHO to be superfood. Therefore, the importers/distributors should take this advantage to expand distribution channels to supermarkets and health specialist shops.
- The exporter should work with edible insects manufacturers in Australia to directly supply insects from Thailand.
- The promotion of edible insects in Australia and New Zealand by the Thai government is needed in order to improve consumers' perception of insects. The sustainability of insect farming and its nutrition should be emphasised to the consumers.

WO Strategies

- The Thai government should encourage integrated edible insects farming and processing. The government should encourage insects farmers/producers to process their insects into value-added products and support market access in the global market.

- The producers should completely transform insect into finished products without the appearance of original insects, such as insect powder, protein powder, pasta flour and cookie flour.
- The Thai government should support the research on edible insects product development and encourage research commercialisation. The research should focus on insect protein powder production and advanced insects processing to add more value to the products.

ST Strategies

- The Thai government should also place importance on other insects as well, not only cricket farming. Many Thai insects are demanded in the world market, including mealworm, grasshopper, and silk pupae. Good Agricultural Practices for other economic insects should be set in order to elevate the production standards.
- The cricket producers should maintain high production standards and implement the GAP for cricket farming to increase competitiveness in the world market.

WT strategies

- The Thai government should support the producers to visit edible insect companies in overseas countries, especially in the Netherland, China, Canada, England, the USA and Israel, to bring back the knowledge and techniques to Thailand.
- The growers/producers should keep up with or stay on top of the latest technology and innovation in edible insects products development.

6.5 Strategies for Thai high nutritious rice

SO Strategies

- The producers/exporters should target on new distribution channels other than Asian groceries. The producers/exporters should pitch their products to supermarkets, food services and Thai restaurants.
- The Thai government should also promote different Thai nutritious rice varieties in Australia and New Zealand, such as Hom Nil rice, Mali Nin Surin rice, and Sung Yod rice, as Riceburry rice and RD43 rice have been promoted for many years and they are now recognised.
- The Thai government should actively develop new high nutritious rice varieties and genuine low glycemic index rice varieties.

WO strategies

- High nutritious rice should be used in ready-to-eat meal production to target health-conscious customers and avoid biosecurity import issues. The products made with high nutritious rice include frozen Riceberry rice with Thai curry and frozen Riceberry rice porridge with shrimp. These products can also be an alternative for customers who want to experience a new flavour.

ST strategies

- Thailand should change the strategy from being Australia's competitor to be their business partner by supplying niche market rice to Australian rice companies
- The Thai government should strongly encourage and promote niche market rice farming in Thailand to boost production. There is a high demand for niche market rice from the world market. Nevertheless, the production in Thailand is still minimum.
- All stakeholders should conduct research and development, focusing on production efficiency improvement and rice production innovations.

WT strategies

- Training on rice production using high technologies and innovations should be provided to farmers. The farmers should be encouraged to use technologies in production to increase productivity.
- The Thai government should encourage and support innovative rice products to create more market channels for Thai rice and add higher value to the products.

6.6 Strategies for Thai healthy snacks from rice

SO Strategies

- The manufacturers/exporters should approach supermarkets and other retail stores to sell existing products such as rice crackers, rice chips, Thai rice crisp roll, and rice cereal bars. Pitching products into the retail sector is a great way to create brand awareness among potential customers.
- The manufacturers/exporters should also find a business partner, primarily the potential distributor and work closely to expand the product sales in Australia's and New Zealand's markets.
- The benefits of being gluten-free should emphasise when marketing the products to attract consumers who adopt gluten-free eating pattern.
- Rice products should be developed from high nutritious rice or fortified with functional ingredients to offer consumers health benefits. The products should be high in fibre, sugar-free, preservative-free, low in carbohydrate, saturated fat and calories.

WO strategies

- The rice snack markets in Australia and New Zealand are highly competitive, so the products from Thailand should be unique to execute other products in the markets. Making a health claim such as gluten-free, natural, high in fibre, and vitamin is an excellent strategy to make the products stand out for customers.
- The government and research institutes should encourage rice snack product innovation to improve the competitiveness of Thai products.

- The Thai government should encourage and support innovative rice products to create more market channels for Thai rice and add higher value to the products.

ST strategies

- The manufacturers should place an importance on packaging development. The packaging should be simple, well-designed, visually appealing, as well as environmentally friendly. It also should be able to convey the messages on health benefits effectively.
- The manufacturers/exporters should keep updated with importing countries' biosecurity import conditions, food standards and other related regulations. All requirements should be implemented rigorously by the manufacturers/exporters.

WT strategies

- The Thai government should encourage the commercialisation of innovative products in parallel with promoting Thai products in overseas countries.

6.7 Strategies for Thai processed organic fruit and vegetable products

SO strategies

- The government and food industry sector should encourage organic food and beverage production in Thailand, mainly fruit and vegetable juice, dried or freeze-dried fruits and vegetables, and canned fruits and vegetables. The products should be undergone minimal processing and still maintain high nutrition.
- The manufacturers/exporters should target the organic food importers to expand their product range into organic shops, health specialist shops and organic section in supermarkets.
- Organic healthy snacks such as dried/freeze-dried fruits and vegetables should be exported more into Australia and New Zealand in response to the increasing demand for healthy snacks in both countries. The exporters should work closely on conducting market research with potential Thai's importers who have already imported those products to drive the export.

WO strategies

- The government should provide farmers and manufacturers supports to stimulate organic farming and organic food production in Thailand through different schemes such as reducing the tariff for organic ingredients import and organic food export, offering subsidies for organic farming and production, offering free organic certification services, supporting educational program about organic farming techniques. The government should also pursue bilateral trade agreements with Australia and New Zealand to boost organic export and access new organic markets.
- The government should encourage organic fruit and vegetable farming in Thailand.

ST strategies

- processed organic fruit and vegetable should contain natural functional ingredients such as superfoods, high nutritious fruits and vegetables.
- The products should be organically certified by recognised organic certifying bodies.

WT strategies

- The government should provide farmers with an organic farming technology education scheme to improve crops quality and reduce production costs.

6.8 Strategies for Thai organic rice

SO strategies

- The manufacturers should not only aim to sell organic rice products in Asian groceries. They should also expect to expand their products into other primary distribution channels, mainly supermarkets, food services, and Thai or Asian restaurants that have witnessed the increasing demand for organic rice.
- The government should encourage organic rice cultivation in potential areas. The pest and disease tolerance rice variety should be developed to help improve organic rice yield.

WO strategies

- The government should support farmers education about organic farming. Education helps farmers keep updated on the latest technology and innovation to enhance production effectively and economically.
- The government should continue promoting the Organic Thailand standard to increase its recognition.

ST strategies

- Thai producers should work in partnership with Australia’s rice producer. Many tonnes of rice from Asian’s countries, especially organic and high nutritious rice, have been imported every year to supply in the country under the Australian brand. It is an excellent opportunity for Thai producers to be the leading rice supplier for the Australian company.
- All stakeholders should conduct rice processing research to render the non-viable grains while retaining highly nutritious quality.

WT strategies

- The Thai government should benchmark the Thai Standard and Certification marks with existing internationally recognised schemes to gain the same recognition level.
- At the beginning of organic market access, the producers/exporters should focus on organic milled rice export to avoid biosecurity issues.

- The organic high nutritious rice should be undergone a germination test before export to reduce the likelihood of rejection.

6.9 Strategies for Thai organic tea and herbal tea

SO strategies

- The Thai government should push organic tea and herbal tea export to Australia's and New Zealand's markets. According to the promotion of Thai herbal tea in Australia, the products received much interest from consumers. However, there is still no potential importer for Thai organic tea and herbal tea products. The Thai government should organise business matching events for Thai exporters and Australian importers to get an opportunity to meet potential partners face-to-face.
- The manufacturers/exporters should seek an opportunity to get the products into supermarkets and health specialist shops.
- The Thai government should encourage the export of organic herbal tea products, as there is a high demand for herbal tea in Australia.

WO strategies

- The Thai government should support small and medium organic tea and herbal tea entrepreneurs by providing knowledge on high-quality tea production, product development, and marketing to improve Thai products' competitiveness in the international market.
- The Thai government should encourage organic tea and herbal tea farming in potential area. The government should also support small growers to access advanced technology and innovation in tea production. Therefore, the growers will be able to add more value to their products which generate income and enable them to improve their life quality.
- Organic tea and herbal tea producers can export their products to be manufactured in the world's leading tea-producing countries. This strategy may not be an excellent way to promote Thai products, but this can generate revenue flowing into Thailand's economy.

ST Strategies

- The manufacturers should develop organic tea and herbal tea products that provide genuine health benefits. The product should contain a wide range of herbs to offer multi health benefits to make the products stand out from the competitors.
- The exporters should introduce the potential organic tea and herbal tea products that are certified by international organic bodies to the importers.

WT strategies

- The government and industry sectors should work collaboratively to conduct research on the health benefits of Thailand's native plants for new herbal tea product development.
- The government should set Good Agricultural Practices and Good Manufacturing Practices for organic tea and herbal tea and encourage all growers to comply with those standards for the utmost benefit.

6.10 Strategies for Thai organic herbs and spices

SO strategies

- The manufacturers should uphold high production standard to maintain their share in Australia's and New Zealand's herbs and spices markets. Meanwhile, the exporters should expand the product sales to supermarkets, the primary distribution channel for herbs and spices products.
- The exporter should build a good relationship with potential distributors to bring the product into the food industry sector.
- The Thai government should keep on promoting Thai foods in Australia and New Zealand. Cooking Thai foods demonstration is a great way to introduce Thai ingredient to local consumers.

WO strategies

- The manufacturers should develop processed herbs and spices that are self-life stable other than the pickled or frozen products. The preservative techniques should be improved and enabled to maintain the fresh herbs and spices' aroma and flavour. The processes should not drive off the volatile flavour compounds. Dried Thai herbs and spices such as lemongrass, kaffir lime leaf, and galangal are likely to increase demand in the food service and food industry sectors. Nonetheless, the aroma and colour of existing dried Thai herbs and spices are totally different from the fresh ones.
- Many instant Thai curry paste products have been in Australia's and New Zealand's markets for several years. The demand for Thai curry paste products is likely to increase because of the popularity of Thai food. The manufacturers should develop instant curry paste products that are attractive, full of aroma and flavour, and also convenient to use. For example, a Thai curry meal kit containing ready to cook curry paste, cooked rice, coconut cream and dried herbs and spices allows the consumers to cook easily, even for the first time.
- The Thai government should encourage economic herbs and spices production and processing for exportation to increase the product value and farmers' income.

- The Thai government should encourage the farmers to uphold Good Agriculture Practices and food safety standards to lift the product’s quality to the highest level and increase the export opportunity.

ST strategies

- The government should take pesticide residue in agricultural products into account because it has been a massive barrier to Thailand’s agricultural products export in many countries. The farmers should be educated about responsible pesticide usage in a safe and efficient manner.
- The manufacturers should develop products that provide the uniqueness and authenticity of Thai dishes.

WT strategies

- Bilateral negotiation should be established between Thailand and Australia/New Zealand in the regular SPS and FTA fora to engage on market access for potential fresh Thai herbs and spices such as ginger, galangal, turmeric, and lemongrass. These herbs and spices have shown high demand in both countries from foods, cosmetic and pharmaceutical sectors.
- The manufacturer should research and develop new products suitable for western/ European foods to attract local consumers other than Asian.