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Food for the Future: Partners & Opportunities in China

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Abstract

This research focuses on one of the important sectors of "Food for the Future": "Functional Food". Government policies and platforms such as Food Innopolis have nurtured innovative entrepreneurs and products which may spearhead the international market. The functional food market in China is attractive due to its market size and growth momentum. The hot spots, current trends, market structure, the position of Thai players, government regulation, and the ecosystem in the Chinese market constitute both challenges and opportunities. Three business models are proposed based on 8 case studies of Chinese players and discussions with experts in Thailand: outsourcing in China; export of Thai products to China and joint venture. They are related to the broader issue of strategic choices between cooperation parterres based on their identity and incentives.

Keywords: Food for the Future, Functional Food, China, Thailand, Entry Mode

Introduction

"Food for the Future" is one of the 12 "S Curve Industries" in Thailand (Office of National Higher Education Science Research and Innovation Policy Council, 2020). It is also closely related to the sectors in the Bio-Circular-Green (BCG) model (Asia-Pacific Economic Cooperation, 2022). The industry attracts more attention recently because of its impacts on the Thai economy, and strong growth potential (Thailand Board of Investment, 2021). This research focuses on one of the important sectors of "Food for the Future" the "Functional Food".

After an introduction to the definition of functional food and its situation in Thailand, the article illustrates the opportunities of functional food in the Chinese market, China's industrial policy and regulatory framework on functional food, and its ecosystem and potential partners. The conclusion on business models for cooperation between Thai and Chinese players is drawn based on the insights from 8 case studies of Chinese firms and discussions with experts in Thailand.

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One on the S Curve

As one of the 12 "S Curve Industries" picked up by the Thai government to lead the Thai economy in the future, the "Foods for the Future" industry may include functional food, medical food, organic food, and novel food (Figure 1). "functional food" is the food with selected, enhanced or reduced ingredients to promote health by preventing disease or restoring functions of the human body. The market size of functional food in Thailand is expected to be ฿76.5 billion in 2021 with an annual growth rate of 4% from 2018 to 2022, compared with a market size of $255.6 billion and an annual growth rate of 12.4% of the world in the same period (Krungthai Macro Research, 2019). This indicates a large potential and growth opportunity in the world market for Thailand.

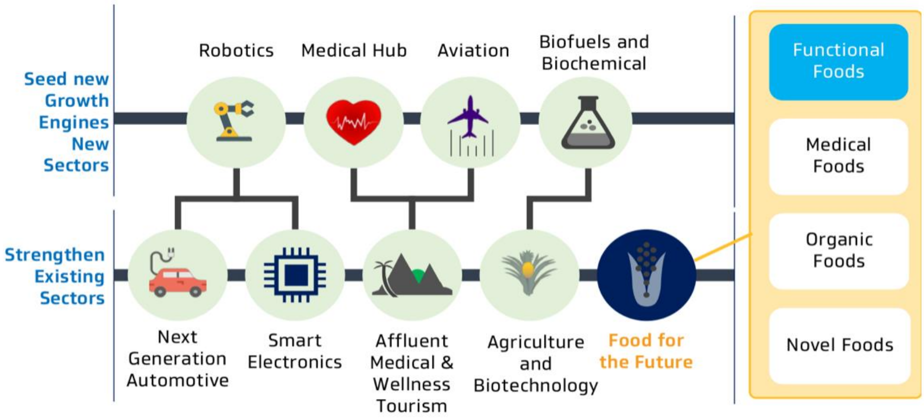

Figure 1 Functional Foods and Food for the Future

Source: Krungthai Macro Research (2019)

Functional food is well promoted by government policies and platforms such as Food Innopolis, with observable achievements in R&D, innovation, and commercialization. These achievements are displayed as 48 Thai brands of "food for the future" showcased by DITP (Department of International Trade Promotion) of Thailand in ThaiFex 2022[2]. They can be divided into 3 groups (Table 1): functional food (21 brands); and two very closely related novel foods due to their health-promoting functions: "alternative protein" (20 brands), and CBD (cannabidiol) infused food (7 brands).

As illustrated in Table 1, 21 cases of functional food include 3 brands with "function enhancement", such as "dried mango mixed with probiotics", and "complete nutrition on-the-go, healthy meal in a bottle"; 3 brands with "function reduction", such as "allergen-free vegan egg", and "natural sea salt with 40% less sodium content"; 14 brands with "selected ingredient" such as low "Low Gl functional flour for diabetes patients", "ketogenic egg white noodles", and "weevil larvae for omega 3 & amino acids". The "alternative protein" group includes "soybean vegan Mozzarella cheese", "German sausage from cricket powder", and "crab meat roll from young green jackfruit and mushroom"; etc. The "CBD (cannabidiol) infused food group" includes "hemp-based milk", "malva nut drink with cannabidiol", etc. These products represent the direction and technology capability of the industry in Thailand which may spearhead the Chinese market.

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[2] ThaiFex is the Asia's leading food and beverage trade show conducted annually in Bangkok.

Table 1 Food for the Future in ThaiFex 2022

Category	Sub-Group	Example
Functional Food (21)	With function enhancement (3)	Probiotics added
	With function reduction (4)	Low sodium, Low sugar
	Selected ingredient (14)	Gl flour, Weevil larvae
Alternative Protein Plant-Based (20)	Meat (7)	Cab Krob, Sausage
	Seafood (4)	Shrimp, Crab meat
	Egg/Dairy (2)	Cheese, Egg
	Snack (4)	Beans hips
	Powder (3)	Protein powder
CBD Infused Food (7)	Drink (6)	Hemp-based milk
	Oil (1)	Hemp seeds oil

Source: Compiled by CASPIM research team based on ThaiFex 2022 brochure

Opportunities in the Chinese Market

The equivalent of functional food in China is called "healthcare food" (保健食品). The market size reached ¥394.7 billion in 2022. Although the annual growth in 2022 was 2.95% due to the COVID-19 pandemic, the period between 2013 and 2022 saw an average annual growth of 10.5% (Figure 2).

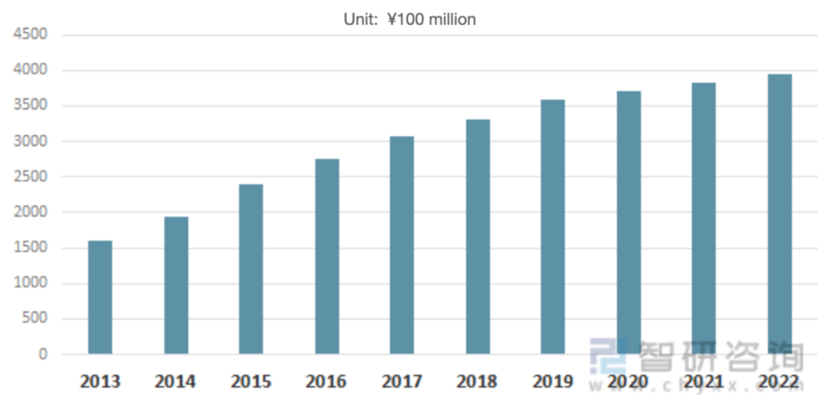

Figure 2 Market Size of Healthcare Food in China 2013-2022

Source: Chyxx (Intelligence Research Group) (2023)

The functional food market in China started in the 1980s. It developed together with the higher disposable income of Chinese consumers and their changing behavior for a high-quality life. In the post-COVID era, it is expected the market size will reach ¥436.6 billion by 2026 (TMO, 2022).

Journal of ASEAN PLUS⁺ Studies Vol. 4 No. 1 January-June 2023

Vitamins and Food Supplement is the largest segment, followed by Traditional Herb and Child Health Care (Figure 3). In terms of growth rate from 2012 to 2020, however, two segments show large potential, which is Sports Nutrition (28.57%), followed by Weight Management (10.7%). These two segments have a bright future from their experience in the USA (Figure 4).

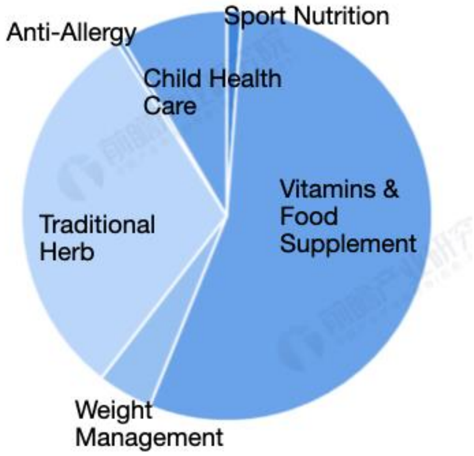

Figure 3 Segments in Functional Food in China

Source: Qianzhan (2020)

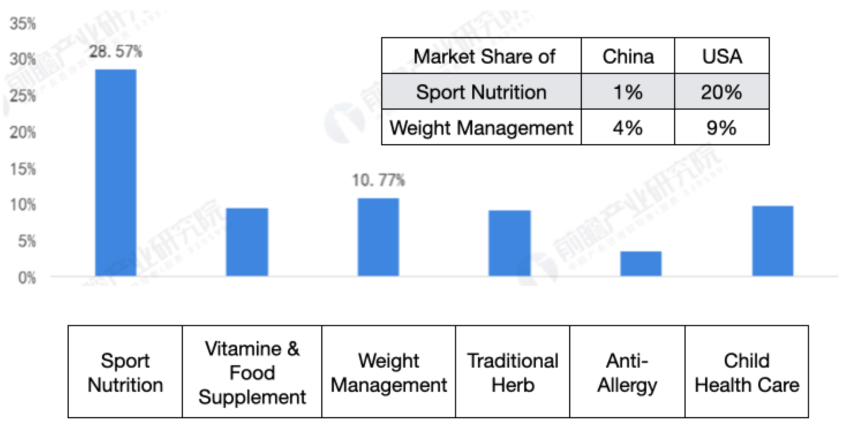

Figure 4 Annual Growth in Segments of Functional Food in China 2012-2020

Source: Qianzhan (2021)

Judging from the number of newly launched products, the hot spots in the Chinese functional food industry in 2021 include anti-fatigue; brain food and memory enhancement; beauty care; weight management and body fat reduction; digestion and bowel health; eye protection; and sleep improvement (Table 2). Table 2 illustrates the category, representative products, and producers.

Journal of ASEAN PLUS⁺ Studies Vol. 4 No. 1 January-June 2023

Table 2 Hot Spots of Functional Food in China

Hot Spots	Product Image	Product	Companies
Anti-fatigue		红牛饮料 Red Bull Energy Drink 东鹏特饮饮料 Eastroc Beverage	北京红牛 Red Bull Beijing 东鹏特饮 Eastroc Beverage
Brain Food Memory Enhancing		六个核桃 Walnut Milk	养元智汇 Yangyuan Zhihui
Beauty Care		阿胶糕/枣 Colla Asini Pudding & Colla Asini Jujube 汤臣倍健胶原蛋白粉、口服液 Collagen Powder & Drink Lumi 胶原蛋白肽液态饮 Collagen Pepetide Drink	东阿阿胶 Dong-E-E-Jiao 汤臣倍健 BY-Health 雷霆生物 LCTV
Weight Management Body Fat Reduction		初吉代餐饼干 Meal Replacement Cookie FfIt8 蛋白棒 Protein Bar 代餐奶昔 Meal Replacement Milkshake 奇亚籽麦片 Chia Cereal 奇亚籽酸奶 Chia Yogurt	思瑞食品 Sirui Food 康比特 CPT 衡美食品科技 HengMei Wonderlab 良品铺子 BESTORE 光明乳业 Bright Dairy
Digestion & Bowel Health		活性乳酸菌饮品 Activated Lactobacillus Drink 双歧杆菌发酵乳 Bifidobacterium fermented milk 益生菌发酵乳 Probiotics fermented milk 益生菌固体饮料 Probiotics Powder Solid Beverage 猴菇饼干 Cookie with Lion's Mane Mushroom	味全 Weichuan 绿雪生物 Lvxue Biology 君乐宝 Junlebao 华润江中 CR JiangZhong
Eye Protection		新希望养眼牛奶 Eyes Care Milk Buff 护眼软糖 Buff X Eye Gummy	新希望乳业 New Hope Dairy 霸符科技 Buff
Improve Sleeping		梦梦水 Dream Dream Water 晚上好牛奶 NOPA Good Night Milk 睡前一小时蛋白饮品 Protein Drink Before Sleep BUFF X 睡眠软糖 SLEEP Gummy	旺旺食品 Wang Wang Food 蒙牛 Mengniu 君乐宝 Junlebao 霸符科技 Buff

Source: Compiled by the CASPIM research team

These hot spots also show the following trend in recent years: 1) expansion from the traditional senior citizen and child care segment to the youth market; 2) more specialization in diversified functions; 3) catering to the need for convenience and portability and 4) adoption of new natural materials such as plant-based products (Chyxx (Intelligence Research Group), 2023). The hot spots in China show some resemblance with the "food for the future" showcased in Table 1. The new trend in China also posed challenges as well as opportunities for cooperation between the two countries.

Among the top 10 brands of functional food In China in 2023, 6 are from China and 4 are from overseas (Table 3). It shows the acceptance of foreign brands. On the other hand, the functional food market is quite competitive In China with few dominating players. For example, there are no brands with a market share of more than 10% in China in 2021 (TMO, 2022). Acceptance of foreign brands and lack of dominating brands are positive for the entry of Thai newcomers.

Table 3 Top Brands of Functional Food in China 2023

Brand/Firm in Chinese	Brand/Firm in English	Country of Origin
汤臣倍健	BY-Health	China
同仁堂	Tong Ren Tang	China
安利	Amway (Nutrilite)	USA
东阿阿胶	Dong-E-E-Jiao	China
钙尔奇	Caltrate	USA
养生堂	Yang Sheng Tang	China
健安喜	GNC	USA
善存	Centrum	USA
21 金维他	SUPER-VITA	China
三精	Sanchine	China

Source: Industrial Research Institute (AskCI) (2023)

The opportunity for Thailand is even bigger looking at the gap in market share between Thailand and other top international players in China. China imported $5.2 billion of functional food in 2021 (China Chamber of Commerce for Import & Export of Medicines &Health Products, 2022), with the largest source country of the USA (20%), Australia (14%), and Germany (9%) (Figure 5). The market share of Thailand is only 4%, after Indonesia (8%), Japan (7%), and Malaysia (5%) in Asia. At the moment, the well-known Thai brands in China are Brand's Essence of Chicken, Nin Jiom Herbal Candy, and Kamagra Oral Jelly which do not reflect the recent achievement of Thailand in functional food discussed above in section 1.

Journal of ASEAN PLUS+ Studies Vol. 4 No. 1 January-June 2023

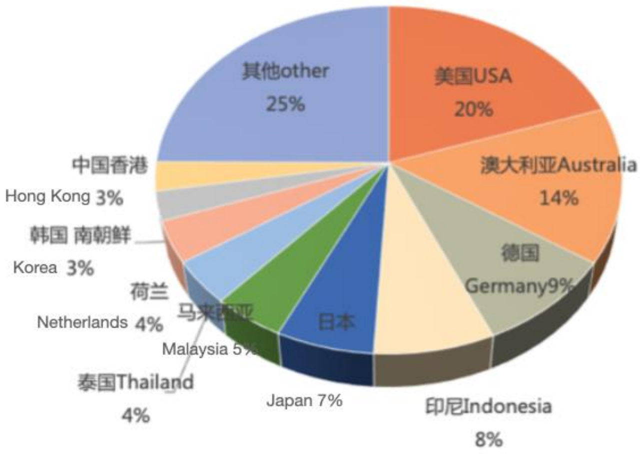

Figure 5 Source Country/Region for Functional Food in China 2021

Source: China Chamber of Commerce for Import & Export of Medicines & Health Products (2022)

Industrial Policy & Regulatory Framework in China

One hurdle for Thai exporters to enter the Chinese market is its strict regulation. Regulation of functional food in China started in 1996 when the industry experienced a period of "wild growth" from 1990 to 2005. The regulation system took shape in the period of "rectifying and consolidation" from 2006 to 2015 when foreign brands entered with Chinese partners. The growth momentum resumed from 2016 until the spread of the COVID-19 pandemic. Under further improved regulation and with more domestic R&D and innovation, there is a transition from "made in China" to "Chinese Brand", and "Brands acquired by China" (Table 4).

Table 4 Development of the Functional Food Industry in China

Periods	Feature	Major Characteristics
1990-2005	Wild Growth	The concept of healthcare & nutrient food became popular Regulation was loose Lack of quality lowered consumer confidence
2006-2015	Rectifying & Consolidation	A regulation system taking shape Foreign brand's entry with Chinese partners
2016-Now	Rapid Growth	The regulation further improved. Rapid growth until the COVID-19 pandemic Domestic R&D & innovation. From "made in China" to Chinese brand" and "Brands acquired by China"

Source: ompiled by the CASPIM research team

A clearer management system for "functional food" finally emerged in 2016, covering "Healthcare Food" and "Normal Food" with some health benefits." Healthcare Food" is defined as a category of food with auxiliary health care function, or as a supplement for minerals & vitamins. It requires a "Registration" or "Notification" process for production and marketing (Table 5). In the case of "Normal Food" on the other hand, it can not claim healthcare functions with the logo of "Healthcare Food". But it may claim to use the ingredients in the catalog of healthcare food materials.

China Food and Drug Administration (CFDA) was abolished in 2018. The functional food industry is managed by a trio party system under the State Council (Figure 6). They include:

1) NHC (National Health Commission) for food safety; 2) SAMR (State Administration for Market Regulation) for registration and regulation; and 3) GACC (General Administration of Customs of PRC) for Customs duty and Customs procedure, including registration of overseas firms exporting to China.

Table 5 Definition and Regulation Requirement for Functional Food in China

Definition of Healthcare Food	
A Category Of Food	With auxiliary health care function
	Or as supplement for minerals & vitamins
Not for treatment of diseases	
Without acute, subacute or chronic hazards	

Category	Sub-Category	Rule
Healthcare Food 保健食品	Registration 注册	With the the proof of the healthcare functions claimed
	Notification 备案	With the proof of ingredients according to the catalogue of health care food materials
Normal Food 一般食品	No regitration and notification process as the healthcare food. But they can not claim the heathcare functions with the logo of Healthcare Food. But it may claim using the ingredients in the catalogue of healthcare food materials	

Source: China Food and Drug Administration (2016)

A foreign exporter may choose between the format of "General Trade" or "Cross Border E-commerce" of international trade. Besides the differences in process, taxation, and cost, one benefit for functional food exporters is they may bypass the time-consuming process of "registration" or "notification" by exporting the product as "normal food" in cross-border e-commerce. They may test the market first, and then go through the "registration" or "notification" process later if necessary (TMO, 2022).

国务院 State Council		
国家卫生健康委员会 NHC: National Health Commission	国家市场监督管理总局 SAMR State Administration for Market Regulation	海关总署 GACC General Administration of Customs of PRC
Food Safety law and regulation	Registration and regulation Healthcare Food	Customs duty & procedure Registration of overseas firms exporting to China

Figure 6 Regulatory Framework of Functional Food in China

Source: Compiled by the CASPIM research team based on documents from NHC, SAMR, and GACC of China

Eco System & Potential Partners

The ecosystem of functional food in China can be described in 3 parts: 1) Up Stream (raw material producers and processors); 2) Mid Stream (OEM producers, brand operators, and producers with brands); 3) Down Stream (distributors in drug stores, direct sales, and e-commerce) (Figure 7). A database is built up with 60 selected players in these sectors, spreading into 16 provincial units in China (Figure 8)[3].

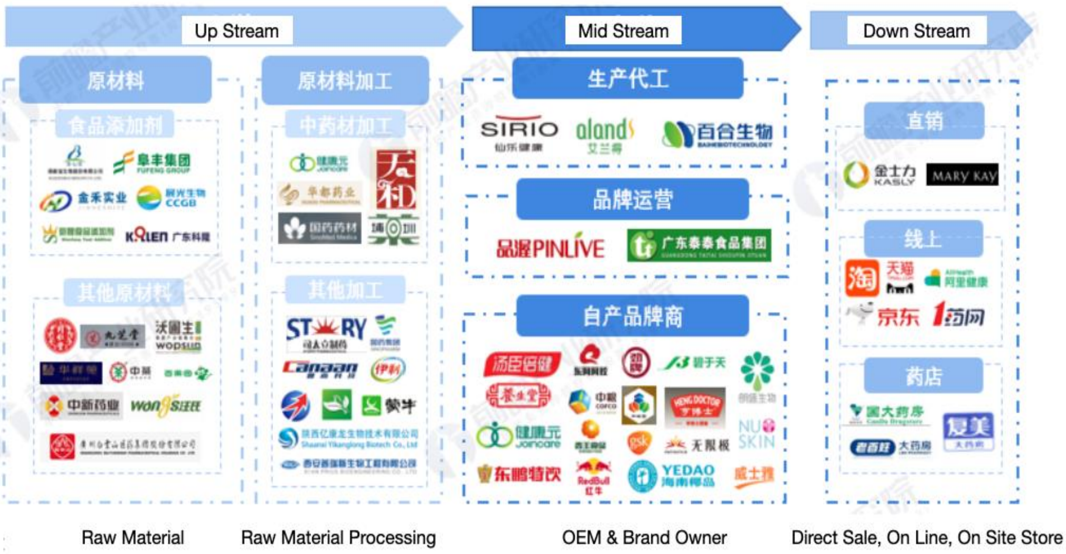

Figure 7 The Eco System of Functional Food in China

Source: Adapted from Qianzhan (2021)

Up Stream (15)	Mid Stream (39)	Down Stream (6)
Raw Material Production (5)	OEM Brand operator Producer with Brands	Drug Store Direct sale & Ecommerce
Raw Material Procession (10)		

Figure 8 A Database for Potential Partners in China (60)

Source: Compiled by the CASPIM research team

[3]The detailed list of the Chinese partners is available from the author.

Journal of ASEAN PLUS⁺ Studies Vol. 4 No. 1 January-June 2023

Insights from Case Study

To have a better understanding of the capacity and intention for the cooperation of Chinese partners, 8 case studies are conducted (Table 6). Table 6 records their background, advantage, and business models applied or proposed for cooperation with Thai partners. The case studies are complemented by discussions with experts from the Thai Food Processor Association, and Food Innopolis of Thailand.

The insights from case studies and discussions with experts reveal the following:

Firstly, from the Chinese side, There is certain international exposure in terms of export (either as OEM or producer with own brand), and joint R&D with oversea partners. The modes of entry range from branches to support sales, joint ventures (JV), or technical assistance in a royal project in Thailand.

One advantage of the Chinese partners is their R&D capacity. They may include patents acquired, number of R&D personnel, overseas research lab, and production-learning and research integration in universities. Some even have post-doctor research stations with Thai candidates.

Secondly, from the Thai side, Thailand has a dynamic “food for the future” sector with many innovations of SMEs supported by government infrastructure like Food Innopolis. Their advantages include unique ingredients, new products (such as Alternative Protein and CBD Infused Food), product design, and packaging. This is the industry with the highest potential for a two-way exchange of products and technology between the countries. However, some Thai exporters are frustrated by the registration or notification process of the Chinese side.

Table 6 Case Study of Chinese Firms in Functional Industry

Code	Background	Advantage	Business Model for Cooperation
FBOA	Export for more than 20 years; OEM of nutritional, herbal, vitamins soft gel products for USA, Europe, Indonesia, Cambodia, Vietnam & Malaysia	Lower cost due to production scale and supply chain network; The technology of production and quality control process	OEM for Thai brand owners: Combine Thai ingredients (e.g. herb extracts) with other materials in China; Deliver the soft gels in bulk for repackaging in Thailand
FINF	Set up in 1992; Entered Thailand in 2018 for Health, Beauty, and Household products; 10 branches overseas	R&D: 200+ team, 600+patens, R&D center in Cambridge; Own raw material production base; Channels: with 1 mil+ member	Local branch for marketing and direct sales; Cooperation for local FDA approval and clinical trial; Local production base with Thai material; Post-doctor stations for Thai Ph.D.
FDXC	Producing & marketing for traditional pastry and bread dated back to 1773	Export to Europe, USA, and Australia; Traditional brands with new and healthy products, such as new flavors with lower sugar content	Distributor or agents in Thailand

Table 6 Case Study of Chinese Firms in Functional Industry (Con.)

Code	Background	Advantage	Business Model for Cooperation
FSYS	Set up in 2015; Producing & marketing healthy food of bamboo dishes	Export to Japan and Korea; Trendy Healthy food; Continuous new product development such as prepackaging dishes	Distributor or agents in ASEAN; Import material from Laos and Vietnam
FMTN	Set up in 2020; JV between Heilongjiang Hua Yuan, HK, and Australia; Producer of alternative protein	Source of special bean seed; Receipt for bean-based meat, seafood, and dairy product; Lower price for the mass market	Provide special material and receipts for Thai partners; OEM for Thai brands
FMFS	Set up in 2019; Production and technology provider for alternative protein 3.0	Sales in Singapore; Molecule cleavage technology; R&D with leading universities	Partners for export of processed materials, or prepared dishes
FGAF	The Academy was set up in 1956; Research and promote the plantation and commercialization of Camellia	The variety has a higher yield And bears fruits earlier; Better healthy property; And is easy to store.	Joint research; Joint plantation providing technology and machine for processing, and buyback of output
FLCB	Biopharmaceutical Institute; Set up in 2013; Producing nutrition emulsion for cancer patients	Micro-jet homogeneity technology; The platform of Production-Research-Teaching Integration	JV with Thai universities; or enterprises under universities; Bridging government-to-government cooperation between two countries

Source: Compiled by the CASPIM research team

Thirdly, three business models may be adopted for cooperation between China and Thailand:

1) Outsource in China: for example, to use lab service in China, or to manufacture products of functional food in China for a Thai brand owner.

2) Export Thai products based on the advantage of traditional herbs or new technology or innovative concepts in Thailand, if possible, through cross-border e-commerce.

3) Joint venture: for example. A joint research establishment for FDA approval and clinical trial in Thailand, or a joint plantation for raw materials in Thailand for functional food with the Chinese partner providing investment, technical assistance, and market for output.

Conclusions

Functional food is a fast-growing market in the world. Government policies and platforms have nurtured innovative entrepreneurs and products in Thailand which may spearhead the international market. The functional food market in China is attractive due to its market size and growth momentum. The hot spots, current trends, market structure, the position of Thai players, government regulation, and the ecosystem in the Chinese market constitute both challenges and opportunities. Three business models are proposed based on the case study of Chinese players and discussion with experts in Thailand: outsourcing in China; export of Thai products to China and joint venture.

The study of the business model for cooperation between Thailand and China in functional food may also provide lessons to understand the generic strategic choice for cooperation between partners of the two countries:

In general, it is important to understand first the identity and incentive of parterres of cooperation. They may be divided into three groups:

1. Those of SMEs or large enterprises to expand their market in Thailand, China, or ASEAN; to expand their operation scale; or to upgrade technology and human resource.

2. Those research institutes to upgrade technology & human resource, boost research output, or acquire more resources for research.

3. Those of government organizations to fulfill their KPI (Key Performance Indicator) for evaluation.

In response to the above three groups of incentives for cooperation. There might be four groups of strategic choices:

1. Trade Partner in goods and services targeting markets in Thailand, China, or ASEAN. The Thai partner may be the brand owner; a part of the supply chain; or the marketing/sales partner

2. Investment Partner targeting a location in Thailand, China, or ASEAN. The Chinese partner may provide capital; technology or equipment; raw materials or components, and market access;

1) Research Partner for a joint research facility; or joint research project; and

2) Government Partner for policy exchange and coordination.

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