BUSINESS PLAN

"TAM-GIN-EANG" ORGANIC FARM AT CHIANG RAI

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EXECUTIVE SUMMARY

Nowadays, the healthy food market continuously grows because of the health awareness in global, which can be seen from many market research and statistics. Thai market is another interested place that good for investing, particularly organic food due to the beginning stage. Therefore, the author saw opportunities in organic farming business and created a business plan about organic farm.

All products will be market under "Tam-Gin-Eang" brand, the new brand organic farm that offers health and safety agriculture products in daily lifestyle. This organic farm business plan is objectives to study and analyze all relevant information that influence to start organic business. It benefits for new investors or the farmer who want to transit from conventional agriculture to organic agriculture. The report collected and analyzed data about environmental factors and internal factors that should concern, Moreover we mention about competitive analysis, management plan, marketing plan, investment budgets and production process in each products such as Salad vegetables, Seasonal vegetables, Mulberry and Fig.

For the investment, Tam-Gin-Eang organic farm divides to 2 phases of investment. By the 1st phase will be invested with a budget 3,246,350 Baht for 12 rai area. The proportion between owner's equity and commercial loan is about 60:40. The owner's equity is 2,000,000 Baht. The net income in the first year of the business will be 349,312 Baht and in the next year will be 1,246,350 Baht. The payback period will be within 3 years.

For, the suggestion of the result of study, we found the investors must have the knowledge and expertise in production in order to obtain high quality product that can add more value by get the standard certification. Moreover, investment has risk, thus the investors should make forecast plan and strategy to solve the problem and develop business to grow more.

Kannika Chearjaraswongse

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CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

The growth of health concerns and increasing health awareness among consumers creates more opportunity for organic products. In 2015, global organic products sales reached US$81.6 billion (FiBL-IFOAM report). The organic markets in Europe continue growing and increased by 13% in 2015. Moreover, major markets presented doubles-digit growth rates (BIOFACH, 2016). The change of consumer perception towards organic foods is the major factor driving the market along with the dramatic increase in numbers of vegetarian across the world. Consumers start to prefer organic food over conventional food due to its greater health benefits. They are recognizing that conventional food, which is cultivated with synthetic ingredients and pesticides are associated with diseases. Organic foods and beverages are also less harsh on the environment since they are free of chemicals. In 2012, the organic fruits and vegetables product segment held 38.9% of the organic food market. Organic coffee and tea and non-dairy beverages product segments collectively held 75% of the organic beverages market in the same year. By 2019, the global organic food and beverages market is expected to reach a valuation of US$187.8 billion (TMR, 2016).

In order that, the farm was run under renter that operation for 5 years and the contract will be end by 1st November, 2017. After 1st December, 2017 "Tam-Gin-Eang" will be in charge of the operation. Since "Tam-Gin-Eang" owns the property and facility is already installed and operated for more than 3 years. Therefore, we intend to study all feasibilities and plan to continuously run the business farm with 3 months. The previous rental practiced in hygiene agriculture that we realizes the trend of health concern and organic product which is blooming now. Therefore, we want to add value for our products and enhance sustainable agriculture, we will adapt all production to right in standard.

Thus, I want to make and research more opportunity for our business. I interested in the organic product, which can increase the price in market and open more channel in the market. I decided to choose the Business plan to be my IS and use it for make benefit for my family business. In Chiang Rai, my family still has more proper land to plant other products.

1.2 STATEMENT OF PROBLEM

Nodaway, the consumption trends in Thai and global change are more concern in healthy more than past, although, it has misunderstand between organic and heath food in Thailand. Health food products in Thailand refer to farm produce grown in the conventional way but with restrictive use of agro-chemicals. Some of them may go as far as not using any synthetic pesticides and only use some chemical fertilizers. There are different labeling schemes for this kind of product. Health food products also include nutritional foods like sesame, beans, herb teas, etc (Greennet, Where to find organic products and health foods, n.d.). The organic crops refer to the way agricultural products are grown and processed, which must be grown without the use of synthetic pesticides, bioengineered genes (GMOs), petroleum-based fertilizers, and sewage sludge-based fertilizers (Lawrence Robinson, Jeanne Segal, Ph.D., and Robert Segal, 2016). However, it shows how consumer interested in healthy product. Global Organic Food Market Grows at Over 16% by 2020 (Burnaby, 2015). Therefore, I could be possible to do business in the organic way.

1.3 THE RESEARCH OBJECTIVE

The primary aim of study for find the feasibility of this project and make clear direction to develop business plan for real market. The research will study from existing business model form relevant business in their service, supply and demand in organic market, cost of customer purchased, and other relevant topics. Moreover, it will research about customer behavior, growth of market and how to make marketing for this project.

- To study the feasibility of the new business of Organic Farm in Chiang Rai at current situation and next 3 years growth.
- Preparing plan for doing business in the future.
- To understand the organic market and target customer for planning marketing

- To study possibility to communicate and take some partner with the locals.
- To study how to create brand to access the existing market.

1.4 SCOPE OF THE STUDY

The research intends to study in organic agriculture and possible trend in future from Business Model in Thailand, especially in Chiang Rai and relevant location. Including Business Planning, Production Process, Target market, create market channel, distributors and other relevant topic

- The relevant business only in Thailand
- The feasibility and trend of this business in current time and for next 3 years.

1.5 SIGNIFICANCE OF THE STUDY

The research will be benefit for the entrepreneur in the agriculture business in Thailand. The research is considered in the customer need, necessary knowledge that relevant for doing this business, analysis in existing business and supply and demand in Thai and global.

1.6 LIMITATIONS OF THE STUDY

The limitation of study is access in some part of information.

1.7 TOOLS OF THE STUDY

- SWOT Analysis
- PESTLE Analysis
- Michael Porters five forces model
- 4Ps
- Risk Analysis
- Focus group
- Observation

1.8 FRAMEWORK FOR EDUCATION

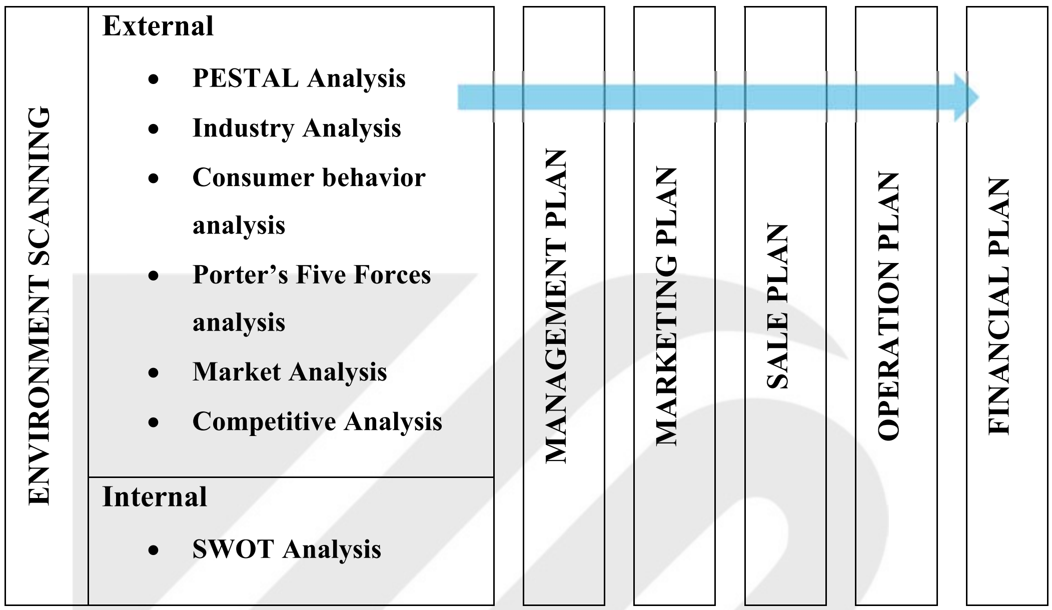

Figure 1: Framework for Education

CHAPTER 2
BUSINESS DESCRIPTION

2.1 VISION STATEMENT

To be first in mind of target customer
when they think about fresh organic farm products.

2.2 MISSION STATEMENT

We are an organic farm that focuses on cleanliness and health. We achieve this through natural and sustainable farming methods for value addition and make enough profit to sustain our growth.

2.3 GOAL

- Support and promote healthy lifestyle daily life by presenting through food or planting activities.
- To gain brand awareness and loyal customer through customer satisfaction.
- Promote and support sustainable agriculture to people.

Short-term goals (2 years)

- To modify farm to completely organic farm and certified the organic standard from reliable organization.
- To expand customer base both public and private company, and end-users. There are the number of followers in Facebook page at least 3,000 persons and in Instagram more than 2,000 followers
- To gain brand awareness and loyalty customer within 2 year
- To open own healthy café in area of farm

Medium-term goals (5 years)

- Increase planting area after 3 year of operation
- To Increase sale and profit in 5 year at lease 50%

Long-term goals (more than 5 years)

- After 5 year, open Farm-Stay service in this site
- To be stable organic farm business and increase potential to expand brand in other area or in other style of business

2.4 LOGO

Figure 2: The logo of "TAM-GIN-EANG"

2.5 OVERALL STRATEGIC DIRECTION

Since, Tam-Gin-Eang organic farm is being in early stage. Our products focus on health lovers which is still niche market group in Thailand, though the market continuously grows every year. Therefore, in the part of strategic direction is in growth strategy by increasing Profit Margin and create brand awareness to customer. Our products is organic crops, so instead of growing by increasing units of production, the focus of this strategy is to grow by producing higher value crops with a larger profit margins.

2.6 COMPANY BACKGROUND

"Tam-Gin-Eang" is organic farm project located at Mueang Chiang Rai District, Chiang Rai, with the area of 33 rais. At present, the farm was run under Mr. Kam Deang operation for 5 years and the contract will be end by 1st November, 2017. After 1st December, 2017 "Tam-Gin-Eang" will be in charge of the operation. Since "Tam-Gin-Eang" owns the property and facility is already installed and operated for more than 3 years in the part of fix assets. But in the part of plants, some plant likes mulberry tree and Fig tree just have planted about one year ago which is still young. However, it makes unfair competitive advantage for "Tam-Gin-Eang" for both initial investment cost, and monthly operation cost.

Tam-Gin-Eang brand intend to upgrade all products from non-pesticides to be 100% organic agriculture products and expand product line. For the new project, the farm will delicate more land in Chiang Rai to plant variety plants both vegetables and fruits. We will use the land in mountain that separate from other field for reduce cost to build the buffer zone, which necessary for doing organic farm in nature.

Tam-Gin-Eang organic farm want to deliver the trustworthy product to customer and treat them like our own family. It means all products are safe, fresh and tasty with reasonable price. Our farm aims to build customer satisfaction.

All our crops are produce by the professional agriculturists who have more than 20 years' experience in fields such as rice planting, local vegetable and seasonal fruits in order to provide premium products to consumer and delivery directly hand to hand to consumer.

2.7 COMPANY'S VALUE PROPOSITION

Values: We believe that people want to be healthy. Organic food is a step towards that. But they don't know where to find trustworthy, reliable sources. Our farm makes commitment to quality and sustains ability. If the produce you buy from us is not up to your standards, we will refund the entire amount through a voucher or exchange. That's our promise.

Keys to Success

- Promote 'Agro Ecological Agriculture' based on the three principles of sustainability (social, environment and economic) for livelihoods enhancement.
- Creating market access through value addition involvement in aggregation; farm-gate processing, accessing markets from the subsequent nodes in the value chain of the commodities.
- Food and nutrition security through the production of diverse and safe without agrochemicals, GM, adulteration, etc.

2.8 PRODUCT AND SERVICE

Tam-Gin-Eang Farm is integrated organic farming. It refers to agricultural systems that integrate crop production and livestock. This method denotes a holistic system of farming that optimizes productivity in a sustainable manner through creation of interdependent agri-eco systems where annual crop plants, perennial trees and animals are integrated on a given field or property.

2.8.1 <u>Product</u>

Tam-Gin-Eang Farm offers Fresh fruits and vegetables. The details are as follows;

- **Organic Vegetables**

Salad vegetable

Including; Green Oak Lettuce, Red Oak Lettuce, Green coral lettuce, Red coral lettuce, Butter head Lettuce, Green Cos lettuce, Iceberg lettuce

Figure 3: The example of Salad vegetable

- **Seasonal vegetable**

Seasonal cropping is planting vegetable in their season. This method is the one of method of organic farming that reduces caring crops. Because seasonal vegetables can grow well in the right season and have immunity with any diseases and insects. Therefore, proper vegetables should be selected in each season as follows;

SEASON	VEGETABLE TYPE
Summer February to April	Coriander, Onion, Water Convolvulus, Cucumber, Chinese Radish, Yard long bean, Kale, Chinese Cabbage, Green Cabbage, Bitter Chinese cucumber, Muskmelon, Leaf mustard
Early rainy season May to July	Kale, Chinese Chives, Angled gourd, Shallot, Chinese Cabbage, Sweet corn
End of rainy season August to October	Dill, Spinach, Chinese Chives, Chinese Cabbage, Green Cabbage, Kale, Green Shallot
Winter November to January	Green Shallot, Chinese Chives, Garlic, Celery, Cauliflower, Tomato, Green Cabbage
All season	Chinese Cabbage, Lettuce, Watermelon, Coriander, Green Shallot, Yard long bean, Bitter Chinese cucumber, Gourd,

Table 1: Seasonal Planting Calendar

Since, period of planting and harvest vegetables are shorter than fruits, therefore it will be main income for farm in the beginning.

- **Exotic vegetable and fruits**

Farms focuses on the crops that suite to plant in north area and have market value in Thailand or international for the future phase. In the beginning stage we invest in 2 main fruits; Mulberry and Fig. Moreover, we offer more other vegetables and fruits in the limited amount in each season. We will sale in the eating fresh style and species breed in some crop, such as Raspberry, Black berry, Avocado, Butternut Squash, Passion fruit, Dragon fruit and etcs. The more detail is attached in *the Appendix B.*

2.8.2 Service

Tam-Gin-Eang organic farm intend to enhance organic cultivation, therefore we offer farm tour activity for people who are interested in organic production or sightseeing. Sightseeing tour will be arranged in periods that do not effect to working in farm. Moreover, in the future we intend to do some workshops and bungalow for tourist.

Concept: *"See Eat Learn Try"*

2.9 STARTUP PLAN

Tam-Gin-Eang organic farm decide to divide our investment to two phases. In the 1st Phase focuses on created our brand and customer base in the beginning stage. We get benefit from low initial capital investment, because of previous rental that already installed many startup items following the figure 2.5. The figure shows the current plan and brief future plan in 2nd phase.

2.9.1 The Proportion of Using Area

The 33 rais (52,800 sq.m.) overall farm area was divided to 2 phases as follow in the table 2 and figure 4;

CURRENT PLAN (approximately 12 rais)					
EXISTING ITEMS	Planting Zone		**RENEW ITEMS**	Planting Zone	
	Green House	720 sq.m		Vegetable garden	2 rais
	Vegetable garden	1 rai			
	Orchard	2 rais		Private Zone	1 rai
	Semi-Public Zone			Public Zone	
	Storage Building	50 sq.m.		Farm Shop	100 sq.m.
	Sort & Cleaning building	50 sq.m.		Event Court	500 sq.m.
	Office building	30 sq.m.		Service zone	
	Circulation 30%	40 sq.m.		Parking Area: 20 cars	400 sq.m.
	Public Zone			Restroom	50 sq.m.
	Parking Area: 5 cars	140 sq.m.			
	Service zone				
	2 nature ponds	5 rais			
	Road & walk way	300 sq.m.			
FUTURE PLAN (approximately 21 rais)					
	Planting Zone			Residential Area	5 rais
	Farm trekking			Restaurant	50 sq.m.
				Hall	100 sq.m.

Table 2: The Proportion of Using Area

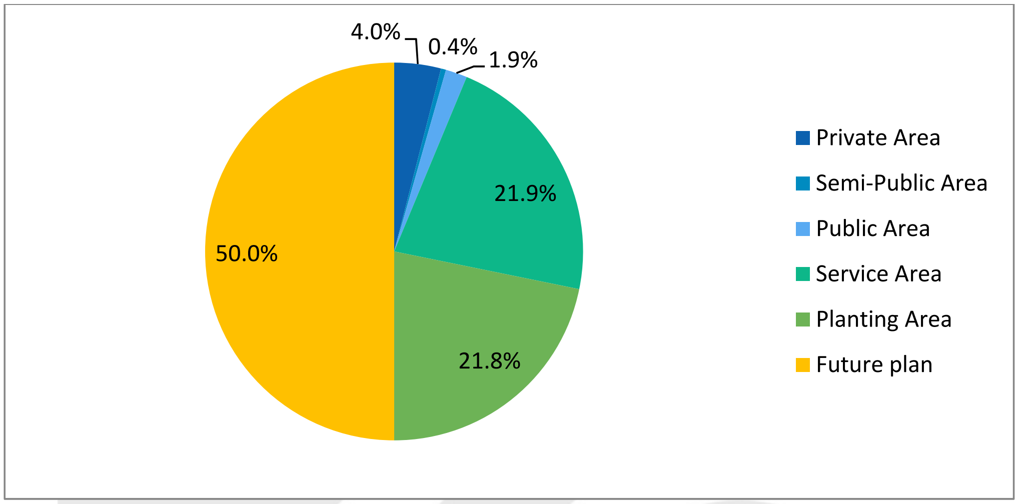

Figure 4: Percentage of using area in current phase plan

2.9.2 The Proportion of Species Crop in Planting Area

Categories	Area
Salad vegetable	2 greenhouses (360 sq.m.)
Seasonal vegetable	1 greenhouse 3 Rai
Mulberry	2 rais
Fig	1 greenhouse (180 sq.m.)
Exotic Vegetable and Fruit	1 rai

Table 3: The Proportion of Species Crop in Planting Area

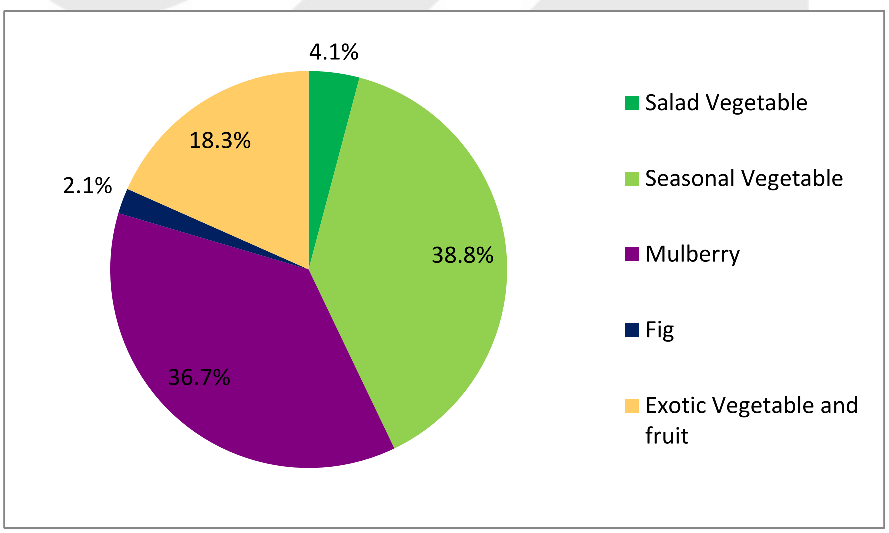

Figure 5: The percentage of land using for each crop categories

2.9.3 Estimate startup cost

The largest portion of estimated startup costs goes into operating capital, other part already installed. Since, the focus on the business is trustworthy and good scenery of farm for developing to next stage to be farm tour. Website development and branding will be another major cost component. The estimated startup costs are shown in a Table 4 below;

TAM-GIN-EANG ORGANIC FARM AT CHIANG RAI		
Required Start-Up Funds	**Amount**	**Totals**
Fixed Assets		
Building	1,840,000	
Landscape Improvement	140,000	
Equipment	182,500	
Furniture and Fixtures	25,000	
Vehicles	142,000	
Total Fixed Assets		2,329,500
Operating Capital		
Pre-Opening Salaries and Wages	55,000	
Utility	10,000	
Supplies	8,850	
Advertising and Promotions	20,000	
Working Capital (Cash on Hand)	813,000	
Total Operating Capital		916,850
Total Required Funds		*฿3,246,350.00*
Sources of Funding	**Amount**	**Totals**
Owner's Equity	61.61%	2,000,000
Additional Loans or Debt		
Commercial Loan	38.39%	1,246,350
Total Sources of Funding	100.00%	*฿3,246,350.00*

Table 4: The Startup expense

From table 4, non-recurring costs associated with setting up a “Tam-GIN-EANG” Organic farm business, such as improvement cost, equipment, furniture and vehicle.

Our “Tam-GIN-EANG” Organic farm business has beginning cost equal 3,246,350.00 Baht.

2.10 BUSINESS MODEL CANVAS

<table>
<tr><th colspan="5">“TAM-GIN-EANG” ORGANIC FARM Business Model</th></tr>
<tr><th>Key Partner</th><th>Key Activities</th><th>Value</th><th>Customer Relationship</th><th>Customer (Target Group)</th></tr>
<tr>
<td rowspan="3">• Seed Suppliers
• Equipment Shop
• State & Private organization
• Agriculture Learning Center
• Other popular webpage in organic products</td>
<td>• Planting plants with 100% organic system
• Develop to sustainable agriculture
• Keep quality of produce
• Make it available for market</td>
<td rowspan="3">• Trustworthy organic crop source
• Clean and Safety
• Quality product with reasonable price
• Diversify product
• High Nutrition product
• Customize
• rare products
• Beautiful scenery
• Ecotourism
• Sustainable practice
• The center of healthy community production</td>
<td>• Community for healthy lifestyle people to acknowledge and sharing information about healthy and organic agriculture</td>
<td rowspan="3">Current Plan
• Personal Group
- Healthy lifestyle individuals
- Aging Family
- Expat Family

• Organization group
- Restaurants
- Hotels
- Hospitals

Future Plan
• Personal Group
- Healthy Young Baby Family
- Patient Family

• Organization group
- Modern Trades</td>
</tr>
<tr><th>Key Resource</th><th>Channel</th></tr>
<tr>
<td>• Profession worker with passion and high responsibility
• Organic system procession
• Brand</td>
<td>• Farm Shop
• Green Market
• Green Shop
• Healthy Shop
• Online Market
• Direct sale</td>
</tr>
<tr><th colspan="2">Cost - Expense</th><th colspan="3">Revenue</th></tr>
<tr>
<td colspan="2">• Leasehold Improvement Expense
• Species seeds and branches
• Utility Expense
• Equipment Expense
• Salary
• Advertising and Promotion</td>
<td colspan="3">• Sale crop
• Sale species braches
• Farm Tour service
• Event</td>
</tr>
</table>

Figure 6: Business Model Canvas of “TAM-GIN-EANG” Organic farm

CHAPTER 3
INDUSTRY ANALYSIS

There are a few main industries that our company should concern. First industry is Agricultural Industry, second is Health food Industry. However, effects of overall economy of global and country are importance issue that cannot be overlook. Therefore, in this section we will present about environmental scanning by PESTEL Analysis, then other relevant factors such as customer analysis, product analysis. The data is secondary data and some of data from workshop and interview farmer.

3.1 PESTEL OF THAILAND

3.1.1 Political Factors

- **Global Political**

The political of the United States is uncertain. They still have persistent political wrangling that conduct doubt about ability to reflate the economy. The Europe political is still uncertain, such as upcoming election in Italy, the outcome of Brexit negotiations. But the election in France took positive turn that supports the economy recovery (Torné, 2017; SCBEIC, Thai economy in 2017, 2017)

- **Thai Political stability**

The government status is constitutional monarchy, which interim military-affiliated government since May 2014. The politics have cement control by the army and its allies via a constitution approving in a referendum in 2016. The general elections will be held before 2019 at the earliest. The royal office and additional laws are mainly owing to change the draft constitution and must be written into the charter before propagation. The economy is supported by public investment, while private investments still below par despite the government significant efforts it (EIU, n.d.).

- **Government policy**

The current 12th National Economic and Social Development Plan (2017-2021) began on 1 October 2016 and will continue until 30 September 2021. The 12th plan has continued to focus on the Philosophy of King Bhumibol Adulyadej (King Rama IX of

Thailand): *"Sufficiency Economy"*. The philosophy intends to change the priority of economic policy from "growth" to "social development. This philosophy was used since 2008 that is the first year for beginning the specific policy on organic agriculture. The Office of the National Economic and Social Development Board (NESDB) reported that this Plan was created along the 20-year national strategy, 2017-2036. The 20-year national strategic plan has six areas, six primary strategies, and four supporting strategies. The six areas include security, competitiveness enhancement, human resource development, social equality, ***green growth*****,** and rebalancing and public sector development (PRD, 2016; Greennet, Policies on organic agriculture in Thailand, 2016) Therefore, there are organic agriculture policies supporting farmers under the Plan in each region in Thailand.

Moreover, Thai government tried to promote Thailand as the center of organic farming and trading in ASEAN and aim to become one of the world's major suppliers of organic products. But Thai producers and consumers still have to learn more about organic products. Therefore, the government would help and acknowledge about organic farming and products (Thiraporn, 2016). The Ministry of Agriculture and Cooperatives intends to make Thailand the organics leader of Southeast Asia, aiming to increase both organic farming land area and organics revenues by 20% annually for the next five years. Therefore, they established 'Organic Thailand" a national standard without cost for Thais farmers to incent farmers for converting to organic agriculture and selling domestically (EIC-SCB, 2017).

- **Thailand 4.0**

Tis economic model aims to unlock the country from many issue challenge in the past. The past economic development model includes Thailand 1.0-Emphasis on agriculture, Thailand 2.0-Emphasis on light industry and Thailand 3.0-Emphasis on advance industry. In this model focuses on 4 main topics as follows;

1. **Economic Prosperity:** to add a value-based economy via driven by innovation, technology and creativity. This model increases the expenditure of R&D about 4% of GDP.
2. **Social Well-being**: It aims to reduce social disparity from 0.465 in 2013 to 0.36 in 2032. Moreover, this model needs to change the social welfare

within 20 years and develop at least 20,000 households to be "Smart Farmers" within 5 years.

3. **Raising Human Values**: This model focus to develop Thais into "Competent human beings in the 21sth Century" and "Thais 4.0 in the first world.
4. **Environmental Protection**: to become livable society, low carbon society , handle with climate change and reduce terrorism.

Smart Farming and integrate INNOVATION to every industry /develop normal agriculture to be smart Farming keep balancing between production and sale demand in the markets. Moreover, each stage can create more value by improving standard to get high value products or service. Knowledge of technology is importance point of success (BBL, 2016). Therefore, this is another topic should concern for running farming business.

3.1.2 <u>Economy Factors</u>

- **Overall Global economy**

The global economy had just recovered and gained steam on the back of an improvement in both advanced economies and emerging-market countries in Q2. A primary estimate for GDP of the global economy show expanded 3.1% annually in Q2. Most of the world's largest economies like China posted another expectation result in this quarter that is higher and Chinese government set this year's growth target to be 6.5%. The economies of other developing countries gained benefit from resilient global demand and more stable financial markets. That led to rising commodity prices. International trade grew 10%YOY in the first quarter.

The Euro area economic growth is likely bright. Economic sentiment increased to a near-decade high in June that is the best quarter in over six years and a declining unemployment rate, accommodative monetary conditions and a stable political environment. The inflation rate is lower because of a weak wage growth and failing energy prices.

In the United States, the economy likely accelerates in Q2 due to future labor market expansion. Although the political still uncertainly but the inflation rate is soften. The recovery market likely inspires a consumer spending growth in this quarter.

In Asia, China economy is reverberating positively to developing economies, particularly in Asia but except Japan. Russia economy is slow but still recovery.
In Middle East, the growing is uncertainly and declining oil prices affect economic prospects.

The economy is growing solidly due to the strong demand of global healthy and rising consumer spending driving economic growth. Even though, it still have downside risks for economy in this years too, like as political instability in Europe, rising trade protectionism ensuing the election of Trump in November and an abrupt slowdown in China still have not recover, but they have certainly diminished. Moreover, the near future will have more another topic that surely affects to the global economy, such as geopolitical risks; especially in the Middle East, the upcoming elections in Italy that will test situations of the anti-euro movement.

Nevertheless, analyst surveyed by FocusEconomics see the global economy growing 3.0% in 2017 and the stronger growth in the United States and in many emerging economies will drive a growth in 2018 to 3.1% (Torné, 2017; SCBEIC, Thai economy in 2017, 2017).

- **Thailand economy**

There are well-developed infrastructure, a free-enterprise economy, and generally pro-investment policies. Thailand is currently the 2nd largest economy in Southeast Asia after Indonesia. However, it ranks as the 4th richest nation according to GDP per capita in the region after Singapore, Brunei and Malaysia. In Q3/2017, Thailand's financial markets face instability. However, rising of global growth drive Thai export to grow faster than expect in the first half of the year, EIC of SCB forecast export growth will be 2.5%YOY in 2017, from 1.5% in the previous quarterly forecast. But Thai export remains vulnerable with U.S. trade policy. Higher demand rate from external will lift export and increase manufacturing output while leading suppliers to restock the inventories, which had been decreasing for a long time. This evidence would be boots the slow private investment and hiring. Moreover, the government help to boots economy by using the central budget; 190 billion US Dollar to support employment and consumption in countryside. The resulting is recovery the level of household income of low-to- moderate income. Due to the first half year, the income only concentrated with the middle-to-high income group (SCBEIC, Thai economy in 2017, 2017). Thailand economy highly depends on international trade, which is about two-thirds of GDP. Thailand's exports include electronics, agricultural commodities, automobiles and parts, and processed foods. 90% of GDP is about industry and services sectors and 10% is the agriculture sectors, but take one-thirds of the labor force of country (TheWorldFactbook, 2016).

Economy Growth slowed in lately few years, because of domestic political turmoil and sluggish global demand. However, overall economic fundamentals are good; with low inflation, low unemployment, and reasonable public and external debt levels (TheWorldFactbook, 2016)

- **Thailand's GDP**

Figure 7: Thailand's GDP Annual Growth rate 1994-2017
(NESDB, Thailand GDP Annual Growth Rate, 2017)

From figure 7, Thailand's GDP expanded 3.7 percent from a year earlier in the June quarter of 2017, compared to a 3.3 percent growth in the first quarter 2017 and above market expectations of a 3.2 percent expansion. It is the strongest growth rate since the first quarter of 2013, amid higher exports and robust farm, tourism and retail output. GDP Annual Growth Rate in Thailand averaged 3.69 percent from 1994 until 2017, reaching an all-time high of 15.40 percent in the fourth quarter of 2012 and a record low of -12.50 percent in the second quarter of 1998 (NESDB, Thailand GDP Annual Growth Rate, 2017).

Figure 8 Thailand GDP from Agriculture 1993-2017
(NESDB, Thailand GDP From Agriculture, 2017)

From figure 8, in the section of Agriculture in Thailand, GDP increased to 141,069 THB Million in the second quarter of 2017 from 127,931 THB Million in the first quarter of 2017. The GDP average is 104313.46 THB Million from 1993 until 2017, reaching an all-time high of 141069 THB Million in the second quarter of 2017 and a record low of 66,849 THB Million in the second quarter of 1993 (NESDB, Thailand GDP From Agriculture, 2017).

- **Wage Rate**

The minimum wage rate in Thailand is 300 to 310 baht per day, by provinces. In term of “per day” means 7 work hours for endangering the health and safety of employees, and 8 work hours for all other work. Beside the skill Labors wage are 370 to 600 per day, depending on a skill level (BankofThailand, 2017). Wages increased to 13619.97 THB/Month in the second quarter of 2017 from 13,415.67 THB/Month in the first quarter of 2017. Wages in Thailand averaged 9,220.15 THB/Month from 1999 until 2017, reaching an all-time high of 13,963.14 THB/Month in the fourth quarter of 2016 and a record low of 6344 THB/Month in the first quarter of 2000. (NSO, Thailand Average Monthly Wages, 2017). That shows in figure 9 as follows;

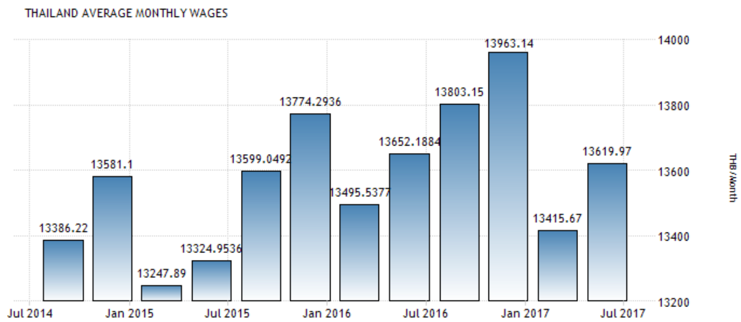

Figure 9: Thailand Average Monthly Wages 1999-2017

3.1.3 <u>Social Factors</u>

- **Demographic of Thailand**

The current population is 68,319,686 and the population density in Thailand is 134 per Km2 (346 people per mi2). The 52.2 % of the population is urban (35,632,808 people in 2017). The highest population density is found in and around Bangkok; significant population clusters found throughout large parts of the country, particularly north and northeast of Bangkok and in the extreme southern region of the country. The median age in Thailand is 38.5 years. A population growth rate is 0.32%. The birth rate is 11.1 births/1,000 populations and Death rate is 7.9 deaths/1,000 populations, which death rate is higher than birth rate. That can assume Thai society will transfer to be elderly society in the future like many countries around the world (TheWorldFactbook, 2016). That shows in figure 10 as follows;

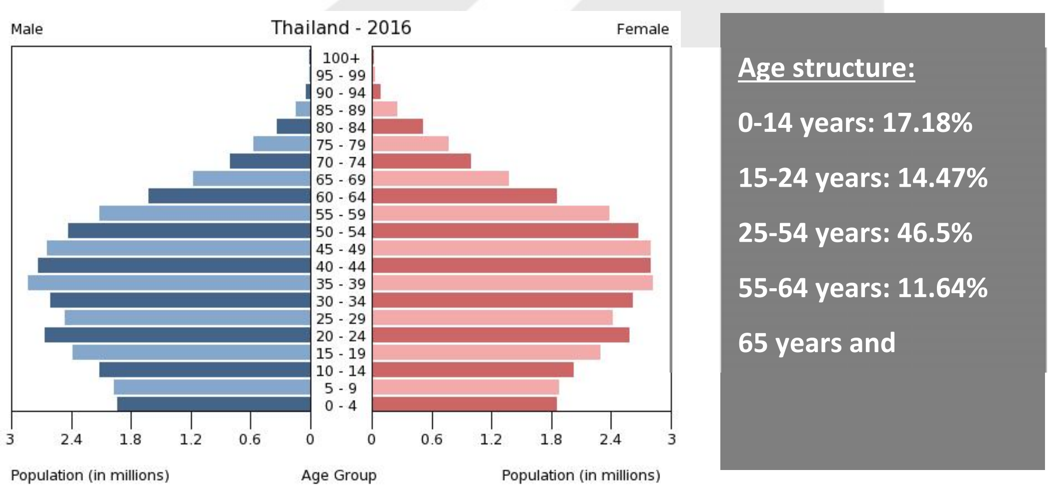

Figure 10: Population Pyramid of Thailand in 2016 (TheWorldFactbook, 2016)

- **Income and Expenditure**

From figure 11 and 12, Thailand is classified by the World Bank as an upper-middle-income economy, the country's monthly income and expenditure per capita averaged US$273 and US$215, respectively, in 2015. In Greater Bangkok, the respective figures were US$443 and US$334, some 60% higher than the national average (Ma, 2017).

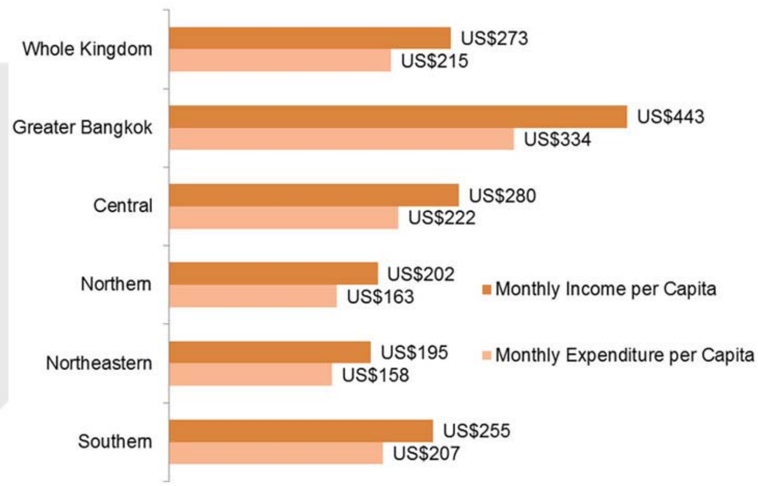

Figure 11: Thailand Monthly Income and Expenditure Per Capita by Region in 2015

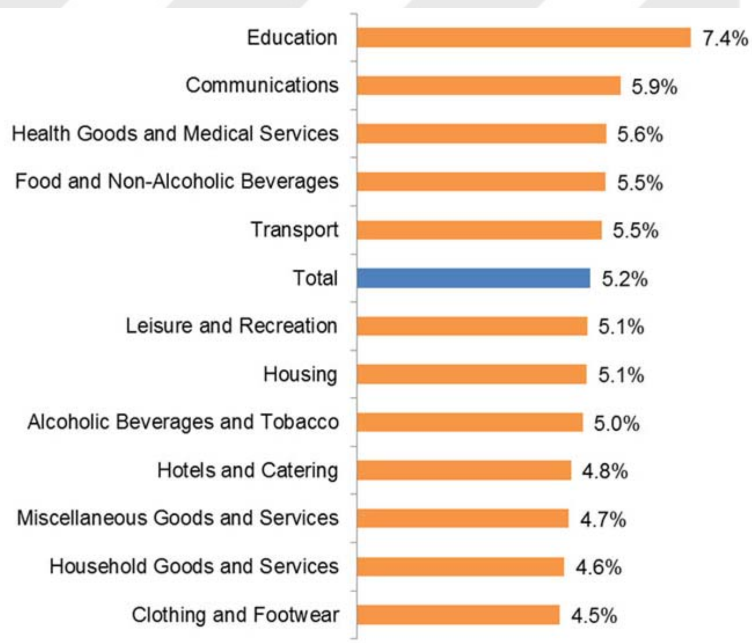

Figure 12: Thailand Consumer Expenditure' Compound Annual Growth by Category in 2016-2021 (Ma, 2017)

According to *Euromonitor International*, consumer expenditure in Thailand is expected to expand modestly by 5.2% each year from 2016-2021, with stronger growth expected in education (7.4%), communications (5.9%), health goods and medical services (5.6%), and food and non-alcoholic beverages (5.5%). Indeed, as income improves, Thai consumers increasingly crave quality, convenience and high levels of service (Ma, 2017).

- **Education**

This category grows fastest as expected, because most of Thais parents and other Asian countries emphasis on their children's development which make blooming in demand for international schools and language training. That is as well as for a variety of extra-curricular activities, such as music, dancing, painting and sports classes (Ma, 2017).

The perception of Thais consumers about organic agriculture is quite well, generality knew about organic agriculture. But the perception did not correctly understand in organic agriculture, approximately 92% of all respondents around country. Only 6.51% of respondents, except the respondents in Bangkok Metropolis region, could correctly answer only half of questions. The 10.9% of Bangkok Metropolis region respondents that could give more than half of right answers. Main issue of misunderstanding is difference of each standard, such as Q Mark, standard of Hygiene vegetable and Pesticide residue free vegetable. Moreover, they did know Hydroponic vegetable is not organic vegetable and GMOs breed do not allow for organic process (OAD, 2015).

	FACTOR						
RESEACH	**Age**	**Job**	**Educa-tion**	**Income**	**Size of Family**	**Children in Family**	**Patient in Family**
รัชดา สิริภาณุพงศ์ (2004)	●	●	●	●	-	-	-
กัลยาณี กุลชัย และพีรชัย กุลชัย (2006)	-	○	○	○	○	-	•

Roitner-Schobesberger, Darnhofer, Somsook, Vogl (2008)	●	-	●	●	-	•	-
Till Ahnert (2011)	○	-	-	○	-	-	-
Sangkumchaliang and Huang (2012)	-	-	◙	•	-	◙	-
ปิลันธนา แป้นปลื้ม (2014)	●	○	●	○	○	○	○

◙ = Very Significant ● = Significant • = little Significant ○ = No Significant

Table 5: Private Factors that effect in making decision in purchasing organic products (OAD, 2015)

From the research in table 6 showed the education is the main factor that effect maximum in purchasing organic products. Moreover, the level of education effect to the overview understanding of organic products, which Ph.D. group are most accurate understanding in organic products, about 53%. The second is the master's degree, approximately 43.5%.

Education level	Percentage of understanding		
	correct	incorrect	Not sure
below Bachelor degree	42.1	34.0	23.9
Bachelor degree	42.0	33.0	25.0
Master's degree	43.5	34.0	22.5
Ph.D.	53.0	25.8	21.2
other	35.1	36.0	28.9

Table 6: Percentage of understanding in organic product classify by education level (OAD, 2015)

- **Communication**

Since, increasing in spending communication led to develop in new technologies and services. Because of the falling price drives the completion with other brands in innovation, outlooks and services. However, Thailand is a strong market for premium smartphones, thanks to a desire for high-performance and stylish design among high-end mobile users, especially among those looking to upgrade (Ma, 2017).

- **Health Goods & Medical Services**

Similar to other consumers in the region, Thais have become more health-conscious and are now willing to spend more on health goods and medical services. While the desire to look younger and more attractive has led to an expansion of the range of health goods in number of specialist areas, including nutritional supplements, health equipment and spas, local demand for medical services in the private sector has also risen in line with increasing incomes (Ma, 2017).

- **Food & Non-Alcoholic Beverages**

Thailand's on-going urbanization program has proved a huge boost to the food-and-beverage sector, with people dining out and socializing more. Many chains focus on a particular product likely to be embraced by the young aspirational urban population, typically yoghurts, desserts, coffee, bread or noodles (Ma, 2017).

3.1.4 Technological Factors

- **Internet Access**

Thailand internet users in 2016 are 29,078,158 users, approximately 42.7% of total population Invalid source specified.. That shows almost half of Thai people can perception information via internet, which is the one method to communicate with consumers. The figure 13,14 and 15 below shows the growth rate of internet users in Thailand since 2013 to 2016 increases 68% in 3 years.

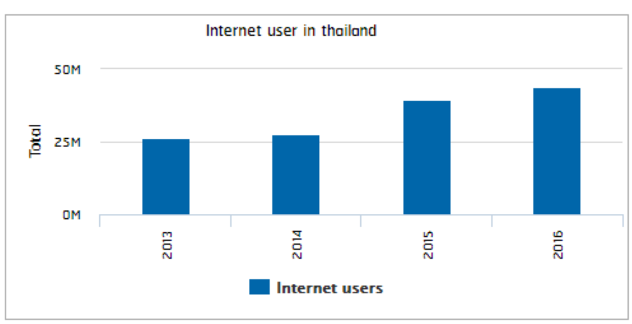

Figure 13: Growth rate of Internet user in Thailand 2013-2016
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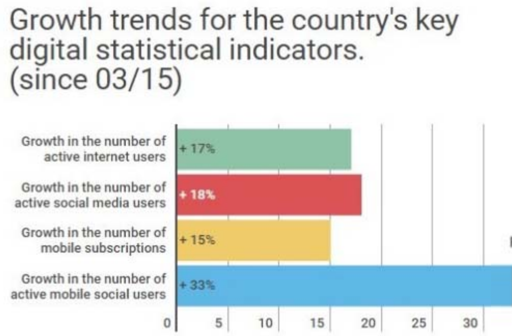


Figure 14: Device usage for Internet connection in Thailand (AdCombo-Blog, 2016)

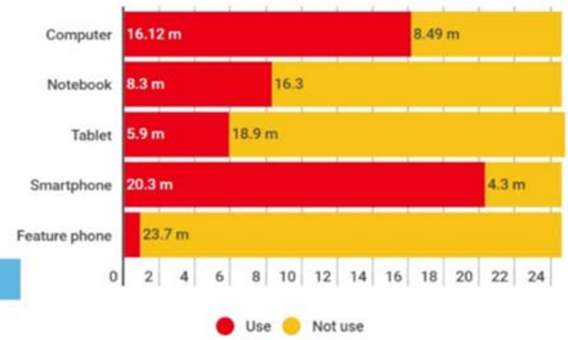


Figure 15: Digital growth trends in Thailand (AdCombo-Blog, 2016)

Moreover, Thailand still remains in the top ten worldwide for social media statistic on network usage and consumer adoption growth in 2017. Nowadays, social media make high impact on consumer and brands in Thailand. It became an important tool for marketing and business success. Importance social media includes Facebook, Instagram and Twitter, their adoption were up an average of 20% year-on-year. The social media users are not only numerous but they are also advance users, such as banks, telecoms, goods production, films and government, etc. (Fredrickson, Thailand in social media world's top 10, 2017).

- **Digital Usage**

When looking in the overview of Asia-Pacific found the penetration of internet users are still below 50%, comparing around the world. While mobile subscription in region reaches 96% in relation to the APAC population. The penetration of active social media users is only 36%. However, the annual growth showed it is still growing, which the growth rate of Internet and Social Media users are growing on a steady pace. Southeast Asia are on 5th place on a global scale that showed the potential growth of region, particularly Indonesia, Philippine and Thailand are growing stronger than the global average.

Spending time on the internet of Thais is 3rd rank of the world. Thailand is 67% in social penetration by country and growth rate only 21% that coincide with global average. The Facebook is most popular social media in Thailand. E-commerce in Thailand mostly does via mobile connections, although the active e-commerce penetration is not too much but certainly increasing (Funk, 2017). In line with global trends, Thai consumers are increasingly embracing online shopping. According to *Statistica*, revenue in Thailand's e-commerce market amounted to US$2,451 million in 2016 and is forecast to grow by 17% a year over the next five years. The market's largest segment is electronics and media, worth US$1,117 million in 2016, whereas fashion and toys/hobbies/DIY are the two segments where the strongest compound annual growth is anticipated over the next five years – 27% and 21%, respectively (Ma, 2017). That shows in figure 16 as follows;

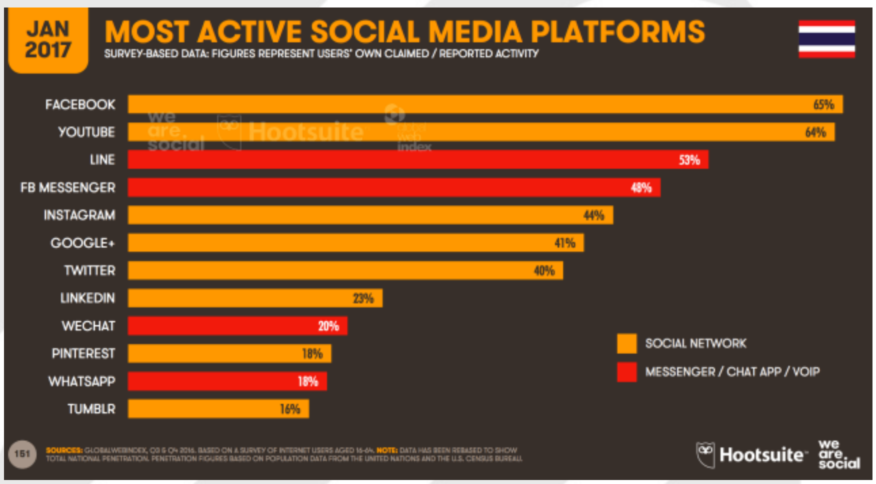


Figure 16: Active social media ranking in Thailand
(Hootsuite, We are social SG, 2017)

- **Technology create new opportunity for consumer and producers**

Each meal in the big city is easier as technology created new access to their meal via mobile ordering, delivery services, kiosks, order for pickup, and order to your table. This trend change the eating culture to be easier and faster, which make competition between suppliers about how to make more communicate to their customers (SoilAssociationCertification, 2015). Furthermore, the working in fingertip Era creates advantage to entrepreneur for reducing many expenses such as rental cost, wage, etc. The entrepreneur can work anywhere, transfer information or accept the result of work for worker via internet online and can make transaction through Online Banking which makes easier and faster in doing business Invalid source specified..

- **Smart Agriculture Technology**

Agriculture continues to feed the world, so many people invent and use technology to support agriculture industry, such as vertical planting in limited area. Moisture sensors that tracks soil or plants and send all data via cloud, hydroponic greenhouse or agro-robot and etc. (Economist, 2016)

Vertical Farm; this method resolves the limited arable area for some country as Singapore. Vertical Farm means planting on layers overlapping which provide watering, nutrition and light by human control. Planting conducts in greenhouse with insect protection mesh. Its advantage is growing crops without seasonality and can produce more than 5-10 times of normal cultivation in the same area size (Adisak, 2016).

3.1.5 Environmental Factors

- **Arable area in Northern Region**

From figure 17, National Statistical Office (NSO) revealed Northern Region had 1.3 million of agricultural holdings, approximately 5.5% of total households of the country. The total area of holding was 27.5 million rais or averagely 21.2 rais per holding. Chiang Rai province occupied the largest number of holdings with 145,177 members (11.2%), followed by Chiang Mai, Nakhon Sawan, Phetchabun and Lampang (10.4, 7.6, 7.5 and 7.2% respectively). Mae Hong Son had the least number of holdings with 33,817 members (2.6%). Total area of holding is about 27.5 million rais (8.6% of the total area of the country). Considering changes of agricultural holding during the past 10 years, the number of holdings decreased from 1.37 to 1.30 million members (5.3%) but the area of holding increased from 25.02 to 27.51 million rais (10.0%), the average area of holding were 18.2 and 21.2 rais respectively. Most of agricultural holdings 1.3 million members (96.8%) are cultivating crops and 15.4% of this number was also operated with the other type agricultural activities such as livestock or freshwater culture (NSO, Executive Summary: Agriculture Census of Northern Region, 2013).

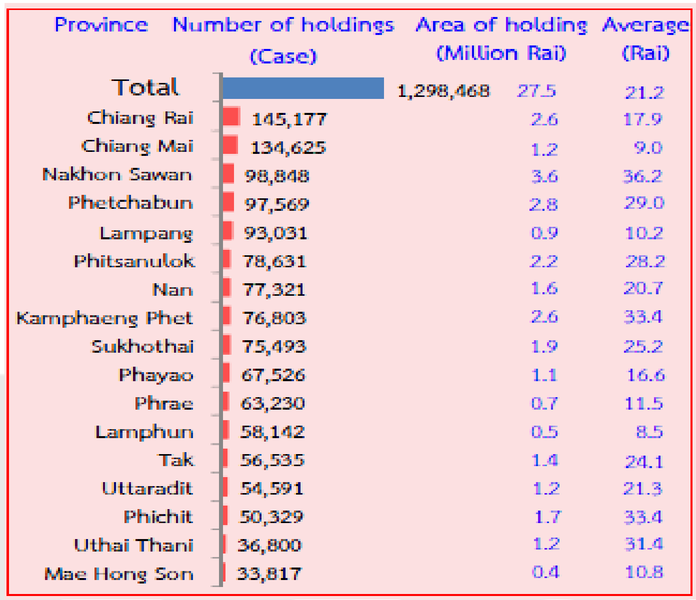


Figure 17: Number and Area of holdings by province (2013)

(NSO, Executive Summary: Agriculture Census of Northern Region, 2013)

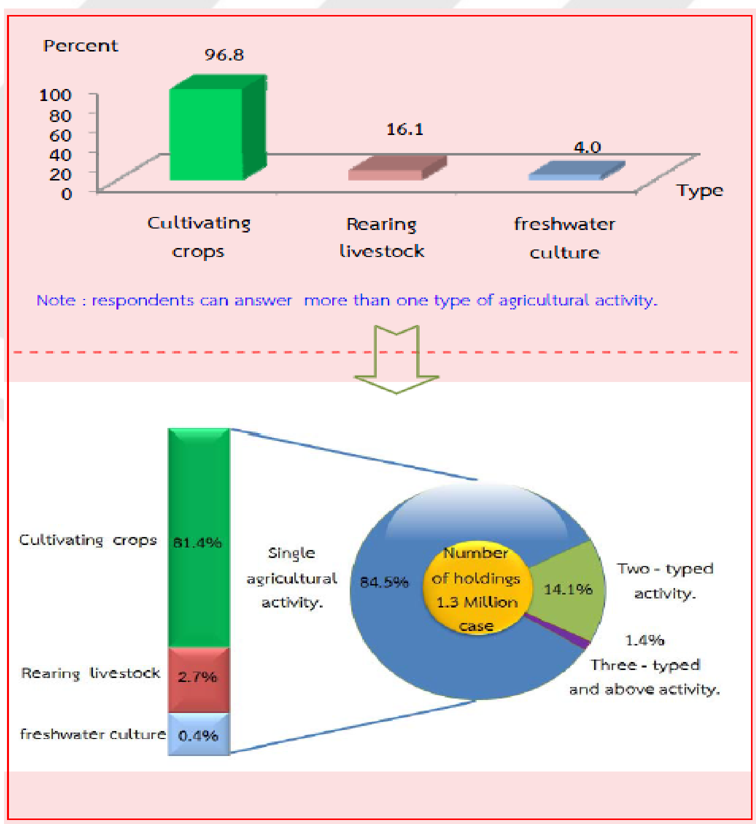


Figure 18: Number of holdings by type of agricultural activity (2013)

(NSO, Executive Summary: Agriculture Census of Northern Region, 2013)

From figure 19, the majority of agricultural holdings in Northern Region (84.5%) have area of less than 40 rais, which of this number 44.7% was of agricultural holdings having area 10 – 39 rais. There was only 0.6% for the agricultural holdings having area140 rais and over. About half of total area was the area under rice, followed by field crop (34.8%) and permanent crops/forest (9.2%).

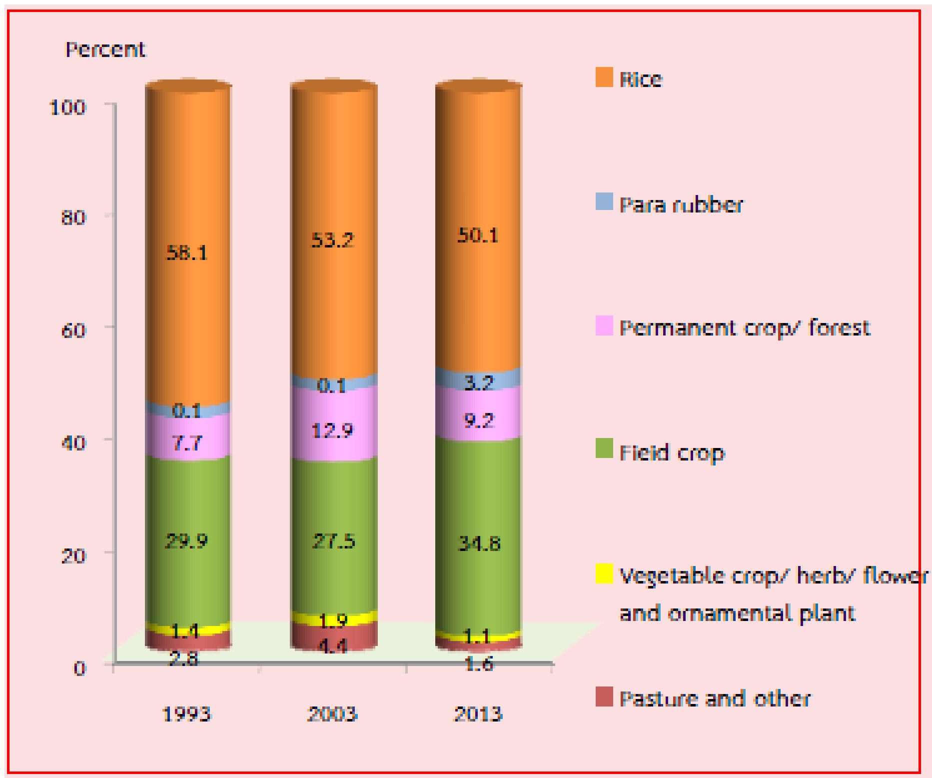


Figure 19: Comparing area of holding by land use (1993 – 2013)
(NSO, Executive Summary: Agriculture Census of Northern Region, 2013)

- **Fertilizer Type**

From figure 20, the majority of agricultural holdings (90.5%) used fertilizer. But most of them (85.7%) used inorganic fertilizer. By this number, about 54.9% used only inorganic fertilizer. However, the use of organic fertilizer only and the used of bio-fertilizer only were only 2.2 and 1.0% respectively (NSO, Executive Summary: Agriculture Census of Northern Region, 2013). That showed the organic cultivate is still in the little amount.

Item	1993	2003	2013
1. Number of holdings with crop	1,376,938 (100%)	1,320,495 (100%)	1,248,888 (100%)
Not using fertilizer	334,989 (24.3)	178,239 (13.5)	118,293 (9.5)
Use fertilizer	1,041,949 (75.7)	1,142,256 (86.5)	1,130,595 (90.5)
Inorganic	669,129 (48.6)	757,267 (57.3)	685,980 (54.9)
Organic	67,147 (4.9)	45,596 (3.5)	27,642 (2.2)
Bio	*	*	12,262 (1.0)
Inorganic and other	305,673 (22.2)	339,393 (25.7)	385,064 (30.8)
Organic and Bio	*	*	19,647 (1.6)
2. Area treated inorganic fertilizer (rai)	16,063,643	22,951,513	28,654,408
3. Quantity used inorganic fertilizer (1,000 kg.)	507,971	992,018	1,706,050
Average per rai (kg.)	31.6	43.2	59.5

Note * In 1993 and 2003, did not collect about bio-fertilizer.

Figure 20: Number of holdings by using fertilizer (1993 – 2013)
(NSO, Executive Summary: Agriculture Census of Northern Region, 2013)

- **Environmental issue in Thailand**

The climate condition and climate change are the main issue that is concern of agriculture industry since water is importance resource for production. Therefore, *flooding and drought* affects crops and debt problems for farmers. Maintain ecology is another topic that farmer should prepare and conduct for reducing the risk of production (Environnet, 2016). Besides, there are many environmental issue was neglected such as, deforestation, Air pollution, Field and forest burning, overfishing and illegal fishing, water pollution, wildlife and so on. Wastewater is still a prominent environmental problem for Thailand that showed Thai laws are still too weak to control and reduce water pollution. The Pollution Control Department (PCD) reported the agricultural sector is the largest pollutant as the country's farms discharged up to 39 million cubic meters of wastewater per day in 2016. While the industrial sector is the 2nd rank after discharging 17.8 million cubic meters per day. The residential sector ranked third with 9.6 million cubic meters per day (Rujivanarom, 2017).

3.1.6 Legal Factors

The Nation of Thailand is a constitutional monarchy which a legal system based primarily on the civil law system but also influenced by the common law tradition. Common law tradition is most notable in the Thai legal system's use of Supreme Court decisions as persuasive authority in lower court cases. The new Constitution signed by His Majesty the King BHUMIBOL in 1997 is the highest and supreme law in Thailand. Judicial System in Thailand, the Supreme Court is the highest court that has jurisdiction power over all.

Structure of Legal System in Thailand consists of Code /Acts of legislature /Royal Decrees / Emergency Decree/ Ministerial Regulations / other governmental notifications / regulations.

- **The Agricultural Standards Act B.E. 2551 (2008)**

This Act provide standard, inspection and certification on agricultural commodity in order to promote agricultural commodity and meet standard for safety or prevention on loss to publish or trade activity or country economy as well as to comply with international obligations (ACFS, 2003-2010).

- **Relevant standard and certification in organic agriculture**

In addition, there are many requirements from public and private in the organic business to concern for create value of product and service, both in requirements.

Domestic Standard and certification

1. Organic Agriculture Certification Thailand (Act)

This standard is about organic production systems for plants and products and for aquaculture, which establish by the Ministry of Agriculture and Cooperatives. The standard of organic agriculture divides 4 parts;

- TAS 9000-2546;

  PART 1: THE PRODUCTION, PROCESSING, LABELLING AND MARKETING OF ORGANIC AGRICULTURE
- TAS 9000 PART 2-2011

  PART 2: ORGANIC LIVESTOCK
- TAS 9000 PART3-2009;

  PART 3: ORGANIC AQUATIC ANIMAL FEED
- TAS 9000 PART 4 – 2010

  PART 4: ORGANIC RICE
- TAS 9000 PART 5-2010;

  PART 5: ORGANIC SNAKESKIN GOURAMI
- TAS 9000 PART 6-2013

  PART 6: ORGANIC HONEY BEE
- TAS 7413-2007;

  Organic Marine Shrimp Farming

Operators certified under this Programme can use the ACT organic seal below (must not have "IFOAM Accredited")

Figure 21: ACT Programmed label, Organic Thailand label (ACT, 2012)

"Organic Thailand" The official organic label by the Department of Agriculture. It indicates that the product has been produced according to the organic farming standards set by the Department of Agriculture. A national standard which provides certification at no cost to Thai farmers for selling their product domestically, but producer have to certified year by rear with organization (ACFS, 2003-2010; ACT, 2012).

2. Good Agriculture Practices (GAP)

A multiplicity of Good Agricultural Practices (GAP) codes, standards and regulations have been developed by the food industry and producers organizations but also governments and NGOs. It aimed to codify agricultural practices at farm level for a range of commodities. Their purpose varies from fulfillment of trade and government regulatory requirements (in particular with regard to food safety and quality), to more specific requirements of specialty or niche markets. The objective of these GAP codes, standards and regulations include, to a varying degree:

- Ensuring safety and quality of produce in the food chain
- Capturing new market advantages by modifying supply chain governance
- Improving natural resources use, workers health and working conditions
- Creating new market opportunities for farmers and exporters in developing countries.

Source: (FAO, 2008)

It can be monoculture farming or integrated farming, which in the practice of GAP in each type must have planted area not less than 3 rais in the case of fruit trees or perennials and not less 1 rai case for one or several season crops.

The principles are as follows;

- Water sources must come from clean sources, no additives
- There is no contamination in soils causing contamination in yield.
- Hazardous materials for production in accordance with the regulations of the Department of Agriculture.
- Storage and transport must have standardized farm storage.
- Hazardous and pesticide use information is recorded.
- Free from post-harvest pests
- The quality of the output sorting out clearly.
- Harvesting tools must be clean and free from contamination.

3. Q Mark certificate

Q Mark is the standard of Ministry of Agriculture and Cooperatives that the use be certified covered in manufacturers, operators, commodities, plants, livestock and fisheries. The purpose is as follows.

- Covering in different bases such as GAP, GMP, HACCP.CoC, organic agriculture.
- Acknowledging and revealing about quality of agricultural products And quality food under the Q mark.
- Motivating the producers to produce products under the Q mark and develop into a more standardized ministry.

Qualifications are as follows;

- Be a juristic person and have an interest in obtaining certification.
- Cooperate with the inspection team
- Follow the guidelines of certification
- The place of sale must have products under the Q mark, both farms level and processing. There are often available products.

Problem issue was found that Q-mark cannot a guarantee of food safety, after found chemical contamination in the samples of vegetables and fruits granted the Q Mark. The director of BioThai unveiled the level of pesticide contamination of samples had higher than the products without the Q guarantee. That reflects the poor standard of the National Bureau of Agricultural Commodity and Food Standards (ACFS), which authorized the safety logo for the products (Fredrickson, Q-mark: not a guarantee of food safety, 2014).

Figure 22: Q Mark label (source: www.acfs.go.th)

That is a reason for concerning to upgrade standard of product to be reliable standard and certificate. In the part of international standard attached in *the appendix C*.

Division of safety of domestic agriculture product standard

✓ = usable/Yes ✗ = No	Chemical (Convention)	Hygiene (Chemical control)	Safety (Chemical control)	Hydroponics	Non-chemical	Organic Farming
GMOs	✓	✓	✓	✓	✓	✗
Chemical Fertilizer	✓	✓	✓	✓	✗	✗
Chemical Pesticide	✓	✓	✓	✓	✗	✗
Synthetic hormone	✓	✓	✓	✓	✗	✗
Safety Consumption	✗	?	?	?	?	✓
Environment Safety	✗	✗	✗	✗	?	✓
Increase biodiversity	✗	✗	✗	✗	?	✓
Certification Standard	None	GAP or None	Toxic residue or None	GAP or None	PGS or None	Organic Agriculture
Conformity Assessment Body (CAB)	None	Department Of Agriculture	Department of medical sciences	Department Of Agriculture	PGS or None	PGS ACFS IFOAM
Certification Standard label	None				Specific groups	

**GAP = Good Agricultural Practice, PGS = Participatory Guarantee System, ACFs = National Bureau of Agricultural Commodity and Food Standards*

Figure 23: Division of safety of domestic agriculture product standard (DOAE, 2016)

3.2 INDUSTRIAL STRUCTURE IN THAILAND

3.2.1 Overall organic Agriculture

Thai organic agriculture is still an early stage, both production and marketing. It started nearly 30 years ago and steadily growing year by year. Although, Organic agriculture declined in 2012 because of effect from domestic political and economy, but recovered in 2013 because international market demand was rising, which affected to domestic production exporting to aboard, particularly U.S., Europe and China (CreativeThailand, 2016). The average growth of organic production in Thailand, since 2001 to 2013, reached to 39.9% per year (Warunpun Kongsom, Chaiwat Kongsom, 2016). By 2014, Thai organic agriculture grew reach 21%, which the main products are organic rice (28%) and integrate plants (187%). From 5 years later (2010-2015) the growth of Thai organic market average is 6.37% and 10.14% if look back in 10 years (2005-2015) (OAD, Study and preparation of data production and marketing situation of organic goods., 2015; Panyakul, 2016).

3.2.2 The production of Thai organic agriculture

From the study of Greennet in figure 24 showed arable land of organic agriculture with approval by organic standard was increasing from 235,523.35 rais in 2014 to 284,918.44 rais in 2015. That increases 20.97% within a year. Moreover, the number of organic farm with approval standard rose up from 9,961 farms to 13,154 farms within a year too (Panyakul, 2016).

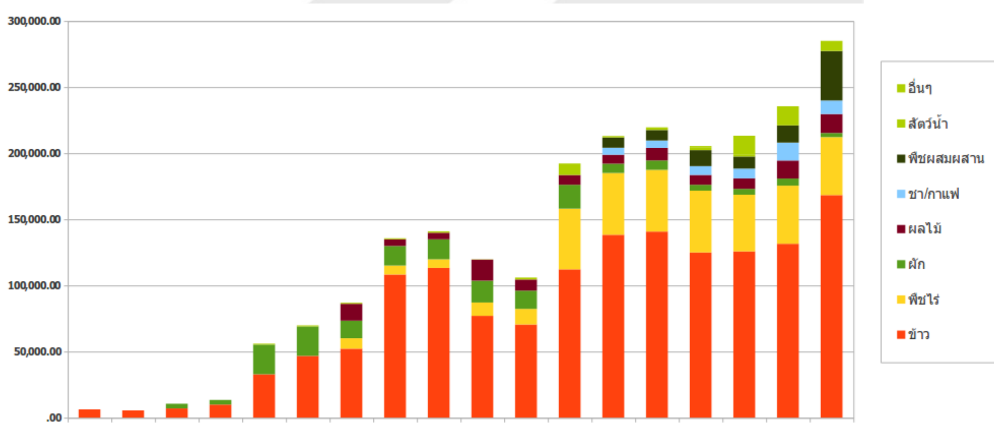


Figure 24Arable land of Organic agriculture in Thailand (1998-2015) (Panyakul, 2016)

The Northeast region has a number of farmers and organic arable land with standard approval that is highest proportion. While the Southern region has the lowest proportion of both farmers and organic arable land. The North region is interested, a number of the North regional farmers reach 29%, but the organic arable area only has 15%. The Central region has only 6% or farmers but a number of organic arable land reach 24%. The data reveals the proportion of possessing arable land per person lower than conventional agriculture which follows the figure 25 below (OAD, 2015).

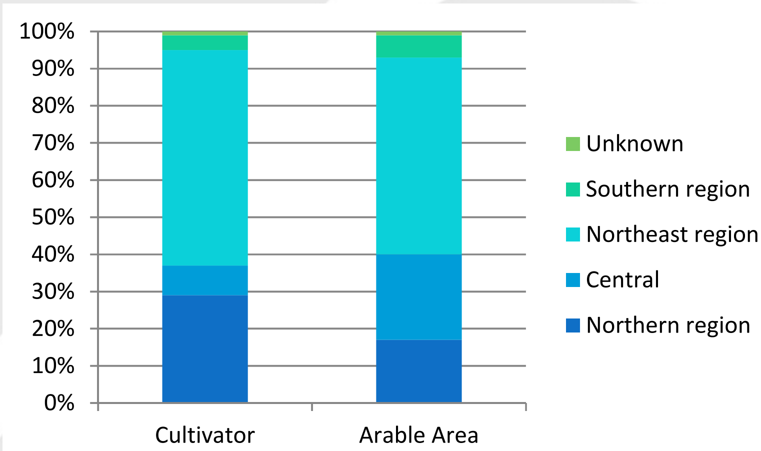


Figure 25: Proportion of cultivators and organic arable area by region (OAD, 2015)

Region	Avg. of holding organic arable land (rais/person)	Avg. of holding convention arable land (rais/person)
Northern	12.3	20.9
Central	88.1	22.7
Northeast	19.6	19.5
Southern	64.3	14.5
Total	22.9	19.4

Table 7: Average of holding arable land in organic agriculture and convention agriculture

From table 8, there are 5 top provinces that conduct organic cultivate in a number of arable areas and accept standard approval, which mostly of arable land belong to only one entrepreneur but there are huge areas.

Province	Organic arable land area (rais)	Number of organic cultivator (families)	Order by area	Order by number of cultivators
Nakhon Pathom	35,190.25	199	1	5
Yasothon	31,691.99	1,375	2	2
Ubon Ratchathani	28,991.08	1,475	3	1
Chiang Rai	23,558.86	922	4	4
Surin	20,079.80	1,206	5	3

Table 8: Comparing of organic arable land and number of cultivator in top 5 provinces

From figure 26, moreover 70% of family farmer accepted domestic standard of organic agriculture, which is approximately 40% of organic arable area of all country.

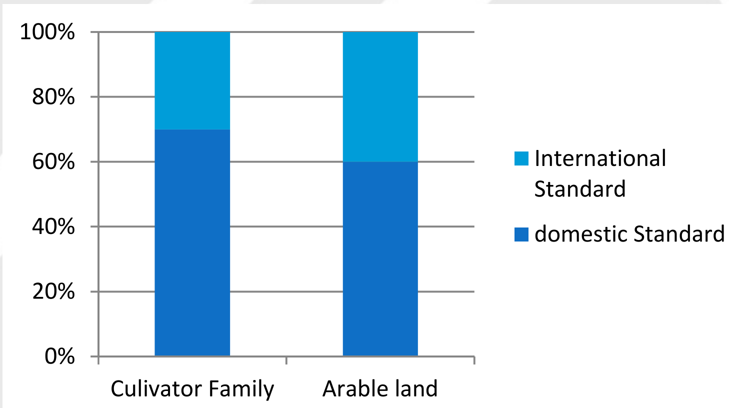


Figure 26: Portion of cultivator's family who do organic agriculture and arable land with standard certification

3.2.3 **The Organic Market in Thailand**

In Thailand, sales of organic food grew at a 7% annual rate during that time, well above the 5% growth rate of conventional foods, according to of Green net Cooperative. The main foods grown organically here are rice, coffee beans, mulberry leaf tea, fresh vegetables like lettuce, and fruits like coconut. The organic food deserves serious attention. Economic Intelligence Center (EIC) of Siam Commercial Bank analyze that consumers are willing to pay 15% to 50% more for organics, which contrast with the sinking price of many Thailand's commodity farm products such as, corn, tapioca and soybeans. Furthermore, the rice price has recently fallen to ten-year lows, which effect to many farmers. Because of some 60% of 13 million Thais farmers grow rice Food

Consumer behavior (EIC-SCB, 2017). Furthermore, the studies showed the arable land of organic agriculture where was approval from organic standard is increasing 20.97% from 2014 to 2015.

The organic products market in Thailand has a total value Baht 2,331.55 million (70.1M US Dollar) that consists of export market 77.9% and domestic market 22.06%. The main domestic distributor includes Modern trades 59.48%, Green stores 29.4% and restaurants 5.85%. The organic sale points have 251 points. The modern trade is major points that consist of 8 companies, as 171 sale points and the total sale is 306 million Baht per year. The second point is Green stores, which consist of 33 places and have a total sale 151.62 million Baht per year. In the part of export, the process organic food is major segments, which is amount 1.201 million Baht; approximately 66.1%. The next segment is organic rice; export value is 552.25 million Baht or about 30.4%.

From the research estimate the organic crop in Thailand about 71,847 ton per year and have value at farm about 1,914 million baht per year. Because organic Thailand agriculture is still early stage, the crops are low diversifying (OAD, 2015). That shows in table 9 and figure 27 as follows;

Year	Rice	Farm plants	Vege table	Fruit	Tea/ Coffee	Vege. fruit integrati on	Aquatic Animal	others	total
1998	6,281.41		-					-	6,281.41
1999	5,510.13		-					-	5,510.13
2000	7,005.26		3,518.75						10,524.01
2001	9,900.50		3,518.75						13,419.25
2002	32,841.27		22,382.30					768.75	55,992.32
2003	46,719.33		22,260.64					768.75	69,748.72
2004	52,182.75	7,859.79	13,283.60	12,777.00				768.75	86,871.89
2005	108,302.02	6,731.20	14,844.76	4,995.35				761.00	135,634.33
2006	113,213.04	6,546.65	15,121.21	4,981.83				1,077.25	140,939.98
2007	77,005.03	10,103.64	16,503.19	15,907.20				203.75	119,722.81
2008	70,485.67	11,791.13	13,820.39	8,369.92				1,500.00	105,967.10
2009	112,152.27	45,920.63	18,066.51	7,342.20				8,738.43	192,220.03
2010	138,328.03	46,682.07	7,047.70	6,751.33	5,286.00	7,832.88		1,067.34	212,995.34
2011	140,711.61	46,682.07	7,132.83	9,485.50	5,605.00	7,935.13	1,838.52	130.50	219,390.66
2012	124,964.39	46,691.44	4,443.45	7,440.04	6,689.25	12,106.5	1,779.92	1,270.83	205,385.81
2013	125,730.71	42,865.57	4,433.33	7,951.09	7,372.41	9,145.09	1,685.92	13,999.56	213,183.68

Table 9: Organic Arable land area in Thailand since 1998-2013 (rais)

	ปี พ.ศ. 2547		ปี พ.ศ. 2550		ปี พ.ศ. 2553		ปี พ.ศ. 2556	
	ปริมาณ (ตัน)	มูลค่า (ล้านบาท)	ปริมาณ (ตัน)	มูลค่า (ล้านบาท)	ปริมาณ (ตัน)	มูลค่า (ล้านบาท)	ปริมาณ (ตัน)	มูลค่า (ล้านบาท)
ข้าว	7,827.4	313.1	13,467.1	373.4	23,515.8	752.5	44,005.8	704.1
พืชไร่	1,572.0	55.0	2,934.1	65.9	13,071.0	366.0	12,002.4	336.1
ผักและสมุนไพร	2,656.7	159.4	5,336.8	297.2	2,114.3	105.7	1,330.0	53.2
ไม้ผล	3,833.1	76.7	11,930.4	236.6	4,050.8	153.9	4,770.7	190.8
ชา-กาแฟ	0.0	0.0	0.0	0.0	1,057.2	190.3	1,474.5	176.9
ไม่สามารถจำแนก	0.0	0.0	0.0	0.0	3,524.8	141.0	4,115.3	164.6
อื่น	76.9	4.6	9.1	1.8	213.5	42.7	4,148.6	289.1
รวม	15,966.1	608.8	33,677.5	974.8	47,547.3	1,752.1	71,847.2	1,914.8

แหล่งข้อมูล: กรีนเนท (2558)

Figure 27: Production volume and market value of organic crop in each years.

	Export Market	Modern Trade Market	General Market
Type (Sort By Importance Order)	Rice Processing food Non-food product	Vegetable and Fruit Rice Processing food	Vegetable and Fruit Rice Processing food
Entrepreneur	Major operator usually have producers and network of producer on their own with contact of production but sometimes buying from other producers when not enough yield	Medium-Major operator Modern trade require certainly delivery and quantity	Minor operator (mostly) Social enterprise or Non-governmental organization
Law Of Organic Certification Standard	Most importance Depend on each country import legal	Importance But there are some expectations	Importance less
Example	· Private company (producers/processors/ exporters in same organization) · Organic Agriculture Cooperative · Private companies (who are Export, but have contract agreement with production or farmer groups	Supermarket of Modern Trade	· Green Market · CSA-Membership system · Green Shop

Table 10: The basic characteristic of organic product

3.2.4 **Marketing channel of organic product in Thailand**

From the research revealed the retailer and exporters prefer to contact directly with producers or processing manufactures more than via distributors. Therefore, distributors of organic product in Thailand still fewer amounts. Since, size of organic is smaller, so producers can easier approve to retailers. In addition, directly contact support confidence in certainly production for retailer and make trust in market for producers, which this methods help producers and retailer to reduce cost of middle man too. The biggest market of organic market is export market about 77.9% and Modern trade (13.1%), followed by green shops (6.5%) (OAD, Study and preparation of data production and marketing situation of organic goods., 2015).

The format of the organic market channel can be classified as 6 channels as follows:

1. Modern trade
2. Green shop
3. Green Market
4. Member Marketing System
5. Direct marketing
6. Food and Beverage Services

From figure 28, in *Bangkok and Bangkok Metropolitan Region*, consumers purchase organic product from 3 main channels as follows; Modern trade, Green shop and directly buying from producers.

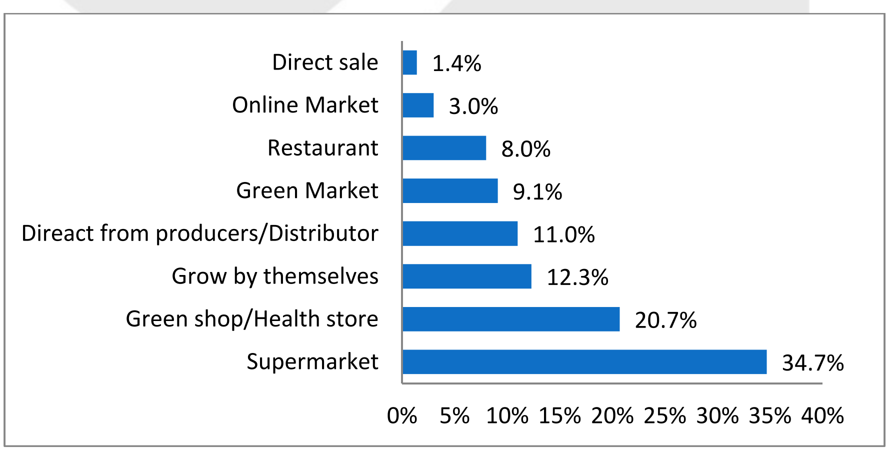


Figure 28: Percentage of source of buying organic product in Bangkok and BMR

While *the other region* consumers choose to purchase in modern trade, directly from producers and Green market. That shows in figure 29 as follows;

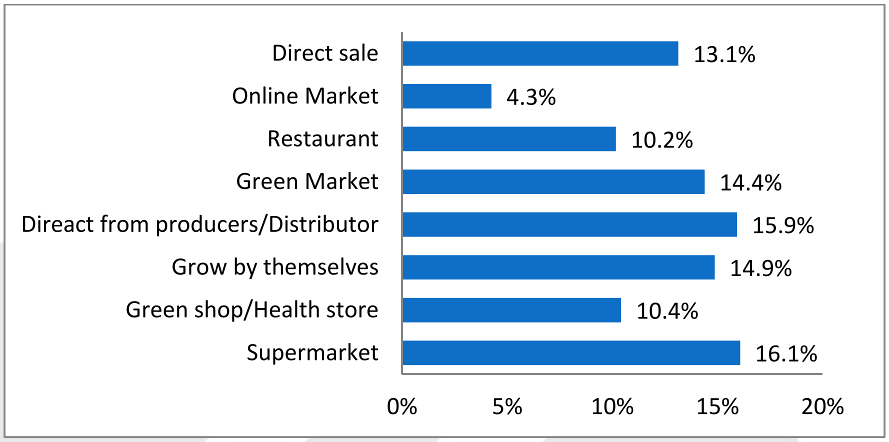


Figure 29: Percentage of source of buying organic product in other region

However, the percentage of growing by themselves are high, therefore sale source of planting, such as trial kit for beginner or breed branch, are interesting idea.

<u>The list of Supermarkets that carry organic vegetables & fruit</u>

The following is a list of supermarkets known to carry organic foods and products. A rating has been given to indicate the comparative range of certified organic products the shop carries.

Rating:

Few = less than 20 items, Moderate = 20 to 100 items, Good = 100 to 200 items, Excellent = more than 200 items

Shop	Location & Description	Organic Range
Villa Market	**25 branches** At certain branches they carry certified organic vegetables from *Rangsit Farm.* And a wide range of imported and local organic products as well as home use items.	Moderate
Lemon Farm	**10 branches** Lemon Farm’s products are not all certified organic. They also have Organic cafe’s that accompany some of their shops, serving up some of their fresh produce in wholesome meals.	Moderate
Gourmet Market	**11 branches** Gourmet Market at Emporium and Paragon carry the largest ranges of certified organic products. They have a wide range of imported and local organic products. At certain branches they carry certified organic vegetables from *Rangsit Farm.*	Moderate
Tops Supermarket	Several locations in Bangkok and all major cities in Thailand. They also do home delivery and online ordering. They carry certified organic vegetables from *Rangsit Farm* at a few of their branches too.	Moderate-Good
Tesco Lotus	Multiple branches all over Bangkok. They carry a few Tesco branded products that are IFOAM certified organic.	Low – Moderate
Big C	Multiple branches all over Bangkok. Because they used to be Carrefour stores, they carry a lot of Bio Agri Cert products (French organic certification). They also have their own brand of certified organic vegetables with the IFOAM seal on them.	Moderate
Foodland	Multiple branches all over Bangkok, open 24 Hours. They have a wide range of imported and local organic products.	Moderate

Table 11: The list of supermarket that carry organic vegetables & fruit

(UrbanGreenScene, 2012)

3.3 PORTER'S FIVE FORCES ANALYSIS

3.3.1 Threat of new entrants: low - moderate pressure

The threat of new entrants is low - moderate. Since, Thailand organic market continuously grow year by year. The growth of Thai organic market average is 7%. Although, organic farming remains a tiny niche industry in Thailand, but the growth rate showed healthy growth potential. Moreover, the research of Organic Agriculture Development Thailand and Earth Net Foundation unveil less than 0.2% of Thais farmers practice organic agriculture and 58% of organic food products sold at retail are imported (EIC-SCB, 2017). That means this business still has space for new players to the market.

But there are some obstacles for new comers too. Because the switching period required 1 to 1.5 years for domestic sales and 2 to 3 years for exports (MJU, 2013). Therefore, during the transition the growers cannot claim crops be organic crops and cannot earn high prices because their products still not certifiable. Another considering point is the reducing crop yield when comparing with normal crops that the nature methods yield 13% to 61% less per hectare the conventional agriculture, depend on the type of crop (EIC-SCB, 2017). However, for the new players should compete in quality, diversify, price and available of products, which are the importance factor for incentive purchasing decision (Warunpun Kongsom, Chaiwat Kongsom, 2016). In addition, the knowledge of organic method quite enhances from many organizations both public and private, but Premium pricing is a strong incentive for producers.

3.3.2 Threat of substitute products: High pressure

The threat of substitute products is high. Food market is huge market and consists of variety section that consumers can find various foods replaced organic fresh food, such as meat, Ready-to-Eat, snack, process food, supplement food/ vitamin, western fast food, beverage and etc. (TNSO, The 2013 Food Consumption Behaviour Survey, 2014). The price of organic vegetable are higher about 2-3 times that conventional vegetable, so the consumers who do not see the need to maintain health still buy vegetables containing toxic residue to consume. Furthermore, there are many factor that effect to purchasing decision including; education, health, finance, culture, advocacy, type of family and so no (Warunpun Kongsom, Chaiwat Kongsom, 2016).

However, there are groups of consumer that need organic product particularly in children food market and patient food market.

3.3.3 Bargaining power of suppliers: low pressure

The bargaining power of suppliers is low. The main resources of organic farm business consist of seed, organic fertilizer which often purchase, but other equipment are similar to conventional farming. Producers have many alternatives in market. In the part of the organic seed, because of enhancing of numerous organization like Maejo University that offer the seed in reasonable price and ready to acknowledge farmers in seed production and seed selection (วิชรัตน์, 2559). But in some vendors who sell specialized equipment and have few vendors. It will have a high negotiation power that the entrepreneurs cannot choose or have less options.

3.3.4 Bargaining power of buyers: low - moderate pressure

The bargaining power of buyers is low to moderate. The price of organic products is higher than commodity products about 2-3 times. In addition, the nation's consumption of organic food remains low, with retail sales of just $0.24 per capita in 2014, compared to $10 in Japan, the highest level in Asia, and $294 in Switzerland, the world's top level, according to FiBL. As Thailand's population ages and as incomes rise, domestic consumption of organic foods is likely to grow. But the research unveil Consumers are willing to pay 15% to 50% more for organics (EIC-SCB, 2017). Since, consumers perceive in the process of planting and production.

3.3.5 Rivalry among competitors: moderate – high pressure

The rivalry among competitors is moderate to high. The competitions in this industry are continuously rising. Meanwhile international competition is growing. Some import crops have lower cost but better quality than domestic crops both sizing, diversity and advance technology. One of Thailand's main rivals in the rice export market is Vietnam which is moving ahead on organic food. Vietnam already exports significant quantities of organic tea, and now Vietnamese Ministry of Industry and Trade is targeting organic rice. Vietnam has slightly more organic farmland than Thailand does today (EIC-SCB, 2017). Moreover, the major entrepreneur invest in contract farming with neighborhood countries which offer lower cost of production , because of lower labour coat and economies of scale. Therefore, this reason increases the competitiveness in industry (SANGTHONGVORAKIJ, 2013).

3.4 COMPETITOR ANALYSIS

From the survey of organic farm in Thailand, we collected the data to compare and improve the business plan of organic farm. Therefore, the selected competitors in the following table 10 shows the potential in each farm, which consists of direct competitors and indirect competitors.

3.4.1 Direct competitors

In the part of direct competitor would be the business that focus on farming and practice in organic method in main of business. In the table 10 consists of 2 brands; Rai Ruen Rom and Phrao Organic Farm. That detail of each farm as follows;

- **RAI RUEN ROM**

Rai Ruen Rom organic farm produces and sale organic product such as organic rice, dried herb, vegetables, seasonal fruits and agricultural souvenirs. They also have farm café that serving healthy food and beverage with used crop from their farm. Moreover, their farm stay surrounds with 360° mountain scenery. The resort has organic healthy breakfast set. This farm dedicates some area to be learning center to acknowledge in organic agriculture for interested people, which;h arranges every month. Rai Ruen Rom is the one of popular agritourism in Chiang Rai that offer experience, knowledge, activities for tourists, for instance feeding sheep and goat, riding bicycle, driving ATV, planting, cooking and so on.

- **PHRAO ORGANIC FARM**

Phrao Organic Farm is a small certified Organic ACT and IFOAM. They located 100 kilometers north of Chiang Mai. They grow a wide variety of tropical fruits. They are a working farm, they have a small cafe', a farm stay and their produce can be found on shelves of organic stores and premium supermarkets in Chiang Mai.

3.4.2 Indirect competitors

In the part of indirect competitor would be the business that have conduct part of agriculture in their business but they have another main point idea for their business. For example, the main goal becomes restaurant serving with organic product, or conducts non-organic method for their farm or does not reach the standard of organic standard.

- **RAI BAO NOI**

Rai Bao Noi is the biggest chemical-free strawberry farm in Chiang Rai that locates among mountain scenery. Besides, strawberry farm also has accomadation and farm experience activities to serve tourists.

- **OHKAJHU**

The famous restaurant that have 3 branches in Thailand; 2 branches in Chiang Mai and another one at Bangkok. They plants their vegetable by their farm for serving in their restaurants. They started their 1st farm with only 6 x 30 square meters area. Nowadays, they expanded their farm to 3 farms. First Farm called 'Farm of the faith' with 11 rais area. Second is 'Love Mom farm' with 12 rais area. The last one is 'Love dad farm' with 20 rais area.

- **Agricultural Community**

Agriculture Community are general farm of small farm of community that have a lot in local area. Nowadays, farmers concern in their health and change from conventional agriculture to organic agriculture. Therefore, there are minor competitors and major competitors.

Table 12: Competitor analysis

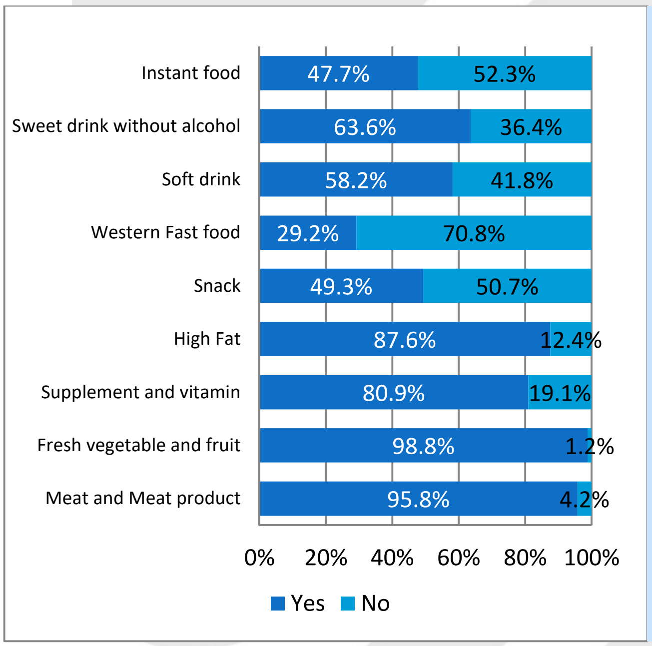
		RAI RUEN ROM	RAI BAO NOI	PHRAO ORGANIC FARM	OHKAJHU	Agricultural community	TAM-GIN-EANG
PRICE		Reasonably	Moderate	Reasonably	High-Moderate	Low-Moderate	Reasonably
QUALITY	Organic	●		●	●	●	●
	Non-organic		●			●	
PRODUCT	Salad	●			●		●
	Vegetable	●		●	●	●	●
	Fruit	●	●	●		●	●
	Rice	●				●	●
	Live stock						●
	Process food	●			●		
	Herb & Spicy	●		●	●		●
CERTIFICATION	NONE					●	
	GAP	●	●	●	●	●	●
	Organic Thailand	●		●			●
	IFOAM			●			●

		RAI RUEN ROM	RAI BAO NOI	PHRAO ORGANIC FARM	OHKAJHU	Agricultural Community	TAM-GIN-EANG
MARKET CHANNEL	Farm shop	•	•	•	•		•
	Online	•	•				•
	Organic store			•			•
	Supermarket			•			•
	CSA	•	•	•	•	•	•
	Fresh Market		•			•	•
SERVICE	Farm Experience	•	•				•
	Farm Café / Restaurant	•	•	•	•		• F
	Farm stay/ Resort	•	•	•			• F
	Learning Center	•				•	
	Farm store	•	•				•
	Online shop	•	•				•
LOCATION		Chiang Rai	Chiang Rai	Chiang Mai	Chiang Mai	-	Chiang Rai
AREA (rais)		80	70	?	11-12-50	variety	30

**Note – F refer to 'Future Plan' not calculate in financial plan*

3.5 THAIS CONSUMER BEHAVIOR ANALYSIS

From figure 30, the 2013 Thailand food consumption behavior survey arranged by The National Statistical office showed the data of Thailand consumption behavior by dividing to 9 categories; Meat Product, Vegetable fruit, Supplement vitamin, High fat food, snack, western fast-food, carbonated beverage, non-alcohol sweet beverage and Ready-to-Eat (like Frozen food/Canned food). From the study found 4 categories that have consumptions more than 80% per week.



4 in 9 categories found had proportion of consumption more than 80% as follows,

- Vegetable and Fruit 98.8%
- Meat products 95.8%
- High fat food 87.6%
- Supplement-vitamin 80.9%

Other categories that is lower proportion is

- Non-Alcohol and sweet beverage 63.6%
- Carbonate beverage 58.2%
- Snack 49.3%
- Ready-to-Eat 47.7%
- Fast Food 29.2%

Figure 30: The percentage of consumption behavior in each categories food per week in 2013 (TNSO, The 2013 Food Consumption Behaviour Survey, 2014)

The top 2 ranking of the frequency consumption found in meat products and vegetable-fruit which were from 3 days up per week maximum (respectively, 70.8% and 88.9%), and higher than 50% eat vegetable fruits every day. More age groups will have a higher proportion of daily meals in vegetable fruit and lower consumes meat. Furthermore, those who do not eat vegetables had a small number, not more than 1.4% of all regions. Therefore, mostly Thais eat vegetables and fruits. From the studies revealed the frequency of consuming vegetable and fruit is more than 48% in all regions that eat them every day, particularly in Northern and Bangkok (about 60%). That shows in Table 13 and 14 as follows;

Type of food and age	Frequency of food consumption<per week>					
	total	no	yes 1-2days	yes 3-4days	yes 5-6days	yes everyday
Meat and meat product	100.0	4.2	25.0	23.0	15.8	32.0
6-14 yr.	100.0	2.3	20.7	24.7	16.5	35.8
15-24 yr.	100.0	3.3	23.2	22.6	16.9	34.0
25-59 yr.	100.0	4.0	25.0	22.6	15.8	32.6
60 yr. and above	100.0	7.6	30.5	23.4	13.7	24.8
Fresh fruit and vegetables	100.0	1.1	10.0	16.8	17.6	54.5
6-14 yr.	100.0	2.8	17.4	21.8	17.0	41.0
15-24 yr.	100.0	1.0	11.6	19.3	18.3	49.8
25-59 yr.	100.0	0.9	8.5	15.5	17.8	57.3
60 yr. and above	100.0	0.8	7.8	15.0	16.9	59.5

Table 13: Percentage of population aged 6 years and over grouping by age and frequency of food consumption in each type of food (2013) (TNSO, 2014)

Type of food	Frequency of food consumption (per week)					
	total	no	Yes 1-2 days	Yes 3-4 days	Yes 5-6 days	Yes everyday
Meat and meat products	100.0	4.2	25.0	23.0	15.8	32.0
Fresh fruit and vegetables	100.0	1.1	10.0	16.8	17.6	54.5
Food supplements minerals and vitamin	100.0	80.9	10.7	2.9	1.2	4.3
High fat food	100.0	12.4	48.1	21.8	9.0	8.7
Snack	100.0	50.7	28.2	10.0	4.2	6.9
Western fast food	100.0	70.8	23.5	3.8	1.3	0.6
Soft drink	100.0	41.7	35.2	12.1	4.5	6.5
Sweet drink without alcohol	100.0	36.4	21.3	11.0	5.7	25.6
Instant food	100.0	52.2	38.6	6.8	1.8	0.6

Table 14: The percentage of consumers 6 year old and above in the frequency in consume food in each category (TNSO, 2014)

From figure 31, the first factors that effect to Thais in purchasing foods as, Taste (Maximum about 24.5%). The lower factors are Cleanness and likeness (respectively, 19.4% and 17.7%), Want-to-Eat (14.9%), Nutrition (12.8%), Convenient and price is lowest factor about 10 %, when consider in each region.

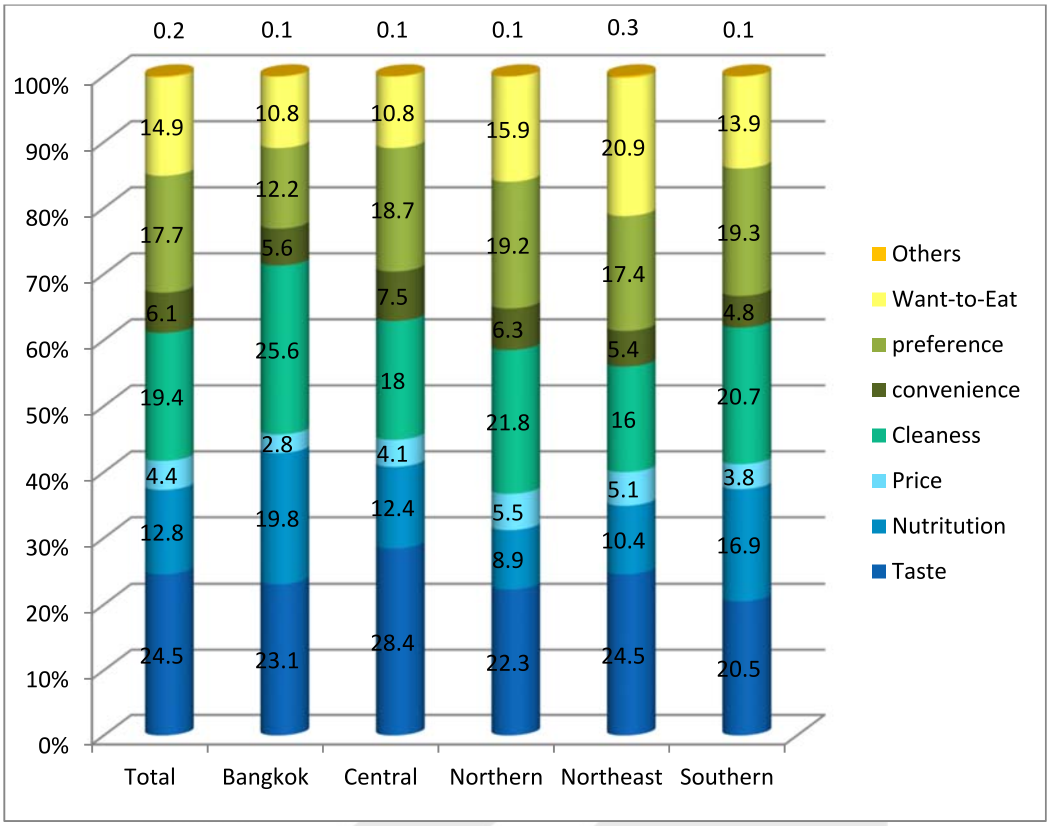


Figure 31: The percentage of consumers 6 year old and above in first consider for purchasing food (TNSO, The 2013 Food Consumption Behaviour Survey, 2014)

- **Health awareness**

According to, the National Statistical office showed increasing a number of populations with Chronic Disease / Congenital disease. The most disease is cardiovascular disease (66.5%), then diabetes (26.5%), endocrine disorders and chronic respiratory syndrome (12.2%) (TNSO, The 2015 survey on health and welfare, 2015). That shows in table 15 as follows;

Chronic disease/ medical problems	Percentage (per million persons)		
	total	men	women
total	100.0 (11.7)	100.0 (4.8)	100.0 (6.9)
1. Cardiovascular disease (High blood pressure, atherosclerosis etc.)	66.5	60.9	70.4
2.diabetes and abnormality of endocrine and metabolism	26.5	21.3	30.2
3. chronic respiratory disease	12.2	13.7	11.1
4.abnormality of bone and muscle	11.3	12.5	10.4
5. digestive system disorder	5.7	5.6	5.8
**Subjects can give more than one answer*			

Table 15: The percentage of population who has chronic disease/medical problems sort by type of chronic disease and gender (year 2015) (TNSO, The 2013 Food Consumption Behaviour Survey, 2014)

Obesity/Overweight

As for the ranking of obesity in the ASEAN region 2011, Thailand came second after Malaysia, with the highest number of people with the disease. The study showed the number of obese in Thais was rising because of the current eating habits. The data presented that obesity usually occur among city people who are well-off and receive higher salaries than those who live in the countryside. Most Thais approach to food and eating for social and relaxed, often featuring multiple snacks or meals at irregular times of the day or night. In addition, many Thais addict sweet tastes and add amount of sugar to their dishes and love to eat very fat and oily food that damage their health (Karaman, 2014). That shows in figure 32 as follows;

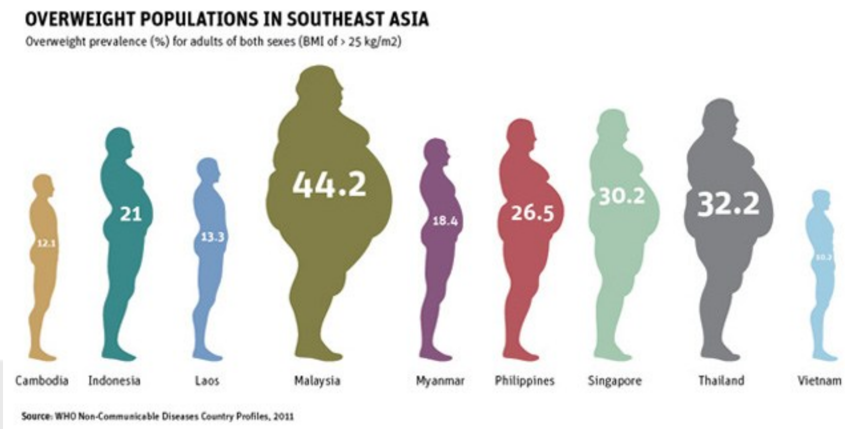


Figure 32: Overweight Population in Southeast Asia (Karaman, 2014)

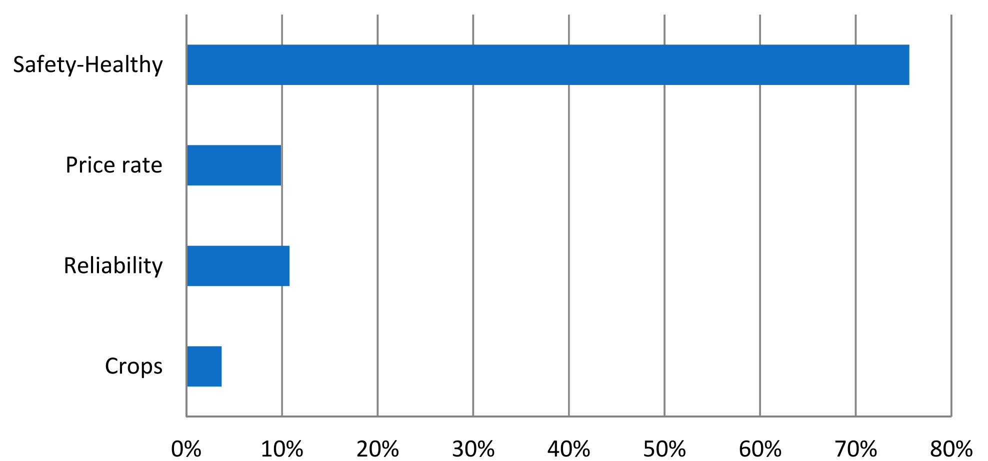
Personal Health is the top motivation for Thais to more health awareness and shifts their eating behavior to eat more healthy foods, particularly educational people and living in the big city. These groups have knowledge and choose the healthy foods for their health. That is in 19th of the global ranking and 2nd of AEC ranking (นุชเจริญ, 2016). EIC report showed Thai consumers tend to become more health conscious, from 2009 to 2015, they spend on medical supplies and healthcare among high-income earners increased from 4% to 17% of monthly expenditure, especially among those 40 years or older whose health-related spending was high as 20% (SCBEIC, Insight unlocking the secrets of the digital consumers, 2017).

- **The awareness, knowledge towards organic products**

Many Thais still have misunderstanding in organic products. The results of questionnaire arranged by World Academy of Science showed more than 92% of consumers have awareness of organic agriculture, but still have less knowledge about it. The 60% of consumers knew about organic agriculture processing prohibit to use chemical and 40% of consumers still confused between food safety logo and the label of organic logo and whether knew GMO was allow or not in organic agriculture. However, most Thai people were misunderstanding in each any standard of organic product and health food. Health food Product in Thailand refer to the farm product grown in the conventional method, which still can growing by allowance agro-chemical, no mean 100% non-chemical. The consumption of organic food reflects the idea of consumers that concern more about individual health and perception of connecting to environment protection. That is cause, why environmentally friendly products are more popular among consumers. Moreover, the organic production is encouraged via government and many private initiatives, which increase potential growth of this industry (Warunpun Kongsom, Chaiwat Kongsom, 2016; Greennet, Where to find organic products and health foods, 2011)

- **Perceptual and attitude of Organic consumer**

From the survey showed in figure 33 that conducted in Bangkok about “The first idea when think about ‘organic product’” is safety and healthy, approximately 75.6% and follow by 10.8 % though about reliable (OAD, Study and preparation of data production and marketing situation of organic goods., 2015).



	Crops	Reliability	Price rate	Safety-Healthy
%	3.7	10.8	9.9	75.6

Figure 33: Percent of comment to “first idea when think about organic product”

The survey about perception in price rate of organic product in Bangkok and BMR found 44.3% of consumers though these are reasonable price, 37.8% though these are high price but acceptable because of better quality. If the producers can improve all those factors, the half of consumer willing to purchase more 10-20% and more than 20% in non-food product. That shows in figure 34 as follows;

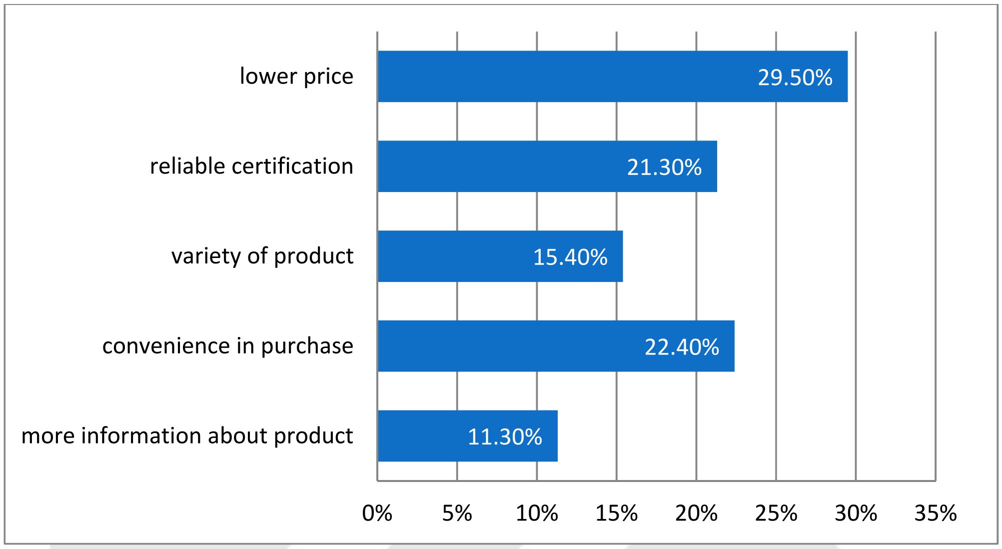


Figure 34: The incentive factors that enhance purchasing in Bangkok (OAD, 2015)

From table 16, considering in above factors, if consumers can increase purchasing in organic products as follows;

Categories	5%	10%	20%	20-50%	100%
Rice	16.8	30.1	20.8	19.1	13.2
Fresh vegetable and Fruits	18.7	36.3	24.5	14.9	5.6
Processing food	5.8	25.0	27.1	26.5	15.6
Non-food products	5.6	15.3	20.4	22.1	36.6

Table 16: Percentage of the increase in organic items consumption in each category (OAD, 2015)

The top 3 rank of fresh organic vegetable that consumers need a lot as follows; the 1st rank is Salad mix set, about 16.2%, the 2nd rank is Chinese Kale, about 15.4% and the last one is Lettuce, about 11.5%. That shows in figure 35 as follows;

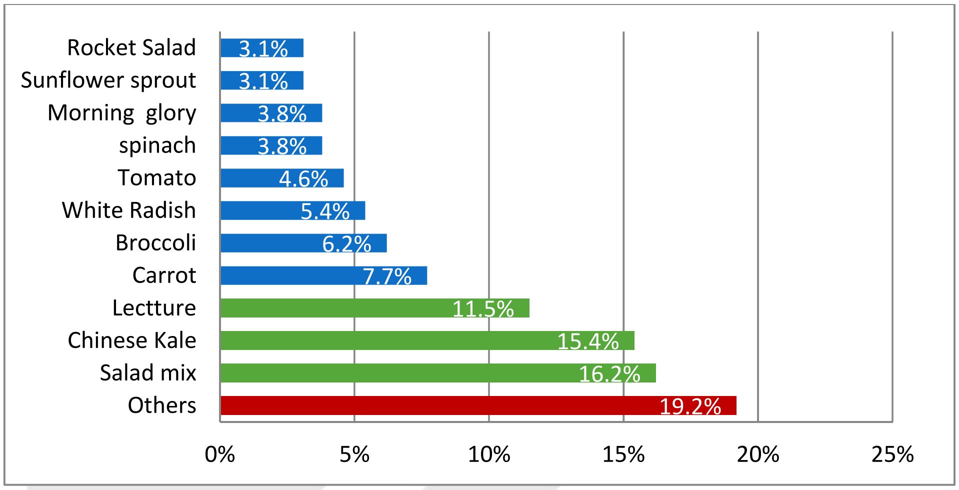


Figure 35: Percentage of the fresh vegetables needs (OAD, 2015)

For organic vegetables that consumers need, but also difficult or not found items include Rocket Salad, Watercress, Okra, Water Mimosa, Red Cabbage, Green Oak Salad, Baby Corn, Ginger, Lemon Grass, Ivy Gourd, Sponge Gourd, Yard long Bean, Pumpkin ,mushroom and etc.

The top 3 rank of fresh organic fruit that consumers need a lot as follows; the 1st rank is organic grapes, about 10%, the 2nd rank is organic mango, about 9.3% and the last one is organic watermelon, about 8.6%. That shows in figure 36 as follows;

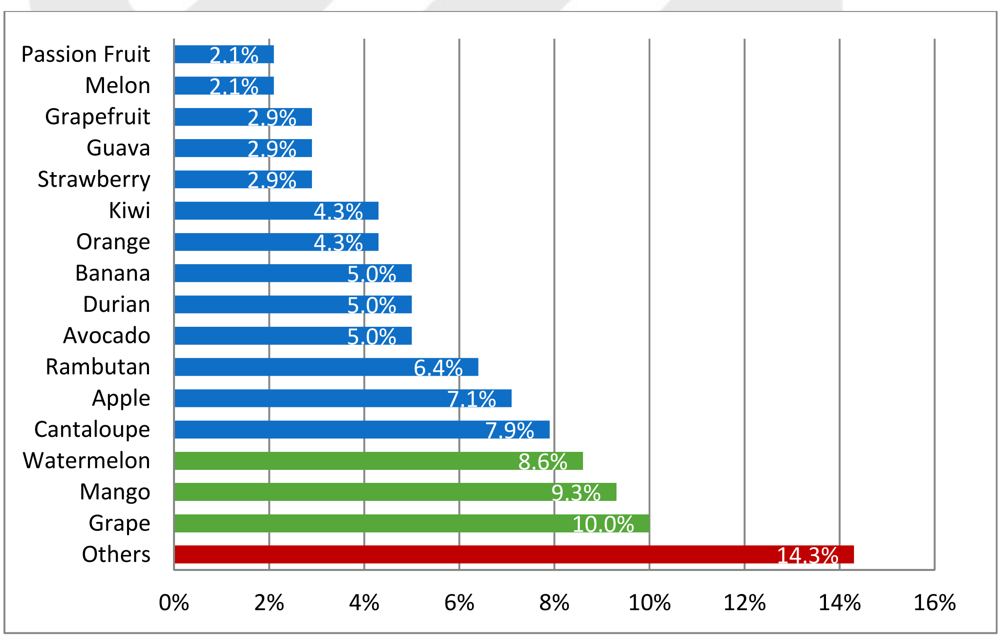


Figure 36: Percentage of the fresh vegetables demand (OAD, 2015)

For organic fruits that consumers need, but also difficult or not found items include Longan, Long Kong, Indian bael, coconut and etc.

In addition, the top 3 rank of organic process food products consist of the 1st rank; organic juice (5.3%), 2nd rank; Chili paste and meat processing (3.1%), organic grain beverage (2.7%). That shows in figure 37 as follows;

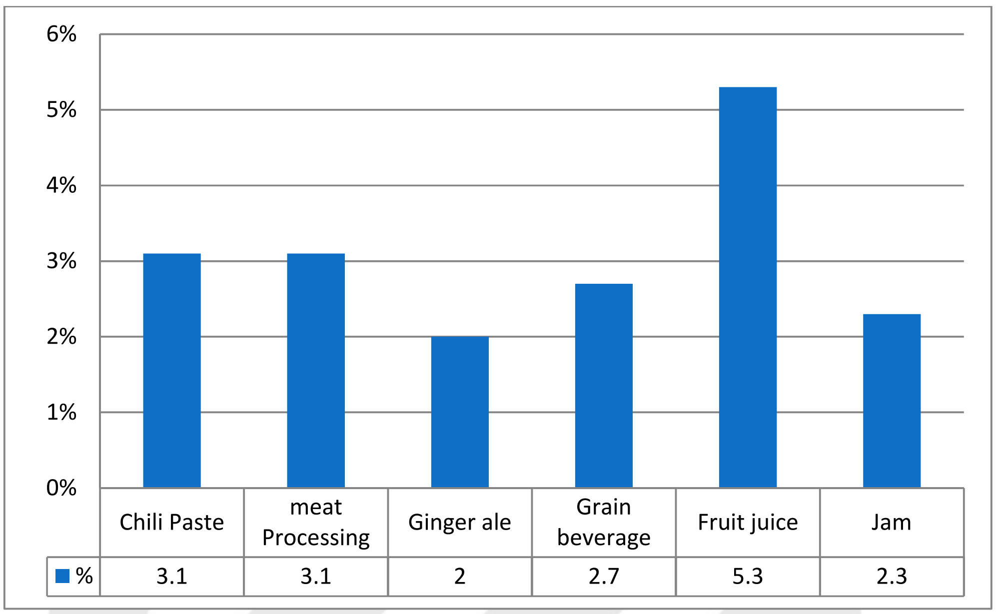


Figure 37: Percentage of organic processing food demand

58% of Bangkok Metropolitan Region consumers and 62.8% of all regions consumer purchase the organic product at least 1-2 times or more per month and in each purchasing is about 200-400 baht for consumer in Bangkok region (OAD, Study and preparation of data production and marketing situation of organic goods., 2015).

According to the study in 2011, this research conducted in Chiang Mai, the Northern of Thailand that studied about demographics, attitudes and behavior of organic consumer in supermarket by questionnaire (Parichard Sangkumchaliang, Wen-Chi Huang, 2012). Organic foods were perceived as high quality with the premium price. The attitudes towards organic foods were different among demographic variables in general. Older age, higher income levels, and married status groups had purchased organic foods in the past than other.

From table 17, this is the summary of the research about attitudes as follows;

<table>
<tr><th colspan="4">Attitude toward</th></tr>
<tr><th>organic foods</th><th colspan="2">purchasing decision</th><th>source of production</th></tr>
<tr><td>Over 70%
healthier and safer</td><td colspan="2">60% concern about external appearance and color</td><td>73% don't be sure about organic production</td></tr>
<tr><td>84% concern about help to protect environment</td><td colspan="2">50% concern about taste and smell</td><td>9% confident in what producer claim</td></tr>
<tr><td>non-chemical
free chemical contaminate</td><td colspan="2">47% considered in High price product</td><td></td></tr>
<tr><td>60% believe
Higher quality than other</td><td colspan="2"></td><td></td></tr>
<tr><th>disparity of the income levels effect to buying</th><th colspan="2">affected by consumers</th><th>affected by Family size</th></tr>
<tr><td>Higher income
concern in convenient in purchasing</td><td colspan="2">Older consumers
often buy organic product than other aged group</td><td>families of 2 members to consider more about the organic food price</td></tr>
<tr><td>Lower income
trust in local producers</td><td colspan="2">Younger (15-25 years old)
Older age (≥ 55 years old)
groups trust in local producers</td><td>Who live alone likely do not have intention to buy organic food</td></tr>
<tr><td rowspan="2">71% of organic buyers have a monthly personal income of over 30,000 Thai Baht</td><td rowspan="2">62% of Buyers respondents are female</td><td rowspan="2">Female buyers are more than Male buyers</td><td>60% of buyer respondents are Married with kids</td></tr>
<tr><td>Married concern more than Single</td></tr>
</table>

**Local producer = producers who practice organic farming and do/mot sale in modern trade*

Table 17: Summary of any attitudes involved in organic product in the Northern region (Parichard Sangkumchaliang, Wen-Chi Huang, 2012)

- **Consumer trend in Thailand 4.0**

From the ELC survey that shows in figure 38, revealed over 60% of the Thais consumers prefer stay in than go out. In this group about more than 75% said their favorite pastimes are watching TV series and listening to music, and 74% enjoy browsing websites and social media. Consumers now have access to more media alternatives than ever before. That means that businesses can reach young consumers and specific target market faster via source in each group. On the other hand, consumers become older to exposure in these media will decline, they spend time with reading, exercising and enjoying other hobbies. Although the majority of consumers said that they like to stay at home but the survey unveiled 80% of them, especially teenagers and high-income people admit that they spend more money than the past when they go out. The most popular activities are dining and shopping (SCBEIC, Insight unlocking the secrets of the digital consumers, 2017).

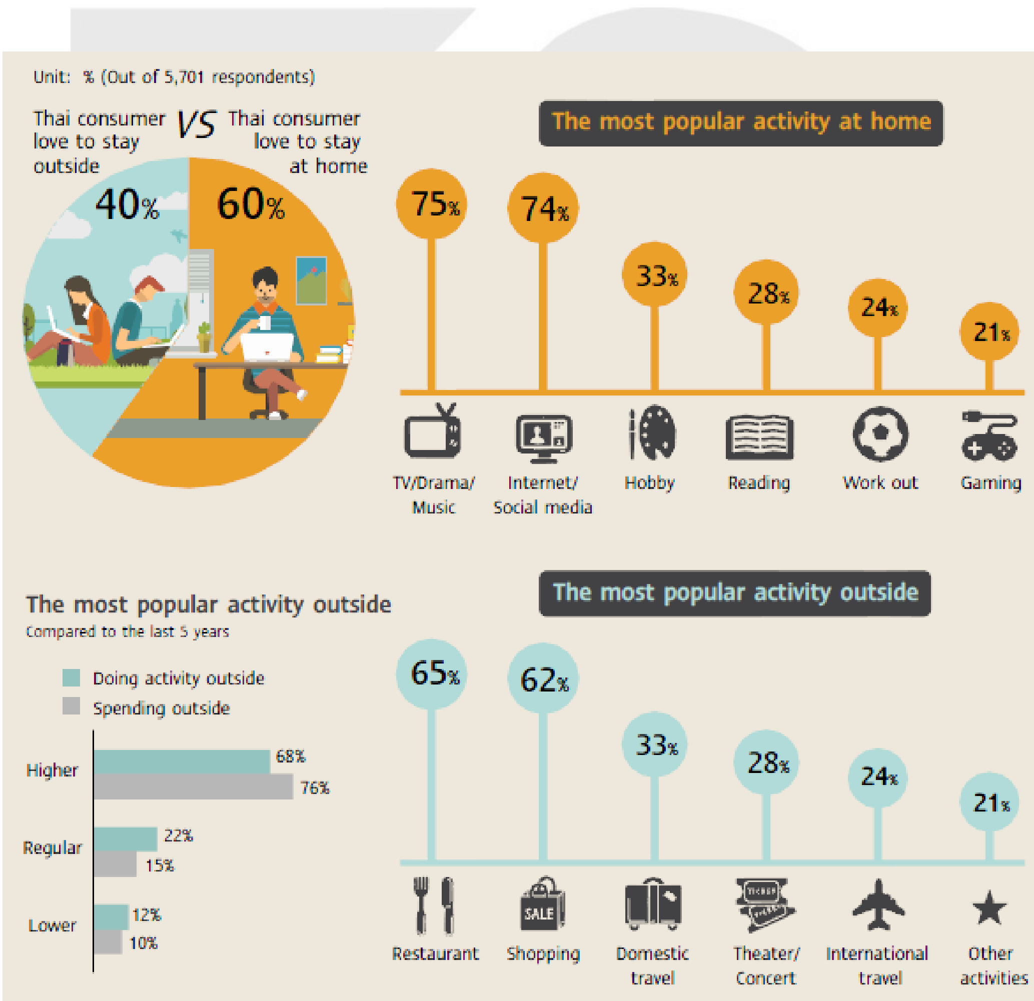


Figure 38: Percentage of Thais consumer activities

3.6 SWOT ANALYSIS

This analysis conducts to evaluate potential of business in both internal and external environment in order to develop the proper strategies to run efficiently organic farm business.

3.6.1 Strengths

- Our farm can produce crop all the year, because of planting in greenhouse. That can meet the demand of consumers.
- Our crops are premium product and high quality in the reasonable price that meet the organic farming standard, such as GAP, organic Thailand. It can value-adding and make reliable in consumers.
- Our location is not far from Amphoe Mueang Chiang Rai, which is easier for approve to our farm, Moreover, we are near Singa Park and Wat Rong Khun.
- All our crops is produce by the professional agriculturist who have more than 20 years' experience in field, such as rice planting, local vegetable and seasonal fruits in order to provide premium products to consumer and delivery directly hand to hand to consumer.

3.6.2 Weaknesses

- We are new coming player in this market
- In the switching period make lower profit in a few years, because we cannot use the organic label in 1 to 1.5 years in beginning.
- Have to wait transition period to be completely organic farm
- Have to acknowledge labour and control production process

3.6.3 Opportunities

The production and organic market of Thailand started almost 30 years later, which in the beginning stage the production emphasized only export market, particularly organic rice. Organic markets continuously increases growth rate every year, since 1998 to 2013, the growth rate of Thai organic production average is 39.9% per year. Although in the 5 years later, the growth average still 18.5%. Thailand Organic product market in 2014 had a total value 2,331.55 million Baht, which divided to be export market valued 1,181.71 million baht or about 77.9% and be domestic market value 514.45

million baht (22.08%). The biggest organic distributors are Modern trade (59.48%), followed by green shops (29.47%) and restaurants (5.85%) (OAD, Study and preparation of data production and marketing situation of organic goods., 2015).

- There are many organization both public and private sectors which support and knowledge producers **(Panyakul, 2016)**.
- Health awareness trend of Thais is more increase and they willing to pay more for their own health and family.
- Following Assessing global organic production compared to the overwhelming majority of conventional production. Currently, organic agriculture represents just over 1% of global agriculture land. But only some crops reached more higher than other such as, coffee; almost 9% represented the organic area, for olives; 6.5% of total world area for these crops was organic **(Willer,H. and Lernoad, J., 2017)**.
- Agro-tourism is more popular both for Thais tourists and Foreigner Tourism.

3.6.4 <u>Threats</u>

- Misunderstanding in Thais consumers

However, the perception and understanding in Thais consumer is important issue. From the study found mostly consumers used to hear about organic agriculture about 92% of respondents around Thailand but mostly had incorrect understanding about organic agriculture (6.51% of all respondents, except in Bangkok Metropolitan Region that could give correct answers more than half about 10.9%). The main issue of misunderstanding topic between the similarity and difference of the standard of organic agriculture and safe toxics agriculture standard, such as organic products, hygiene products, non-pesticide crop, hydroponic vegetable, Q Mark and so on (Greennet, Organic Thai Market reach 2,000 million baht but big issue is a confusion of consumers., 2015).

- Niche market group that is still small market.
- Have competitive from the import product from China, Vietnam, other neighborhood countries.
- The pollution from neighboring countries effect to internal province

- Market channel is quite rare and high price, because modern trades expand and have own production with sign contract farming.

The Summary table 18 of SWOT Analysis of "TAM-GIN-EANG" Organic Farm

STRENGTHS	**WEAKNESSES**
▪ Planting in GREENHOUSE ▪ Premium product with reasonable price + meet standard ▪ Good location, not far from city and airport ▪ Various service to respond new era consumer	▪ Switching period to claim certificate ▪ New player in Market ▪ Limited in some distributor channel, use time to operate
OPPORTUNITIES	**THEATS**
▪ Public and Private organization support ▪ Health awareness trend ▪ Arable organic land still low ▪ A popular of Agro-tourism	▪ Misunderstanding in organic product of Thais consumers ▪ Small market ▪ Neighborhood countries competitors ▪ Modern trade expand their own production

Table 18: A summary of SWOT Analysis

This SWOT Analysis is analyzed by the tool called "Tows Matric" to plan the proper strategy that reduce the future problems and utilize the strength and opportunity to make benefit for organic farm business as follow the table 19.

3.6.5 TOWS MATRIC

		EXTERNAL	
		OPPORTUNITIES	**THREATS**
		O1 Public and Private organization support ***O2*** Health awareness trend ***O3*** Arable organic land still low ***O4*** A popular of Agro-tourism	***T1*** Misunderstanding in organic product of Thais consumers ***T2*** Small market ***T3*** Neighborhood countries competitors ***T4*** Modern trade expand their own production
INTERNAL	**STRENGTHS**	**SO Strategies**	**ST Strategies**
	S1 Planting in greenhouse ***S2*** Premium product with reasonable price + meet standard ***S3*** Good location, not far from city and airport ***S4*** Various service to respond new era consumer	***S4, O2*** Crete proper channels and make it easy to approach for each target group ***S3, O4*** Build Farm shop and create farm trekking activities to attract customer	***S2, S4, T1, T2*** conduct IMC to acknowledge the consumers about the right understanding in organic product via labels and etc.
	WEAKNESS	**WO Strategies**	**WT Strategies**
	W1 Switching period to claim certificate and less knowledge in this field ***W2*** New player in Market /no-name ***W3*** Limited in some distributor channel, use time to operate	***W1, O1*** Participle in the support organization for knowledge ***W2,O2*** Conduct IMC to attract customer ***W3, O1*** Join the support group for find customer and connection	***W1, W2, T1*** Create brand awareness via social media, website and labels. Keep the quality of products for get the standard ***W2, T3, T4*** Planting exotic crops or rare crops for make distinction

Table 19: Tows Matric of "TAM-GIN-EANG" Organic Farm

Following the Tows Matric in the table 19, these strategies are chose for make business success along with the short and long goals. Firstly, the strategies have to motivate the customer and consumer to concern about products and brand. It would create value-added to brand, lead brand to be standardize organic farm and increase sale, which can divide to Offensive Marketing Strategy and Defensive Marketing Strategy as follows;

A. Offensive Marketing Strategy: *S4, O2 and S3, O4 Strategies*

   These strategies focus on make comfortable way for customer to approach our farm product, not only sale in green market or shop only but customer can purchase via online market too. In addition, Farm will open farm shop for sale the product and have coffee service to convince customer to come in our farm to meet and share.

B. Defensive Marketing Strategy: *S2, S4, T1, T2* strategy

   This method would create brand awareness about standard of products and make perceived value for customer to trust in our quality of products via making IMC to approach each customer group. Making brand image that simply and safety but have creative and modern idea.

CHAPTER 4
MANAGEMENT PLAN

Corporate management is another factor of organizational success. It must be clear in each responsible for the understanding of team member and prevent mistakes that will occur in the future.

4.1 ORGANIZATION CHART AND MANAGEMENT CHART

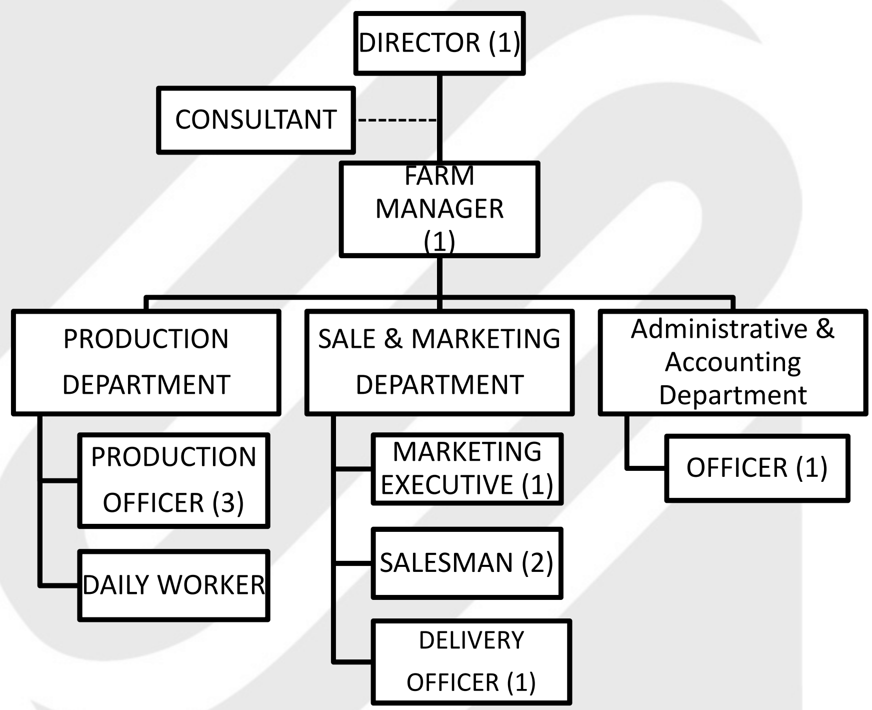


Figure 39: Startup organization chart

4.2 JOB DESCRIPTION AND JOB SPECIFIC FOR MAJOR POSITION

That is a single owner business. Businesses in the form of a Company Limited are divided into sub-departments as follows;

4.2.1 Director: *Kannika Chearjaraswongse*

Education background:

- Master business Administration programs, Major in General business management. Stamford international Universities,

- Bachelor Degree Program of Architecture, Chulalongkorn University

Responsibilities: to plan the strategies and direction of business for each department to success in the goal. Moreover, she has highly experience business development and communication expert.

4.2.2 Consultant: *Monnicha Towandejsiri*

Education background:

- Master of Economics at University of New England
- Bachelor Degree Program of Agriculture, Chiang Mai University

Work Experience:

Work as the specialist in agriculture and give consult for many agriculture organization both public and private organization, such as Earth Net, Green net, which is non-profit organization. This programme is linked with the Organic Farming Programme that focuses on organizing community group organization for local enterprise development.

4.2.3 Farm Manager: 1 position

Qualification

- Male Age less than 30 years old
- Bachelor's degree or equivalent in any fields.
- Agricultural experience not less than 3 years.
- A strong leader with good communication skills
- Pleasant personality, good human relation and co-ordination

Responsibilities: Full-time staff who look after all process in farm and to be the primary consonant and make solutions for every department. Have responsible in conduct the daily report to update situation to director and coordinate with customers or relevant organizations.

4.2.4 Production Officers: 3 positions

Qualification

- Male/Female Age less than 30 years old
- Agricultural experience and healthy

- A good understanding of cropping on the soil.
- Highly detailed, honest and responsible.
- Have patience, diligence and enthusiasm to work all the time.

Duties and Responsibilities

- Maintained for harvesting equipment.
- Plan the production of each vegetable species to suit.
- Responsible for planting vegetables as determined by the farm.
- Responsible for harvesting vegetables over time.
- Responsible for cleaning vegetables, packing and inspecting.
- 6 days working per week, have 2 period working time; 6.00 am -15.00 pm and 08.00 am – 17.00 pm

4.2.5 Daily worker

Number: depend on each season

Qualification

- Male/Female
- Agricultural experience and the local people

Duties and Responsibilities:Responsible for harvesting vegetables over time.

Wage: 300 Baht per day

4.2.6 Marketing Executive: 1 position

Qualification

- Male/Female Age 30-35 years old
- Bachelor's degree or Master's degree in Marketing, Public Relation or Other related fields.
- Have a good communication and personality skills.
- At least 2 years' experience in marketing public relation.

Duties and Responsibilities: Full-time staff who work in part of marketing take photo and plan the detail of advertising for social media and coordinate with other distribution channel. Moreover, there are duties to survey market on field in province and other provinces to collect data for analyzing and planning marketing strategies in order to increase sale and create brand awareness.

4.2.7 Salesman: 1 positions

Qualification

- Male/Female Age less than 30 years old
- The education level is more than high school
- Have a good communication, personality skills
- Self-discipline and strong service-minded
- Experienced candidates will be selected

Duties and Responsibilities: Full-time staff who sale the products at farm shop and via telephone, have knowledge with understanding in farm products and farm systems. The other duties are to making menu of F&B for shop and prepare product for delivery, welcome customers and cleaning shop.

- 6 days working per week, working time; 9.00 am -18.00 pm

4.2.8 Delivery officer: 1 position

Qualification

- Male Age less than 35 years old
- The education level is more than high school
- Possess valid driving license with own transportation, both cars, trucks and motorcycles
- Have good skill in route and on-time
- Honest and reliable

Duties and Responsibilities: Full-time staff who work as deliver product via post office and delivery at home and collect the purchasing order and purchase the equipment according to assigned duties.

4.2.9 Administrator and Accounting officer: 1 position

Qualification

- Male Age less than 40 years old

- Diploma, Bachelor's degree or Master's degree in Financial or accounting experience not less than 2 years
- Highly detailed, honest and responsible.
- Honest and reliable
- No history of fraud.

Duties and Responsibilities:

- Full-time staff
- Gather relevant documents to account for income - daily expenses. And collect weekly to send to the next manager.
- Take care of the debt Receiving payment Receiving billing Customer billing and the costs incurred.
- Collect documents to send to the accounting office.
- Report expenses incurred in each part of each month to the next manager.
- Control unnecessary expenses.
- Report financial status to managers and executives continuously.

4.2.10 Rate of Salary

The farmer's initial salary is set at the following departments:

	POSITION	NUMBER	RATE OF SALARY (minimum)	DURATION	TOTAL for 1 year
1	Director	1	30,000	12	360,000
2	Farm manager	1	25,000	12	300,000
3	Production officer	3	8,500	12	306,000
4	Marketing Executive	1	23,000	12	276,000
5	Salesman	1	10,000	12	120,000
6	Delivery officer	1	9,000	12	108,000
7	Administratoe & Accounting officer	1	13,000	12	156,000
	Total	9			1,626,000

Note: Salaries rose by about 3% in line with the country's overall inflation. Announced by the Bank of Thailand.

Table 20: The table of Salary

4.3 ACTION PLAN

	Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	Study the feasibility of organic farm business								←	2017	→		
2	Improve and prepare land use and all relevant equipment											2017	
3	Apply for organic Thailand standard												
4	Contacting the supplier												
5	Recruitment											2017	
6	Start planting												
7	Create brand awareness via Social Network												
8	Harvest												
9	Promote and sale to customer												

PROCESS IN 2017 PROCESS IN 2018

Table 21: Action Plan of "TAM-GIN-EANG" Organic Farm

CHAPTER 5
MARKETING AND SALES PLAN

5.1 MARKETING STRATEGY

5.1.1 Overall strategy

- **Growth Strategy**

Since, our farm aim to increase capacity in production and created brand until develop farm to be restaurant and farm stay with any activities such as, farm experience tour, work shop or learning center in the future. Therefore, we are in early stage of business, we have to develop, study in variety knowledge both in cultivation and marketing. In addition we have to select the right staffs and sale partner to enhance our basement in beginning.

- **Niche Market Strategy**

Tam-Gin-Eang farm is organic farm, which produce fresh vegetable and exotic fruits. That focuses on specific customer groups who concern in health awareness and vegetarian lovers. Therefore, farm will arrange activities motivating and acknowledge people to realize in the effect of food consumption. Some season, we will meeting in farm for making relations with consumers and make opportunity in presented farm to customer via farm experience tour.

- **Differentiation Strategy**

Organic products are higher price than commodity goods, so developing unique brand image, unique feature and unique customer service are necessary. The key to differentiation is obtaining an advantage that is readily perceived by the consumer. Increased costs can usually be passed on to the buyers due to the uniqueness of the product attributes.

5.1.2 Market Segmentation

Consumers were classified 2 categories;

- **Personal consumer**

Personal consumers purchase for using by themselves, or for family, or gifts. These were called end user or ultimate consumer, which categories as follows in figure 40 and table 22 (OAD, 2015);

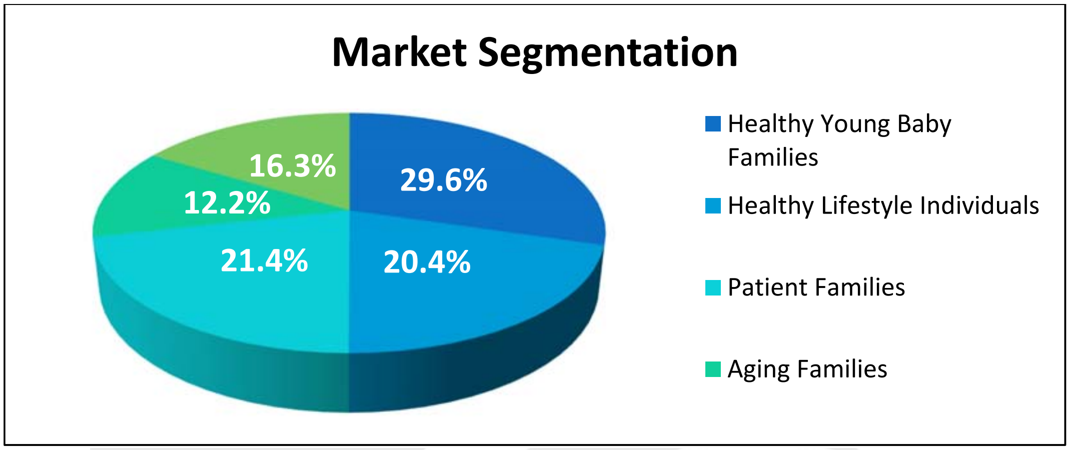


Figure 40: Market Segmentation of Organic Farm Business (OAD, 2015)

Organic consumers in Thailand		Market size
Healthy Young Baby Families		**29.6%**
Character	New generation family, have baby	
Age	35+	
Income	A/A+	
Personal Preference	Health and safety concern (not sickness)	
	Interested in organic food for baby and themselves	
	High Alertness	
	Learn from internet	
Healthy Lifestyle Individuals		**20.4%**
Character	Single or married but do not have children mostly graduate from abroad	
Age	30+	
Income	A/A+	
Personal Preference	Health and safety concern (not sickness)	
Patient Families		**21.4%**
Character	At least one of family member has serious illness, such as cancer, heart disease. Therefore, they have to purchase organic food for elder relatives.	
Income	A/A+	
Aging Families		**12.2%**
Character	Buyer and consumers are elders who concern in health	

Age	50+	
Income	A/A+	
Expat Families		**16.3%**
Character	Buyer and consumers are foreigners (Asian and others) that one works in Thailand (private company or international organization) and percept about organic agriculture from previous.	
Age	30+	
Income	A/A+	

Table 22: Characteristic of consumer in each segment and market size (OAD, 2015)

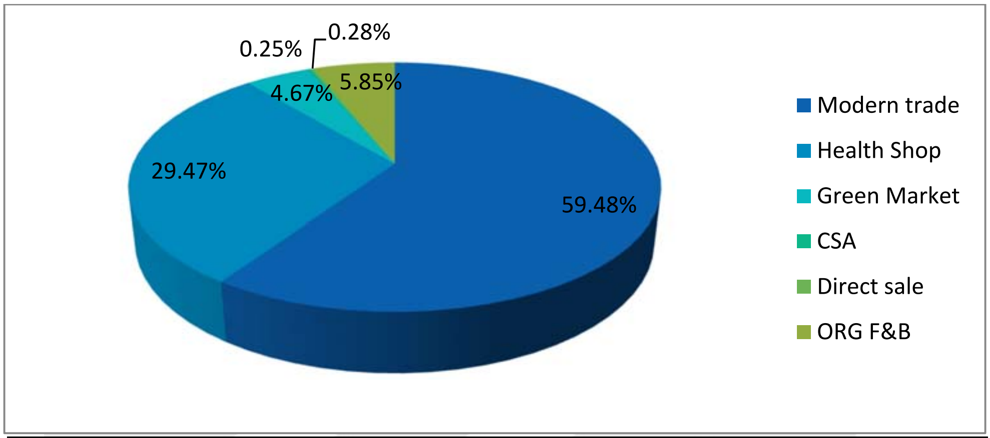
- **Organization consumer**

This group is the customer who purchase in lots of produce per one time or the customers who make contract with farm to deliver products in some continues period, such as every 2 days or every week and need fresh product and available products for their ingredients. This customer group consists of restaurants, hotels, schools, hospitals, the modern trade and etc. The consumer organization is an organization that aims to profit or a non-profit organization, both State organizations and institutions. These organizations have bought goods, tools and services for use in operations such as purchasing ingredients for use in the manufacture of goods (Waratornpaibul, 2014). That shows in table 23 and figure 41 as follows;

Type	Quantity	% Proportion of consumers	
Modern trade with organic goods	8 company, 171 branches	unidentified	
Green Shop/ Health shop	33 shops (total all branches)	Young generation Aging Family Foreigners Young Baby Families Patients Families	27% 20% 19% 18% 15%
Green Market (2015)	24 places (in 6 provinces)	Young generation Aging Family Patients Families	30.7% 30.7% 13.8%

Organic food and beverage shop	19	Health awareness people	

Table 23: The percentage of consumers in each distributor channel



	Modern trade	Health shop	Green Market	CSA	Direct sale	ORG F&B
Total value (million Baht)	306.00	151.62	24.02	1.28	1.45	30.08

Figure 41: The total value of distributor channel

In the part of organization consumers, we focus on healthy restaurants and hospital that have daily demand. Moreover, we intend to increase capacity in production and expand our market channel to modern trade in the future. Therefore, the certificate standards are necessary for growing in this process. Because it will add-values and create reliable in brand.

5.1.3 Market Target

- **Personal consumer**

"TAM-GIN-EANG" Organic Farm focus on health awareness group both ageing people and new generation. The main of target group in the beginning stage is the group of '***Healthy Lifestyle Individuals'*** and the following is '***the Expat Families'***. Because the demand still common, not too specific that proper with our farm in the beginning process. Moreover, from the research showed female consumers brought organic product more than male consumers, because they are main shoppers for household. Thus, the main end users are *women* who have duties to purchase food for their family and *household income more than 30,000 THB*, which include good education, influence in family to motivate them to eat healthy food. It is possible; they are still working or are housewife. Therefore, marketing strategy should make easier in shopping method and advertisement. The market strategies that we intend to apply with end users are membership system, online marketing and delivery service. We emphasize to build good relationship, satisfaction to customer with premium products in reasonable prices, in order to make customer loyalty (OAD, 2015).

Summary of Market Target	
Gender	Female (majority)
Age	25 and above
Income	30,000 and above
Personal Preference	Health awareness or pay special attention in someone, such as children, elders, patients.
Family size	2 members and above
behavior	Focus on safety and health
	Convenience concern

Figure 42: The summary of Target Market

- **Organization consumer**

In the beginning street our farm will focus on small to medium organizations like restaurants, but in the next stage we will approach to big organizations when the farm can control the capacity of production, quality and get the standard certification.

For the location of the customer group that we are interested locate on north region first in the beginning stage and will expand more to other region in the following period (OAD, 2015).

5.1.4 Market position

We position our farm in premium product with reasonable price that consumers can reliable in our brand. Moreover, our farm offer other service for responding to new era consumer, such as beautiful packaging with detail of products, the easy approach to our product in multi-methods and etc. The following Figure 40 shows the position of brand in market. In the term of high quality means the product that pass standard of organic products. And low quality means the products that do not pass the organic standard but can be chemical safety control products or hygiene products. That shows in figure 43 as follows;

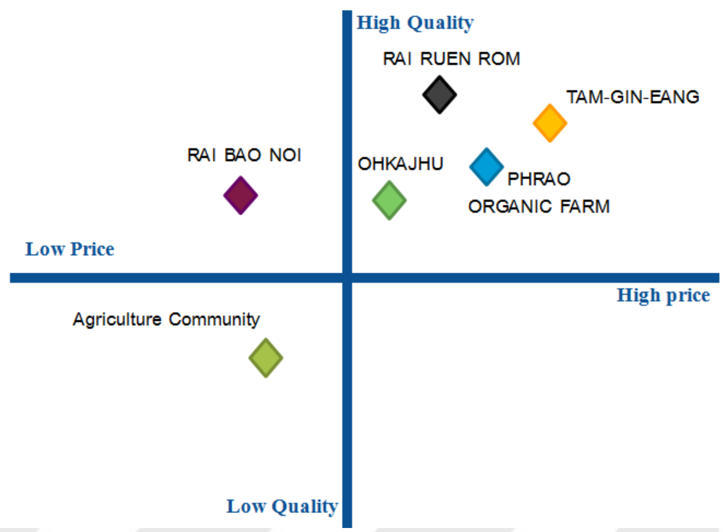


Figure 43: Brand Perceptual Map

5.2 MARKET MIX

5.2.1 Product Strategy

Our products are shopping goods that offer in Business-to-Business (B2B) and Business-to-Consumer (B2C). In the Production Strategy, we intend to select high demand vegetables and useful followed the research. Moreover, in first period Tam-Gin-Eang Farm intends to attend in community enterprises of Chiang Rai in order to create base customer and build partnership with local agriculture. Our product consists of as follows in table 24;

	Product Categories	example	Target customers	%Break down
1	**Salad Mix**	Green Oak Lettuce, Red Oak Lettuce, Green coral lettuce, Red coral lettuce, Butter head Lettuce, Green Cos lettuce, Iceberg lettuce	Young generation consumer Healthy restaurant Hotel Modern trade Green shop	
2	**Fresh vegetable**	Chinese Kale, Lettuce, Carrot, Lemon Grass, Tomato, Chinese cabbage, Celery,	Health concern consumer Healthy restaurant Modern trade	

		Moring glory, Yard long bean, Pumpkin, cucumber	Green shop
3	**Fresh fruit**	Mulberry, Fig, Raspberry,	Health concern consumer Modern trade Green shop
4	**Processing Fruit**	Juice, Dried fruit, Jam	Consumer who concern in convenience
5	**Species Branch for Planting**	Mulberry, Fig, Raspberry	Farmers Growing by own
6	**Beginning planting set**	vegetable	Growing by own

Table 24: The summary of Market Mix

The percentage breakdown of the products

The green house size is 6 meters width and 30 meters long. For planting in green house, it divides to 13 vegetable beds; each bed has 1.20-1.25 meters width and 4.2 meters long. It has walkway around and each bed separate by walkway width 0.90 meters. In each bed can plant 5 columns x 17 rows, therefore one bed can produce 85 plants by spacing plant in each plant about 20-25 centimeters. The total capacity production per green house is about 1,105 plants.

- **Salad vegetable**

In the startup period, we start 4 salad vegetable species which have high demand and after testing market we will add more other species to make our farm crops diversify. Farm will use 2 greenhouses for planting Salad vegetable. That cans product 2,210 plants. Farm needs to deliver salad every week, so we divide planting bed to 5 periods, so in 442 plants. We divide to each species following the below figure 10. The capacity of production for Salad vegetable is about 100-105 kilogram per week. That shows in table 25 as follows;

Type	**Weight per Plant (gram)**	**Quantity (Plants) per Kg.**	**Price (Baht) per Plants**	**Price (Baht) Per Kg.**	**% quantity in farm per week**	**Quantity (plants) per week**	**Capacity (Kg.) Per week**
Green Cos	250	4	35	140	40%	176	44.0
Green Oak	200	5	30	140	20%	88	17.6

Red Oak	100	10	15	120	20%	100	10.0
Frillier Iceberg	200	5	30	140	20%	88	17.6

Table 25: Green house management for planting Salad to sale every week

- **Seasonal vegetable**

In the startup period, we start with 4 kinds of vegetables that have high demand from market, include Chinese kale, Chinese lettuce, Tomato and Celery. The total area for seasonal vegetable planting is 1 greenhouse and 3 rais. The percentage of production is following the table 26;

Type	Quantity of Planting seed (gram per rai)	Number of output per area (kg. per rai)	Area (rai)	Quantity of crop (kg.)	No. of harvest per year (times)	Price (Baht) Per Kg.
Chinese Kale	800	1,500-2,000	½	750-1,000	6	35
Chinese lettuce	100-160	1,100-3,000	½	550-1,500	6	30
Tomato	30-40	3,600	½	1,800	3	50
Celery (Year after year)	100	1,450	1 GH & ½	850	3	40-100
Yard long bean	3-4 Kg.	1,500	½	750	6	70

Table 26: Management for planting Seasonal vegetable to sale in one year

- **Exotic Vegetable and Fruit**

In the first stage start with 3 type of fruit as follows;

- **Mulberry**

Mulberry plants in 1 rai, has 100 trees. The output is about 150-3,500 kg., depend on the age of tree. Mulberry farm product consists of fresh fruit, species branch, jam, juice and tea.

- **Fig**

Fig plants in 1 greenhouse, has 90 trees. The output is about 270 kg. Fig farm product consists of fresh fruit, dried fruit and species branch.

- **Raspberry**

The output is about 200 kg.

5.2.2 Price Strategy

Our customers consist of 2 categories; personal consumers and organization consumer. Therefore, in price strategy we select skimming pricing and bundle pricing for our product. The price of fresh vegetable and fruit high fluctuate which depend on season effecting to a number of crop in each season. That shows in table 27-30 as follows;

Salad Mix

Vegetable type	Wholesale price (THB/ Kg)	Retail Price (THB/ Kg)
Green Cos	100	140
Green Oak	100	140
Red Oak	100	120
Frillier Iceberg	100	140

Table 27: The Price list of Salad Mix

Seasonal Vegetable

Vegetable type	TAM-GIN-EANG		Other organic farm	Non-organic crop price	unit
	Wholesale price	Retail Price			
Chinese Kale	25	35	35	12	kg
Chinese lettuce	20	30	30	10	kg
Tomato	40	50	50	16	kg
Celery (Year after year)	60	70	70	20	kg
Yard long bean	65	70	70	30	kg

Table 28: The price list of Seasonal Vegetable

Fruit

Fruit type	Wholesale price (THB/ Kg)	Retail Price (THB/ Kg)

Mulberry	200	240-300
Fig	250	300-400

Table 29: The price list of Fruit

Our farm fixes a cost of product by considering base on capital and market price in each season. The setting price is minimum cost which can fluctuate follow market demand and the species of each plant. The price of retail cost is higher than wholesale cost about 40%.

Processing Fruit

type	TAM-GIN-EANG	Non-organic crop price	unit
Jam	100	100	jar
juice	35	35	bottle
Tea	120	150	box
Ice-cream	35	40	cup
Dried fig	200	250	pack

Table 30: Processing fruit product price

Species Branch for Planting

type	Thai breed (THB/Branch)	Abroad breed (THB/Branch)
Mulberry	50-500	350-2,000
Fig	200-500	500-1,500

Table 31: species branch price

Beginning planting set: 50 THB/set

5.2.3 Place Strategy

Our farm locates in Chiang Rai which is not far from city and near the highlight landmark of Chiang Rai, such as Singha Park, Wat Rong Khun and etc. Therefore, our farm can approach easily. Moreover, the area 33 rai consist of mountain, pond, orchard and vegetable garden which is proper for farm experience activities in future.

Distribution channel

Agriculture community enterprise; ‘Chiang Rai Green network’

This group conducts by the state organization, which support the local farmer to practice more in organic agriculture and create the community food security. The objective of this project includes;

- Promote and develop farmers' potential. To be able to upgrade production standards to be safe.
- Develop distribution channels for safe agricultural products and expand the access to safe food to consumers.
- Promote and develop food safety management in restaurants.
- Encourage and develop tourism: Health and Wellness: Lanna style
- Communicate campaign to raise awareness of green agriculture and food safety (ThaiHealth, 2016).

Therefore, we intend to start with this distribution channel in first period to study in agriculture market and create perception of brand.

Green Market

This distribution channel is the way to communicate with end consumers and make opportunity to introduce product and contact channel directly to consumers. It can create brand recognition and sales. The advantage of Green market channel is chance to connect with multiple consumer groups and most of them quite have positive attitude and knowledge about organic product. The 3 provinces that have many green markets include Chiang Mai, Bangkok and Yasothon (OAD, Study and preparation of data production and marketing situation of organic goods., 2015). Therefore, our farm will focus on the green market in Chiang Mai or nearby provinces first and Bangkok in the next stage.

Direct sale

We offer our product via farm and directly contact from internet, telephone, and walk-in. We will have deliver service in condition of each product. This channel we offer a convenience and comfortableness to customer to purchase in the proper method. It is created relationship to customer in reliable product.

Restaurant/Hospital/Hotel

The restaurant and hotel are another distribution channel of agriculture crop. From the research showed consumer willing to purchase more when go out their home (SCBEIC, Insight unlocking the secrets of the digital consumers, 2017). This channel have uses crop in daily in countable quantity, which is easier from producers in calculate crop and delivery in amount of contact.

Modern trade

In the future, we intend to sale our product via modern trade, when capacity production is steady. Because this channel is powerful distribute produce. Moreover, the number of department store and shopping mall are increasing in many provinces, which is a good opportunity of producers. However, we will upgrade our production to get certification to add value to product too. In the process of certification, we will take at least one to one and half years in process.

5.2.4 Promotion Strategy

Since, our farm is in the early stage, so we intend to create brand recognition and boost sales via various elements as follows;

Advertising

It is the importance part that cannot overlook, we uses both offline and online advertisement in order to approach every aged consumers like;

- *Brochures*

Tam-Gin-Eang will place will other CSA business such as the local organic bakery, organic restaurant and when we sale product as green market or other events. Moreover, we will add some discount coupon in our brochures and privilege to customer who directly purchase via our farm.

- *Billboard*
- *Website*

Tam-Gin-Eang's website and social media will present about our farm and show the production process or what we value. It will provide additional marketing information, map and location when we have outdoor activities or about the place that we sale products, except our farm. We will show the special offer to customer.

Moreover, we will create video clip to acknowledge consumer about product and uses for enhance people to take care their health in many topic. The website will also have links to the current weekly newsletter for during season, off season and what new and exciting produce will be available in the upcoming season.

- *Social media*

In the part of social media includes Facebook, Instagram and Line. We will use this channel to communicate and present healthy lifestyle to consumers. Furthermore, we will create some activities online that give reward or special gift to respondents. For instance, Like & share gets discount or special products or e-coupon.

- *Word of Mouth is important role*

Events & Activities for increasing sale

- *Open Farm in special day of years* as follows in table 32

January	February	March	April
New Year's Day Kids day	Valentine Day		Songkran Festival Day
Chinese New Year's period			
May	June	July	August
International Day of Families			Mother day
September	October	November	December
	Chinese Veggie Festival (9 days)		Father Day

Table 32: The events & activities of farm

- *Workshop to civil or environment group*
- *Gift set or promotion package for visitors and online respondents.*
- *Farm tour and pick some crops*
- *Gift set in special occasion to loyalty customer ex: Birthday organic gift*
- *Seasonal Promotion*

5.3 SALES MANAGEMENT

The first year planting calendar shows in table 33 as follows;

List	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Salad	**Planting period 55-60 days**											
Vegetable	**Planting period (fastest is 45-55 days)**											
Mulberry	**Planting period 8-12 months**											
Fig	**Planting period 8 months**											

**Note: The color show the start period sale for each crop*

Table 33: The 1st year plan

Every crop have period of growing, but most of our product were already planted in farm, so in the part of sale management we can start sale in the first month of next year. Although, mulberries and figs were already planting about one year ago, so they are still young. The Yield crop in the early will gradually increase month-by-month depends on the strong of trees.

Due to the technic of planting and planting in green house, those we studied make our farm has crop all of the years and can send products to distributors every week. For instance, the part of Salad vegetables, we will start seeding to seeding tray every week in order to harvesting in every week and have rotary crop with enough for every season. In the part of seasonal vegetable, we select various plants type to fulfill sale in each season in order to have enough crop to customers. However, the seasons are still effect to the yield of crop which we have to solve it follow case by case.

CHAPTER 6
OPERATIONAL PLAN

6.1 THE OPERATION PLAN

6.1.1 The selection of organic production area

The standard organic farm with certification must control the usage of land both soil, water resource, fertilizer and surround area. The selected land has to investigate previous land usage at least 3 years with non-chemical usage for switch to organic practice. In the 33 rais area of farm is the land that far from the main road about 1 kilometers and non-nearby the factory. The surrounding area do not use for the chemical agriculture practice. The existing asset is 2 ponds, 4 green house, building and 3 rais planting area. Farm chooses 3 rais area more for expanded planting and about 2 rais for other criteria. The site area shows in figure 44 as below;

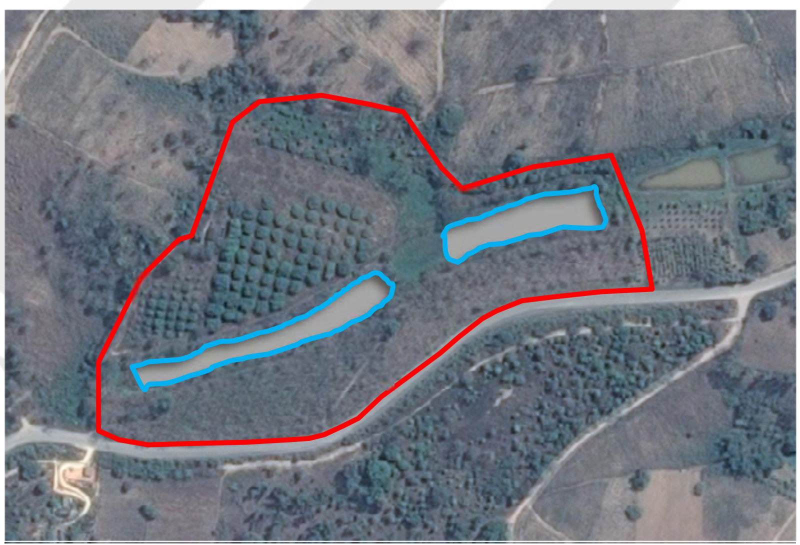


Figure 44: Farm land

6.1.2 Management planning

The preparation of land usage in organic farm has 2 main topics to planning;

- **Protection from contamination in soil, water and air**

For request the standard certificate, the producers have to plan and record all protection of contaminated in farm level, such as planting buffer zone crops, waste disposal system, drainage system, maintenance equipment system and the carrying items from in and out of farm.

- **Cropping management in planting area and cropping system**

For example; season for planting, proper planting system, selecting tools and equipment, preparing planting bed since seeding until harvesting and etc.

6.1.3 <u>Breeding selection</u>

- To concern about the proper of soil, weather, pests resistance and Biodiversity conservation
- The seed selecting come from the reliable sources.

6.1.4 <u>Management and improvement of soil</u>

The every step has to use organic material and natural material. The example of this step includes;

- Growing Legumes for future natural fertilizer
- Putting manure, compost, debris
- Repairing the pH of soil

6.1.5 <u>Pest management plan</u>

For this step divides to 2 periods to concern as follows;

A. Before Planting
    a. Use the resistance seed for planting
    b. Preparation of breeding and planting bed about 1-2 weeks before
B. Plant growing period
    a. Disease control
    b. Insect control
    c. Weed control

6.1.6 <u>Storage, Sorting and Transportation</u>

Organic products or products must be extracted from the non-organic products in all process since the move within production to transportation for sell and attaches clearly signed. The organic crop must be prevented from the contaminated in every process and Store in a clean place.

6.2 CHART OF OPERATION PLAN

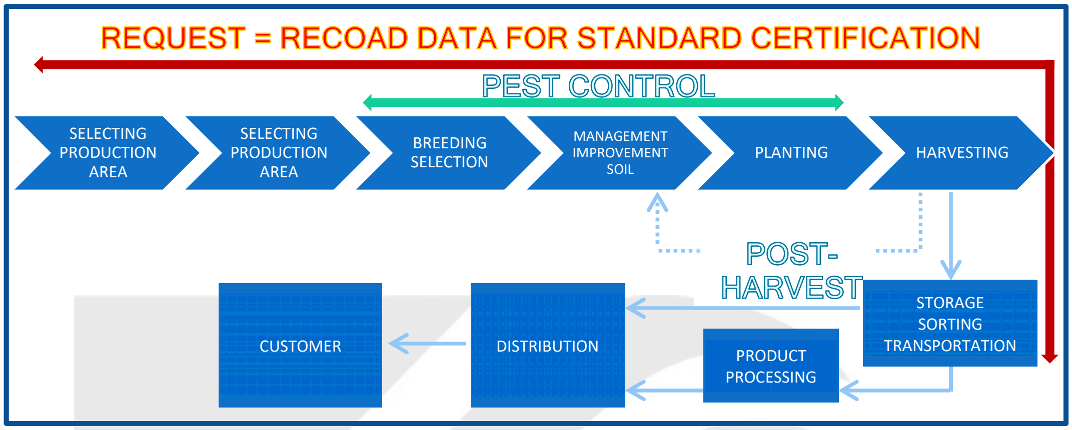


Figure 45: "TAM-GIN-EANG" Organic Farm operation plan

6.3 PLANTING PROCESS

6.3.1 Salad Vegetable

Salad vegetables have planting period about 55 – 60 days and can grow in every season. But the yield crop fluctuate follow each season. We will seed every 7 days in order to get crop to sale every week. The detail shows in the table 34 and 35 as follows;

Permanent Installations (for future expanding)

No.	List	Price / item	Price
1	Greenhouse (3 houses) size 3.5 x 6 meters, Height 1.90 meters		
	Elements; - iron tube Ø ½" length 6 meter; 5 tubes for bend and 3 tubes for structure - transparency plastic sheet width 6 meters	7,000	3 x 7,000 = 21,000
2	Sprinkle set		
	1 set: area 18 meters 20 items @1 – 2 meters	4,000	4,000
	total		25,000

Table 34: The Permanent Equipment of Salad planting for future expansion

Equipment

For planting area 1.30 x 10 meter; for 1 greenhouses

No.	List	Price / item	Price
1	Plastic flooring size 1.30 x 1.80 meters		2,350 THHB
2	Soil	-	-
3	Seeding tray 104 holes	15 THB	15 x 100 = 1,500 THB
4	Coconut husk thoroughly	80 THB	80 THB
5	Seed 5 species	100 THB	100 x 5 = 500 THB
6	Hoe, shovel	-	-
7	Clay pot (for breeding)	35 THB	35 x 20 = 700 THB
8	Black bag 12 inch (for breeding)	45 THB/kg	45 x 25 = 225 THB
		Total	5,355 THB

Table 35: The equipment of Salad planting for future expansion (Boonyakornchanok, 2017)

Production Process

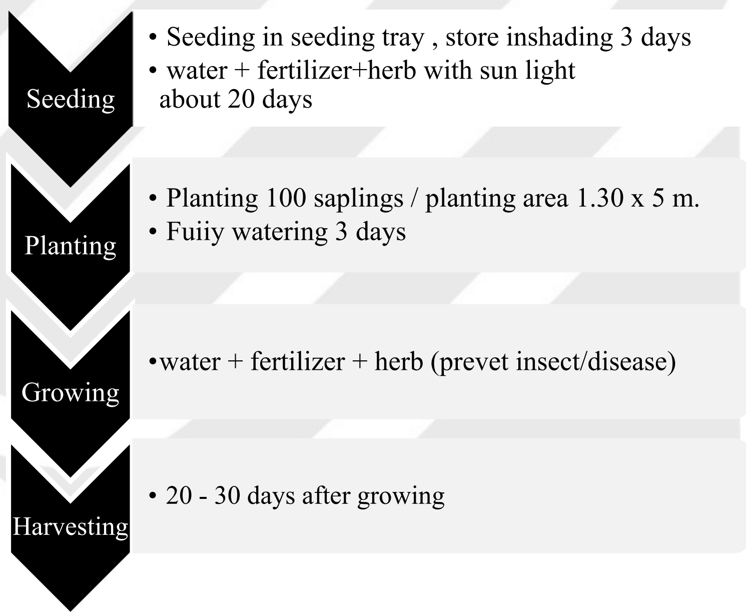


Figure 46: The production process of Salad planting

Crop management of Salad

- 100 THB / kg (price at farm)
- 140-170 THB / kg (for retail price)

6.3.2 Seasonal vegetable

Vegetable type	Harvesting Period (days)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chinese Kale	45-60												
Chinese lettuce	60-90												
Agasta	90												
Tomato	60-70												
Celery	45-50												
Yard long bean	50-60												

Table 36: The calendar planting for seasonal vegetable in the beginning stage

6.3.3 Mulberry

In 1 rai can plant 100 fig trees. Mulberry can grow in every season but grow faster in rainy season, since May. It depends on technic of trimming branch to make to produce fruit every season. In the first year, planting mulberry should let it grow enough. We intend to selecting both domestic species and aboard species.

Production Process

Planting
- Planting distance 4x4 meters (for tree)
- have to bend branch for motivative
- Brance distance 2-3 meters / branch

Growing
- water + fertilizer
- 8 months later; start producing fruit
- but mature growth and Full yield at the age of 2 years.

Harvestin g
- 3 times per year; rest 3 months
- harvert every 2 day
- mature mulberry produces 1.5-35 kg / tree

Figure 47: The production process of Salad planting

Diagram of planting mulberry

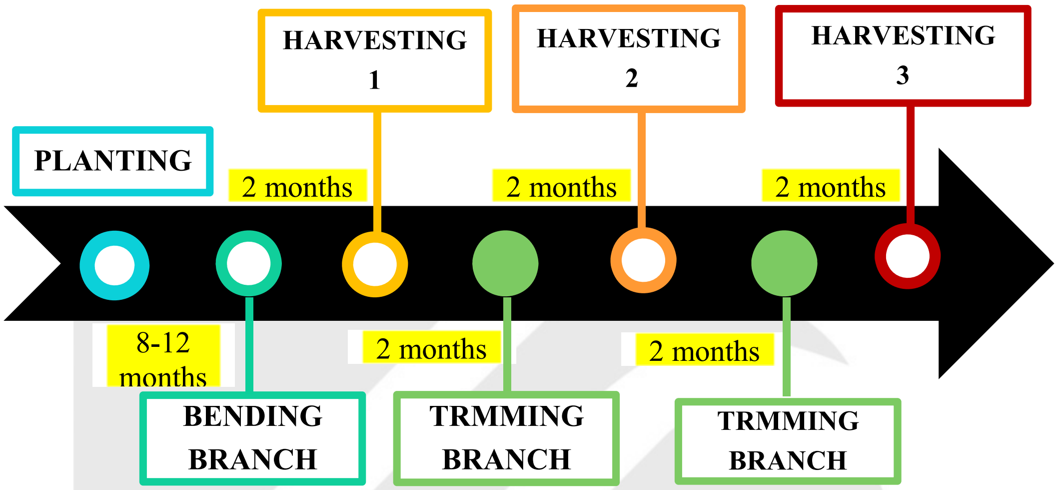


Figure 48: Planting plan of Mulberry

Crop management of mulberry

Fresh fruit for Eating	Processing product
• 200 THB / kg (price at farm) • 240 - 300 THB / kg (for retail price)	• 60-70 THB / kg • Processing in our farm • juice, Jam, dried fruit, Yogurt

Table 37: Crop management of Mulberry

Human resource

Wage for fruit picker: 40 THB / kg, 1 day: 8 kg

*Have to pick fruit every 2-3 days, because it can attack from fungus

Source: (Butkhup, 2012; QSDS, 2016; ThaiJobsGov, 2017)

6.3.4 Fig

Normally fig plants by branches and should plant in greenhouse to prevent insect and disease. Because fig can grow well in base soil, so planting should not use chemical fertilizer that makes acidic soil.

<u>Equipment</u>

1. Greenhouse size 15 x 30 meters, Height 4 meters

   For area about 800 square meters

The greenhouse helps to protect fig from insect and disease because we do not use chemical. The roof covers with plastic sheet and besides cover with wire screen.

2. Automatic Mini sprinkler system
   - 2 times per day and 2 minutes per time
   - 1000 liters per day
   - Water supply 10 THB per day
3. Fertilizer
4. Water fertilizer
5. EM + manure (once a month)

   All fertilizers develop taste of fruit and modify soil structure.

<u>Production Process</u>

We plant various species, both thick peel species for eat fresh fruit, thin peel species for processing and species for dried processing.

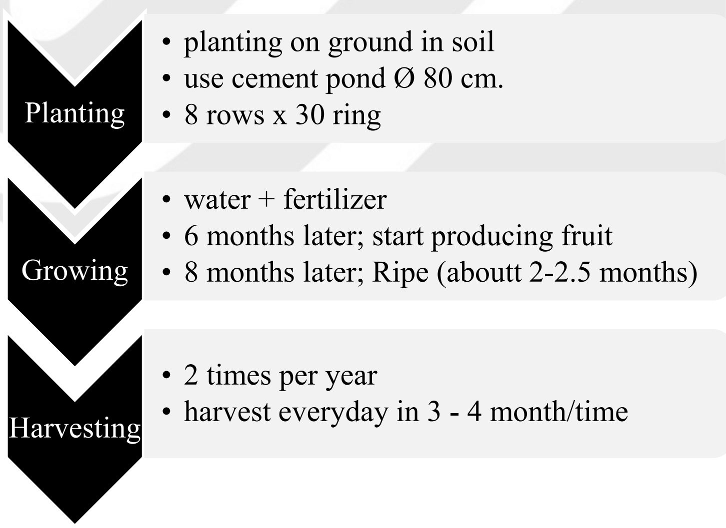


Figure 49: The production process of Fig planting

<u>Crop management of fig</u>

Fresh fruit for Eating	Dried Fig	Processing product
• Sale to agent at BKK and Chiang Mai • 200-300 THB / kg (price at farm)	• 1000 THB / kg • Solar incubator 20,000 THB / machine. Day – sun light Night – Spotlight Automatically on-off • 3 day for processing	• Peeling and freeze, then send to manufacture at Lampang every 2 day, 20-30 kg / time. • Processing in our farm • juice, jam, mincemeat

Table 38: Crop management of Fig (Rojanaportip, 2015; Bumrungvej, 2017)

CHAPTER 7
FINANCIAL PLAN

Financial planning is another process that is necessary for efficiency business. It reduces the risks and prepares enough start-up funds for operated business. Moreover, the financial plan will analyze and predict the future financial structure of business, thus the company can prepare the solutions to handle the future problems or other opportunities to expand business.

7.1 THE FINANCIAL GOAL

1. The payback period is set within 3 years, for reducing risk in investment and brings the profit to expand the business.

2. The start-up fund is about 3,246,350 baht from the owner's equity.

3. The minimum working capital is at lease 813,000baht to maintain liquidity of the business. It is used for the monthly expenses if an emergency situation occurs.

7.2 THE START-UP FUNDS

Table 39: The summary Start-Up Funds

Required Start-Up Funds		Amount	%
Fixed Assets			
	Building	1,840,000.00	56.68%
	Landscape Improvement	140,000.00	4.31%
	Equipment	182,500.00	5.62%
	Furniture and Fixtures	25,000.00	0.77%
	Vehicles	142,000.00	4.37%
Total Fixed Assets			**2,329,500.00**
Operating Capital			
	Pre-opening Salaries and Wages	55,000.00	1.69%
	Utility	10,000.00	0.31%
	Supplies	8,850.00	0.27%
	Advertising and promotions	20,000.00	0.62%
	Other Initial Start-Up Cost	10,000.00	0.31%

	Working Capital (Cash On Hand)	813,000.00	25.04%
Total Operating Capital			**916,850.00**
TOTAL REQUIRED FUNDS			**3,246,350.00**

Table 39: The requiring Start-Up Funds

Table 40: The Source of Funds

Sources of Funds		**Amount**	**Totals (Baht)**
	Owner's Equity	61.70%	2,000,000.00
	Additional loans or Debt		
	Commercial Loan	38.30%	1,241,350
TOTAL SOURCE OF FUNDS			**3,246,350.00**

Table 40: The Source of funds

Form table 40, farm intends to invest by the owner's equity and borrow from bank with the proportion about 60%: 40%. The initial investment is 3,246,350 baht. We increase sale plan year-by-year to make payback period in 3 years. The loan rate is 7% and loan payment period within 84 months.

Table 41: Fixed Asset detail

No.	**Detail**	**Qty.**	**Price/Item**	**Totals (Baht)**
FIXED ASSET				
1	**Land**			
1.1	Landscape Improvement	-	20,000.00	20,000.00
1.2	Parking area: 20 cars	-	20,000.00	20,000.00
1.3	Event Court (500 square meters)	-	100,000.00	100,000.00
	total			**140,000.00**
2	**Building**			
2.1	Green house Size: 6 x 30 meters	4	60,000.00	available
2.2	Sorting and cleaning building (50 square meter)	1	400,000.00	available

2.3	Storage for Agricultural equipment (36 square meter)	1	50,000.00	available
2.4	Office building (30 square meter)	1	250,000.00	available
2.5	Farm Shop (100 square meter)	1	640,000.00	640,000.00
2.6	Roof covering (800 square meter)	-	800,000.00	800,000.00
2.7	Restroom (50 square meter)	1	400,000.00	400,000.00
	total			**1,840,000.00**
3	**Equipment**			
3.1	Agricultural machinery and equipment	-	10,000.00	available
3.2	Supply water system	-	30,000.00	available
3.3	Freezer vertical (1,590 lit)	1	37,500.00	37,500.00
3.4	Vegetable freezer (208 lit)	2	16,000.00	32,000.00
3.5	Solar incubator	1	20,000.00	20,000.00
3.6	CCTV	4	5,000.00	20,000.00
3.7	Computer	2	25,000.00	50,000.00
3.8	Packaging equipment	1	5,000.00	5,000.00
3.9	Cashier machine	1	3,000.00	3,000.00
3.10	Equipment in farm shop	-	15,000.00	15,000.00
	total			**182,500.00**
4	**Furniture and Fixture**			
4.1	Furniture in office	-	5,000.00	5,000.00
4.2	Furniture in shop	-	20,000.00	20,000.00
	total			25,000.00
5	**Vehicles**			
4.1	Truck with freezer room	1	100,000.00	100,000.00
4.2	motorcycle	1	42,000.00	42,000.00
	total			**142,000.00**
	TOTAL FIXED ASSET			**2,329,500.00**

Table 41: The Fixed asset Detail

Table 42: Operation Capital detail

No.	Detail	Qty.	Price/Item	Total (Baht)

Operating Capital						
6	**Pre-Opening Salaries and Wages (1st months)**					
6.1	Director	1	30,000	30,000.00		
6.2	Farm manager	1	25,000	25,000.00		
6.3	Production officer	3	8,500	25,500.00		
	total			**55,000.00**		
7	**Advertising and Promotions**					**20,0**
8	**Utility**				**10,000.00**	
9	**Supplies**					
	Plastic flooring 1.30x180 meters	1	2,350.00	2,350.00		
	seeding tray 104 holes	100	15.00	1,500.00		
	Agricuultural supplier					**5,00**
	total					**8,85**
10	**Working Capital (Cash On Hand)**					**813,**
11	**Other Initial Start-Up Costs**					**10,0**

Table 42: Operating Capital detail

7.3 THE SALE FORECAST

Because organic product is the high quality product for setting the sale price will be higher than general agriculture crop about 20-30% the reference sale price for Tai Market, where is the big market of vegetable and fruit in Thailand and the price is lower than supermarket price about 10-15%. In the first year, we forecast the sale about 80% of production in fresh drop and 90% in processing product and beginning planting set and 100% of species branch. The detail shows in table 43 as below;

Table 43: The estimated of capacity of production and sale of 1st year

List	No. of products per month	No. of sale per month	unit	No. of month for sale (time)	Sale price	Income per month (Baht)	Income per year (Baht)
Salad Mix							
Green Cos	704	563.20	kg	10	100	56,320.00	563,200.00
Green Oak	352	281.60	kg	10	100	28,160.00	281,600.00
Red Oak	400	320.00	kg	10	100	32,000.00	320,000.00
Frillier Iceberg	352	281.60	kg	10	100	28,160.00	281,600.00
Seasonal Vegetable							
Chinese Kale	750	600.00	kg	6	35	21,000.00	126,000.00
Chinese lettuce	550	440.00	kg	6	30	13,200.00	79,200.00
Tomato	1800	1,440.00	kg	3	50	72,000.00	216,000.00
Celery (Year after year)	850	680.00	kg	3	70	47,600.00	142,800.00
Yard long bean	750	600.00	kg	6	60	36,000.00	216,000.00
Fruits							
Mulberry	1000	800	kg	3	200	160,000.00	480,000.00
Fig	300	240	kg	2	250	60,000.00	120,000.00
Raspberry	200	160	kg	3	200	32,000.00	96,000.00
Processing product							
Juice	300	270	bottle	10	35	9,450.00	94,500.00
Dried fruit	200	180	kg	10	50	9,000.00	90,000.00
Jam	100	90	jar	10	40	3,600.00	36,000.00
Species Branches							
Mulberry -Thai species	50	50	branch	3	50	2,500.00	7,500.00
Mulberry -Abroad species	30	30	branch	3	350	10,500.00	31,500.00

Fig	50	50	branch	3	300	15,000.00	45,000.00
Raspberry	50	50	branch	3	150	7,500.00	22,500.00
Beginning Set							
Set	50	45	set	3	50	2,250.00	6,750.00
Farm Tour							
Tourist	30		person	1	50	1,500.00	3,000.00
TOTAL						**647,740.00**	**3,259,150.00**

Table 43: The 1st year sale forecast

In the table 43 shows the 1st year sale forecast which will be continuously increase in the following years until the sale 100% in 3rd year and will increase the capacity of production after 3 year later. In addition, we forecast our products cannot sale 100% of production, so we intend to divide some of product use gifts or tester products for promoting our farm. The price of product will increase at least 3% per year follow the inflation rate.

1st Year		
No.	**CATEGORIES**	**SALE FORECAST**
1	Salad Mix	1,446,400.00
2	Seasonal Vegetables	780,000.00
3	Fruits	696,000.00
4	Processing products	220,500.00
5	Species Branches	106,500.00
6	Beginning Sets	6,750.00
7	Farm Tourism	3,000.00
	TOTAL	**3,259,150.00**

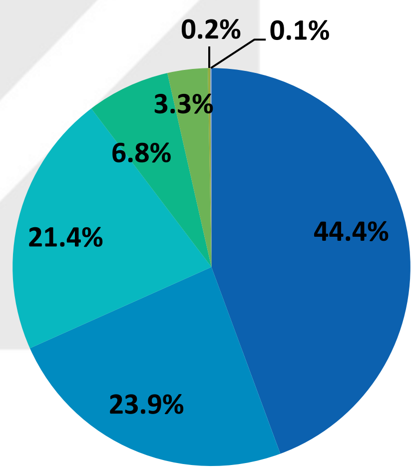


Figure 50: The summary sale fore case in 1st year

Table 43: The sale forecast for 3 year

SALE FORECAST				
No.	**CATEGORIES**	**1st Year**	**2nd Year**	**3rd Year**

1	Salad Mix	1,446,400.00	2,011,219.20	2,301,728.64
2	Seasonal Vegetables	780,000.00	1,022,712.75	1,170,437.93
3	Fruits	696,000.00	876,015.00	1,002,550.50
4	Processing products	220,500.00	272,538.00	311,904.60
5	Species Branches	106,500.00	109,695.00	112,985.85
6	Beginning Sets	6,750.00	9,270.00	13,261.25
7	Farm Tourism	3,000.00	6,000.00	9,000.00
	TOTAL	**3,259,150.00**	**4,307,449.95**	**4,921,868.77**
	Growth rate from 1st YEAR		**32%**	**51%**

Table 44: The sale forecast of the first 3 years sale

From table 44, the growth rate of sale of 2nd year increases 32% and of 3rd Year rises 51% from first year because of certification, customer perception and the mature growth of fruit tree which can produce more crops.

7.4 THE VARIABLE COST ESTIMATE

The cost of production consists of cash cost and non-cash cost. Some of material cans self-production but some have to purchases from other sources. In the table 45 shows the cost estimate of production per year;

Table 45: The variable cost of production per year

	Amount (Baht)					
List	**Salads**	**Seasonal vegetables**	**Fruits**	**Processing products**	**Species Branches**	**Beginning Sets**
1. Temporary wages	-	2,400	2,400	2,400	-	-
2. Raw material cost for Production	12,000	15,000	10,000	2,000	-	500
3. Maintenance cost	24,000	30,000	20,000	-	-	-
4. Harvest cost	10,000	10,000	8,000			
5. Packaging cost	10,000	15,000	15,000	5,000	2,000	1,000
6. Other cost	8,000	8,000	5,000	3,000	1,000	1,000
TOTAL VARIABLE COST	**64,000**	**80,400**	**60,400**	**12,400**	**3,000**	**2,500**
	222,700					

Table 45: The variable cost of production per year

The detail of each list;

1. Temporary wages: 300 baht per day
2. Raw Material for production: such as seed of vegetable and fruits or species branches, soil and etc.
3. Maintenance cost: about maintenance soil, water, fertilizers and herb for destroy pest and etc. The amount depends on the scale of production.
4. Harvest cost
5. Packaging cost: include the purchasing package from outsource of farm
6. Other cost; include utility cost, maintenance greenhouse and etc.

7.5 SALARIES AND WAGES

In the first 3 year, the farm operates by 9 staffs and the salaries increase 5% in every year. That shows in table 45 as follows;

Table 45: SALARIES AND WAGES in 3 years

	YEAR 1		YEAR 2		YEAR 3	
Position	**(Person)**	**Rate of Salaries (Baht)**	**(Person)**	**Rate of Salaries (Baht)**	**(Person)**	**Rate of Salaries (Baht)**
Director	1	30,000	1	30,001.05	1	31,501.10
Farm manager	1	25,000	1	25,001.05	1	26,251.10
Production officer	3	25,500	3	25,501.05	3	26,776.10
Marketing Executive	1	23,000	1	23,001.05	1	24,151.10
Salesman	1	10,000	1	10,001.05	1	10,501.10
Delivery officer	1	9,000	1	9,001.05	1	9,451.10
Administrate & Accounting officer	1	13,000	1	13,001.05	1	13,651.10
TOTAL per month		**135,500**		**135,507**		**142,283**
TOTAL per year		**1,626,000**		**1,626,088..20**		**1,707,392.61**

Table 46: Salaries and Wages in 3 years

7.6 DEPRECIATION OF FIXED ASSET

No.	Detail	Price/Item	Lifetime	Depreciation per year
FIXED ASSET				
2	**Building**			
2.1	Green house	60,000.00	10	240,000
2.2	Sorting and cleaning building	400,000.00	10	40,000
2.3	Storage for Agricultural equip.	50,000.00	10	5,000
2.4	Office building	250,000.00	10	25,000
2.5	Farm Shop	640,000.00	10	64,000
2.6	Roof covering	800,000.00	10	80,000
2.7	Restroom	400,000.00	10	40,000
3	**Equipment**			
3.1	Agricultural machinery and equip.	10,000.00	5	2,000
3.2	Supply water system	30,000.00	5	6,000
3.3	Freezer vertical (1,590 lit)	37,500.00	5	7,500
3.4	Vegetable freezer (208 lit)	16,000.00	5	6,400
3.5	CCTV	5,000.00	5	4,000
3.6	Computer	25,000.00	5	10,000
3.7	Packaging equipment	5,000.00	5	1,000
3.8	Cashier machine	3,000.00	5	600
3.9	Equipment in farm shop	15,000.00	5	3,000
4	**Furniture and Fixture**			
4.1	Furniture in office	5,000.00	5	1,000
4.2	Furniture in shop	20,000.00	5	4,000
5	**Vehicles**			
4.1	Truck with freezer room	100,000.00	10	10,000
4.2	motorcycle	42,000.00	10	4,200
	Total Fixed Asset	**5,309,500.00**		
	TOTAL DEPRECIATION			**553,700.00**

Table 47: Depreciation of Fixed Asset per year

7.7 INCOME STATEMENT

	YEAR 1	YEAR 2	YEAR 3
Revenue	3,259,150.00	4,307,449.95	4,921,868.77
Cost of sale	222,700.00	229,381.00	236,262.43
Gross margin	3,036,450.00	4,078,068.95	4,685,606.34
Total Salaries & Wages	1,626,000.00	1,626,088.20	1,707,392.61
Fix Business Expense			
Advertising	50,000.00	51,500.00	53,045.00
Travel	30,000.00	30,900.00	31,827.00
Sale & Marketing	10,000.00	10,300.00	10,609.00
Miscellaneous expense	10,000.00	10,300.00	10,609.00
Telephone and communications	8,400.00	8,652.00	8,911.56
Utility	36,000.00	37,080.00	38,192.40
TOTAL Fix Business Expense	144,400.00	148,732.00	153,193.96
Other Expense			
Amortized Start-Up expense	32,950.00	33,938.50	34,956.66
Depreciation	553,700.00	570,311.00	587,420.33
Interest			
Commercial Loan	82,382.00	72,085.00	61,043.00
Total Other Expense	669,032.00	676,334.50	683,419.99
Total income without Taxes	**597,018.00**	**1,626,914.25**	**2,141,599.78**
Taxes 15%	89,552.70	244,037.14	321,239.97
NET INCOME	**507,465.30**	**1,382,877.11**	**1,820,359.81**

Table 48: Income Statement for 3 years

The table 48 shows the net income of the business forecast in the first three year. For the net income the company will divide to 2 parts; firstly retained earnings and dividend for owner, which will conduct after 3rd year or after finish payback period.

7.8 PAYBACK PERIOD

Payback period	YEAR 1	YEAR 2	YEAR 3
The Start-Up investment	3,246,350.00	2,738,884.70	1,356,007.59
Net Income	507,465.30	1,382,877.11	1,820,359.81
payback period	2,738,884.70	1,356,007.59	
		12 months	**8.94**
		or	**2 Yrs. 9.94 M.**

Table 49: Payback period of "TAM-GIN-EANG" Organic farm

From the table 49 shows the payback period of "Tam-Gin-Eang" organic farm business is about 2 years, 8 months and 29 day.

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APPENDIX A

THECONSENT FORM

INTERVIEW SUMMARY

Name: *Nongkran Thunin*
Organization name: *Maemoo organic farm*

She is the owner of organic garden name ‘Maemoo organic farm’ at Mae Sad Village in Chiang Rai. Her business has operated about 4 years. The motivation of this business is the health of Mae Sad villagers and her sickness. Because this village is abundant with water resource, so the farmer can plant rice all year. But the grass grows fast, so many farmers in this area often uses the chemical herbicide to eliminate them. When the time pass, many farmers was sick and be cancer. Khun Nongkran realized the cause of sickness of villagers is from the chemicals. And her health was bad from her former job. Therefore she started her organic farm business to present the better way of agricultural practice for the villagers. Actually in the beginning period she only planted by organic method for her family consumption. When the number of crop increased, she started to sale it to the market. The first target customer was restaurants which found he customer by direct contact to them and offered crops to taste. Later, in Chiangrai province had policy to support producers to shiftfrom convension agriculture to organic agriculture. Thus, there are many state organizations supported and helped her business to grow more, such as Pracharut, Chiangrai green network which support by Thai Health Promotion Foundation and etc. Those organizations have not only acknowledged her business, but have found the distributor channels and customer for farm too. Now, the main customer of farm includs hospitals and schools in Chiang Rai, which the number of production still cannot meet the demand of customer, therefore farm requested the support from the villagers. Her farm showed all villagers in Maesad village that organic products can make income better than conventional crops and give healthy to producers. Nowadays many villagers turn to practice organic farm with her. She devoted 10 rais area for village to plant organic crop and make income for village. Beside of the selling crop, farm still has other activities, such as organic practice class for students from universities or organizations, which come from the suggestion of the state organizations. Now they opens farm to be the leaning center for organic agriculture that has many visitors visit to the farm many times of year.

Since, working with the hospital group made her know about the sensitive of food. Some patients have to get the food for hospital, which one of ingredients is Choy blending. If cancer patients consume chemical choy blending, it will make them suddenly seizures. But her crops pass the test and can provable 100% non-chemical. Therefore, her products are needed of the market because of worthy trustable resources. The new coming customers of farm mostly come from the word of mouth.

The high demand of vegetables in this farm includes Kale, Chinese cabbage, Choy, Eggplants, Salad and zucchini. The outstanding of this farm is delicious crop and trustable product that is non-chemical 100%.

INTERVIEW SUMMARY

Name: *Vichai Hansawat*

Organization name: *Khun Wan orange orchard*

Khun Vichai is the owner of orange orchard that has experience in agricultural industry more than 30 years. He mentions the 100% organic way is hard to control and does not proper with large production because it cannot control accurately outcome. This farm still operates with the conversional practice which is under control in safe chemical control production. He believes the pure organic practice can be possible in Thailand in this time. However the cons of conventional agricultural methods are the high cost of chemical fertilizer and chemical pesticide. Now the products of this orchard is Longan and Durian. The main customer is factory and the network groups which have connection for the long time. The current problem is the overload of Longan in market, therefore he tries to change their crops to continuously run the business.

INTERVIEW SUMMARY

Name: *Pawnnut Chalermsri*

Organization name: *Sapsuk organic farm*

The Sapsuk organic farm is the one of producers who shifts from conversional agriculture to organic way. The organic method has operated more than 3 years. The cause of change is a lot of problem from conversional method, such as knowledge, health and high expense. In the first of switching period took some time. For the Biennial plants takes 6-12 months for adapt to organic and can claim to be organic product and for perennial takes at least 18 months for switching period. Many conversional producers think organic practice give lower outcome, but for this farm claim this method is better way for them in long life time in business. Although, it offers lower crop but they gain healthy and sustainable business. Moreover, it is still in high demand for the niche market. The advantage of organic crop is the longer life shelf because the natural way of growing makes the crop stronger and delicious. The crop of this farm has 2 categories; vegetables and fruit in 60 rais area with 2 workers. They selected to planting by integrated method follow the King Rama 9 theory. The outstanding of farm is variety output which can serve various market demands. However in the first period they had to find the market but in long term the customer contact to farm by themselves. The best way for advertising of this farm is the word of mouth. Their target customers aim to the ones who love to take care their health and the loyalty customer who used to taste the products. The obstacle of organic methods are hard to control the amount and sizing of crop, therefore they decide to not sign contact to distributor but they will contact back when the products outcome. However the customer's demand still increases day by day and they cannot produce enough for their need. The Sapsuk farm thinks the organic market has potencial to grow more and more, even if the customers are niche group.

APPENDIX B

THE DETAIL OF PRODUCT IN FARM

MULBERRY

Mulberry is a perennial plant that is the one of importance economic plant of Thailand**.** Mulberry has various benefits, such as eating fresh fruit, processing food products (Jam, Jelly, Wine, fruit juice, ingredient of bakery) and non-food products. The cultivators prefer to plant Mulberry for being wind breaker in the past before launching research, but after that high demand in mulberry fruit in various industry, such as 5 star hotels, supermarket, food and beverage industry. Therefore, many producers grow it more for their fruit. The harvest period of fresh crop is in February to April. Its yield per rai is about 300-400.kilogram.

Properties:

In ancient Chinese medicine, mulberry is considered a medicine. It can nourish the nervous system, resolve insomnia, Fix arthritis, Cough expectorant, Reduce neck inflammation Edema and pain in the body. In addition, the mulberry also has properties to cure rheumatic diseases, diabetes, numbness, numbness, numbness, constipation, dizziness, nourishing the heart, nourishing blood, nourishing the kidneys, nourishing hair, black hair, remove heat from the body and Alzheimer, Rheumatoid arthritis and Anemia disease. Berry fruit family has high antioxidant.

Nutritional Profile:

Mulberry contains Carotene, Vitamin B1, B2, C, Glucose, Sucrose, Tartaric acid, Succinic acid, and Citric acid. The dried mulberry is a large amount of sugar, good aroma, and sweet taste. It is a medicinal plant with high Vitamin B1, B2 and vitamin C. It is one of medicinal plants (Butkhup, 2012).

FIG

It is a fruit with a good taste, a lot of benefits, high nutritional value, high energy and less cholesterol. Fig is the one in world top 10 fruit that have High nutritional value. The figs are also used to make sweets, jam, and dried figs, stir fried pudding, ice cream cakes mixed in pearl tea. Fig can put dessert instead of raisins. Dried fruits can roast to replace the coffee. The leaves of the fragrant varieties of tea leave as well.

Figs are also easy to grow plants suitable for the climate in Thailand and give yield fast. The figs are trees that lasted more than 100 years and can be harvested for many years, depending on soil fertility and climate (Bumrungvej, 2017).

Properties:

Fig is Suitable for patients with hypertension, high cholesterol, and liver disease. It nourishes the body and fight free radicals. It helps strengthen and repair muscles, bones and teeth. Furthermore, it rebalances pH in body, prevent kidney stones, bladder inflammation, lung disease, liver and spleen bleeding and prevent cancer. Fig is higher fiber than other fruits or vegetables (Rojanaportip, 2015).

Nutritional Profile:

Calcium, phosphorus, high iron

APPENDIX C

THE TABLE OF ORGANIC FARM REGULATION COMPARISON

International Standard and certification

Label	Title of the label
	USDA Organic U.S. Department of Agriculture
	Food labeling & Japanese Agricultural Standard
	EU organic
	Australian Certification Organic
	Biologique Canada
	Germany

Table of Organic farm regulation comparison

Topic	OPC	IFOAM	EU	USDA
Seed From Organic Source	Use seed from organic sources when available. If not available use normal seed that is free from chemicals. If not available, use of normal seed is permitted but must be revised periodically.	Use seed from organic sources when available. If not available use normal seed that is free from chemicals. If not available, use of normal seed is permitted but must be revised periodically.	Similar but started from year 2003	Use seed from organic sources when available. If not available use normal seed that is free from chemicals. Use of chemical is not permitted.
Sprout seed, or consumable sapling.	No Regulation	No Regulation	No Regulation	Seed must be from organic source.
Perennial	Use branch from organic sources when available. If not available, use of normal branch is permitted but must be revised periodically.	No Regulation	No Regulation	Use of chemical is permitted if required by phytosantary regulation.
GMOs Seed	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Keeping of prohibited substances in farm	Not prohibited	Not prohibited	Prohibited from organic farm	Not prohibited

Table of Organic farm regulation comparison (Con.)

Topic	OPC	IFOAM	EU	USDA
Partly Organic farm	- Permitted, but organic and non-organic field must be clearly separated. - Organic plant and non-organic plant must be clearly identifiable.	- Permitted, but organic and non-organic field must be clearly separated. - Organic plant and non-organic plant must be clearly identifiable.	- Permitted, but organic and non-organic field must be clearly separated and separately contained. - Organic plant and non-organic plant must be of different species.	- Permitted, but organic and non-organic farm must be separately managed with physical barrier to prevent mixing and contamination
Keeping of prohibited substances in farm	Not prohibited	Not prohibited	Prohibited from organic farm	Not prohibited
Switching period	Minimum 12 months for Biennial plants and 18 months for perennial plants	Minimum 12 months for Biennial plants and 18 months for perennial plants	Minimum 24 months for Biennial plants and 36 months for perennial plants specified. Minimum 12 months for Biennial plants and 18 months for perennial plants allowed.	Minimum 36 months from last chemical use. Full organic standard does not have to be kept during switching period.
Organic matter from outside of farm	No Regulation	Permitted regulated amount, based on local regulation and organic plant	Permitted in regulated amount	no regulation

Table of Organic farm regulation comparison (Con.)

Topic	OPC	IFOAM	EU	USDA
Use of manure and intermission period before harvest	Not Specified	Not Specified	Not Specified	Specified
Field cover material	No Regulation	No Regulation	Bark, sawdust, and wood pieces with chemical contamination not permitted	No Regulation
Human manure	Prohibited	Permitted for plants that are not for human consumption	Prohibited	No Regulation
Compost	No Regulation	No Regulation	No Regulation	Detail of ingredients, fermentation period, temperature and flipping times must be specified
Permitted fertilizer material.	- sewage sludge not permitted - Chicken compost permitted	- sewage sludge not permitted - Chicken compost permitted	- sewage sludge not permitted - Stillage and stillage extract permitted - Chicken compost not permitted - Heavy metal contamina-tion must be detailed	- Chicken compost permitted

Table of Organic farm regulation comparison (Con.)

Topic	OPC	IFOAM	EU	USDA
List of ingredients allowed for weed and pest control.	Allowed (not in EU) - Ryania - Diatomaceous earth - Sodium bicarbonate - Potassium permanganate	Allowed (not in EU) - Ryania - Diatomaceous earth - Sodium bicarbonate - Potassium permanganate	Allowed (not in IFOAM) - Hydrolysed proteins - Metaldehyde Allowed (not in IFOAM, CODEX) - Pyrethroids (deltametrin or lambdacyhalotrin) - Mineral oils (other than light paraffin-based mineral oils)	No Regulation
Other rules and regulation	detailed rules and regulation	detailed rules and regulation	No Regulation	No Regulation
Use of Organic badge when less than 70% is organic	Permitted	Permitted	Prohibited	Permitted
Use of Organic badge when less than 95% is organic	"95% organic ingredient" Specified	"95% organic ingredient" Specified	"95% organic ingredient" Specified	"95% organic ingredient" Specified
Radiation	Prohibited	Prohibited	Prohibited	Prohibited

Table of Organic farm regulation comparison (Con.)

Topic	OPC	IFOAM	EU	USDA
GMO ingredient	Prohibited	Prohibited	Prohibited	Prohibited
non-organic ingredient	Must be considered case-by-case and periodically revised	Must be considered case-by-case and periodically revised	Specified in Annex VI Section C	- Must be considered case-by-case and periodically revised - ingredient grown with sewage sludge prohibited

APPENDIX D

THE OTHER FACTORS THAT RELEVANT TO ORGANIC MARKET

Other relevant Factors

There are many general factors that effect and support to do organic business as follows;

- **Increasing in world food demand**

Nowadays, the number of world population is estimated to have more than 7.5 billion living humans on Earth on May 22, 2017 (worldometers, 2017). The United Nations estimates it will further increase to 11.2 billion in the year 2100 (UN, Population Division World Population Prospects 2015, n.d.). The world Population growth rate is lower but the number of Population still high, because of high technology of medical. It causes the birth rate looks like increasing less than death rate, but it makes the world food production has more load to produce enough food for everyone.

Year	Population	Yearly % Change	Yearly Change	Median Age	Fertility Rate	Density (P/Km²)	Urban Pop %	Urban Population
2017	**7,515,284,153**	1.11 %	82,620,878	29.9	2.5	58	54.7 %	4,110,778,369
2016	**7,432,663,275**	1.13 %	83,191,176	29.9	2.5	57	54.3 %	4,034,193,153
2015	**7,349,472,099**	1.18 %	83,949,411	30	2.51	57	53.8 %	3,957,285,013
2010	**6,929,725,043**	1.23 %	82,017,839	29	2.56	53	51.5 %	3,571,272,167
2005	**6,519,635,850**	1.25 %	78,602,746	27	2.62	50	49.1 %	3,199,013,076
2000	**6,126,622,121**	1.33 %	78,299,807	26	2.74	47	46.6 %	2,856,131,072
1995	**5,735,123,084**	1.55 %	85,091,077	25	3.04	44	44.8 %	2,568,062,984
1990	**5,309,667,699**	1.82 %	91,425,426	24	3.45	41	43 %	2,285,030,904
1985	**4,852,540,569**	1.79 %	82,581,621	23	3.59	37	41.3 %	2,003,049,795
1980	**4,439,632,465**	1.8 %	75,646,647	23	3.87	34	39.4 %	1,749,539,272
1975	**4,061,399,228**	1.98 %	75,782,307	22	4.48	31	37.8 %	1,534,721,238
1970	**3,682,487,691**	2.08 %	71,998,514	22	4.92	28	36.7 %	1,350,280,789
1965	**3,322,495,121**	1.94 %	60,830,259	23	4.96	21	N.A.	N.A.
1960	**3,018,343,828**	1.82 %	52,005,861	23	4.9	23	33.8 %	1,019,494,911
1955	**2,758,314,525**	1.78 %	46,633,043	23	4.96	21	N.A.	N.A.

Figure 51: The World Population record (2017 and historical)
(UN, World Population prospects 2015 revision, 2015)

From the World Bank research revealed the world's food insecure in each region. In 2014 the population in developing countries was undernourished about 12.9 percent and in 2016 found that one in nine people has serious problem from chronic hunger. Globally food demand rise by at least 20 percent in the next 15 years, especially in Sub-Saharan Africa, South Asia and East Asia. The climate change is the one of factor, which cut more than 25 percent crop yield. The producers have to learn how to sustainable produce and manage our nature capital to maintain the risk of food security.

From the forecast, Food demand will increase 35 percent by 2030 and in 2050 the world needs food production will at least 50 percent more from food demand in 2012 for feeding 9 billion people globally (Kray, Farming for future, 2012). Moreover, the conflict, civil insecurity, large-scale displacement and natural resource degradation are linked to intensity food insecurity for million people (Worldbank, 2017).

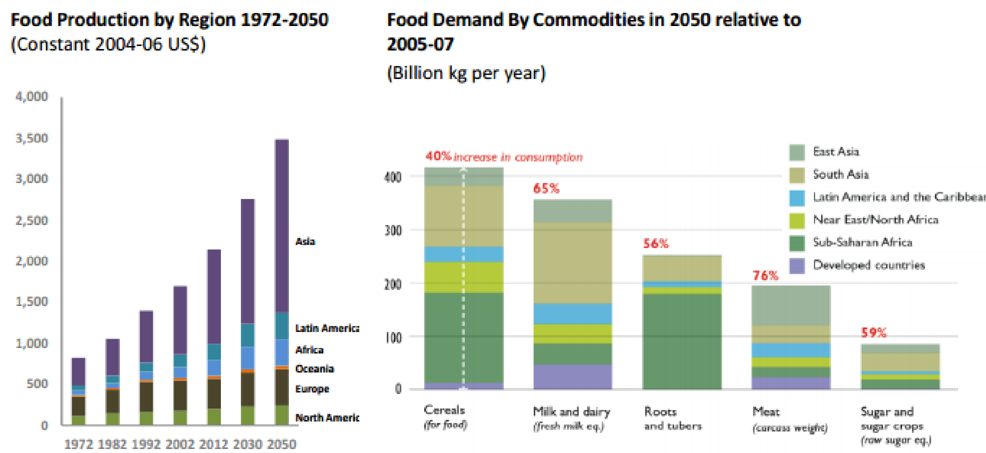

Figure 52: Demand Productivity in 2050

(Kray, Farming for the Future , 2012)

- **World food crisis**

Nowadays, there is high intense competition of land utilization between the productions of food and energy crops that effect to expansion of arable land. Thus, world food supplies will lower while the food prices will shoot up (Greennet, Policies on organic agriculture in Thailand, 2016).

Global health and disease concern

Nowadays, half (49%) of the global respondents believe they are overweight and half are trying to lose weight. Consumers try to seek fresh, natural and minimally processed food. According to the Global Burden of Disease revealed the percentage of people considered overweight by BMI until 25 to 30 and obese by BMI until 30 in over 30 years ago. But in 2013 the growth rate of overweight and obese increased 28 percent in adults and 47 percent in children. That can be estimated to 2.1 billion people which are almost 30 percent of the global population. The study report obesity rates do not only happen in the developed world, but mostly of obese live in developing market that about 62 percent or 671 million people. For this reason made many worldwide consumers attempt to take charge of their health. They also make more healthful food choice and other methods for healthy. The consumer chose to diet 75%, doing physical exercise 72%, taking diet pill 11% and taking medicine prescribed by doctor 7% from the 60 countries respondents around the world. In the part of diets have many choices, such as cutting down on fats, cutting down on sugar sweets, eating more natural or fresh food, eating the same but smaller portions, eating fewer processed foods, following low-carbohydrate, high-fat diet and using weight watchers or other slimming programs. In term of action, the three major methods are cutting down on fats (65%), cutting down on sugar sweets (62%), eating more natural or fresh food (57%) (Nielsen, 2015). Above all mostly consumers are looking for function foods, which can either lower their risk of diseases and/ or promote good health. This reason show what is factor into purchase decisions.

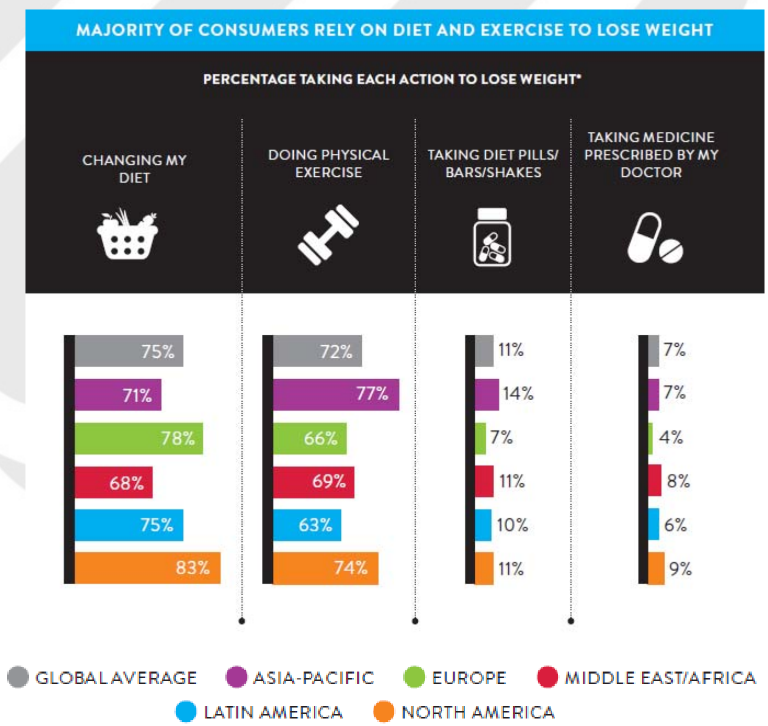

Figure 53: Percentage of people that trying to lose weight in each region
Source: Nielsen Global Health & Wellness Survey, Q3 2014 (Nielsen, 2015)

For health goods market in the United State is reach about 1% of GDP since 2000, which compares this expense with other countries in early stage market of health goods, the segment of health market are about 0.6% of GDP. For this reason created Mega-trend for global. The research of Euromonitor International found the values of health food and beverage is likely increase with an average growth rate not less than 6-7% per year, particularly in China, Brazil and the United State, which positioned in 1st to 3rd of the countries that consume health foods (นุชเจริญ, 2016).

The Global Organic Food & Beverages Market is poised to grow at a CAGR of around 16.6% over the next decade and it will be reach approximately $456 billion by 2025. Since, increasing government in many countries support for organic agriculture, expansion of organic products beyond the natural channel, rising connected consumer and proliferation of organic in food service (PRNewswire, 2017). Moreover, the growing of health concern in consumers and increasing awareness with regard to health, improving standard of living and increasing income levels aimed at encouraging widespread adoption of organic products (techsciresearch, n.d.).

- **Future eating trend**

In addition, Food Ingredient Asia 2015 assumed the food business trends since 2016-2017 that the whole world focuses as follows;

1. *Health and Natural Ingredients*

   That means natural food, organic foods, Gluten and Lactose free products, low sugar and low fat foods and vegetarian foods (นุชเจริญ, 2016).

2. *Food for Older Adult*

   The studies showed about Aging Society, which is the future of the number of 48-57 years old people today will be increase rapidly. Therefore, the Older Adult food market will be expands more to support the demand (นุชเจริญ, 2016).

3. *Fusion Food*
4. *Ready to Eat products*

   In 2020, the number of city living population will increase for 50% to 60%. Their lifestyle is hastily that make opportunity for Ready to Eat product to popular (นุชเจริญ, 2016).

5. *Halal Foods*

In 2030, the Islamic population around the world will increase to be 2.2 billion people, which is about 26.4% of global population. For this reason make the Halal Foods market grow to be 3rd global ranking of foods, below the Chinese foods and Indian foods (นุชเจริญ, 2016).

6. *The Era of Nutritious*

   Supplements foods and Vitamin that helps in brain system and the immune system, Dietary supplements control the weight of the heart, which helps to improve the digestive system (นุชเจริญ, 2016).

7. *Food Safety*

   That is the non-chemical food, which have certificates from credible organizations. Nowadays, Consumers do not only need food, but want to what actually in the dishes. There is increasing in awareness of the prevalence of artificial additives and occur a movement of split the ingredient of what we eat. That makes many Major food and restaurant companies take responsibility to made commitment to remove all artificial stuff, colors, preservatives, and sweeteners from its menu (Greenfield, 2015).

8. *Social Media Online Market and Delivery*

   'Not fast food, but Fast casual' Today, technology is more effect to daily living life, particularly city man. The next meal is just a tap on smart phone. These trends completely change the market way to connect with consumer. Social media is not only advertising anymore but turn to the one of distribution of market. Food suppliers work together with delivery business to make more easy way to deliver product to consumer (Greenfield, 2015).

9. *Digital to Diet foods*

   It is low fat, low sugar, low carbohydrate foods such as brown rice, cereal, etc.

10. *It's time to Generation Z*

    In the next 5 years, Gen Z will increase rapidly. And they will be in many organizations. The food is produced to satisfy the tastes of high-purchasing Gen Z consumers has been launch more in the markets (นุชเจริญ, 2016).

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- **Climate change impacts Food System**

From the World Bank group report assumes the weather will warmer 2 degree Celsius by 2030 which associate 10 percent reduction in food crop yield. That means in the future food production can be reduce and would use sustainable agriculture to reduce emission (Kray, Farming for the Future , 2012). That can assume the food production in the future will risk to reduce and insufficient.

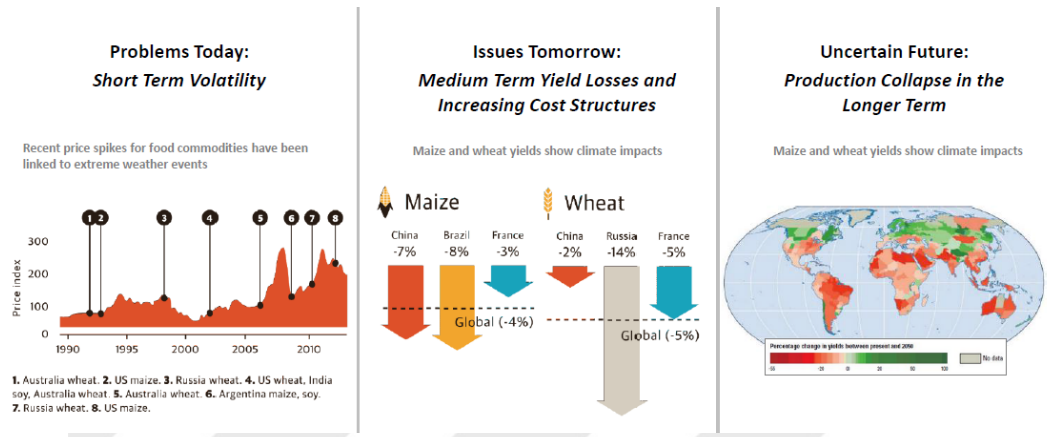

Figure 54: How Climate change impact Food system

(Kray, Farming for the Future , 2012)

- **Rising food and energy prices**

The food prices have risen over the past two decades which took approximately 2.6 percentages a year. There are many factor cause food inflation. The one of factor is the high oil price increase in food shipping. That can forecast high gas prices after a rising in oil about 6 weeks later. Moreover oil price also affect directly in farming via fertilizer which added more 20 percent of the cost of raising grain. Because of high oil prices between 2001 and 2007, added 40 percent to the cost of raising corn, wheat and soybeans (Amadeo, 2017).

BIOGRAPHY

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