

A Balanced Management Model on Organic Rice Production

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Abstract

The purpose of this study was to identify basic factor of farmers' personal sociality and economy, and to study a balance management model vs Business model Canvas. Rice is an important staple crop and economic crop in Thailand. Organic agricultural market in Thailand has incessantly grown from organic consumers, whilst organic agricultural areas in Thailand are merely 213,183 Rai or 7% of total agricultural areas nowadays. Thai government has undertaken policy to enhance the strengthening for the organic agricultural producer. However, most of organic agricultural producers in the country are members of sustainable agricultural networks. The study selected organic rice producers under the sustainable agricultural network in Pakmai Sub-District Huaithaptun District, Si Saket Province. Organic rice areas in the study area contributed approximately 3,780 Rai with 297 farmers as sustainable agricultural network members. were sample 40 farmers. Data were collected from questionnaire survey, in-depth interview and focus group discussion was conducted among selected farmers in major organic rice product in sustainable agricultural network to identify the strengths, weaknesses, opportunities, and threats related to organic rice farming activities. and data analyze included of frequency, percentage, mean and standard deviation. After that use to business model canvas vs balance scorecard. Found out that the average return of organic rice production was higher than that of chemical rice production in most area. The high-return farmers shared their experiences with other on the use of organic fertilizers, natural weed eradication, and how to look after fields constantly according to organic farming product.

Keywords: organic rice product, organic agricultural producer, organic farming, business model canvas, balance scorecard

Introduction

Rice is an important staple crop and economic crops in Thailand. Thailand agriculture is the backbone of the country. Organic agricultural market in Thailand has incessantly grown from organic consumers, whilst organic agricultural areas in Thailand are merely 213,183 Rai or 7% of total agricultural areas nowadays. (Mekong Commons, 2016).

Since the policies put forward in Thailand's First National Economic and Social Development plan (1961-1966), chemical use has significantly increased in Thailand's agricultural sector. These policies had the intention of increasing the quantity of Thailand's agricultural production. 1) Relatedly, the maximization of rice production for export to generate foreign exchange has played an important role in Thailand's economic and political history. 2) It was a major factor in the transformation of Thailand from a traditional agrarian-based society to one that has become increasingly industrialized. Overall, the country as a whole has benefited from this economic growth and many people's standard of living has improved. However, there have been costs and trade-offs, and these include in relation to the environment, which also has implications for rice farmers.

Global demand for organic food products is growing at a very rapid rate. This awareness has caused shifts in consumers' tastes and only 7% of total agricultural areas preferences which have led to the domestic as well as global rise in demand for organic products (Sikka et al., 2006). However, the production of organic products in Thailand is still consider to be a very small sector in country's agriculture, in fact In Thailand, organic agriculture market initiated in 1990 from the people's health and environmental concerns in consuming healthy, safety food and environmentally Friendly Products.

Healthy food industries increase exponentially and rapidly at that time. From the economic downfall in 1998, organic agriculture market was stagnation. The market has started recovering since 2003 after the international conference in Thailand (organized by International Federation of Organic Agriculture Movements (IFOAM) together with Food and Agriculture Organization (FAO)). Additionally, other important factors contribute to the expansion of organic agricultural products, for example, the use of the standard organic agriculture seal certified by government and private sectors, which assist consumers to access to organic agricultural products conveniently (Kasikorn Research Center, 2011).

Organic agriculture production in Thailand can be categorized into two groups: Self-reliance organic agriculture and Standardized organic agriculture for commerce. Self-reliance organic agriculture uses local wisdom in growing organic agriculture products which is manly used in households and sell residual products to markets. Standardized organic agriculture for commerce increases rapidly in response to the increase of consumers' healthy and environmental concerns. One exemplars of the expanding of organic rice produce and markets can be noticed from the increased in cultivated area from 235,523.35 Rai in 2014 to 284,918.44 Rai in 2015 or 20.97% of total agricultural areas in Thailand, which is approximately 150 million Rai. Green net estimated that during the past ten years, in 2013, the total of 71,847.2 ton of organic agricultural products increased from 15,966.1 ton in 2004 in Thailand. In 2013, the value of organic agricultural products was 1,914.8 million Baht which boosted from 1,752.1 million Baht in 2003. In terms of price, from a survey of organic agricultural products such as fresh vegetables in supermarkets in Bangkok in 2007, the investigation revealed that organic

vegetable price was 122.80 Baht per kilogram, whilst regular vegetable price was only 42.13 Baht per kilogram or 191 percent higher. This can demonstrate that on average the price of organic agricultural products is far higher than regular agricultural products (Greenet, 2016).

From the above-mentioned situations, farmers in Si Saket Province, Northeastern Thailand, many rice farmers struggle with accumulated debts, face health problems, and battle with the challenge of environmental degradation as a result of their involvement in so-called “modern farming” practices that are chemical intensive. At the same time, they find that nowadays this agricultural model seems to produce increasingly uncertain rice yields, farmers in Pakmai Sub-District, Huaithaptun District, Si Saket Province change to be an individual organic agriculture for commerce. After that, the farmers merge together to be the Organic rice Group under the alternative agricultural network focusing on strengthening, as well as knowledge and innovation management in order to support by government and private, Kubota durable agriculture equipment and knowledge and innovation development for the whole value chains and promote knowledge generation and accurate understanding regarding organic rice for producers, entrepreneurs, consumers. It is also in line with the organic rice strategic development for local wisdoms in order to improve production, create a self-reliance network, together with develop marketing channels for surplus production.

Organic rice Group focuses on systematic and sustainable organic products from group members. However, insufficient water in a drought is one of value chain problems for organic rice production, causing insufficient products to market demands. Moreover, the increase of production size and the extension of new organic rice members are also at sluggish rate. These predicaments result in a belated delivery to purchasing orders and the loss of opportunity in prospective markets in balance scorecard. Consequently, management strategies of the Organic rice Network in Pakmai Sub-District, Huaithaptun District, Si Saket Province are required to be studied in order to create stable and sustainable production systems for the members. Furthermore, results from this study are beneficial for organic rice value chain management in the Northeastern region of Thailand, apply to develop a sustainable value chain management model, and establish a policy to other regions.

Research Objectives

1. To identify basic factor of farmers’ personal sociality and economy for organic rice.
2. To study a balance management model vs Business model Canvas.

Definition of Terms

1. Organic rice product refers to means the produce and products of rice derived from organic rice production system.
2. Organic rice production system means a system of rice production management that enhances the ecosystem, sustainable biodiversity and biological cycles. It emphasizes the use of natural materials by opposing the use of synthetic raw materials, transgenic plants,

animals or microorganisms or raw materials derived from genetic modification. It also covers the product management, which carefully emphasizes on every processing step to maintain the organic integrity and quality of organic rice products.

3. Business Model Canvas (BMC) is a strategic management and lean startup template for developing new or documenting existing business models. It is 9 Building Blocks a visual chart with elements describing a firm's or product's value proposition, infrastructure, customers, and finances. It assists firms in aligning their activities by illustrating potential trade-offs.

4. The Balanced Scorecard (BSC) is a strategic management technique for communicating and evaluating the achievement of the mission and strategy of the organization using both financial and non-financial measures. The balanced scorecard approach involves collecting data and analyzing the company from five different perspectives. These are: agricultural ecosystem, which includes environment; learning and growth, includes training and knowledge resources; business processes, including how well products and services meet customer needs; customer perspectives, such as customer satisfaction; and the financial perspective, which includes collecting traditional types of financial data about corporate or farmer performance, such as sales and expenditure

Literature Review

In the Northeastern part of Thailand, rice is normally cultivated once a year in the monsoon season i.e., rain-fed farming, but there are two or three times in irrigated areas. Although it takes 3-4 months for rice to mature, but the whole process of cultivation is ranged from 7-8 months.

The market of organic rice products is one of the most dynamic in the world (Mishev and Stoyanova, 2009). Under the dynamic situation of growth and the change, strategic planning is to bring an organization into balance with the external environment and to maintain that balance over time. The performance measurement system, Balanced Scorecard, is presented in Kaplan and Norton (1992). It was initially designed as a performance measurement tool, and later evolved as a way to implement the strategy by creating alignment and focus. This system allows the inclusion of financial and non-financial measurements, through four perspectives: financial, customer, internal business process and learning & growth. The success of the four perspectives and applies five perspectives is agricultural ecosystem relies on the fact that the perspectives themselves and the measures chosen are consistent with the corporate strategy (Fernandes, Raja and Whalley 2006). And Osterwalder (2004) considered that these perspectives were suitable as a starting point for the creation of his business model ontology. His studies would later evolve and take the current format, introduced as the Business Model Canvas. Considering the logic presented, Figure 1

seeks to show the relation among the nine blocks of Business Model Canvas, overlapped by the four perspectives of the Balanced Scorecard.

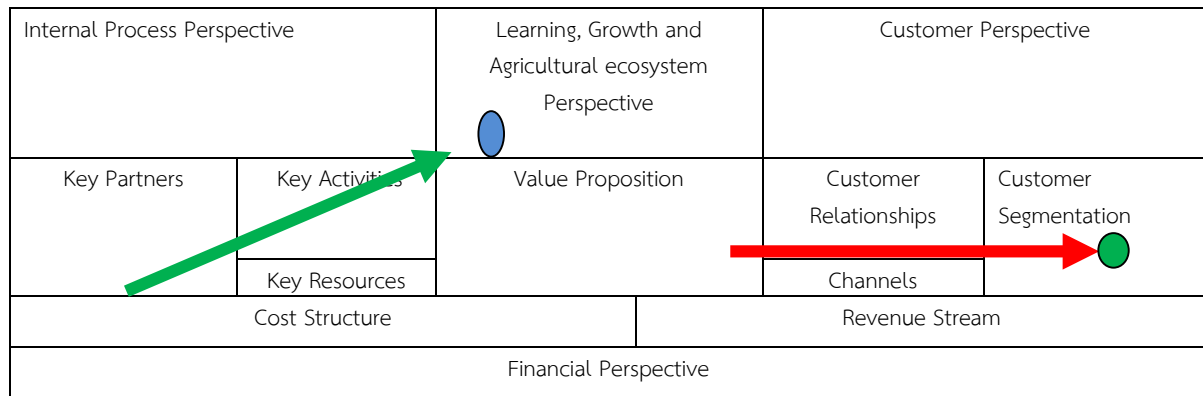


Figure 1. The nine blocks of the Business Model Canvas, overlapped by the five perspectives of the Balanced Scorecard.

Strategic planning is defined as an organization's process of formulating its strategy based on a thorough analysis of its internal and external situations which enable organizations to reach their long-term objectives. Various theories and tools have been developed to help top executives formulate and manage their strategies. SWOT analysis became one of the most popular tools for strategic planning (Lu, 2010). A SWOT analysis is another strategic tool which focuses on evaluating 4 factors that compete in pairs to assess both internal factors which are strengths and weaknesses and external factors which are opportunities and threats. TOWS Matrix is a strategic tool using the output from SWOT analysis to identify the appropriate strategies for the business. There are four strategies which are (Wehrich, 1982). 1) SO strategy is the strategy coming from strengths of the business which matches with the opportunity in the market. 2) ST strategy is the strategy coming from strengths of the business but having some threats from competitive environment. Therefore, the business will prepare strategy to maintain their market share. 3) WO strategy is the strategy where organization has to improve their weaknesses in order to capture existing and future opportunities. 4) WT Strategy is the strategy where organizations might decide not to do it by themselves but to outsource to someone else so that they can focus on their core competencies. SWOT analysis and TOWS Matrix for establishing strategic plans, suggested as guidelines for developing quality and safety management system of organic rice which is a comment about SWOT analysis and strategy formulation from TOWS matrix **for BMC VS BSC** (Figure 2).



Figure 2. Focus group on SWOT analysis for BMC VS BSC

Research Methodology

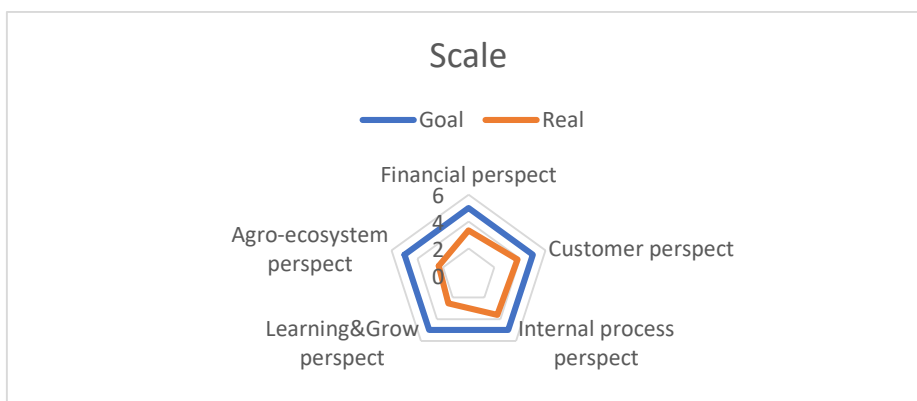
This study investigated organic agricultural producer strategies in value chain of sustainable agriculture network in Thailand. Materials and methods Pakmai Sub-District Huaithaptun District, Si saket province, located at the Northeast of Bangkok, Thailand, was selected as the study area. It is Organic rice Group as a organic rice producer. Organic rice growing mainly consists of farmers who are members of alternative agriculture network or sustainable agricultural network with more than 10 years a organic rice networking program for approximately 3,780 Rai with 297 farmers as sustainable agricultural network members. were sample 40 farmers, collect data by purposively for organic rice. To clarify the current situation in value chain of the organic rice producer in Thailand a in-depth interview analysis was employed, all data were collected through field survey, interview a representative of participants and stakeholders along the chain for Compare present BMC and future BMC VS BSC (Fig.3). SWOT analysis and TOWS matrix were used as a tool for establishing strategic plans, suggested as guidelines for developing organic agricultural producer strategies in value chain of sustainable agriculture network, Si Saket Province, Thailand. Focus group discussion was conducted among a representative of main actors in value chain; organic farmer as a network member, group leaders, chiefs and deputy chiefs of network, network secretary, finance and accounting, network committee, network coordinator and the government agencies.

BMC in Pakmai Sub-District, Huaithaptun District, Si Saket Province		Future BMC VS BSC		
<p>g. Key Partners (KP)</p> <ul style="list-style-type: none"> Universities, Local NGOs Business Centers Ministry of Agriculture Regional industry, Suppliers Accounting, IT, Foodies Marketing Association of Vegetables, Local organic products Local organic partners, Community, Religious, NGOs, Charities, Pharmacies, Co-operatives, Government, Public sector, Agricultural extension, Si Saket Rice Center, Local Bank 	<p>e. Key Activities (KA)</p> <p>Main Activities: Farm input, Real farm with visit, agriculture processes, Farm visit, holding lessons systems, Business plan development, Project management, sale of products, Field experience support, Administration, HR, Customer acquisition, Platform & Customer management, Technology and compliance handling.</p> <p>Support Activities:</p> <ul style="list-style-type: none"> Local organic partners Forum "Wise Rice" Value support unit Non-pesticide Forum Local Farmers Platform management, Marketing, Educational content creation. 	<p>b. Key Partners (KP)</p> <ul style="list-style-type: none"> VPs, BSC Agricultural production, Plant production (source for livestock production), Livestock production, Ecotourism and Rural tourism Accommodation/tourism 10 homestays, 20 beds, Adventure, Children program ma, horse riding, Team-building, Cooking Academy, Weddings, Product manufacturing, Waste in organic quality, Waste data in field expertise, Land use surveying, innovation, Canal monitoring, Customized information and advice, DISE monitoring, Team of operators, innovation / innovation, Land use surveying, Land use expertise, Land use surveying, Land use surveying, improving livelihood of small farmers, historical data collection, Actual data gathering, improved crop quality / yield, Cost effective service for farmers, New way of solving crop issues, Results monitoring per farmer basis, Water saving, increase of water use efficiency 	<p>d. Customer Relationships (CR)</p> <ul style="list-style-type: none"> B2C, exhibition booth, 1st trimester, Website, Facebook, Market, Social media Personal relationship, Persona contract on the farm, Owner itself, Trust, reliable, useful, impactful, Tailor make packages, 7,000, 5,000 for sanitized products of different customers Keep relationship, Provides dealer information, Brochure - Customer Visitation Grow, Business Giveaway, Member Management, Creates a good friendship, New Product Arrival, 10% Line Facebook E-mail, Fax, EMS, organic rice clinic, Automated, Indirect marketing approach 	<p>Customer Segments (CS)</p> <ul style="list-style-type: none"> general customer with health 1st 1st goal: 70% Green product male, female healthy more than 60 year income more than 80,000 Baht/month B2C Secondary goal: 30% Health families male, female healthy more than 60 year income more than 80,000 Baht/month 1st goal: 1st goal: 70% Green product male, female healthy more than 60 year income more than 80,000 Baht/month
<p>f. Key Resources (KR)</p> <p>Physical, Farm, Animals, Human, Family, staff</p> <p>HR, Educators, Manager, Digital content</p>		<p>c. Channels (CH) APP, store</p> <ul style="list-style-type: none"> B2C, B2B teleshopping, post office local TV, local radio Direct offer End users (farmers) need to pay however not the only target group How to reach farmers? Local community, How to reach other customer segments? ambassador, partner network 		
<p>Cost Structure (CS) Variable costs, Cost drivers, Cost structure</p> <p><i>The most expensive cost, material for agriculture, People</i></p> <p><i>The most expensive cost, Key activities-accommodation, Key resource-material for agriculture</i></p>		<p>Revenue Stream (RS) Long term, short term (Cash flow), Freemium for health</p> <p>Profit generation, agriculture production, Adventure, Riding school, 1stest production, Accommodation</p>		

Figure 3. Compare present BMC and future BMC VS BSC

Research Results

The results show that the sample of 63.5% was female with average age of 46.56-year-old, The ages of interviewees range from 40 to 76 years old. They are mostly 40 to 52 years old. The average age is 53 years old. 40.6% graduated grade 4, the average of period being memberships of the group was 1.65 years, average rice cultivation area was 23.34 year, average labors was 5 persons, average income was 155,454.54 baht per household, average capital for rice cultivation was 60,737.5 baht per household, average cost for agricultural and harvesting equipment were 89.2%, average the factors that farmers accepting non-pesticide rice cultivation for area approximate was 2.69%, 98.5% perception of information received from the government officials to promote knowledge. Average knowledge of non-pesticide rice cultivation was 96.9%, 99.2% of the farmers have knowledge about the right period of harvesting that were the stage rice flowering 75-80% and draining water from paddy field for make rice was ripen all over. The farmers in Pakmai Sub-District, Huaithaptun District, Si Saket Province 87.95% adopted of non-pesticide rice cultivation technology.



Radar' charts are a form of graph that allows a visual comparison between five perspectives: financial, customer, internal business process and learning & growth. The success of the four perspectives and applies five perspectives is agricultural ecosystem show that Fig.4

Discussion and Conclusion

Thai Consumers are more concerned with health and food quality (cleanliness and freshness). However, Thai consumers do perceive organic farming as sustainable production and consumption. A SWOT analysis can be excellent use for BMC and BSC, fast tool for exploring the possibilities for initiating new programs in the organic rice. It can also be used for decision making within agricultural or even by individuals.

The number of both genders is quite equal in the research population. In northeast of Thailand, both men and women have contributed the same amount of labor force in the farm. However, men are still the decision makers in most families. Most farmers grow sticky rice for their household consumption and the surplus is sold to the market. However, the only marketable organic rice is jasmine rice because it can be sold the middle class and exported. Some farmers with low amount of land cannot shift from sticky rice to commercial jasmine rice because sticky rice is the stable food in Pakmai Sub-District Huaitthapton District, Si Saket Province in the Northeast of Thailand. Although rice farmers have low yield and income, they still grow rice for the household consumption. Some farmers have shifted for other cash crops but still keep small piece of land for growing rice. This is for food security.

Recommendation For Further Research

The development so far is largely in the hand of farmers and private sector while government supports are developing but still lacking behind. Its development has capitalized on the province's strengths by focusing on organic rice, Organic rice Institute is a public agency under the Ministry of Agriculture and Cooperatives. The institute is responsible the Organic Agriculture project focusing on inspection and certification of organic rice production. Due to lack of international recognition, this label is only used for domestic markets. This institute might help the organic rice farmers by certificate the organic rice. The future research should study path analysis across different places. Second, further study is needed to investigate more independent and dependents variables such as, environment value chain management and A Balanced Management Model, and the connect farm area from Si Saket province.

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