

**INCREASE SUPPLY CHAIN EFFICIENCY:
A CASE OF SAMPATUAN MICRO COMMUNITY ENTERPRISE**




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Thematic Paper
entitled
**INCREASE SUPPLY CHAIN EFFICIENCY:
A CASE OF SAMPATUAN MICRO COMMUNITY ENTERPRISE**




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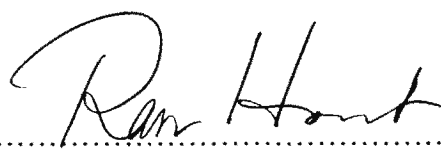
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A CASE OF SAMPATUAN MICRO COMMUNITY ENTERPRISE

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ABSTRACT

This paper investigates the value chain creation of a well established and well reputed rice mill and compares the finding with Sampatuan MCE's value chain in an attempt to identify the critical success factors for running a successful rice mill. The objective is to build a supply chain performance metric – based on the factors found – that can be used to increase the efficiency of Sampatuan MCE's supply chain. The qualitative data was collected by in-depth interviews with key-persons and analyzed using the content analysis technique. The scope of the research focuses on the evaluation and management of supply chain performance measurement. Related theories from the fields of agricultural engineering, human resources, operation management, accounting and finance may be discussed and mentioned but very briefly.

From the research, five critical success factors emerged: Human Resource Capacity, Material source management, Process productivity, Product quality and Cost control. Out of the five factors, only four can be sufficiently researched and converted into a performance measurement metric in this paper. Human resource capacity is purposefully omitted because it requires more time to conduct an acceptable research. The remaining four success factors are Material source management, Process productivity, Product quality and Cost control.

The Supply Chain Performance Measurement Metric is not perfect. The author gives two suggestions for future research. One, future works should focus on developing a practical supplement monitoring device. The performance scorecard and the trouble-shooting manual offer a simple, yet practical, set of implementation devices. They allow the users to monitor the indicators in a structured and user-friendly way. Two, the scope of this paper is limited to the evaluation and management of supply chain performance measurement, the author does not investigate thoroughly into other related fields especially in Human Resource Management. Although a number of reviews have been done on Operation Costing, Agricultural Engineering and Post-Harvesting Technologies for a rough outline of key measures to be drawn, it is not nearly extensive enough. Further work is sorely required to perfect the metric

KEY WORDS: RICE/SUPPLY CHAIN MANAGEMENT/PERFORMANCE MEASUREMENT/SUPPLY CHAIN
PERFORMANCE METRIC/MICRO COMMUNITY ENTERPRISE/VALUE CHAIN ANALYSIS

120 pages

เพิ่มความสามารถของห่วงโซ่อุปทานของโรงสีข้าวชุมชน: การศึกษากลุ่มวิสาหกิจชุมชนที่สัมปะทวน
INCREASE SUPPLY CHAIN EFFICIENCY: A CASE OF SAMPATUAN MICROCOMMUNITY ENTERPRISE

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บทคัดย่อ

งานวิจัยนี้ทำการวิเคราะห์ห่วงโซ่อุปทานของโรงสีข้าวพานิชที่ประสบความสำเร็จและอยู่มาช้านาน แล้วนำผลที่ได้มาเปรียบเทียบกับห่วงโซ่อุปทานของโรงสีข้าวชุมชนของวิสาหกิจชุมชนที่สัมปะทวน เพื่อหาปัจจัยความสำเร็จในการบริหารโรงสีข้าวให้ประสบความสำเร็จ จุดประสงค์คือต้องการสร้างแม่แบบวัดประสิทธิภาพห่วงโซ่อุปทานโดยใช้ความรู้ที่ได้จากปัจจัยความสำเร็จที่พบ และนำมาใช้เพื่อการเพิ่มประสิทธิภาพการบริหารงานห่วงโซ่อุปทานของวิสาหกิจชุมชนที่สัมปะทวน ข้อมูลเชิงคุณภาพถูกเก็บจากกลุ่มผู้ที่ประสบการณ์การทำงานที่เกี่ยวข้องโดยตรงกับการบริหารห่วงโซ่อุปทานของโรงสีด้วยการสัมภาษณ์เชิงลึก และวิเคราะห์ด้วยวิธีวิเคราะห์เนื้อหา งานวิจัยนี้จะพูดถึงทฤษฎีที่เกี่ยวข้องจากวิศวกรรมการเกษตร การบริหารงานบุคคล การบริหารการผลิต การบัญชี และการเงินอย่างย่อๆ

ผลของงานวิจัยเผยให้เห็นปัจจัยสำคัญห้าประการ คือ ความสามารถของบุคลากร การบริหารแหล่งวัตถุดิบ การจัดการการผลิต คุณภาพสินค้าและการควบคุมต้นทุน สี่ในห้าปัจจัยได้รับการวิจัยอย่างเหมาะสมในงานวิจัยครั้งนี้และถูกพัฒนาเป็นแม่แบบวัดประสิทธิภาพห่วงโซ่อุปทาน คือ การบริหารแหล่งวัตถุดิบ การจัดการการผลิต คุณภาพสินค้าและการควบคุมต้นทุน ความสามารถของบุคลากรถูกละไว้อย่างตั้งใจด้วยปัจจัยนี้ต้องการเวลาในการวิจัยเพิ่มเติมจึงจะได้บทสรุปที่เหมาะสมและใช้ได้จริง

แม่แบบวัดประสิทธิภาพห่วงโซ่อุปทานที่พัฒนาโดยงานวิจัยนี้ยังไม่สามารถเรียกได้ว่าสมบูรณ์ ผู้วิจัยเสนอว่าควรมีการทำวิจัยต่อในสองด้าน หนึ่งคือการพัฒนาเครื่องมือเสริมที่จะช่วยในการนำแม่แบบวัดประสิทธิภาพห่วงโซ่อุปทานมาใช้ แบบฟอร์มวัดคุณภาพและคู่มือการทำงานเป็นตัวอย่างง่ายที่ได้ผล สองคือขอบเขตของงานวิจัยจำกัดอยู่ที่การวิเคราะห์และการบริหารห่วงโซ่อุปทาน ผู้วิจัยไม่ได้ลงลึกในทฤษฎีที่เกี่ยวข้อง โดยเฉพาะการบริหารงานบุคคล ถึงแม้ว่าจะมีการค้นคว้าข้อมูลจากงานวิจัยในสายต้นทุนการผลิต วิศวกรรมการเกษตรและเทคโนโลยีหลังการเก็บเกี่ยวมากพอจนสามารถวางกรอบของตัววัดประสิทธิภาพที่สำคัญได้ แต่งานวิจัยในอนาคตก็จำเป็นในการสร้างแม่แบบที่สมบูรณ์

120 pages

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CHAPTER I

INTRODUCTION

This chapter has the purpose of briefing the readers in on three things: the brief history of the research problem, the research objectives and the identities of Sampatuan Micro Community Enterprise and Chiameng Co., Ltd. – the chosen subjects. It is expected by the researcher that, in completing this paper, theories from various disciplines must be reviewed or, at least, briefly touched on. To prevent future confusion, **the research scope** is laid down. For this piece, the author will **focus the main attention on the evaluation and management of supply chain performance measurement. Related theories from the fields of agricultural engineering, human resource, operation management, accounting and financing may be discussed and mentioned but very briefly.**

1.1 Research Problem

2009 sees the world's renew attention on the world food supply issue. The international economic turbulent, global climate change and soaring food/commodity price in 2008 inevitably force us to be aware of our food sources and suppliers. The Food and Agriculture Organization under the United Nations claims the problem of insufficient distribution of world existed well before the food-price craze in 2008. The organization's 2009 Food Insecurity Report states rather frankly that countries heavily relied on imported food and in poverty are most at risk, in the face of world food fluctuation. Thailand, having fallen in to the latter category, is not an exception despite being one of the biggest food exporters ("The Stage of Food Security", 2009).

The advocates in Thailand have long begun to contemplate the options, under a clear guidance of King Rama IX's new sufficient economy theory. To be free of foreign influence, the country must first create strong independent farmers and local markets. They quickly recognize the important role; cooperatives and micro

community enterprises (MCE) play in achieving these goals. The core ideas are to band together farmers and to support them educational-wise, at times financial-wise, so they are strong enough to survive in the Capitalistic World (Phetprasert and Wongkul 2007; Agricultural Economics Research No. 103 2008; and “Cooperative Promotion Department’s,” 2009).

Once the focus is defined, numerous pieces of researches have then been put into identifying weaknesses and strengths of cooperative operations. And through these works, the author discovers three persisting problems relating to cooperative operation. They are the ineffective marketing management, the lack of professional as well as transparent operation and the lack of true understanding of cooperative concept. The ineffective operation spreads through the topics of product development through to supply chain (Joonpongsatol, 2007; Hantrakul, 2000; and Jantharawong 2002).

And while many suggestions and guidelines have been made on how to improve the understanding of cooperative concept and operation transparency, little works are done on supply chain management. **Most researches recognize that the marketing productivity of cooperative, especially the supply chain and logistic, must be improved; yet no research indicates how it can be done and measured systematically under contemporary marketing theories** (Agricultural Economics Research 2008; Hantrakul, 2000; Joonpongsatol, 2007; Tanpatthana, 1996).

For this reason, this thesis will look for 2 objectives.

- 1. To explore the rice supply chain before and after the introduction of MCE.**
- 2. To formulate a successful supply chain model for agricultural MCE in Thailand.**

The outcome will present a new way of assembling logistic for agricultural products in Thailand which will result in the agricultural workers’ independence.

1.2 Sampatuan Micro Community Enterprise (Mce)



Figure 1.1: Sampatuan Map

Source: <http://maps.google.com/>

Sapatuan District is a small community nestled in the heart of Amhur Nakornchaisri in Nakornpratom Province. It contains a modest population of approximately 3,838 people – the majority of which engaged in rice farming, horticultural activities and laboring (Thai Tambon, 2010). A private conversation with Miss Chaidaisook (2010), a Sampatuan-born resident, told the author that since the time of her foremother, the people of Sampatuan had always been growing rice for export. She told of small and medium sized rice mills once dotted the areas and the river jam-packed with flatboats carrying paddies to their destinations. Although, such picture no longer exists today, the small and middle sized millers went away leaving a limited number of much bigger, more efficient, millers behind. Water transportation was replaced by interstate highways. Mr. Kekprayoon (2010), Sampatuan MCE's manager, explains that although the area continues to produce rice for export market, the number of educated young people returning to take over agricultural activities in the area has dwindled overtime. Able people are snatched up by surrounding businesses leaving whoever remains in the agriculture sector who continues to grow low-quality paddies to sell to millers and buy milled rice of better quality for consumption.

Table 1.1: Sampatuan MCE's committee members

#	Committee Name	Position
1	Mr. Thammarong Chappaya	Director
2	Mr. Bantern Ratanasri	Vice Director
3	Miss Ponpunsu Chaidaisook	Secretary
4	Miss Lingee Sirawiang	Vice Secretary
5	Mr. Chid Paungpong	farmer committee member; production
6	Mr. Chom Kumkrinwong	farmer committee member; production
7	Mr. Kriengsak Chareonporn	farmer committee member; production
8	Miss Somboon Wongprakong	Accountant
9	Miss Sawarak Thepnaboon	Assistant Accountant
10	Miss Pimpatcha Katkeaw	Agricultural Officer, consultant
11	Miss Saipin Kertchanrong	Government Officer, consultant
12	Mr. Sukon Kekprayoon	MCE Manager

Amid the 2008 Rice Price Crisis, Mr Kekprayoon along with eleven other committee members set up the MCE with all intents to tap into the gold rush. In the very beginning, Sampatuan MCE bought paddies from other area and sold them off at a profit to local millers. Realizing the true purpose of MCE, the committee members quickly moved on to manufacturing rice products for retail within the community. Brown rice, white rice, rice oil, and rice chaff were the main products. Although the MCE managed to make a small profit in the first year of operation, with little knowledge of paddies property and milling, the MCE did and still do, run into many problems (Sampatuan MCE's 1st annual meeting, 31 October, 2009). Miss Chaidaisook and Mr. Kekprayoon admitted casually – in the conversation on 5 May, 2010 – that MCE's problems could be categorized into three major types; manpower, operation and communication. The problem that concerns her most is of operation inefficiency of Sampatuan MCE. The statement was also shared by Mr Kekprayoon (2010) and Miss Sawarak(2010) later in their separated interviews to various degrees of confidence and reasoning on how the MCE's operation could be improved. Such honest assessment of self and openness to other's suggestions were the qualities the researcher found unique in Sampatuan MCE. It was these qualities and the MCE's manager's commitment to improve operation efficiency via the adaption of appropriate technologies that had Sampatuan MCE selected as the subject for this study by the researcher.

1.3 Chiameng Co., Ltd. Group

Golden Phoenix is perhaps one of the most well-know brand of packaged Jasmin Rice in both Thailand and abroad. Only a small portion of the population notices however that the brand is managed by Chiameng Co., Ltd., a 70 year-old rice miller originated in Nakornratchasrima Province. Since the founding, the company has continuously evolved and adapted to contemporary management knowledge and practices. At presence, Chiameng Co., Ltd has one headoffice located in Nanthaburi Province and a mill with 20,000 ton/month capacity in Ayutthaya Province serving four brands tailored to different market segments. The excellent management of the company is also widely accepted by various organizations both from within Thailand and out. Table 1.2 listed out the company’s accomplishments in chronical order (<http://www.chiameng-rice.com>).

Table 1.2: Chiameng Co. Ltd.’s award

1999	■ ISO 9002 Quality Standard
	■ SQF 2000 Quality Standard
	■ Safety management from Ministry of Industry
	■ Certification mark of "Thail Hom Mali Rice" from Department of Foreign Trade, Ministry of Commerce, Thailand.
2000	■ Excellent factory from Ministry of Public Health
2001	■ ASIA SUPER BRAND 2004 from Reader's Digest
	■ Gold Award on the working environment of the factory from Ministry of Industry
2005	■ GMP Quality Standard
	■ HACCP Quality Standard
	■ ISO 9001 : 2000 Quality Standard From SGS United Kingdom Ltd. System & Service Certification
	■ ISO 14001 : 2004 Quality Standard From SGS United Kingdom Ltd. System & Service Certification
2007	■ HALAL Certificate

Source: <http://www.chiameng-rice.com>

CHAPTER II

LITERATURE REVIEW

2.1 Introduction

In the quest to solidify Sampatuan Micro Community Enterprise (MCE)'s constitution and assure its survival via improvement in its supply chain's efficiency, this paper sets out to accomplish two objectives as previously stated in Chapter 1.

1. To explore the rice supply chain before and after the introduction of MCE.
2. To formulate a successful supply chain model for agricultural MCE in Thailand

To accomplish these tasks, the author developed four sets of critical questions. Figure 2.1 illustrates the thought process that occurred during the literature search.



Figure 2.1 Literature Review's Formulation

2.2 Thai Farmers' Dilemma: The Universal Issue

“Produce more of the (selected) crops and sell them to the World for riches” is the one message being snatched up left, right and center by nations all over the world due to its promise of a better economic stability. Decades after its popularization, it has become clear that only the industrial sector and large corporate farms are the benefactors of such a theory. Local and small scale producers within the agricultural sector remain the poorest groups in all societies. Despite efforts to grow economic crops and the employment of new technologies offered by specialists, small scale farmers continue to struggle for survival. Bhumpanya Tok-Kra-Sair (2008), Nattsupa (2007), Phetprasert & Wongkul (2007), Norberg-Hodge & Merrifield & Gorelick (2002/2008) and Shiva (2000/2008) have conducted numerous studies on the causes and possible solutions to this problem. Three principle reasons have been identified that account for this deficiency in small scale survival. The first is globalization and the employment of capitalistic theories in agricultural sector development. The second is the misuse of synthetic insecticides and fertilizers in agricultural production. The final factor is the hold that multinational agricultural corporations in the West have on the global food system.

Shiva (2000/2008) hypothesized that globalization effectively shifts farmers from a local based food system to a world based food system through promises of greater profits. This is further fueled by the employment of capitalist based production and efficiency theories offered by multinational chemical corporations and government officials. This causes farmers to refrain from traditional methods of growing multiple plants for their own subsistence to producing a single economic crop on a large scale. Furthermore, farmers are increasingly relying on synthetic chemicals instead of traditional methods of such as manure and natural insecticides to protect their crops. When small scale farmers' crops are harvested they are shipped to other areas of the world to feed global demand leaving marginal amounts to supply local areas. The result of this is that local living and production costs increase disproportionately and lead farmers to purchase goods from outside their

community instead of from their own farm. (Norberg-Hodge & Merrifield & Gorelick, 2002/2008).

Under this system, farmers are further forced to producing higher yields of crops through the use of chemicals. The result is a cycle that leads to additional debt. Furthermore, should local farmers produces crops similar to those being imported, the product will overflow the local market leading to a drop in the price it may be sold for. Moreover, as local consumers' tastes change for these foreign imports small scale farmers are hit by an additional drop in the demand for their traditional crops. Therefore, small scale local farmers also face additional challenges as they struggle to earn enough money to pay off the debt owed for chemical fertilizers and insecticides (Bhumpanya Tok-Kra-Sair, 2008; Phetprasert & Wongkul, 2007; and Nattsupa, 2007).

The situation of rice farmers in Thailand is not much different than in the rest of the world. Globalization first affected Thai farmers in 1855 with the signing of the Bowring Treaty. Following this rice production quickly became an important industry and at a steady pace the changes began to manifest themselves. The intervals between rice seasons began to shorten while the growing periods were also reduced by months due to irrigation and biological advances. Farmers began replacing manure and natural insecticides with chemical insecticides and fertilizers as a result of the government and the private agricultural corporations' campaigns. Traditional rice species were also abandoned in favor of the popular species demanded in foreign markets. This has lead rice growing to ultimately move away from an act of feeding one's self and family to a job done in exchange for money (Sujahaxayya, 2010; Thongdee, 2010; and Thongmeekar, 2010).

As a result of this small scale rice farmers in Thailand have become the poorest in all The Kingdom. The farmers have become inundated with debt despite rice exports fetching billions of dollars each year for the country (Department of Foreign Trade, 2010). Figure 2.2 is a simple model of Thailand's current rice market. This figure highlights two important facts. The first is that middlemen, who help connect supplies with markets, are overly abundant in the current system and lead to a loss or profits between suppliers and sellers. The second is that the rice farmers, the raw material producers, end up as the end-users in this hierarchy. The farmers become the buyers of milled rice that travels hundreds of miles from their farms and back

again. This occurs at a much higher price than what it was originally produced for (Tanpatthana, 1996; Phetprasert & Wongkul, 2007; Nattsupa, 2007; and Joonpongsatol, 2007)

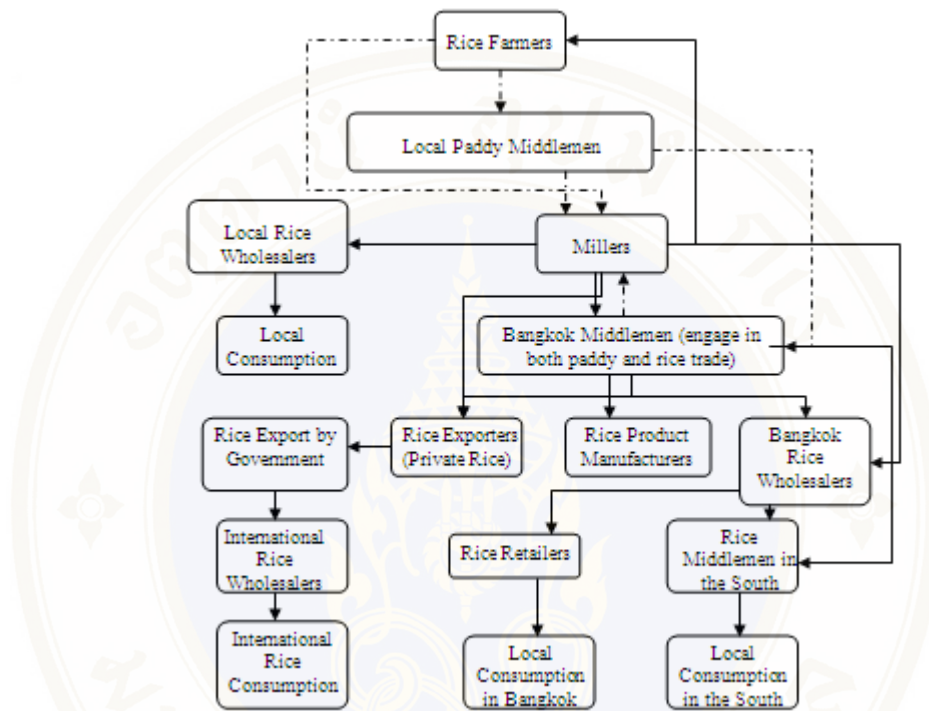


Figure 2.2: Thai Rice Market

Source: Adapted from Tanpatthana (1996), p.26

Figure 2.2, demonstrates how important information is to the rice market. The immense amount of skills required and scattered throughout the market is the reason why middlemen exist and are able to trade their specialties (information and skills) for commission. Evidently, the rice market has many layers and each layer holds its own unique demands. The demands are so diverse and volatile that they require constant monitoring which results in additional time and costs being spent to interpret the market. Lacking these skills, and being unable to deny their importance, rice farmers and millers instead rely on middlemen for their services. Middlemen are therefore depended on to purchase crops from the farmers. The rice millers also rely on middlemen to buy paddies for them they cannot buy personally and to in turn sell

their rice stocks (Hantrakul, 2000; Tanpatthana, 1996; and S. Suwankosoom, personal communication, March 12, 2010).

A conversation with two rice farmers in Ayutthaya Province revealed the farmers' needs to quickly convert their paddies to profits. They pointed out that it is imperative they pay back their debts once the harvest season ends as that is when they are due. The principle method used to sustain the farm is through loans, both in the forms of money and objects, from local banks, millers and agricultural shops. The cost of producing rice is high therefore farmers must take out a loan or sell off their paddies in the hope that they will make some profits. However, the harsh reality is that many farmers fail to reap enough profits to clear their debts. One farmer commented that often farmers cannot keep their crops even if the selling price is lower than the production cost as they lack the necessary storage space (J. Kraipob and S. Naiyayuti, personal communication, October 10, 2009).

It is under these circumstances that small rice farmers in Thailand are left in unstable financial circumstances. Millers and middlemen ensure that they take full advantage of the small rice farmer's economic predicament, as Suwankosoom (2010) has previously found. Data on the amount of rice-paddies already in stock, the moisture level in the paddies and the quality of the paddies are recorded with only one aim, which is to reduce the selling-price as much as possible. Kraipob and Naiyayuti (2009) found that the average production cost per one rai of rice farming is 6,000 Baht, the average production rate per rai is 850 kilograms and the highest selling price they are ever sold is roughly 8,000 Baht per ton. Therefore, even under the best circumstance, small scale rice farmers earn an approximate profit of just 799 Baht per rai. This figure is the full amount a small scale farmer receives for three full months of work on his farm- three months is the circle of rice growing- and they will not be paid again for another three months, therefore it should come as no surprise that they are heavily indebted.

The problems small scale farmers face has been acknowledged. The Thai government and other organizations have attempted to aid rice farmers. For many years, the government extended its hand to help small rice farmers through price interventions. Its policies, however, have been criticized for being short-sighted as they fail to address the root cause of the problems. Therefore, the government's

policies are only prolonging the hardships of small scale farmers and allowing the problems to develop further (Kraipob and Naiyayuti, 2009; and Suwankosoom, 2010).

2.3 Sufficiency Economy

After decades of capital intensive development, it is now more apparent than ever that Thailand's economy is at a cross roads. The current civil war is clear evidence that capitalism cannot answer the needs of all people. While capitalism can bring in foreign currency and speed up material development, the distribution of wealth is limited to those who have the required knowledge, funds and connections – those who belong to the upper and middle class. The lower class therefore engages in small-scale agricultural activities, as it is poorly represented and left to fend for itself. Though perceived by the general public as insignificant, the prosperity of national economy is in fact based on the productivity of this lower class. Without the existence of the lower class, the real producers of the commodities needed to facilitate the flow of capitalism, Thailand's economy would collapse (Poompanyatokkasae, 2008; and S. Kekprayoon & P. Chaidaisook, personal communication, March 24, 2010).

Academics, activists and practitioners have spent years developing strategies to sustain the lives of the lower-class in order to keep them in the agriculture sector and preventing them from instead seeking employment in major cities. They have concluded that a secondary economic system must be created in parallel with the current main stream economy. Many problems exist with a capitalist approach to economics. Self-efficient is a short and to-the-point way of describing anarchistic economic ideology. A simple parable of this concept can be seen in the bedtime story *The Princess and The Frog*. An unfortunate prince was cursed and transformed into a frog. The prince later made a deal with a princess to lift his curse with a kiss if he fetched her ball however she cheated him and refused him the kiss. In the end, the prince was able to return to his normal form through his own cunning. The moral of this story is clear; who is better to rely on than yourself, this does not mean that one should refuse help when offered. It means one must know and understand one's own

worth as well as how to use it best. Such is the idea of a sustainable economy (Phetprasert & Wongkul, 2007; Bhumpanya Tok-Kra-Sair, 2008; Shiva, 2008; Norberg-Hodge & Merrifield & Gorelick, 2008; and S. Kekprayoon & P. Chaidaisook, personal communication, March 24, 2010).

It can be said that Mohandas Karamchand Gandhi is the father of the concept of a “sustainable economy” as he was the first to come up with the term. Gandhi’s theory is simple; the nation must operate with a focus on satisfying its internal demands a focus that must not neglect the country’s environment. His theory was based on two points. The first was that he realized that without a strong agricultural sector and local market India’s economy would likely to be weak against foreign imports. He was aware that a slight shift in the world’s demand and supply chain could send his country’s economy spiraling downward. The second principle Gandhi founded his logic on was that to sustain the lives of Indians over time, nature must be maintained at its best. Earth, water and forest were, and still are, the base of a nation’s economic security. Elimination and deterioration of any of the three elements can directly affect the livelihood of a country’s people. Furthermore, shortages of food, illness and severe weather can render a nation weak to foreign attack (Shiva, 2008, Bhumpanya Tok-Kra-Sair, 2008; and Norberg-Hodge & Merrifield & Gorelick, 2008).

Therefore, Gandhi urged farmers to grow as many varieties of plants as they needed in daily life instead of one or two economic plants to feed foreign markets. He called on India’s farmers to practice seed-breeding and make natural insecticide/fertilizer. His teachings led Indians to develop a sense of patriotism and as a result created a strong trade barrier against foreign products. Gandhi taught Indians not to copy but to learn from the best and improve upon their methods. He warned against the exploitation of nature for money and instead promoted its protection. Years after Gandhi’s ideas were first introduced his theories continue to be practiced and supported. King Rama IX of Thailand is also one of many who have acknowledged the importance of Gandhi’s agricultural theories (Shiva, 2008, Bhumpanya Tok-Kra-Sair, 2008; and Norberg-Hodge & Merrifield & Gorelick, 2008).

King Rama IX is a very influential figure when it comes to promoting the concept of a sustainable economy in Thailand. Officially, his three-step-model is

called the sufficiency economy. The first step begins at an individual level and involves making the most use of a small piece of land (approximately 15 rai). Farmers are urged to work to feed themselves first. They are called on to separate their farm into separate zones for growing rice, fruit-bearing plants, vegetables and herbs. They are also advised to create a pond to provide a natural water source as well as a fish. They are also urged to maintain livestock for household consumption – these actions are all done with two purposes in mind; to save living costs and to provide life-security against starvation. Step two commences after the needs of the individual farmer are met. It involves the gathering of a individuals to engage in agricultural production, marketing and spiritual activities. Step two seeks to create a platform in which the community can exchange ideas and co-produce other commodities from local materials for consumption within the community (Bhumpanya Tok-Kra-Sair, 2008).

The third and final step is taken when the community reaches out to financial institutions for funding in order to set up a community business enterprise. The initiative is intended to market and manufacture local products for the benefit of the community (Bhumpanya Tok-Kra-Sair, 2008). At close scrutiny, it is very apparent that the same elements presented in Gandhi's work also show up in The King's model. The King's sufficiency economy system and Gandhi's sustainable economy both have three things in common. The first is that neither rejects the existence of capitalism and the important of capitalistic develop on the national economy as a whole. Rather, both focus on making it possible for lower class people to survive and build a strong sub-economy as a contingency plan in the process. The second is that both place a lot of emphasis on learning and retaining a body of knowledge. The final similarity is that both highlight the importance of natural preservation.

2.3.1 Micro Community Enterprise (MCE)

The word "Micro Community Enterprise" had not materialized in Thai society until quite recently. The term was legally registered by the 2005 Community Enterprise Promotion Act as a new type of cooperative in an attempt to promote the

theory of a sufficiency economy in practice (Bureau of Agricultural Economic Research, 2008). The Act describes MCE as “a community-run business engaging in producing products and services or both to serve the community’s needs”. It states that a business must be run by a body of people, registered as a juristic person or otherwise, who share a common interest in life-style. It says that a business must “aim to create income to efficiently sustain the lives of oneself, family and community, even between communities within the given restrictions” (Panyathai, 2010).

Despite this rather detailed description, many people still misunderstand the purpose of MCEs. Often times, MCEs are seen at the same as cooperatives which aim to create enough market power to bargain with merchants and to operate under promises of additional profits to shareholders. However, MCEs are quite different. An MCE is a business organization born from a community’s need to be independent from the world by building a strong local economy. A strong local economy is one which operates independently, is self-efficient and reduces its reliance on external aid. This does not imply that the community will isolate itself from external interferences and become “closed”. It only means that the community will manage its available resources systematically with the aim of retaining its wealth and creating opportunities within itself (Phetprasert & Wongkul, 2007; Phongphit, 2009; and Bureau of Agricultural Economic Research, 2008).

Wealth in MCE’s books does not mean money or properties; it refers, instead, to the well-being of people within its community. This includes having enough to eat when hungry, having access to medicine when sick, having sanitary products when needed. Such things often taken for granted are considered as “wealth” by MCE’s philosophy. MCEs are not aimed towards making large profits but instead securing the basic needs of its community as a “safety net” should an economic crisis ensue. Therefore, no matter how high the price of rice rises or how deeply the economy falls, the people will be able to maintain their basic needs and sustain their lives with reasonable ease. However, shifting communities into sustainable development is not easy to achieve. Phetprasert & Wongkul (2007) and Phongphit (2009) insist MCEs must operate strictly under the following four principles to be successful.

1. MCEs must obtain their business ideas from within the community. An MCE's main market is its community hence it would be irrational to offer things it does not need. Also, MCEs must be sure they address the demands of its community by matching its products and services to the locally available resources.

2. Those managing an MCE's must understand and put into practice the philosophy and aims of an MCE. Without comprehension, the MCE can only fall under influence of a capital driven society and go back to relying on the world's economy.

3. MCE's must give equal attention to the community's involvement in its management and operation and to the community's education. MCEs cannot succeed without support from the local community. Therefore, it is crucial that a community feels the ownership of an MCE as well understands the benefits from partaking in such a scheme.

4. MCEs must work and be planned in a systemic manner. As MCEs do not seek to make excessive profits like other commercial enterprises there is additional reason for it to operate with efficiently. To close the gap left by limited capital and narrow choice of manpower, a clear and orderly business plan must be put in place to limit wasted resources.

2.3.2 Community Rice Mill as MCE

Nantiya & Narong (2000), Hantrakul (2000), Hutanoowat & Hutanoowat (2000), Joonpongsatol (2007) and Phetprasert & Wongkul (2007) all indicate that the presence of MCEs can create many positive effects on the lives of those within the community in which they operates. In the case of a community rice mill, these effects are very palpable. Figure 2.2 pictures displays the significant differences between a community mill supply chain and that of a typical mill. An MCE supply chain essentially removes middlemen and commercial millers from the system. By doing this it achieves four things, it shortens the rice supply chain, solves its under pricing problem, developed a steady stream of income for the community and also creates local jobs.

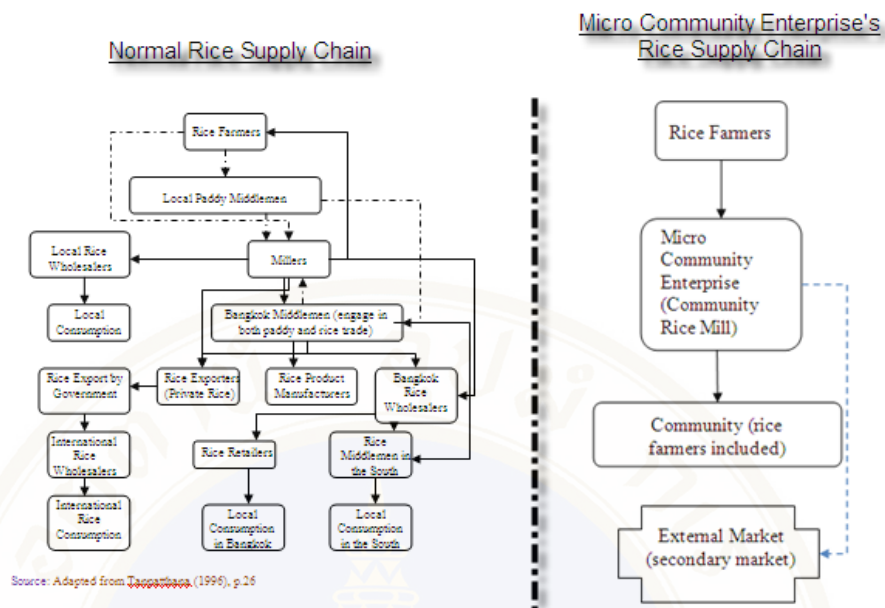


Figure 2.3: Comparison of supply chains

In theory, the farmers can be sure that their paddies will not be underpriced since the community mill exists to better the community's future. Furthermore, as the paddies are sold to a community mill this will prevent crops from traveling out of the community and around Thailand before coming back as package rice sold to be sold in neighborhood stores. It will also allow farmers to purchase cheaper rice from their community mill. Moreover, aside from these benefits the wealth generated by the mill will be kept within the community which will create further employment opportunities.

However, there are a number of problems associate with creating an MCE. Hantrakul (2000), Joonpongsatol (2007) and Phonphit (2009) detailed a critical analysis of the typical, yet critical, problems faced by Thai MCEs, including community rice mills. The authors found that a lack of management knowledge, marketing awareness, funding and instances of corruption were recurring themes – all of which were leading MCEs into debt. Although not all MCE are bound to fail the researchers findings suggest that there are significant difficulties associated with creating a sustainable MCE. However, the researchers also point out that training, strong and honest leadership, planning and community support can help pull an MCE through difficult times.

A case study conducted by Nantiya & Narong (2000) has provided important insight into creating a successful MCE. The authors begin by separating the operation structure of community rice mill into three major parts – input control, operation control and marketing & delivery. They specify a step-by-step instruction on how input control can be implemented. Their steps also include plans on how a community rice mill can grow and harvest its own paddies as well as purchasing paddies from local farmers. The authors also stress the importance of education to promote the benefits of chemical free rice. They also highlighted that education and communication were essential to creating a strong community rice mill. Strict rules of regulations are not acceptable as input control when it comes to dealing with rice growing. Rice farmers will only grow rice in the way they know best whether this way gives the best quality paddies, is not irrelevant (S. Kekprayoon & P. Chaidaisook, personal communication, March 24, 2010). Hence, by slowly educating the farmers, the community mill stands to receive better quality paddies each harvest season as well as creating trust. Furthermore, by enhancing communication between farmers and customers, the authors claim it is possible to establish a long lasting customer loyalty and receive valuable information for future improvement. However, despite their detailed layout of the operation structure and the step-by-step instruction of input control, they authors failed to provide clear instructions on how operation and marketing & delivery can be efficiently controlled.

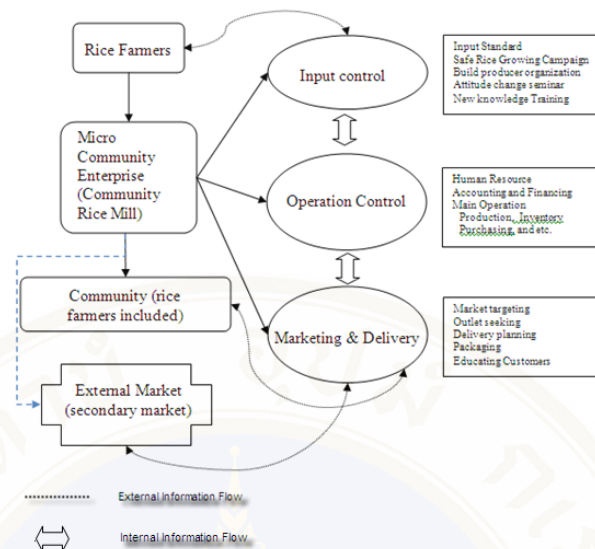


Figure 2.4: Community Rice Mill's Operation Structure

Source: Adapted from Nantiya & Narong (2000)

2.4 Supply Chain Management

In order to understand the working of supply chain management (SCM) it is essential that the term is first understood. A simple idea of the term is widely shared among researchers. Croom et al (2000) investigated the varying definition of SCM by other authors to develop a universal understanding of the term. They found that among the literature there was a recurring theme of the management of raw material transition and transfer and trust and coordination between entities toward ultimately delivering goods and services to customers. Based on Croom et al. (2000) literature review SCM is the management of a set of entities involved in procuring, converting and delivering the finished products and services to the end-customer.

This definition is also shared by Mentzer et al. (2001). The authors make three points regarding the definition of SCM. One is that “supply chain” and “SCM” are two very different things. Supply chain refers to the means, activities and entities involved in the performing, purchasing, manufacturing and delivering of a product or service. However, SCM refers to the means used to manage the activities, entities and information within the supply chain. The second is that a supply chain is always in existence. The last point the authors make is that the customer must be included in the supply chain (Mentzer et al., 2001). Putting together the ideas presented by these two

papers, it can be said that SCM means not only the physical transfer and transformation of products to end-users but also to the management of information required to complete these tasks successfully. Cooper & Ellram (1993) also claim that relationship-building, multi-level coordination and information-share are at the center of supply-chain management.

From these definitions, an idea can be formed about the nature of SCM literature. Tan (2001) concluded that the SCM literature body is a merger between two literature perspectives; the purchasing and supply perspective and the transportation and logistics perspective. This grouping has given rise to a new kind of supply chain management that involves processes and past lessons from the two existing perspectives as well as providing additional insights for further developments. Croom et al. (2000) summarize the disciplines being drawn upon in SCM into 6 broadly defined groups including, strategic management, relationships/partnership management, logistics, marketing, organizational behavior and practitioner's best practices. Below is a brief description of each discipline.

Strategic management: the strategic approach to SCM implemented by the top level of management. Whether the strategic plan is to reduce cost or create flexibility the decision will be made based on the nature of the company's product (Fisher, 1997). Fisher (1997) highlights the importance of identifying the company's product type before making any significant changes. The authors identified two types of products; the functional and the innovative. Functional products are normal community products that have predictable and supply and demand traits. The authors suggest cost-focused strategies yield the most benefits for such products. Innovative products are those with short life-cycles whose demand fluctuates unpredictably. Strategies that promote operation flexibility are the most appropriate for such product types.

Logistics: the planning of material/product traffics both within the company's channels and beyond. Predicting future flow of information and demand has also become a part of logistics (Croom et al., 2000).

Marketing: as a discipline has been included in the managing of supply chains just as customer service and satisfying end-customer has become part of normal

business. Customers no longer see their conveniences being meant as special but part of the packet they mean to get. Marketing is used to manage the flow of information needed to serve the customer and coordinate operations (Porter & Millar, 1985). Porter & Millar (1985) propose that the value chain is a tool to manage information flow and create competitive advantages in costs and differentiations. The principle of consumer behavior, customer service and relationship marketing has also been borrowed for SCM to understand the customer's needs and demands (Cooper and Ellram, 1993).

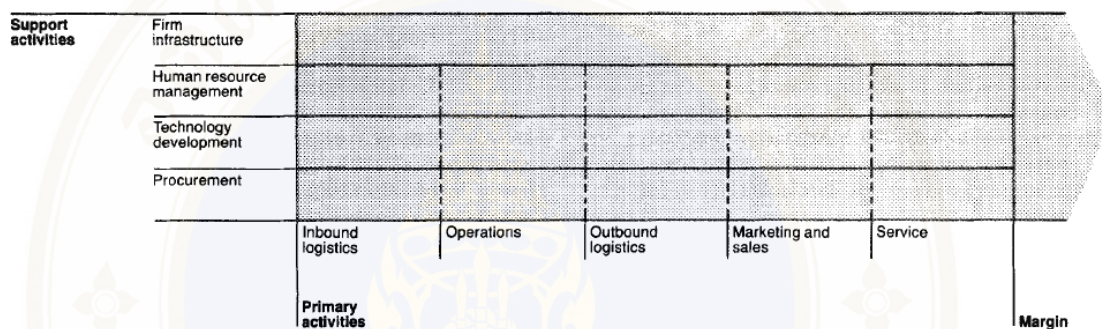


Figure 2.5: Porter's Value Chain

Source: Porter, M. E. & Miller, V. E. (1985) How Information Gives You Competitive Advantage

Relationship/Partnership Management: the managing of suppliers, customers and other business partners is an important facet of SCM. SCM requires standardized systems and legal activities to ensure success. Knowledge about partnership and integration are also deemed as essential important.

Organizational Behavior: SCM concerns not only the flow of material and information but also the people who are responsible for such transfers. Insight into how an organization and its staff should be coordinated to efficiently transfer such information and materials is therefore also important.

Practitioner's Best-Practice: the success of many great SCM schemes is due to the efforts of its practitioners, for example the infamous JIT. It is therefore important that researchers scrutinize the success of their predecessors. Croom et al. (2000) provided a detailed list of critical practices such as; such as MRP, process mapping and waste removal.

Given these groundings, this thesis will adopt the model of supply chain management proposed by Mentzer et al. (2001) as a blueprint for investigating the value creation of Sampatuan MCE’s supply chain.

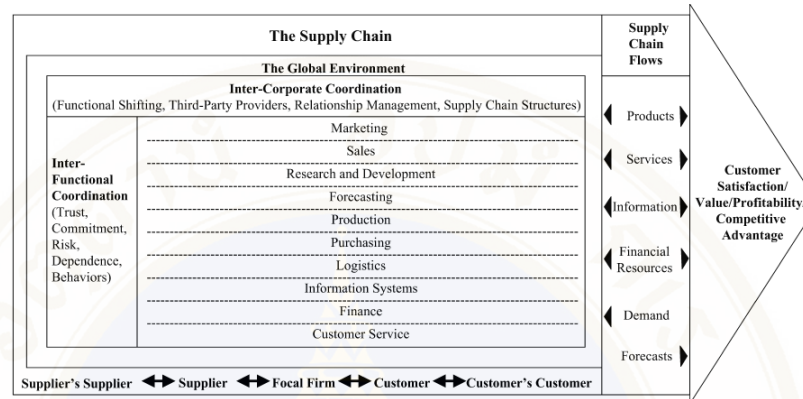


Figure 2.6: The model of supply chain management

Source: Mentzer, et al. (2001) Defining Supply Chain Management

Cooper & Ellram (1993), Lummus & Vokurka (1999), Mentzer et al. (2001) and Croom et al. (2000) all indicate that engaging in integrated supply chain management will increase productivity levels. Cooper & Ellram say SCM can eliminate excess inventory, increase customer service abilities and create competitive advantage in a supply chain. Lummus & Vokurka reason that SCM can provide a means of addressing the ever shifting demands of today customers more accurately as well as maximizing an operation’s capacity. Committee on Supply Chain Integration et al. (2000) states that SCM offers an effective means of building a competitive advantage. The authors explain that by enhancing an operations performance in the supply chain, the company stands a better chance of survival in the today’s volatile market. More efficient costs, greater response rates to shortening product life-cycles, speedier product development and better understandings of the market are the forces that drive more and more enterprises toward adopting SCM, according to Committee on Supply Chain Integration et al.

Based on previous research it is clear that the management of an integrated supply chain differs from that of a normal supply chain as it requires organization-

wide as well as multi-organizations coordination. Mentzer et al. (2001) and Tan (2001) found that for the benefits of integration to reach their full potential trust and honest exchanges of information must be gained and maintained. Integrated supply chain management is unsustainable if the intentions of either organization are short-term and beneficial to only a few or one member of the chain. A good, successful SCM must create long-lasting effects (Cooper & Ellram, 1993; Mentzer et al., 2001; Fisher, 1997 and Croom et al., 2000).

Table 2.1: SCM Characteristics

1. Integrated behavior between functions and partners
2. Mutually sharing information
3. Mutually sharing risks and rewards
4. Cooperation across functions and partners
5. The same goal and the same focus on serving customer
6. Integrated of Processes between functions and partners
7. Partners to build and maintain a long-term relationship

Source: Mentzer, et al. (2001) Defining Supply Chain Management

It is easy to assume that SCM is all about integration; an integration of different disciplines, an integration of internal functions' workflow and integration processes that reach out to influence and support external partners. However, Committee on Supply Chain Integration et al. (2000) offered a distinction between two forms of integrations for SCM. The authors identified two separate categories integration-by-function and integration-by-processes, each with their own benefits and weaknesses. The integration-by-function form requires a focused effort to integrate the function of group with the highest financial payback offered by its partner from within the chain. However, the idea is not without its problems according to Committee on Supply Chain Integration et al. While logically this type of integration offers high returns on investments, problems such locating the critical functional activities is equally costly and time-consuming. It is therefore difficult to verify the significant cause-and-effect relationship of certain activities with the desired outcome (financial performance).

The integration-by-process looks beyond the existence of functions and holistically scrutinizes an operation. Instead of being confined by functions, this analysis focuses on business processes to understand relationships and gaps within the system. This approach posts a better chance of reducing redundant processes and weeding out irrelevant activities. Therefore, the integration-by-process approach gives insight into process to improve the efficiency of a supply chain (Committee on Supply Chain Integration et al., 2000).

Koek, Harrison & Christopher (2001) found that modern SCM is not only about integration but also about agility also known as lean thinking. Their research revealed that integrating processes yielded greater results when combined with elements of agility. Citing Golman et al. (1995), Koek, Harrison & Christopher believe an agile supply chain must have four dimensions enriching customers, cooperating to enhance competitiveness, organizing to master change and uncertainty, and leveraging the impact of people and information. Therefore, agility may be seen as a means of managing demand information in such a way that it reduces risk, increases supply chain coordination and satisfies customers. Previous literatures concerned with the study of agility are based on theories such as just-in-time (JIT), lean production, mass customization, postponement and efficient customer response (ECR).

2.4.1 SCM's Performance Measurements: Doubts and Theories

To implement any source of change an enterprise must anticipate some source of returns the same expectation applies for the employment of SCM. However, Gunasekaran et al. (2001) found that implementing an SCM scheme will not result in instant efficiency improvements instead it was found that many conditions must be met. For one, a balance must be struck between the financial and non-financial measurements. Otto & Kotzab (2002) are also in accordance with this view. Otto & Kotzab found that a company must be aware of the limitations involved in any change. While measuring the ability to achieve goals may result in operational improvements it is important that a company set goals which maximize their capacity. Similarly, attaining a set profit level does not always imply that a company has improved its efficiency. Gunasekaran et al. relate further that the measurement matrix itself has a

problem of implementation clarity. Due to the complexity of SCM, no one set of measurement matrices can universally cover all functioning levels. On the other hand, the implementation of too many sets of measurement matrices can be ineffective and confusing.

Despite the cons, performance measurements for supply chains are a required part of SCM as they provide a measure of a company's efficiency. Beamon (1999) and Gunasekaran et al. (2001) state that the measurement of SCM can be classified into four major types; cost, customer satisfaction, activity time and flexibility of supply chain (Beamon, 1999 and Gunasekaran et al., 2001). The combination in which these outcomes can be employed will depend heavily on three things; product type, customer's expectation and a company's goal. The logic behind this rule is simple – without alignment in between the performance measurement and overall strategy of the company that measurement is of no value for it cannot propel the company toward its goal (Fisher, 1997; Beamon, 1999 and Gunasekaran et al., 2001).

Committee of supply chain integration et al. (2000) proposed that performance measurement metrics should be set on two different levels. It suggested that one should gauge overall performance of the supply chain overseeing profits, sales, return on investment and similar figures. The second set of performance measurements discerns the performance of each major operation process. The two metrics separate the performance measurements according to the level of responsibility within the management structure.

Gunasekaran et al. (2001)'s performance theory seems to have tied together the ideas of Beamon (1999) and Committee of supply chain integration et al. (2000). The performance metric takes heed of both the financial and non-financial elements and separates them into three levels: strategic, tactical and operational. Otto & Kotzab (2003) suggest that SCM should be measured from six primary perspectives. These six views are order management, information flow, logistics, marketing, intra-enterprise segmentation and strategic positioning. Hugo (2006) advises that performance measurement metrics should be adjusted overtime according to the six cycles of product demand. The author reasoned that it would inappropriate to

use one set of matrices for all situations when each is unique and requires different approaches to survive.

Table 2.2: Supply chain’s performance measurements

Book/Article Name	Author	Publisher	Supply Chain Performance Measures																																																							
Measuring supply chain performance	B. M. Beamon (1999)	International Journal of Operations & Production Management, vol 19, No.3, pp 275-292	Propose that supply chain should be measured in three areas: resources, output and flexibility. 1. Resource – objects and activities necessary to producing and managing and delivering product/services. Measure in lowest quantity allowed. Total cost, Distribution Cost, Manufacturing Cost, Inventory; investment, obsolescence, work-in-process and finished goods, ROI 2. Output – the customer's reactions or the result of supply chain operation. Measure in both quantity and quality. Customer Satisfaction, On-time delivery, Product depletion / stockout, Product quality, Production time, Order circle time, Lead-time / customer response time, Sales / Profits, Shipping Error, Customer Complaints 3. Flexibility – the ability to further improve output performance. Measure in term of probability, excess cost/saving or adjustment to risk. Volume Flexibility (Fv), Delivery Flexibility, Mix Flexibility – demand of all product type, New product flexibility – product with short life cycles																																																							
Surviving supply chain integration: challenges for small manufacturers	Committee on Supply Chain Integration, Board on Manufacturing and Engineering Design, Commission on Engineering and Technical Systems, National Research Council (2000)	National Academy Press, Washington DC	Offer two metric levels: High-Level Assessment Metric and Key Function Assessment Metric High-Level Metric: Profitability, total sales, decision response time, return on investment, return on assets, technology, production development time, share risk, market share, planning, quality, customer satisfaction, waste, transparency Key Function Metric: General - time to market, inventory levels and capacity utilization, market to collection, customer services, infrastructure, return to available Delivery - delivery-to-commitment date, lead time, faultless installation, faultless invoices, forecast accuracy, customer inquiry resolution time Flexibility and responsiveness - response time, productivity flexibility, replanning cycle, release-to-ship date, materials lead time Logistics - logistics cost, obsolescence, warranty costs Asst management - cash-to-cash cycle, inventory days of supply, inventory aging, days of sales outstanding, asset turns, ship-to-invoice cycle																																																							
Performance measures and metrics in a supply chain environment	A. Gunasekaran, C. Patel, E. Tirtiroglu (2001)	International Journal of Operations & Production Management, vol 21, No. 1/2, pp 71-87	Propose the metric must measure both financial and non-financial elements within the supply chain. The key performance matrices are categorized into three levels in accordance with the integration framework of plan, source, make and deliver. <table border="1"> <thead> <tr> <th>Level</th> <th>Performance metric</th> <th>Financial</th> <th>Non-financial</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Strategic</td> <td>Total cash flow time</td> <td></td> <td>✓</td> </tr> <tr> <td>Rate of return on investment</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Flexibility to meet particular customer needs</td> <td></td> <td>✓</td> </tr> <tr> <td>Delivery lead time</td> <td></td> <td>✓</td> </tr> <tr> <td>Total cycle time</td> <td></td> <td>✓</td> </tr> <tr> <td rowspan="4">Tactical</td> <td>Level and degree of buyer-supplier partnership</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Customer query time</td> <td></td> <td>✓</td> </tr> <tr> <td>Extent of co-operation to improve quality</td> <td></td> <td>✓</td> </tr> <tr> <td>Total transportation cost</td> <td>✓</td> <td>✓</td> </tr> <tr> <td rowspan="3">Operational</td> <td>Truthfulness of demand predictability/forecasting methods</td> <td></td> <td>✓</td> </tr> <tr> <td>Product development cycle time</td> <td></td> <td>✓</td> </tr> <tr> <td>Manufacturing cost</td> <td>✓</td> <td>✓</td> </tr> <tr> <td></td> <td>Capacity utilization</td> <td>✓</td> <td>✓</td> </tr> <tr> <td></td> <td>Information carrying cost</td> <td>✓</td> <td>✓</td> </tr> <tr> <td></td> <td>Inventory carrying cost</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table>	Level	Performance metric	Financial	Non-financial	Strategic	Total cash flow time		✓	Rate of return on investment	✓	✓	Flexibility to meet particular customer needs		✓	Delivery lead time		✓	Total cycle time		✓	Tactical	Level and degree of buyer-supplier partnership	✓	✓	Customer query time		✓	Extent of co-operation to improve quality		✓	Total transportation cost	✓	✓	Operational	Truthfulness of demand predictability/forecasting methods		✓	Product development cycle time		✓	Manufacturing cost	✓	✓		Capacity utilization	✓	✓		Information carrying cost	✓	✓		Inventory carrying cost	✓	✓
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Does supply chain management really pay? Six perspectives to measure the performance of managing a supply chain	A. Otto, H. Kotzab (2003)	European Journal of Operational Research, 144 (2003) 306-320	Present 6 metrics from 6 different perspectives: System Dynamic (SD), Operations Research/IT (ORIT), Logistics, Marketing, Organization and Strategy SD Metric (order management) - capacity utilization, cumulative inventory level, stock-out, time lags, time to adapt, phantom ordering ORIT Metrics (network configuration and flow) - logistics cost per unit, service level, time to deliver Logistics Metric (integration of process)- integration, lead time, order cycle time, inventory level flexibility Marketing Metric (fit between product, channel and customer)- customer satisfaction, distribution costs per unit, marketing share/channel cost Organization Metric (intra-enterprise segmentation) - transaction cost, time to network, flexibility, density of relationships Strategy Metric (ability to partner, positioning in the chain) - time to network, time to market, ROI																																																							
Essential of supply chain management (2ed edn)	Michel Hugo (2006)	John Wiley & Sons, Inc. New Jersey	Propose four kinds of performance metrics tailored especially for each market situations: supply exceeds demand, supply equals demand, demand exceeds supply, and low supply and demand. <table border="1"> <thead> <tr> <th>CUSTOMER SERVICE</th> <th>INTERNAL EFFICIENCY</th> </tr> </thead> <tbody> <tr> <td> Build to Stock (BTS) <ul style="list-style-type: none"> Complete order fill rate & order line item fill rate On-time delivery rate Value of total backorders & number of backorders Frequency and duration of backorders Line item return rate </td> <td> <ul style="list-style-type: none"> Inventory value Inventory turns Return on sales Cash-to-cash cycle time </td> </tr> <tr> <td> Build to Order (BTO) <ul style="list-style-type: none"> Quoted customer response time & on-time completion rate On-time delivery rate Value of late orders & number of late orders Frequency and duration of late orders Number of warranty returns and repairs </td> <td> DEMAND FLEXIBILITY <ul style="list-style-type: none"> Activity cycle times Upside flexibility Outside flexibility </td> </tr> <tr> <td colspan="2"> PRODUCT DEVELOPMENT <ul style="list-style-type: none"> Percent of total sales from products introduced in last 12 months Percent of total SKUs that were introduced in last 12 months Cycle time for new product development and delivery </td> </tr> </tbody> </table>	CUSTOMER SERVICE	INTERNAL EFFICIENCY	Build to Stock (BTS) <ul style="list-style-type: none"> Complete order fill rate & order line item fill rate On-time delivery rate Value of total backorders & number of backorders Frequency and duration of backorders Line item return rate 	<ul style="list-style-type: none"> Inventory value Inventory turns Return on sales Cash-to-cash cycle time 	Build to Order (BTO) <ul style="list-style-type: none"> Quoted customer response time & on-time completion rate On-time delivery rate Value of late orders & number of late orders Frequency and duration of late orders Number of warranty returns and repairs 	DEMAND FLEXIBILITY <ul style="list-style-type: none"> Activity cycle times Upside flexibility Outside flexibility 	PRODUCT DEVELOPMENT <ul style="list-style-type: none"> Percent of total sales from products introduced in last 12 months Percent of total SKUs that were introduced in last 12 months Cycle time for new product development and delivery 																																																
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Upon close scrutiny two conclusions may be drawn from figure table 2.2. The first is that the measurements used by academics to create the metrics, are generic performance indicators. The second is that the metric, hence the performance indicators within, can be shaped and re-shaped according to objectives and goals that the user wants to achieve. Hence, it is safe to imply that a performance measurement metric must be built according to the organization’s business nature, strategy and

goals. The complexity of the metric, likewise, should deviate in the same direction as the operation structure and the human capability to implement it.

2.4.2 Analyzing SCM's efficiency: Value Chain Analysis

The word “efficiency” in the context of SCM can be interpreted in many ways – due to the varieties of activities that constitute SCM. Efficiency can be interpreted as low-operation cost, zero waste production, high-level of customer satisfaction or flawless delivery depending on the activity being addressed and the overall strategy of the company. To ensure that efficiency is achieved a value chain analysis may be conducted. Thompson, Strickland & Gamble (2008) and Net MBA (2010) support the notion that improving an individual player's efficiency without synergy does not equate to the optimization of a chain's efficiency. All players within the chain are connected, and as such, any activity committed by a player may impact positively on the performance of the subsequent players and vice versa. Hence, it is rather imperative to understand these inter-related connections before one can plan to achieve efficiency.

By definition, value chain means “the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use” (Kaplinsky, 2000). The value chain analysis is therefore the study of values added by these activities, the actors of such activities and the intangible elements (relationship and information) surrounding them. Anandajayasekeram & Gebremedhin (2009) found that value chain analysis has become increasingly popular within the agricultural development field during the past decade. The authors speculate that this is due to it providing a holistic view of the power-induced relationship and value-creation within the chain which, in turn, can be useful in developing a comprehensive model. The notion has garnered support as a number of academics have now employed it in their case studies on supply chain's efficiency (Taylor, 2005; Trienekens et al., 2008; and van Donk et al., 2008).

The technique is not without its limitations. It is often criticized for its short-comings in explaining cross-industrial relationships and internal constraints.

However, the technique is also seen as invaluable when being used to investigate relationships within a value chain (Anandajayasekaram & Gebremedhin, 2009). Thompson, Strickland & Gamble (2008) conclude that there are four steps in analyzing a value chain.

Table 2.3: The Four Steps of Value Chain Analysis

Step 1	Identify primary and secondary activities then map them together. Porter & Millar (1985) originally define primary activities as those that directly involved in the making, the marketing, the delivery and the after-servicing of the product to the customers. The secondary activities are those conducted to support the smooth running of the primary activities.
Step 2	Identify the cost of performing each activity. MicroLinks (2009) offers that these costs could be assigned in forms of profits/losses, productivity rate, production capacity or value chain actor. The criteria used in choosing the assigned costs, is simple. It is most precedent that the costs assigned can be used as the common indicators when conducted a benchmarking exercise.
Step 3	Conduct a benchmarking exercise. The common performance indicators allow the company to see a clearer picture of its performance within the industry environment. The internal-gaps and industrial best-performances are quickly learnt and spotted (Thompson, Strickland & Gamble, 2008).
Step 4	Define constraints and to devise an improvement plan.

Source: Adapted from Thompson, Strickland & Gamble (2008)

Considering all four steps laid out above and their implications to this research (procedures wise) one outstanding factor is noted. Step 2 proposes that only monetary costs are assigned to activities and that these costs be used as benchmark criteria. While the researcher agrees that some monetary costs are indeed useful when comparing the company's overall performances with other, financial figures cannot simply be used to explain all activities for all purposes (Fisher, 1997; Beamon, 1999; Committee of supply chain integration et al., 2000; and Gunasekaran et al., 2001). When the objective is to compare operation process or evaluating control points,

financial figures can also give an overview – a conclusion – of the actions. It cannot tell exactly what is going wrong. Other kinds of numbers and methods must be utilized for that purpose (Otto & Kotzab, 2003).

2.5 Related Researches in Thailand

Broadly, there are two branches of academic research concerning Thailand's agricultural productivity. One branch is concerned with researching agricultural technology to develop new biological innovations. Genetic plant research is the most common branch of this topic (National Center for Genetic Engineering and Biotechnology, 2010). The other aspect of research addresses the challenge posed of adapting western engineering knowledge for use in Thailand's agricultural sector. The works of this research branch contain various disciplines. Frequently a research piece can be founded that incorporates more than one school of thought for example mechanical engineering and food engineering, grain study, agricultural science and soil science. The combinations often aim to improve the efficiency of current processes and situations by either removing or adjusting the source of error (Postharvest Technology Information Center, 2010).

Due to their originality and usefulness three studies will be of influential note to this study. They include research by Jadpong & Hansirimichai (1986). The authors worked on the huller's adjustment to increase yield of milled rice. Although old, the study is still very much valid and viable. The researchers proved that the adjustment of engine speed in relation to the width of the grain release door could improve productivity. Furthermore, Triwattanawong & Jaradol (1989) focused their attention on identifying the factors responsible for breaking kernels during the milling process. The authors found that milling rice in high humidity at low temperatures was responsible for reducing yield rates. The authors also found that moisture absorbed from the atmosphere could increase the yield rate after milling. On the contrary, the paddies that had released moisture would break more easily. These findings are somewhat contradicting to the industry practice where rice paddies are forced to release moisture.

Preliminary interviews with two middlemen and Sampatuan MCE's committee members opposed Triwattanawong & Jaradol (1989)'s findings. Both

interviewed parties are in accordance that freshly harvested paddies must be allowed to release moisture and the inner kernels set before they can be milled. They claim that otherwise the inner kernels will be too soft and break. Therefore, the question of what is the right level of moisture to maintain within the paddies at the time of milling has now been raised.

The last piece of influential research to this thesis is work conducted by Sajwan, et al. (1990). The authors' investigation into the humidity treatment of paddies' effects on the yield rates after milling presented notable results. The group found that it is best to immediately thrash the rice and dry the paddies after the harvest to optimize yields. Paddies that were the result of later thrashing after some resting time in the field were easier to break than those that were immediately thrashed during the milling process. Similarly, paddies that endured more than one sun-dry treatment – in order to adjust the moisture content to the right level – broke easier than those that endured just one treatment of oven-dry or sun-dry.

From these three studies, the following speculations can be made regarding the performance measurements of rice mills.

1. Yield rates after milling are the ultimate measurement tool that all processes within the rice mill should aim to improve
2. The appropriate level of moisture content at the time of milling should be included as part of performance measurements
3. Drying methods for paddies must be considered in terms of the number of times required to complete the job effectively
4. The storage of dried paddies should aim to maintaining the appropriate levels of moisture content
5. The huller's adjustment should be included when considering performance measurements

CHAPTER III

METHODOLOGY

This chapter aims to walk the readers through the thinking process of this research. The content has been separated by five sections. The first section talks of the steps taken thorough the research to ensure this research can be replicated scientifically and logically. The second section details the underlying philosophy and perspective taken in this research. The weaknesses and advantages of the tools being employed are also discussed largely. The third section explains the types and sources of data to be collected during the course of this research. The fourth section looks to explain the primary data sampling and collection method. The last section discusses the researcher's choice of analysis approach and tools to be used.

3.1 Research Steps

The research steps of this thesis can be separated into two major categories. They are the overall research steps and the main research steps. The overall research steps take into account all the overarching activities that must be commenced to complete this project. The steps are intellectually based on the process of multiple case study method described by Grey (2009). His approach is adopted from Yin (2003b) who has also been cited by Trieneken et al. (2008) for his work on multiple case study theories. The main research steps are steps that concern the actual analysis steps to be taken on each individual case.

The overall research steps contain seven ascending elements.

1. Conduct literature review on the Supply Chain Management, the Marketing Productivities and the Supply Chain Performance Measurement
2. Build the research problem's background and create focus
3. Locate possible cases to study and to use as comparison to the main case
4. Design interview questions, collection device, and interview procedures
5. Conduct and analyze the data from each separate case individually

6. Compare and contrast the findings from each case
7. Write up the cross-case report

Figure 3 shows the procedures to be taken under the main research steps which detail the case analysis part of this thesis. There are 5 essential steps. The first step is to identify the Supply Chain Factors. Here the whole supply chain management (SCM) is mapped out and observed in its original content. The second step is to understand and to compare the SCM against literatures. The third step identifies any misalignment and waste within the SCM illuminated by both academic theories and practitioner’s practices. The fourth step seeks to identify the performance measurement that will eliminate the misalignments or possible gaps found in step 3. The fifth and final step is the creation of the Supply Chain Performance Metric. The Metric is, in short, the combination of performance measurements.

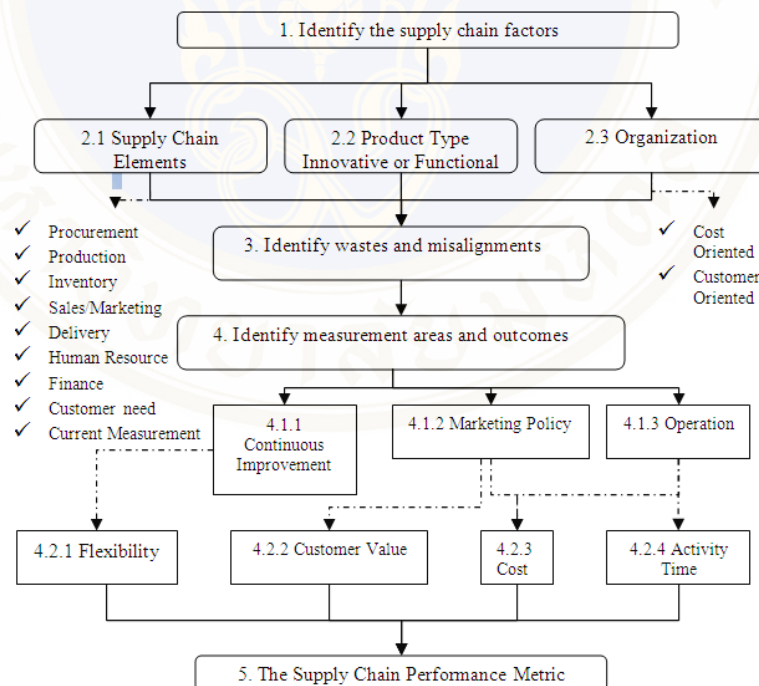


Figure 3.1 Main Research Steps

3.2) Methodology

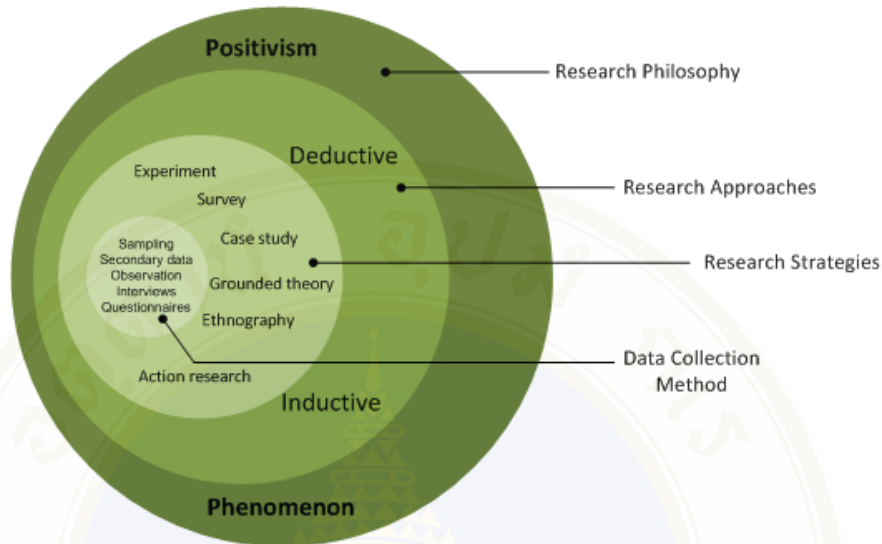


Figure 3.2 The elements of the research process

Source: adapted from Saunders *et al.*, 2007, p.135

This thesis follows the research steps put forward by Saunders *et al.* (2007) in order to clearly define the research stance and theoretical reasoning. Taking on the **constructivism** approach as the **based epistemology**, the author supports the philosophy in believing that truths are created through human interaction with its surrounding. This thinking proposes that the truth in a situation can be interpreted differently by different people depending on their experiences and understanding.

In relation to the epistemology, the author naturally inclines toward the **interpretivism perspective**; the perspective is believed to be closely linked to the constructivism epistemology (Grey, 2009). Both believe that truths are in the eye of the beholder. It is through this theoretical reasoning that the author chooses to employ the **(embedded) multiple case study** as methodology. The (embedded) multiple case study answers this thesis's objectives for it allows the comparison of a small part within the cases, namely the supply chain management of rice millers.

The case study, in general, is utilized when answering the questions of **why, what and how** (Morris and Wood 1991). Saunders *et al.* (2007) and Grey (2009) assert the case study strategy is used in explanatory and exploratory research where factors need identified without interferences from the researcher's part. Although, the

methodology is famous for its descriptive and qualitative nature; the case study is not without criticism.

Yin (2003b) and Gummesson (2000) point out many researchers who doubt the case study as a valid scientific methodology for its difficulty to replicate and low-level of generalization. They discuss further that the time-period and data-collection techniques required to conduct a competent case study are also questionable. Grey (2009) cites Yin (2003b) on his approaches to tackle these criticisms. Yin (2003b) proposes that a good case study should have all of the following four elements.

1. **Construct validity:** the researcher should set out a clear goal, with a definition of the work unit and descriptive work instructions, appropriate measurement tools, and traceable data of various sources of types. It implies the data does not have to confine to qualitative data. The quantitative data may also be used so long as it proves the case.

2. **Internal validity:** the case study must make sense of the data in a systematic manner. The analysis should be based on an appropriate analytical method.

3. **External validity:** the generalization can be improved through the provision of case selection logic. The logic should be based on evidence that the case is chosen for its relationship to true population.

4. **Reliability:** it is important that a case study is planned and conducted in a logical sequence. The act is meant for helping others in verifying the outcome through conducting an exact replica of the original case study. A practice has its common place in the Scientific World. Yin (2003b) asserts the case study should be systematically documented from the planning stage to the final report to maximize the chance of replication.

It can be concluded then that conducting a case study does not necessary lead to unreliability. By being aware of fulfilling the aforementioned four criterias, a case study can be reliable scientifically. The researcher is doubly aware of these points and ensures they are shown in the piece. The goals are made firm through a series of discussions with an advisory. The research design is then drawn out with the goals in

mind (construct validity). The analysis approach and tools are selected to match the qualitative data (internal validity). The case study is selected based on the characteristics of the Micro Community Enterprise that has the most chance of survival as indicated in the literature review (external validity). The research steps and research journals will also be followed and employed strictly to ensure the reliability.

Hanson et al. (2005) proposes a mixed research approach to fulfill these criterias The mixed approach argues a research piece which does not have to be pure qualitative or quantitative. A good research piece should employ both qualitative and quantitative data to use against one another. The different nature between qualitative and quantitative can provide a good cross-analysis of research outcome and a good argument of research validity.

Denzin (1989) calls Hanson et al.'s idea the Methodological Triangulation. He expanded Hanson et al.'s theory and proposed three approaches to Triangulation. Data Triangulation is when data is collected using more than one type of sampling strategies or sample sets. Investigator Triangulation is where more than one investigator conducts the same research then compares findings. Multiple Triangulations is where various research methods, data types, theories etc are used in the same research.

The Multiple Triangulation is considered by the author most appropriated since it most aligns with the research strategy, i.e. (Embedded) Multiple Case Study. The strategy which requires collections of data from different sample set of similar conditions. As suggested by the technique's name, the researcher will attempt to gather the same kind of information employing different techniques and information sources. The first set of information comes from formal interviews with the intended subjects, i.e. the committee members of Sampatuan Micro Community Enterprise (MCE) and Chiameng Co., Ltd. The researcher will then proceed to observe the subjects' behavior from a far to validate/contradict the interviewed data and to collect extra details that have been missed during the interviews. The last source of information comes from the subjects' peers. For the purpose of this paper, the peers are described as "people who directly or indirectly involved in the management of Sampatuan MCE, i.e. the committee members, the people within the community and

the government officers”. All information from the three sources is benched against one another for best results.

3.3 Data

The qualitative data will be employed when gathering information pertaining to Sampatuan MCE’s supply chain and the supply chain of standardized miller. These data will be used to identify the bottom-necks and the industrial practices in that respective order and, ultimately, the critical success factors.

The sources of data will come from the following two directions:

I. Primary data source

- ✓ In-depth interview and focus group with key persons from Sampatuan MCE give information into MCE’s problems and concerns
- ✓ In-depth interview with prominent packaged-rice manufacturer gives information into customer demographic, consumer behavior, market environment and reasons for industrial practices.

II. Secondary data source

- ✓ Statistic data and government policies from Ministry of Agriculture and Cooperatives
- ✓ Statistical data from National Statistic Office (NSO)
- ✓ Books, magazines, newspapers and journals for various perspectives and theories and solutions by practitioners
- ✓ Operation records from Sampatuan MCE

3.4 Primary Data Sampling Strategy And Collection Method

Primary Data Sampling: Patton (2002) introduces fifteen types of sampling strategies for qualitative research in his book on the qualitative research and methods. One strategy out of the list is chosen for this research. It is the Intensity Sampling. This type of sampling seeks to study the subjects that have expertise in the matter concerned.

Primary Data Collection: Saunders *et al.*'s (2007) say there are three types of interview. They are structured interviews, semi-structured interviews and in-depth interviews. This thesis will employ the in-depth interview as a method to collect primary data from selective samples. The reason behind the author choice is that this type of interview allows the interviewer more room to maneuver the conversation within a certain vicinity of the original question in order to probe in deeper detail.

The summary of the In-depth Interview steps are as follows:

- Step 1 : Plan how the author will conduct the in-depth interviews and prepare the interview questions as well as getting approval from Ethic
- Step 2 : Contact the rice millers and Sampratuan MCE to decide who the respondents will be
- Step 3 : Contact respondents to set up interview dates and send the confidentiality form and interview questions for their review
- Step 4 : Prepare interview guide for each category of informants
- Step 5 : Conduct the actual interviews at the manufacturer then at Sampratuan MCE
- Step 6 : Analyze the data and compare findings
- Step 7 : Write a report and recommend SCM Metric

The interview will have the total of thirty-six questions, separated into seven sections. The seven sections are structured in accordance to the main activities of value chain within the rice mill's operation. There are procurement process, production process, inventory process, delivery process, an other involving functions (other supporting services and functions), relationship management and information flow. The ultimate goal is to find a pattern or mismatch in the management of rice supply chain.

The questions of the in-depth interview are designed as followed:

Procurement Process
1. Please help explain the steps in which the paddies are brought and from whom?
2. Who is in charge of making decision to buy paddies from suppliers and what information do they based the decision on?
3. Please describe the kind of relationship being maintained between you and the suppliers? How important is it that this relationship existed?
4. From the view point of a management, what is the most important duty of a buyer?
Production Process
5. Please explain the rice milling processes?
6. What are the products gotten by the milling process?
7. What is the industrial standard for milling paddies?
8. What else must be done before this rice can be packaged?
9. Who are the people in charge of overseeing the treatment of paddies thorough the process?
10. What are the processes of packing a package of rice?
11. What must be done to ensure a smooth operation? What standards must be kept?
12. From the view point of a management, what is the most important duty of the production process?
Inventory Process
13. How do you make sure you have enough rice paddies for production at all time?
14. How are the paddies treated after they are bought and before they can be milled?
15. How is each of the by-products of rice milling treated afterward?
16. Please explain your treatment of packaged rice?
17. How do make sure you produce enough packaged rice for your customers?
18. Who are the people in charge of overseeing this process?
Delivery Process
19. Please explain roughly how the packaged rice is delivered? (by what mean, by whom and to whom)
20. What criteria are being used in making the transport decisions?

21. How do you make sure flawless delivery? (no damaged product, no wrong delivery and no late delivery)
22. How do you know that the billing amount will cover the delivery cost?
Other Involving Departments
23. Please explain how you decide where to sell your packaged rice, at what price.
24. Please explain the roles that promotion and product attributes play in packaged rice market.
25. How do you manage the activities in question 23 and question 24 in alignment with other Departments?
26. Please explain the roles that Financial Department in rice supply chain.
27. How do you ensure that Financial information will be used effectively throughout the supply chain?
Relationship Management
28. Considering Question 1 through 23, please list out the relationships between each players in the supply chain (both within and outside of the organization).
29. Can you describe in detail how each relationship is maintained to the benefit of the organization?
30. Please re-arrange the list of relationship in order, from one that has the most importance to the least.
31. Please help provide the reason for the top three most important relationships.
32. Please describe your opinions on the relationship building and sustaining strategies undertaken by your MCE?
Information Flow
33. Considering Question 1 through 23, please explain the kind of information needed to support the operation flow?
34. How do you ensure that the right information is available to the right people?
35. How do you ensure that the designated person will read and make use of the information given appropriately?
36. Please give your opinions on how information should be managed to ensure smooth operation of the supply chain?

3.5 Data Analysis

The content analysis is utilized in analyzing and comparing the supply chain operations between the community mill and the commercial rice mills. Krippendorff (1980) says the content analysis is a research technique used to make inferences from data to their contexts. The researcher can then search for structures and patterned regularities in the text and makes conclusions on the basis of these regularities. Therefore, it is an appropriate analytical method to employ when attempting to find the ground basis for this thesis's supply chain measurement metric.

Welsh (2002) discusses briefly the academic's stances on computer software that aid the analysis of qualitative research. Like everything in the world, there are two sides to one story. On one side, the academics are supportive of **Computer Assisted Qualitative Data Analysis Software (CAQDAS)**. They see it as the minestrone of qualitative data analysis, to help them achieved accurate translation as well as eased their ways to it systematically. Other academics oppose CAQDAS saying it distances researchers from data and possibly leads them to a wrong conclusion.

Despite the differences in opinions, it is important that the researchers realize the pros and cons of using and not using CAQDAS. The researchers should be able to compromise and combine for the best results. It is recommended that a manual analysis is used when dealing with small amounts of data and vice versa (Welsh, 2002).

CHAPTER IV

RESULTS

This chapter explains, in detail, how the data gotten from the interview are analyzed using the content analysis technique. The data presented here are organized into seven sections; in lieu with the interview question headings. The seven headings of the interview questions, and by proxy the seven sections, derived from the ground theories laid out by Nantiya & Narong (2000), Phongphit (2009) and Mentzer, et al. (2001). Nantiya & Narong (2000) and Phongphit (2009) provide the ideal operation structure of a community rice mill in which has been use to create the initial layout of the interview questions. Mentzer, et al. (2001)'s model of supply chain management is used to add in the missing elements. Each sub-section dedicates to presenting the information relating to the operation steps and the key activities/relationships of its assigned topic.

4.1 Introduction

Following the value chain analysis steps proposed by Thompson, Strickland & Gamble (2008), this thesis starts off identifying the activities taken on by both the micro community enterprise (MCE) and the commercial mills then classifying them into primary and secondary activities. This exercise allows the author to scope the research down to roughly seven areas. They are procurement, production, inventory, delivery, other involving departments, relationship management and information management. According to Nantiya & Narong (2000), the core operations, i.e. primary activities, of any rice mill consist of four functions; procurement, production, inventory and delivery. These core operations are then supported by other involving departments, relationship management and information management; i.e. the secondary activities.

The in-depth interview questions are designed to unearth information relating to the operation steps and the key activities/relationships of each of the seven researched areas. The interpretation and formation of the gathered data comes in seven stages as illustrated in picture 4.1.

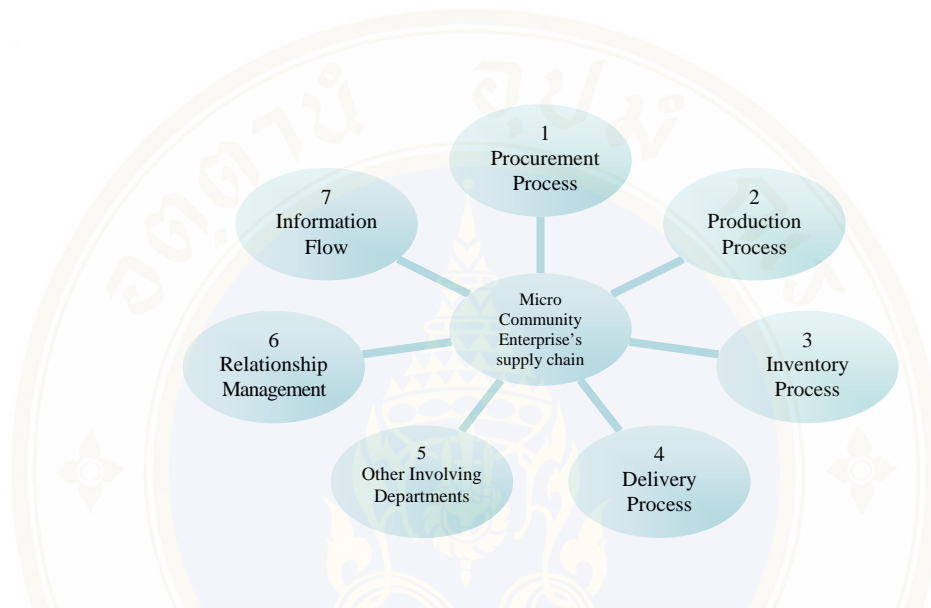


Figure 4.1 Interpretations and Formations of Data Stage

In each stage, the data gathered for each question are mapped against its respective key words. The data analysis approach will take on both conceptual and relational quality of the content analysis. In other words, the author seeks to refer to both the presence and the underlying inference of the key words within the data. These data will provide a building block for performance indicators.

Table 4.1.1 Procurement Process's Key Words and Interview Questions Mapping

Procurement Process's Key Words	From Interview Questions Number
1. Purchasing steps and material sources	1. Please help explain the steps in which the paddies are bought and from whom?
2. Key man and Information back up of purchasing	2. Who is in charge of making decision to buy paddies from suppliers and what information do they based the decision on?

3. Relationship between buyer and supplier	3. Please describe the kind of relationship being maintained between you and the suppliers? How important is it that this relationship existed?
4. Duty of buyer	4. From the view point of a management, what is the most important duty of a buyer?

Table 4.1.2 Procurement Process's Key Words and Interview Questions Mapping

Production Process's Key Words	Interview Questions
5. Rice milling process	5. Please explain the rice milling processes?
6. Rice milling by-products	6. What are the products gotten by the milling process?
7. Industrial Standard of milling process	7. What is the industrial standard for milling paddies?
8. Other production related activities	8. What else must be done before this rice can be packaged?
9. Key man of paddies treatment	9. Who are the people in charge of monitoring the treatment of paddies thorough the process?
10. Process of packaging	10. What are the processes of packing a package of rice?
11. Standard of the operation	11. What must be done to ensure a smooth operation? What standards must be kept?
12. Duty of production process	12. From the view point of a management, what is the most important duty of the production process?

Table 4.1.3 Inventory Process's Key Words and Interview Questions Mapping

Inventory Process's Key Words	Interview Questions
13. Inventory of paddies	13. How do you make sure you have enough rice paddies for production at all time?
14. Paddies treatment	14. How are the paddies treated after they are bought and before they can be milled?
15. By - product treatment	15. How is each of the by-products of rice milling treated afterward?
16. Packaged rice's treatment	16. Please explain your treatment of packaged rice?
17. Stock packaged rice	17. How do make sure you produce enough packaged rice for your customers?
18. Key man/ Key person of production monitoring	18. Who are the people in charge of monitoring this process?

Table 4.1.4 Delivery Process's Key Words and Interview Questions Mapping

Delivery Process's Key Word	Interview Questions
19. Package rice delivery	19. Please explain roughly how the packaged rice is delivered? (by what mean, by whom and to whom)
20. Criteria of transportation decision	20. What criteria are being used in making the transport decisions?
21. Delivery assurance	21. How do you make sure flawless delivery? (no damaged product, no wrong delivery and no late delivery)
22. Delivery cost estimation	22. How do you know that the billing amount will cover the delivery cost?

Table 4.1.5 Other Involving Department's Key Words and Interview Questions Mapping

Other Involving Departments' Key Words	Interview Questions
23. Place of sell and pricing practice	23. Please explain how you decide where to sell your packaged rice, at what price.
24. Promotion and product attribute	24. Please explain the roles that promotion and product attributes play in packaged rice market.
25. Management of place and promotion	25. How do you manage the activities in question 23 and question 24 in alignment with other Departments?
26. Roles of finance department in supply chain	26. Please explain the roles that Financial Department in rice supply chain.
27. Effectiveness of finance information on the supply chain operation	27. How do you ensure that Financial information will be used effectively throughout the supply chain?

Table 4.1.6 Relationship Management's Key Words and Interview Questions Mapping

Relationship Management's Key Words	Interview Questions
28. Relationship between each performer	28. Considering Question 1 through 23, please list out the relationships between each performers in the supply chain (both within and outside of the organization).
29. Maintenance of relation to the benefit of organization	29. Can you describe in detail how each relationship is maintained to the benefit of the organization?
30. Ranking level of importance of relationship	30. Please re-arrange the list of relationship in order, from one that has the most importance to the least. 31. Please help provide the reason for the top three most important relationships.

31. Relationship strategy of each organization	32. Please describe your opinions on the relationship building and sustaining strategies undertaken by your organization?
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Table 4.1.7 Information Flow’s Key Words and Interview Questions Mapping

Information Flow’s Key Words	Interview Questions
32. Information needed to support operation flow	33. Considering Question 1 through 23, please explain the kind of information needed to support the operation flow?
33. Right information	34. How do you ensure that the right information is available to the right people?
34. Right human resource	35. How do you ensure that the designated person will read and make use of the information given appropriately?
35. Information management process	36. Please give your opinions on how information should be managed to ensure smooth operation of the supply chain?

4.2 Key Words and Data Result Mapping

In this section, the key words are mapped to the relevant interview data. Applying both the conceptual and rational analysis, the author highlights key findings and leaves the rest of the data untouched for the time being.

Table 4.2.1 Procurement Process’s Key Words and Interview Data Mapping

Procurement Process’ Key Words	Sampatuan MCE’s Manager	Chiameng Co., Ltd. Group’s Production Manager
1. Purchasing steps and material sources	<p>The rice paddies come from 2 sources.</p> <p>1) From the rice farmers in the surrounding areas (90% - 92%).</p> <p>2) From MCE’s own rice field (8%-</p>	<p>The rice paddies come from 3 sources.</p> <p>1) From the rice farmers who have standing relationship with the miller.</p> <p>2) From independent rice farmers.</p>

	<p>10%).</p> <p>The rice paddies will be tested for moisture level before the buying decision is made. As a result, MCE ended up with many lots of bad quality paddies in the past. If there are many chalky kernels then MCE will end up with more fragmented kernel than originally anticipate and make a loss because fragmented kernels are worst less than half the price of the whole kernel. If the kernels have bad smell or texture then the whole batch cannot be sold at all.</p> <p>MCE wants to have 50% of its supply comes from own plantations and other 50% from local rice farmers. Planting own rice saves MCE's costs and help it stays out of financial tight spots whenever it replenishes inventory. MCE spends between 4,000 – 5,000 Baht/Rai and get the average harvest of 600 – 900 kilogram of paddies in return. The most recent buying price for 1 ton of local rice farmers' paddies is 8,400 baht.</p>	<p>3) From the middlemen.</p> <p>The rice paddies will be tested for moisture level (15% or less), purity level, yield level (% of whole kernels after milling) and undergone chemical testing (amylase and alkali level) before the buying decision is made. Aside from these tests, the origin of the rice paddies is also asked after to ensure that they come from the areas that make high-quality paddies.</p>
<p>2. Key man and Information back up of purchasing</p>	<p>The MCE committee confers the buying power on the manager. The manager makes buying decision based on the stock level and the</p>	<p>Purchasing department is in chart of making buying decisions. Information such as the future selling price (from sales department),</p>

	<p>forecast on future supplies (referring to rice paddies). If there is no harvesting by any local rice plantation in the next couple of months, he will buy more paddies to stock up. In term of paddies' quality testing before purchase, only the moisture level test is conducted. The MCE often ends up with bad quality paddies which mean they cannot produce as much rice as predicted and suffer loss.</p>	<p>historical data of rice paddies' quality from different plantation, records of weather and water condition during the growing season, and customers' orders (quantity, time of delivery and type of rice) are all used to make the buying decision. Keeping historical record of weather and water condition for each plantation allows the purchase department to anticipate the quality and quantity of the current harvest before hands.</p>
<p>3. Relationship between buyer and supplier</p>	<p>The relationship with rice farmers is still an on-going process. Rice farmers have just recently begun to understand the roles of MCE and come to sell their best portions of the harvest as oppose to before. An action is a result of a self-learning experience on the farmers' parts. They realize that selling good paddies to MCE means the community (including themselves) can now buy good quality rice for half the price they usually pay. It is important that this self-learning process continues to secure the MCE's future.</p>	<p>The relationship with middlemen is a normal buyer and seller relationship. The miller has a dependent relationship with contracted rice farmers, package suppliers, carriers, customers and sub-contracted millers. The miller integrates parts of their functions with compatible specialized enterprises (sub-contracted millers, package suppliers and carriers) and influences others through provision of knowledge and financial aids (rice farmers and customers). Sub-contracting off parts of the operations allows the millers to concentrate on the core activities, milling, and cuts down costs. Providing knowledge and financial aids to rice farmers and customers</p>

		who are the key members of the value chain ensure the continuation of future business.
4. Duty of buyer	Keeping records of the harvesting circles for each suppliers, it help buyers make the right decision whether to stock up because there will be no supplies in the next couple of months. In term of paddies quality, the role of a buyer is not as important as the role of the producer. The buyers' role is only to buy. The producers' role is to make good quality paddies.	Keeping a record of yield number, and statistical data of each plantation are most important since they can be used to set a standard or minimum level of purchase criteria. Building a good relationship with the rice farmers enable a miller to bring good quality paddies into the system.

Table 4.2.2 Production Process's Key Words and Interview Data Mapping

ProductionProcess' Key Words	Sampatuan MCE's Manager	Chiameng Co., Ltd. Group's Production Manager
5. Rice milling process	<p>Separate earth matter and stones from the paddies.</p> <p>Put the paddies through the huller to remove the husk.</p> <p>Grade the kernels with a sifter. The fragmented kernels are separated out.</p> <p>Blow the small bits of husk away from the brown rice with a large fan.</p> <p>Pick out the remaining small stones by hands.</p>	<p>Raw Material Inspection (come in as brown rice)</p> <p>Moisture Testing</p> <p>Purity Testing</p> <p>Chemical Testing</p> <p>Fumigate rice with Phosphine to ward off insects.</p> <p>Stock in airy room in normal temperature.</p> <p>Separate earth matter from rice</p> <p>Whiten the rice with whitening</p>

		<p>machine</p> <p>Separate stones out with a de-stoner</p> <p>Polish the rice with a polisher</p> <p>Sort out impurities with a sorter</p> <p>Sort out small glass and stones</p> <p>Separate out the fragmented kernels.</p> <p>Separate out broken kernels</p> <p>Separate out kernels that are not Jasmine by the thickness</p> <p>Sort out metal with a metal Detector.</p> <p>Final weighting of rice to ensure the right quantity before packing in a silo</p>
<p>6. Rice milling by-products</p>	<p>Whole kernels</p> <p>Broken kernels</p> <p>Fragmented kernels (broken chalky kernels)</p> <p>Husk</p>	<p>Whole kernels</p> <p>Broken kernels</p> <p>Yellow kernels</p> <p>Damaged kernels</p> <p>Chalky kernels</p> <p>Fragmented kernels</p> <p>Germ</p> <p>Husk</p>

7. Industrial Standard of milling process	None at the moment.	The standard differs depending on the huller's capacity and the genre of paddies. The miller must keep its own record and create a standard from the collected yield statistic (assuming the huller's capacity is always in a perfect condition).
8. Other production related activities	Send to pack.	The finished rice is kept in a silo.
9. Key man of paddies treatment	Only the manager.	The process is controlled by a team lead. This person is trained to understand the measurements of the milling standard and to recognize the possible sources of abnormality as well as how to resolve them.
10. Process of packaging	Hand-packed.	Finished rice is taken out of the silo and into the packing process. The packing will be done entirely by machine.
11. Standard of the operation	None specify.	Measurement of standard must be taken diligently at all stages. Starting from measuring the yield rate of paddies before putting them through the rice production process then again after the rice production process is complete. Data should be noted down and compared to assure that same number is obtained. Maintaining

		<p>the yield rate is very important to the profit/loss of the rice mill because of the yield rate after rice production is 10% less than original measurement then the rice mill has 10% less than what the customer ordered in weight. The miller will then have to buy more paddies for the production in order to fulfill the customer's order which means more cost and profit loss. Record keeping (date, paddy genre, yield at purchase, yield after milling, weight, etc) and daily report help spot problems early.</p>
12. Duty of production process	Minimize losses from storage and milling	Maintain yield rate.

Table 4.2.3 Inventory Process's Key Words and Interview Data Mapping

Inventory Process' Key Words	Sampatuan MCE's Manager	Chiameng Co., Ltd. Group's Production Manager
13. Inventory of paddies	<p>The demand has been rather stable so MCE is trying to keep 1.5 tons of rice paddies in stock every month. There are times they are not able to make it for lack of purchasing money.</p>	<p>Pre-orders from customers as well as historical sales data are used to calculate stock to keep in each period. Normally a month worth of safety stock is kept as insurance.</p>

14. Paddies treatment	The paddies are sun-dried for 2 – 3 times before packed in sacks. The paddies sacks are placed on the concrete floor under the shade. Placing the sacks on a concrete floor gives the paddies on the bottom a bad stench. The paddies are often eaten by birds and rats during the sun-dried.	The paddies are fed into a dryer to bring down the moisture level then kept in a climate controlled room to maintain the moisture level and keep out pests.
15. By - product treatment	One half of the husk is sold to make soil. The other half is scattered back on the plantation to become natural fertilizer. The fragmented kernels are sold to be animal feed.	Yellow kernels are sold for consumptions in the South. Chalky kernels, damaged kernels, very yellow kernels are sold to be animal feed. Husk is sold to energy plant. Germs are sold to food factories.
16. Packaged rice's treatment	Don't stock packaged rice. They are made to order.	Don't normally stock packaged rice. If the occasion calls the packs are placed on a plastic pallet or a plastic-covered wood pallet. The packs shall not to drag at anytime. The procedure is to prevent contamination since there was a case of splinters breaching the plastic and getting mixed with rice because the bag was placed on wood pallet and dragged.
17. Stock packaged rice	Demand is rather stable so it is easy to predict when and how much to produce without having to hold the stock for a long-period of time.	Pre-ordering from customers makes just-in-time production possible. The finished products can be loaded into the trucks and shipped out as soon as they are out

		of the production lines.
18. Key man/ Key person of production monitoring	The manager and the accountants.	Team Lead

Table 4.2.4 Delivery Process's Key Words and Interview Data Mapping

Delivery Process's Key Words	Sampatuan MCE's Manager	Chiameng Co., Ltd. Group's Production Manager
19. Package rice delivery	The manager delivers the small order to people within the close proximity by a bicycle. The large orders are picked by the customers themselves.	Sub-contracted to carriers.
20. Criteria of transportation decision	Normally the customers came to pick up the orders. If the order is small or the customers are elderly within the community, the manager will do the delivery.	The miller conduct periodic audit on the carrier's operation and work together to achieve the best performance.
21. Delivery assurance	Customers always phone into to order and to check the readiness of the order before pick-up.	1) careful planning between the production and delivery 2) regular evaluation of the performance and process
22. Delivery cost estimation	No cost ever occurs from delivery activities.	Sales must always calculate the cost of rice paddies, the cost of production, the cost of packing, the cost of storage and the cost of delivery before agreeing on a selling price to customers.

Table 4.2.5 Other Involving Departments' Key Words and Interview Data Mapping

Other Involving Departments' Key Words	Sampatuan MCE's Manager	Chiameng Co., Ltd. Group's Production Manager
23. Place of sell and pricing practice	<p>Dictating by MCE's philosophy, the rice is sold within the community and surrounding areas mainly.</p> <p>Occasionally, the committee will participate in a trade fare.</p> <p>The price is set with a decision of the committee. They will look at the current market (local retailers) price as main benchmark.</p>	<p>The miller does business everywhere; with modern trade, with wholesalers, with small retailers or with factories.</p> <p>Mostly, the price is set according to the price in the future market.</p>
24. Promotion and product attribute	<p>Pricing is important but not as important as taste. Customers will never return after one taste of bad rice. There were also times when the customers stopped buying because they found cheaper price elsewhere. It took time to explain to them that other rice were cheaper because their rice were of lower grade and mixed with more percentage of broken rice. I did come back after.</p>	<p>The price war has become more prominent in the recent years. The economic downturn and the competitor's promotion do take sales down. Many customers have become more price-conscious and careless about quality. Although, there are also those customers who remain loyal to the brand because of the quality and customers who return after their financial status become better.</p>
25. Management of place and promotion	<p>MCE doesn't separate into departments; there are only 2 operative members monitoring the entire operation and 12 committee members who make policy decisions. Most often than not the</p>	<p>The miller sells rice in the future market i.e. the price and quantity of the order is agreed upon way in advance of the actual delivery date. The price is highly volatile; it changes daily. Sales and</p>

	issues are presented and discussed in the monthly meeting.	operation must work together to gather price information to set a selling price.
26. Roles of finance department in supply chain	Keeping book of income, expenses, and principle.	Find financial sources and manage money transactions to facilitate sales and production activities.
27. Effectiveness of finance information on the supply chain operation	Nothing is in place.	Yearly finance, sales and production have a meeting to create a financial plan. Sales provide next year sales forecast. Production takes the forecast and work out the production costs. Finance consolidates the information into a detail financial plan for next year. 3 departments meet monthly to update the plan.

Table 4.2.6 Relationship Management’s Key Words and Interview Data Mapping

Relationship Management’ Key Words	Sampatuan MCE’s Manager	Chiameng Co., Ltd. Group’s Production Manager
28. Relationship between each performer	<p>Relationship with rice farmers and surrounding community</p> <p>Relationship between the operation team (manager and accountant) and the committee</p> <p>Relationship with external academic entities</p> <p>Relationship with other MCE</p>	<p>Relationship with sub-contracted millers, package suppliers, and carriers</p> <p>Relationship with rice farmers</p> <p>Relationship with middlemen</p> <p>Relationship with key customers</p> <p>Relationship between sales, operation and finance department</p>

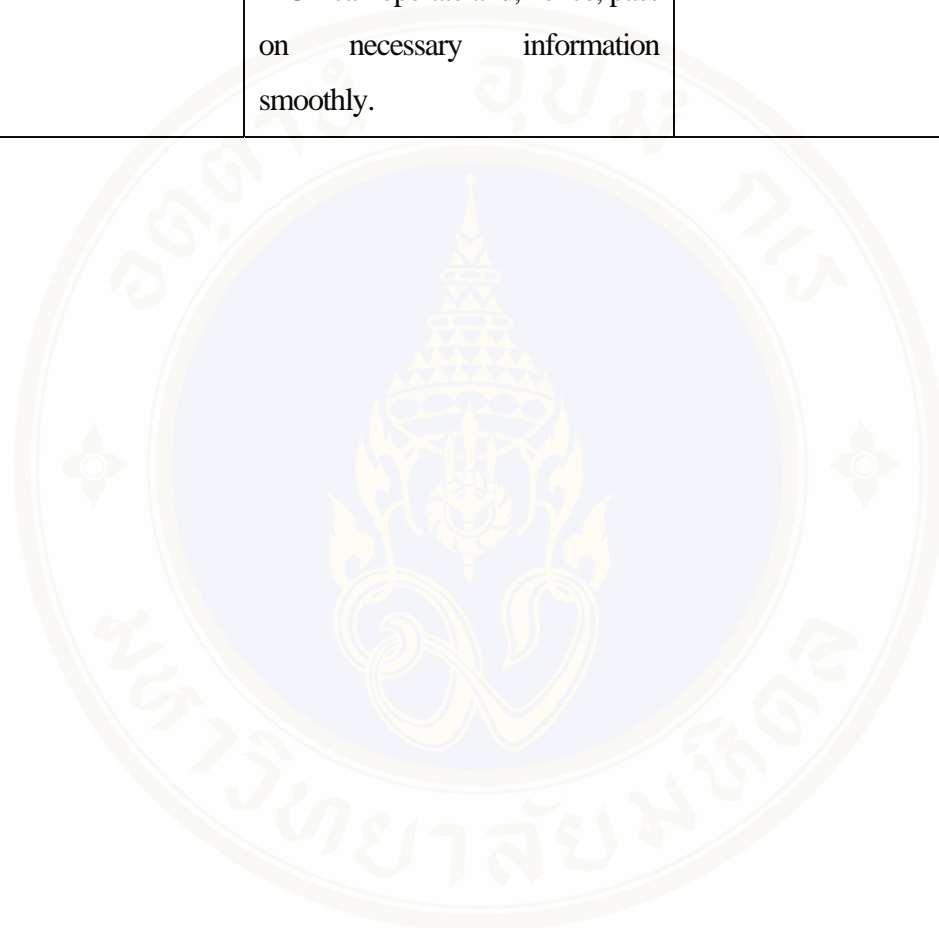
<p>29. Maintenance of relation to the benefit of organization</p>	<p>Relationship with rice farmers and surrounding community is being maintained with simple gestures of home delivery and broadcasting educative messages on a local radio show. Interaction with the community helps endear MCE its people and create the sense of ownership. They will then support MCE's activities willingly and continuously.</p> <p>Relationship between the operation team (manager and accountant) and the committee is very fragile. The committee doesn't take active roles in the management of MCE so all the operations are done by 2 members, the manager and the accountant.</p> <p>Relationship with external academic entities and other MCE exists for MCE to exchange knowledge and information as well as bring in help (suitable technology) where it is needed. MCE cannot stand still, it must evolve and move forward however that move must be regulated to things at which are 'right' for the community.</p>	<p>Relationship with sub-contracted millers, package suppliers and carriers is maintained for minimize the risk of production shutdown from material shortage. They work together as partners on the same set of standard laid out by the millers.</p> <p>Relationship with middlemen is one of normal buyer and seller. The miller doesn't create special ties.</p> <p>Relationship with rice farmers is forged through provision of cheap seeds, financial support and training. The training helps rice farmers produce better crops in which are sold to the millers.</p> <p>Relationship with key customers is maintained by provision of consultation and after-services. These create brand loyalties that cannot be copied by others.</p> <p>Relationship between sales, operation and finance department is maintained through creation of friendly working environment and clearly stated workflow.</p>
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<p>30. Ranking level of importance of relationship</p>	<p>Relationship with rice farmers and surrounding community</p> <p>Relationship between the operation team (manager and accountant) and the committee</p> <p>Relationship with external academic entities</p> <p>Relationship with other MCE</p>	<p>Relationship between sales, operation and finance department</p> <p>Relationship with sub-contracted millers, package suppliers and carriers</p> <p>Relationship with rice farmers</p> <p>Relationship with key customers</p> <p>Relationship with middlemen</p>
<p>31. Relationship strategy of each organization</p>	<p>MCE is a people organization. Its relationships can be made better by giving education to its people. Educate them to think and act responsibly for the community is what needs to be done.</p>	<p>Building a web of good relationship among the suppliers and the customers means a greater response rate in order fulfillment and service.</p>

Table 4.2.7 Information Flow’s Key Words and Interview Data Mapping

<p>Information Flow’s Key Words</p>	<p>Sampatuan MCE’s Manager</p>	<p>Chiameng Co., Ltd. Group’s Production Manager</p>
<p>32. Information needed to support operation flow</p>	<p>Summary of monthly activities and problems are related to the committee by the manager once a month.</p>	<p>Not disclose.</p>
<p>33. Right information</p>	<p>Aside from a monthly meeting, there is nothing in place.</p>	<p>Paper forms and computers are used to manage data and information although there is still human-error.</p>
<p>34. Right human resource</p>	<p>There is none at the moment.</p>	<p>Clear job descriptions and workflow can regulate the information flow to a certain</p>

		degree.
35. Information management process	By inducing the understanding of roles and responsibility within each member of MCE. With this, MCE can operate and, hence, pass on necessary information smoothly.	ERP system is being implemented to better manage information flow.



CHAPTER V

DISCUSSION

5.1 Introduction

Under the principle of increasing the supply chain efficiency for Sampatuan Micro Community Enterprise (MCE), a preliminary research was conducted on two middlemen and the MCE's committee members. The result led the researcher to believe that the secret to better supply chain management for MCE lay within its operation. **This paper undertakes the investigation into the value chain creation of a well established and well reputed rice mill and compares the finding with Sampatuan MCE's value chain in an attempt to identify the critical success factors for running a rice supply chain. The objective is to build a performance measurement metric – based on the factors found– that can be used to increase the efficiency of Sampatuan MCE's supply chain.**

The research is conducted by way of **in-depth interviews with key-persons** who are identified by their direct involvement with the management and the operation of the rice mill's supply chain. The **content analysis technique** is employed in coding and analyzing the collected data. **The data are extracted of meanings both conceptually and relationally.** Table 5.1 lists out the professional details of the two prominent interviewed subjects in chronicle order. Anonymity is maintained as courtesy to the subjects' requests.

Table 5.1 Interviewed Subjects' detail in chronicle order

Sequence	Position	Years of Service	Company
1	Production Manager	15+	Chiameng Co., Ltd Group
2	Manager	2	Sapatuan Micro Community Enterprise
3	Assistant Accountant	2	Sapatuan Micro Community Enterprise
4	Secretary	2	Sapatuan Micro Community Enterprise

5	Agriculture Officer	2+	Sampatuan Micro Community Enterprise
6	Government Officer	2+	Sampatuan Micro Community Enterprise

5.2 Shaping the Five Success Factors

Derived from Mentzer, et al. (2001), Nantiya & Narong (2000)'s community rice mill theory and Phongphit (2009)'s MCE Handbook, **seven primary activities of rice mills are chosen as the starting points of this study; procurement, production, inventory, delivery, other involving departments, relationship management and information management.** The interview questions are crafted around these activities with aims of finding success patterns or mismatches in the management of rice supply chain. **From the interview data, five factors emerge pertaining to the efficient management of rice mill's supply chain.** The five success factors are as follows:

1. **Human resource capacity and ability**
2. **Material management**
3. **Process productivity**
4. **Product quality**
5. **Cost control**

The five success factors presented are conceived under the conditions set by the Sufficiency Economy Theory. Although this research started off using theories from the Western World with strong inclination toward Capitalism, the researcher restricted the application of such theories to the minimal when composed a Supply Chain Model for Sampatuan MCE for three main reasons.

A. Sampatuan MCE is a living organization under the dictation of the anarchistic economic ideology where the well-being of the community people is the main concern. While profitability is important to its continued existence, it is not the main objective of MCE. The optimal objective is to manage the local resources in such a way that the community can comfortably survive with as little interferences from the outside world as possible. This concept extends to everything from funding, customers, employment pool to commodities (Phetprasert & Wongkul, 2007; and Bhumpanya Tok-Kra-Sair, 2008). Such is the very opposite of Capitalism where

companies are encouraged to pursue outside helps when cheaper or more effective and to regard people as objects to be used.

B. MCE’s outlook on Human Resource Management (HRM) under the supply chain management context is very much different than those of the Western World. Western theories were generally written based on an assumption that people involved within the chain behaved in educated manners and could be managed in a professionally detached and direct way. Such luxury is not allowed when handling the HRM aspect of MCE’s supply chain in Thailand where seniority, close kinship, low-literacy level, local norm, and tendency to reject changes as well as criticism prevent effective implementation of western HRM theories (Phetprasert & Wongkul, 2007; and Bhumpanya Tok-Kra-Sair, 2008).

C. The anarchistic ideology does not reject all practices and theories under Capitalism as completely wrong and useless. Shiva (2008), Bhumpanya Tok-Kra-Sair (2008) and Norberg-Hodge & Merrifield & Gorelick (2008) emphasize Gandhi’s philosophy of never rejecting new knowledge body but learn to truly understand the pros and cons then to apply the useable knowledge under the conditions of becoming self-efficiency. In translation, Gandhi supports continuous learning of new knowledge wherever they may come from so the people can equip themselves with enough tools/knowledge to comfortably sustain their lives in the ever dynamic world.



Figure 5.1 Sampatuan Micro Community Enterprise (MCE)’s Five Success Factors

Source: adapted and applied by Sampatuan MCE’s committee members

Taking into account the aforementioned rationale, the five success factors, depicted in figure 5.1, are the key priorities that must be achieved or controlled when running a small rice mill under the Sufficiency Economy Theory. The factors are especially craved to suit the current needs of Sampatuan MCE who is still at the beginning stage of corporate set-up according to its manager's testimony. The collective missions of these factors are sustaining the MCE's operation by reduction of excess waste and creating a sturdy foundation for its future development. Hence, it is safe to say that the five success factors are by no mean an abbreviated version of the seven primary activities of rice mills this paper started off with. Rather, the seven primary activities are combined, re-arranged and narrowed down into the five success factors for MCE under similar situation with Sampatuan MCE.

5.2.1 Human Resource Capacity and Ability

It has been implicated by the interview data, from table 4.2.1 through to table 4.2.7, that an efficient operation requires careful monitoring and measuring of each individual process. Each process is, in turn, controlled by human beings. Therefore, the human competency is deduced as a prerequisite for efficiency, by proxy. Mentioning of training, job descriptions, personal responsibility and workflows are scattered about over the interviewed data by both Chiameng and Sampatuan MCE as the means of increasing competency. Chiameng's production manager also implied that clearly written job descriptions could minimize operation error under key word #34 in Table 4.2.7.

Sampatuan MCE's manager has shared a similar concept regarding the use of job descriptions although the emphasis was more on educating the sense of role and responsibility toward the community as a whole. Conveying the idea and knowledge to the community at large seemed to be as important to MCE's operations as educating its workers. Mentioning of training and education in roles and responsibilities arose every time questions regarding work relationship and information transfer were asked. However, the idea on exactly what to convey and how to achieve was never mentioned. He expressed that:

“MCE is a people organization. Its relationships can be made better by giving education to its people. Educate them to think and act responsibly for the community is what needs to be done.”

Combining this statement with the researcher’s own observation of the inner-working within the community and the testimony of his co-workers, the following connotations can be discerned from his comment. **That is Sampatuan MCE interprets the human resource efficiency differently from that of Chiameng.** Sampatuan MCE seeks human resource efficiency beyond the professional management of its employees/workers. It extends its reach to people within the community. In a sense, this phenomenon is the material form of the four principles for running a MCE by Phetprasert & Wongkul (2007) and Phongphit (2009) mentioned in the literature review. Having replied on its community’s supports for fund, trade, labor and raw-materials, it is inevitable that Sampatuan extends its human resource management in two directions as depicts in figure 5.2.



Figure 5.2 Directions of Human Resource Performance Efficiency for MCE

Source: adapted and applied by Sampatuan MCE’s committee members

The MCE Manager's emphasis on creating sense of responsibility denotes the underlining issues – lack of leadership, lack of group management skills, and lack of responsibility – these issues are not unlike those suggested by Hantrakul (2000), Joonpongsatol (2007) and Phongphit (2009). Subject 2's answers from table 4.2.6 further show that, unlike, Chiameng whose relationships are conducted under professional business environment. Sampatuan MCE's work requires deeper dimensions of human resource management for it engages, on an interpersonal level, not only the people of which the MCE employed but other people living within the community as well. The differences in education/work experience and conflicts in opinions are inevitable and dealt with on a personal level. The people can hardly separate their professional lives from the personal ones unlike what the researcher finds to be the case with Chiameng. This insinuation by the researcher was made certain by the following testimony on October 25, 2010 of the MCE's assistant accountant.

“Relationship between the operation team (manager and accountant) and the committee is very fragile. The committee doesn't take active roles in the management of MCE so all the operations are done by 2 members, the manager and the accountant. Direct confrontations about the lack of responsibility among the committee members are often avoided for fear of conflict and seniority.”

The above statement drives home that, for MCE, the state of internal operation is interrelated to the community's capability. The aforementioned issues found within the community manifest themselves in forms of management dysfunction and disruptions of information transfer. **And while Chiameng's key men, Hantrakul (2000), Joonpongsatol (2007) and Phongphit (2009) all dictate that clearly written job description and workflow implementation can alleviate these problems to a certain degree, they fail to recognize that such methods may not work as well under the complex human resource capital of MCE.** A simple, no non-sense, implementation of such methods can easily raise resistance and discontentment among

well educated and capable workforce. The effect can only be expected to intensify among much less educated and seniority-driven population that Sampatuan MCE, or any MCE, must face and placate.

“Sukon did have a real tough time in the beginning before we could agree on a term. He is a good man – hard working - but people don’t like him much (even within the committee) because they think he is all that. So I help persuade the others by explaining to them his idea and good intention after we become acquaintances.”

This comment was made casually during the conversation in the first annual meeting by one of the farmer committees who evidently played an intermediary between the manager and the locals. This fact does not escape the MCE Manager either. He admitted on many occasions that for him to work efficiently with the community, he needed creative communication channels. As things stand, the key man explained the current difficulties as follows.

“It is not like in a classroom. Managing co-workers and the local needs more tactics and patience than that. It is an art. You cannot expect immediate compliance just because you have said something once or twice. In fact, you can keep preaching the same thing year in and year out, and they will still ignore you until they see the benefits for themselves. And that is just with the locals. With other committee members, you can expect to be ignored forever at best. You know how Thai Culture is.”

There is no one universal solution when it comes down to decipher the heart of man. As such is the difficulty of finding the right management tool/tools, let alone evaluation methods, for Sampatuan MCE. Fuel on by Thai Culture of conflict avoidance and respect toward seniority; it was almost impossible to unearth the real sources of human resource

management inefficiency among the MCE's workers. Despite the odds, two things remain clear according to the researcher, the MCE's assistant accountant, the MCE's secretary and the MCE's manager.

One, there is a gap in cognitive understandings in term of leadership and responsibility among the committee members. The evident is clear as daylight from the fact that all operations and decision makings are handled by the manager with very little to no involvement or supervision from the committee members in charge of the matter. The MCE's assistant accountant admitted the following.

“If possible, I'd like to have someone help train the committee or, maybe, put some systems in place so things run more smoothly. Although I know it wouldn't be an easy task since I know that some members only took the position for the name only and some got involved not knowing the duties that they must do.”

Two, the things needed by Sampatuan MCE in order to increase its human resource efficiency are not KPI (key performance indicator) or well-written job-description and workflow as seen to be the suggestions of Chiameng and the academic alike. Sampatuan MCE's need is something much more basic and considerably more difficult to achieve. It is training and education. Phongphit (2009) suggested that educating the community on the meaning of MCE and the roles its members should play could help increase the chance of survival and should commence before an official forming of the MCE. An idea, I agree with only partly. While educating the mass may have help increase the level of understanding, there is no guarantee that the method can truly increase efficiency. Yet nevertheless, trained it must. It remains that further and more thorough analysis be commenced on what communication technique and evaluation scheme can be effectively implement under the dynamic social structure of Sampatuan Community.

5.2.2 Material Management

While the interview data dictates that the ability to handle the sources of paddies has a great implication on the business. The implication is especially true for small millers with limited financial resources and market connection. The ability to secure reliable material sources is important to the operation for it means the mills are entitled to a consistent flow of high quality supply at a relatively lower cost. Sampatuan Micro Community Enterprise (MCE)'s manager conveyed his thought on the matter as follows:

“Planting own rice saves MCE’s costs and helps it stay out of financial tight spots whenever it replenishes inventory. MCE spends between 4,000 – 5,000 Baht/Rai and get the average harvest of 600 – 900 kilograms of paddies in return. The most recent buying price for 1 ton of local rice farmers’ paddies is 8,400 baht.”

Besides engaging in rice farming, there is also other ways of managing the material sources. The management can start from something as simple as keeping detail records of paddies’ quality records for each supplier. The MCE’s manager added that keeping informed of the suppliers’ farming activities helps him with stock planning. Chiameng’s production manager revealed that the record should include rice genre, historical yield rate, buying price, plantation period, date and weather/water condition during plantation.

Subject 1 emphasized the provision of knowledge and selected financial supports to key rice farmers could ensure the paddies’ quality as well as create a deeper tie with the farmers. The tie created via this method is believed to be stronger and to function as a barrier against rice farmers’ selling their best crops to other millers or middlemen. The production manager stated:

“Providing knowledge and financial aids to rice farmers and customers who are the key members of the value chain ensure the continuation of future business.”

The data seem to fit into Nantiya & Narong (2000)'s theory on how a community rice mill should manage its own rice fields although the purpose differs. Instead of a demonstrative example, MCE's rice fields are use as the main material provider as well as the cost-control measure. It also becomes apparent through the data that Phetprasert & Wongkul (2007), Phongphit (2009) and Nantiya & Narong (2000)'s provided that **educating the community to create stronger business ties holds true as well.** The method is deemed so effective that a successful commercial rice mill – Chiameng – puts it in practice as mean to capture the unwavering loyalty of the rice farmers

The data further unearth the best-practice that has not been mentioned before by academics. **Keeping an individual record of paddies quality statistics alongside the weather and water condition during the growing period for key material sources creates valuable competitive advantage for the keeper** according to Chiameng's manager. The record allows the holders to more accurately anticipate the quality and quantity of the up-coming harvest. Granted, before a forecast can be made accurately, a considerably amount of records must be built-up which, in turn, implies an extended time-period of record taking and, trial and error purchasing before the information can be used. Despite the time-consuming nature of the task, the author believes the end-result is more than out-weight the invested efforts.

5.2.3 Key Processes Productivity

Out of the seven primary activities of rice mills, three critical activities are identified as having the most effect on the rice mill's performances. They are:

- 1. Procurement Process**
- 2. Paddies Storage Process**
- 3. Rice Production Process**

It is to note that Procurement and Material Source Management are two very different things although they are interlinked. The Procurement Process is the act of buying or obtaining the paddies from sources to feed the production of rice. Material Source Management is the act of assuring material availability – taking any possible options to ensure that the rice mill can get its paddies supply when it needs, in the right quantity/quality and at an acceptable price.

The Procurement Process, the Paddies Storage Process and the Rice Production Process have all been identified by both Subject 1 and Subject 2 as critical to both product and financial performance respectively. Both subjects have shared many scenarios to explain their decision. One of the common themes recurring in their examples is the impact of unskilled purchasing on the rice mill's ability to make profits. Rice is produced and consumed in such a way that only a small change is made to the original form hence the raw materials quality becomes paramount to the operation. **One bad lot of rice paddies purchase can easily put the rice mill's financial performance in the red** as expressed by Sampatuan MCE's manager below:

"...As a result, MCE ended up with many lots of bad quality paddies in the past. If there are many chalky kernels then MCE will end up with more fragmented kernel than originally anticipate and make a loss because fragmented kernels are worst less than half the price of the whole kernel. If the kernels have bad smell or texture then the whole batch cannot be sold at all."

Chiameng's production manager concluded that an assortment of tests and origin tracing were conducted prior to every purchase made to ensure the quality of rice paddies. Both interview subjects agreed that testing for moisture level alone gave insufficient indications to predict the paddies quality. In the interview, **the production manager detailed the tests commonly took place in the company's quality assurance department:**

"...tested for moisture level (15% or less), purity level, yield level (% of whole kernels after milling) and undergone chemical testing (amylase and alkali level) before the buying decision is made. Aside from these tests, the origin of the rice paddies is also asked to ensure that they come from the areas that make high-quality paddies."

This comment sheds light onto a new dimension of rice trade. Typically, when dealing with the issue of rice trade, the population and, even, the government concern themselves with measuring the level of moisture in paddies. This statement proves that the method is inadequate on its own. Further testing is needed to determine the quality of paddies and authenticity.

The production manager pressed on that buying in good quality rice paddies alone could not put the book in the green. **Further procedures must also be taken to ensure that the rice paddies quality is constantly maintained and, when possible, improved from the moment of purchase to the condition of storage till the finish of production.** According Sapatuan MCE's manager, the loss can also be numerous if the paddies are not kept properly. **His experience has taught him that the preparation of paddies prior to storage is as important as the storage condition.** Storing paddies with too high the moisture level in a wrong storage condition can do damage to the texture, taste and smell of rice. Chiameng's production manager insisted that the paddies should be treated with utmost care. He stated that:

“The paddies are fed into a dryer to bring down the moisture level then kept in a climate controlled room to maintain the moisture level and keep out pests.”

By rigidly control the storage environment, rice mills will be able to prevent any unnecessary losses from pests and damaged paddies. Chiameng's production manager commented further that the last but not least important activity is to monitor the productivity of rice production. **Machine setting to suit the paddies genre, appropriate moisture level and historical yield rate or yield rate at purchase are all control factors used to achieve optimal performance.** Subject 1 reasoned that:

“...the yield rate after rice production is 10% less than original measurement then the rice mill has 10% less than what the customer ordered in weight. The miller will then have to buy more paddies for the production in order to

fulfill the customer's order which means more cost and profit loss."

Hence, it can be concluded that in order to make a profit, a rice mill must be aware and take necessary steps to control any factors affecting the quality and the resulting productivity of its raw material. **Mentioning of comparing current performance to historical statistics as a standard was thrown on the table by Chiameng's key person.** However, from the interview data in Table 4.2.2, it can be gathered also that this standard will differ from one company to the other. The main reasons are the incompatibility in huller technology and the economy of scale. The huller does not come in only one size, capacity and price. The same can be said about rice millers who are bound to deviate in their capability to serve. **It has been recommended by Chiameng's production manager that each miller builds its own standard based on the capacity of its huller given the available technology.**

On the matter of Rice Production Process's productivity, the research yields very little useful information although it does give guidelines on how the productivity can and may be achieved. Useful information, however, can be found in academic researches of related nature. The author found that the works by the following academics provide more insights into the kind of measurements to monitor.

1. Sajwan, et al. (1990) on the humidity treatment of paddies' effect on yield rate.
2. Jadpong & Hansirimichai (1986) on the huller's adjustment to increase yield.
3. Triwattanawong & Jaradol (1989) on the factors of broken kernels.

5.2.4 Product Quality

Sampatuan MCE's manager stated:

"Pricing is important but not as important as taste. Customers will never return after one taste of bad rice."

Similarly, Chiameng's production manager related to the author during the interview that:

“Many customers have become more price-conscious and careless about quality. Although, there are also those customers who remain loyal to the brand because of the quality and customers who return after their financial status become better.”

From these two statements alone, it is more or less down in stone from these confessions that the product quality shall determine the long-term survival of a rice miller. Although, there are evidences of price war in the market, the customers, especially those consuming brown rice, still put priority on quality. There has been no direct mention regarding how a customer judges the quality of rice, however certain speculation can be made from the interview data. **The taste and the smell take center stage** when it comes to rice product quality. **Other product attributes such as the correct weight, authenticity of rice and contamination-free may also be appreciated.** It has been commented in the preliminary research that general consumers have very little knowledge of rice. The majority of Thai people are not able to tell apart one type of rice from another, nor can they tell a pack-full of good quality, whole kernels apart from one mixed with 5% broken kernels.

According to Sampatuan’s key person, the quality of raw material has a direct cause-effect relationship on rice product’s quality. As such, the rice mill can overcome the taste and smell barrier by simply ensuring only good quality paddies go through the production. **It is beneficial to conduct the purity test both before and after the rice production to cross-check for possible contamination and damage during the storing period or from the production line.** Although, the issues of weight and rice authenticity are more to do with business philosophy, certain procedures can be put in place to ensure that packaged rice remained contamination free. Subject 1 advised that avoiding dragging and placing the packaged rice on wooden pallets help avoid contamination.

5.2.5 Cost Control

The issue of cost control was first raised during the preliminary research via an in-depth interview with two middlemen. Throughout their long years in the rice market, they have encountered many rises and falls of rice millers at the hand of a sore culprit; money. For rice mill to stay in business, it must keep a tight control of its

financial performance. One way of accomplishing that goal is to control costs. This perspective is mirrored by Chiameng' manager:

“Sales must always calculate the cost of rice paddies, the cost of production, the cost of packing, the cost of storage and the cost of delivery before agreeing on a selling price to customers.”

Keeping control on cost does have more than benefits in rice market as further discussion with both subjects later revealed. It has become apparent that price competition is often in action and the customers are affected by it more and more as the economy worsen. Despite their claims of returning customers after a time, it cannot be rejected that cost must be monitored to stay afloat. The attempt on cost control comes in many ways, many of which have been mentioned earlier on in this chapter. Material source control, key process productivity, product quality – one prominent theme, they have in common, is reducing waste, i.e. cost.

Implementing the action alone, however, does not equal the desired outcome, meaning the cost control. Other more tangible procedures have to be put in place to ensure the desired effect happened. This perspective, of course, falls in agreement with Beamon (1999), Committee of supply chain integration et al. (2000) and, later, Gunasekaran et al. (2001) to whom propose that performances shall be monitored by means of money figure and action. Following the suggestions made by the academics as well as considering the MCE's critical activities previously stated under 5.4, the figures to be controlled are gross profit, total sales, total production costs, cost of purchasing one ton of paddies, MCE's cost of producing one ton of paddies, and fixed costs.

5.3 Summary

Out of five factors emerge pertaining to the efficient management of rice mill's supply chain, only four can be sufficiently researched and converted into the performance measurement. Human resource capacity is purposefully omitted because of its complex nature that requires more time to produce an acceptable piece of

research. These remaining four success factors are:

1. Material management
2. Process productivity
3. Product quality
4. Cost control

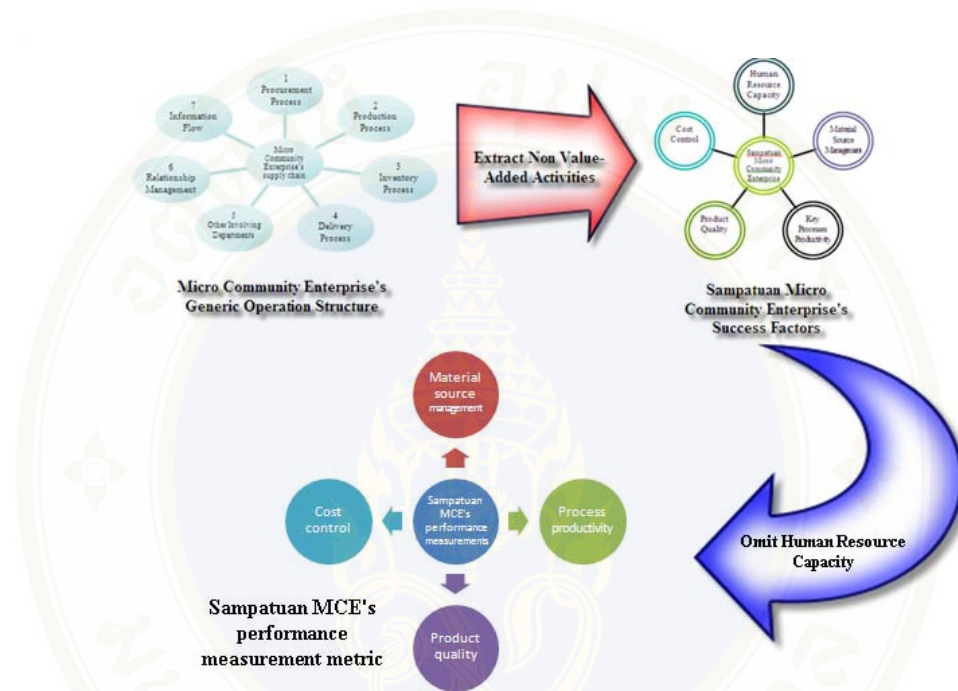


Figure 5.3 The Four Success Factors and The Performance Measurement Metric

Source: adapted and applied by Sampatuan MCE’s committee members

Table 5.3 presents the completed performance metric alongside the key findings found in this research for the benefit of this paper’s audience. So they understand the reason behind each indicator. It was the researcher’s first intention that the key finding column is excluded when the metric is in implementation to avoid confusion for users. The other alternative, however, would be to substitute the findings with the organization objectives – it will serve as both reminder as well as alignment assurance for the management. The Key finding column aside, the metric is composed of four headings.

The 4 Success Factors column, true to its name, organizes the performance indicators into groups of success factors. The purpose of the design is to keep the management from losing sight on the main goals.

The Indicator(s) column details the control elements under each factor.

The Management Level column recommends the level at which each indicator should be implemented and monitored to avoid confusion and overloading works on one party as well as disruptions in implementation from miscommunication.

The Measurement column lists out the actual measurements that should be commenced under each indicator.

Table 5.2: Sampatuan Micro Community Enterprise (MCE)’s performance measurement metric

The 4 Success Factors	Key Findings	Indicator(s)	Management Level	Measurement
1. Material Source Management	a. Providing knowledge and financial aids to rice farmers and customers who are the key members of the value chain ensure the continuation of future business.	Rice Growing Handbook and Rice Growing Scorecard	Strategy	Existence and usage
	b. 50% of its supply comes from own plantations and other 50% from local rice farmers.	MCEs paddies/Local farmers' paddies supply ratio	Strategy	50:50
	c. Planting own rice saves MCE's costs and help it stays out of financial tight spots whenever it replenishes inventory.	MCEs rice field	Tactical	Production Cost (Baht/Ton) Paddies Quality (yield rate & purity test) Productivity Level (Ton/Rai)
	d. Keeping historical record of weather and water condition for each plantation allows the purchase department to anticipate the quality and quantity of the current harvest before hands.	Supplier Record	Tactical	Existence and usage
2. Process Productivity	a. moisture level (15% or less), purity level, yield level (% of whole kernels after milling) and undergone chemical testing (amylase and alkali level) before the buying	Procurement Process Measurement	Operation	Moisture Level, Purity Test, Yield Testing, Amylose Test
	b. Placing the sacks on a concrete floor gives the paddies on the bottom a bad stench. The paddies are often eaten by birds and rats during the sun-dried.	Paddies Storage Process Measurement	Operation	Moisture Level Reduction, Rice Container Type and Preparation, Sealing Technique
	c. The paddies are fed into a dryer to bring down the moisture level then kept in a climate controlled room to maintain the moisture level and keep out pests. d. Maintaining the yield rate is very important to the profit/loss. Minimize losses from storage and milling. The standard differs depending on the huller's capacity and the genre of paddies. The miller must keep its own record and create a standard from the collected yield statistic (assuming the huller's capacity is always in a perfect condition). Measurement of standard must be taken diligently at all stages.	Rice Production Process Measurement	Operation	Yield Rate (whole kernels weight/paddies weight) Huller Setting to paddies genre Moisture Level at Production
3. Product Quality	a. Pricing is important but not as important as taste. Customers will never return after one taste of bad rice.	Rice Quality	Operation	Purity Test (Thai Pathumthani Fragrant Rice) Grain Size = length: 10.52 mm, thickness: 11.72 mm Cooking time @ 100 degree celcius Purity Test (Thai Chonlasit Fragrant Rice) Grain Size = length 10.9 mm, thickness: 2.0 mm Amylose content = 1.7% KOH Cooking time @ 100 degree celcius
	b. There are also those customers who remain loyal to the brand because of the quality and customers who return after their financial status become better.	Weight Consistency	Operation	Final weighting of packaged rice before packing for delivery.
4. Cost Control	a. The economic downturn and the competitor's promotion do take sales down.	Gross Profit	Strategy	Total Sales - Total Production Costs
	b. One half of the husk is sold to make soil. The other half is scattered back on the plantation to become natural fertilizer. The fragmented kernels are sold to be animal feed	Total Sales (Baht)	Tactical	Sale of Packaged Rice + Sales of Husk + Sales of Fragmented Kernels
	c. Sales must always calculate the cost of rice paddies, the cost of production, the cost of packing, the cost of storage and the cost of delivery before agreeing on a selling price to customers.	Total Production Costs	Tactical	Cost of Purchase Paddies + Cost of MCE Produced Paddies + Fixed Cost
		Cost of Purchase Paddies per Ton	Operation	(paddies cost + storage cost + package cost)/weight
		Cost of MCE Produced Paddies per Ton	Operation	(paddies producing cost + storage cost + package cost)/weight
Fixed Cost	Operation	MCE Worker's wage + utility cost + operation expenses		

Source: adapted and applied by Sampatuan MCE's committee members

CHAPTER VI

CONCLUSION

6.1 Overall Picture

This project started out with the need to help stabilize the operation of Sampatuan Micro Community Enterprise (MCE) and to allow the entity a chance to thrive. The preliminary research was conducted, collecting both primary data through interviews and secondary data from journals and books, in search for a probable solution. The initial results led the researcher to believe that by improving the MCE supply chain using the performance measurement metric at this can make the Sampatuan MCE stronger. Looking at the value chain analysis theory, the main research was designed to analyze and compare the Sampatuan MCE's value chain with that of a well-established commercial rice mill. Taking the (embedded) multiple case study as the research strategy for its exploratory and explanatory nature, the data were collected by detailed interviews from samples that had expertise and direct involvement with rice supply chain management. The collected data were coded and analyzed using content analysis technique. The data was extracted both conceptually and relationally.

This paper found five factors closely related to the efficient management of rice mill's supply chain. The five success factors are as follows:

1. Human Resource Capacity
2. Material source management
3. Process productivity
4. Product quality
5. Cost control

These factors are converted into the performance measurement metric with one exception. Human resource capacity is purposefully omitted for insufficient data. The remaining four success factors presented in the metric form are:

1. Material source management

2. Process productivity
3. Product quality
4. Cost control

6.2 Limitations And Suggestions For Future Research

Throughout the course of this research, many limitations are encountered by the researcher. **Time constraint, limited access to viable information from the interviewed subjects, and lack of case studies** are three of the most influential obstacles of this paper. However, from the author's point of view, the limited access to viable information from the interviewed subjects is, by far, the biggest obstacle. No matter how much time is spent on the project or the number of case studies, if the subjects refuse to open up, there is no point in continuing. Limitations aside, **two main suggestions** can be made for the benefits of future research on the subject.

Firstly, it is recommended that future researchers explore how MCE can monitor the indications without interrupting the normal operations. Future works must vigilantly take into account the practical usage of any monitoring device developed. It would be impractical and resource-wasting to invent a monitoring device that is too difficult or far too complex to be manned by the subjects, i.e. MCE's workers. In fact, by the time the author decided to conclude the research some ground works had been laid down regarding this subject. Several discussions took place between the research and the MCE's manager before an agreement was made. To implement the supply chain performance metric, MCE will employ the use of scorecard and the trouble-shoot manual on the key activities.

The development of the performance scorecard and the problem-shoot manual offers a simple, yet practical, means to monitor the indicators in a structured and user-friendly way. The trouble-shoot manual allows critical knowhow to be gathered, organized and accessed by the workers. It is to give a physical body to the local knowledge that has previously been scattered about or concentrated in one person. Through the materialization of knowledge box, anyone can easily access and solve technical problems systematically whether the problems are in relation to rice farming or the running of a huller. In accompaniment with the trouble-shoot manual there is the performance scorecard. It is, by all purposes and means, a platform to lead users through necessary steps/measurements

toward achieving the perfect state of each indicator. It is to be noted that **the performance scorecard and the problem-shoot manual are not religions. Like any forms of knowledge, they must be constantly reviewed and updated according to the situation.**

Figure 6.1 and 6.2 outlines a possible example of how the performance scorecard and the problem-shoot manual may be developed and implemented.

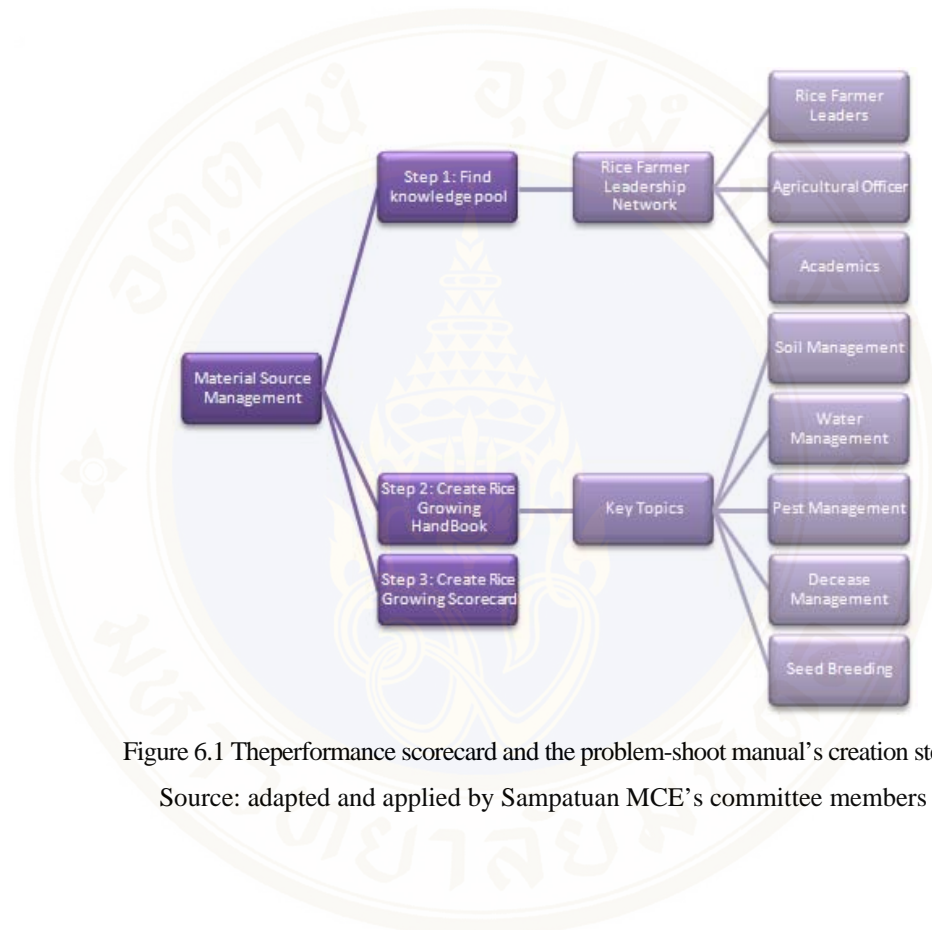


Figure 6.1 The performance scorecard and the problem-shoot manual's creation steps

Source: adapted and applied by Sampatuan MCE's committee members

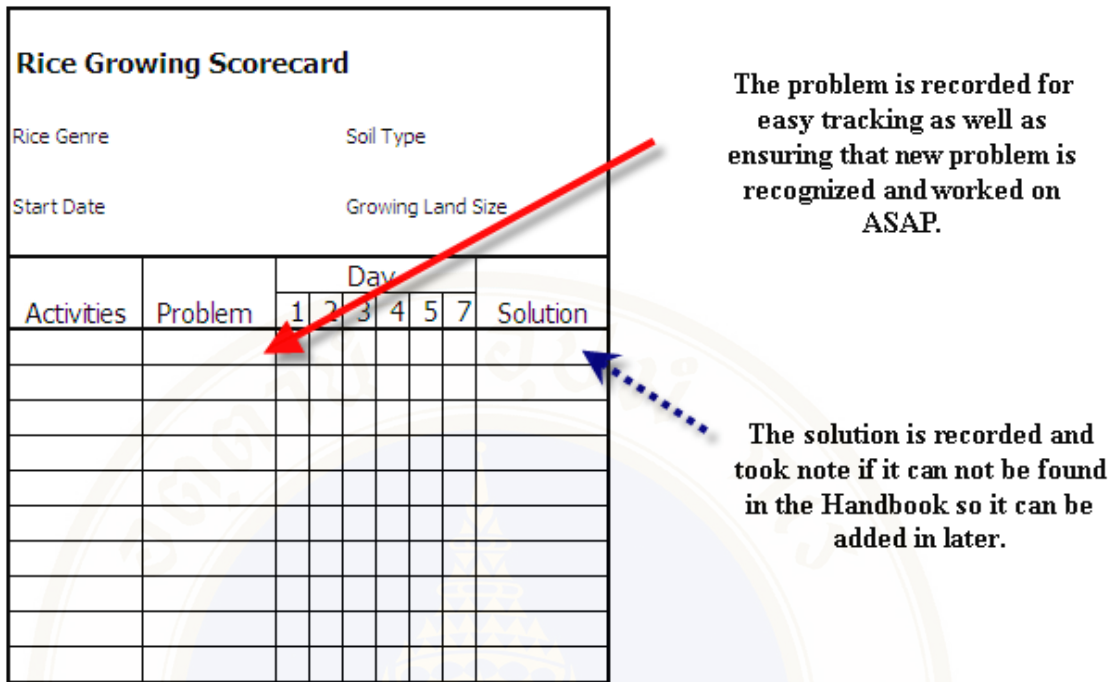


Figure 6.2 The performance scorecard's example

Source: adapted and applied by Sampatuan MCE's committee members

Secondly it is advised that the more research carried out will perfect the measurements. Unearthing the appropriate method and number for each measurement is most precedent to the success implementation of the performance measurement metric. Because the scope of this paper is limited to the evaluation and management of supply chain performance measurement, the author does not investigate too deeply into other relating fields especially in Human Resource Management. Although enough reviews have been done on Operation Costing, Agricultural Engineering and Post-Harvesting Technologies for a rough outline of key measures to be drawn, it is not nearly enough. Further works are sorely required to perfect the metric.

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APPENDIX A

CHIAMENG CO., LTD. GROUP'S INTERVIEW RESULT (THAI)

<p>การจัดการหา</p>
<p>1. อธิบายขั้นตอนการจัดซื้อข้าวเปลือก และแหล่งที่มา</p> <p>ขั้นตอนการจัดซื้อนั้นเริ่มขึ้นตั้งแต่การหาข้อมูลเกี่ยวกับพื้นที่ปลูกข้าวที่มีคุณภาพว่ามาจากพื้นที่ใดในประเทศ แล้วจึงติดตามเก็บข้อมูลเกี่ยวกับการเพาะปลูกในช่วงนั้น การสำรวจผืนดินและปริมาณน้ำตลอดช่วงฤดูเพาะปลูก โดยเฉพาะช่วงใกล้เก็บเกี่ยวจะทำให้สามารถประมาณการได้ว่าข้าวที่มาจากพื้นที่นั้นจะมีคุณภาพดีพอที่จะซื้อหรือไม่ หากผืนดินแห้งก็มีความเป็นไปได้สูงมากกว่าข้าวฤดูนั้นจะมีข้าวลีบเสียมมาก หากมีน้ำมากเกินชวานาก็อาจต้องเก็บเกี่ยวก่อนเวลาเพื่อหนีน้ำเป็นต้น การเก็บข้อมูลสถิติเกี่ยวกับคุณภาพของข้าวในแต่ละพื้นที่เพาะปลูกจึงมีความสำคัญมากต่อการตัดสินใจซื้อข้าวแต่ละครั้ง ทางโรงสียังมีการสร้างเครือข่ายชวานาและส่งเสริมให้ชวานาปลูกข้าวอย่างถูกต้อง โดยการสนับสนุนกลุ่มชวานาด้วยการขายเมล็ดพันธ์ที่ดีในราคาทุนและจัดอบรมความรู้ในการปลูกข้าวที่ถูกต้องโดยร่วมมือกับหน่วยงานของรัฐ เมื่อได้ผลผลิตมารับซื้อในราคายุติธรรม ขบวนการอย่างหลังนี้ทำเพื่อควบคุมการผลิตข้าวให้ได้มาตรฐานที่ดีที่สุดเท่าที่จะทำได้</p>
<p>2. ใครเป็นผู้มีอำนาจตัดสินใจในการซื้อข้าวเปลือก ข้อมูลใดบ้างที่ใช้ในการตัดสินใจซื้อข้าวแต่ละครั้ง</p> <p>โรงสีนั้นจะซื้อข้าวก็ต่อเมื่อแน่ใจว่าขายได้ หรือก็คือมีคำสั่งซื้อล่วงหน้าจากลูกค้าอยู่ในมือแล้วจึงซื้อเข้า ดังนั้นฝ่ายจัดซื้อจึงต้องได้รับข้อมูลมาจากฝ่ายขายเสียก่อนว่าข้าวที่ลูกค้าต้องการคือข้าวชนิดใดและต้องจัดส่งเมื่อใด เพื่อนำมาวางแผนการซื้อ ข้อมูลหลักที่ต้องใช้นอกจากชนิดและปริมาณของข้าวตามคำสั่งซื้อแล้ว ฝ่ายจัดซื้อยังต้องรู้ราคาขาย ค่าความชื้นและ yield (สัดส่วนการสีข้าวเปลือกเป็นข้าวสารเต็มเม็ด ข้าวสารที่มีทั้งจุกและก้น) ของข้าวที่จะซื้อเข้าอีกด้วยเพื่อให้แน่ใจว่าจะได้ข้าวสารที่พอเพียงกับความต้องการในราคาที่เหมาะสม ค่าความชื้นที่โรงสีซื้อจะอยู่ที่ 15% (ค่าความชื้นของข้าวเกี่ยวใหม่คือ 30% ส่วนต่างจะใช้หักจากราคา) และค่า yield ของข้าวจะถูกตรวจสอบด้วยเครื่องที่ได้รับการยอมรับตามกฎหมาย</p>
<p>3. อธิบายลักษณะความสัมพันธ์ที่เป็นอยู่ระหว่างโรงสีกับผู้ขายข้าว สำคัญอย่างไรที่ความสัมพันธ์เช่นนี้ดำเนินต่อไป</p> <p>ลักษณะความสัมพันธ์ส่วนใหญ่ยังคงเป็นแบบผู้ซื้อกับผู้ขายทั่วไป โดยมีแนวโน้มในการสร้างสัมพันธ์ที่ยืนยาวในอนาคตผ่านการสร้างเครือข่ายชวานา และระบบสนับสนุนด้านความรู้และต้นทุน</p>
<p>4. ในมุมมองของนักบริหาร หน้าที่สำคัญของผู้ซื้อข้าวเปลือกคือ</p> <p>การเก็บรวบรวมฐานข้อมูลผู้ผลิต (ชวานา) สถิติที่เกี่ยวกับการเพาะปลูกข้าวและตัวเลข yield ของข้าวที่มาจากแต่ละท้องที่มีความสำคัญมาก เพราะข้อมูลเหล่านี้สามารถนำมาเป็นบรรทัดฐานหรือมาตรฐานที่จะใช้ในการตัดสินใจซื้อข้าว การสร้างความสัมพันธ์อันดีกับชวานาก็เป็นประเด็นหลักที่สามารถทำให้โรงสีสามารถหาข้าวคุณภาพดีมาเข้าระบบได้</p>

<p>การสีข้าว</p> <p>5. อธิบายขั้นตอนการสีข้าว</p> <p>ที่โรงงานนี้ (ปทุมธานี) วัตถุประสงค์ที่นำเอามาจะมีสภาพเป็นข้าวสารแล้ว ดังนั้นขั้นตอนจึงเริ่มจากการตรวจคุณภาพของวัตถุดิบ ข้าวสารที่นำเข้ามาที่โรงงานนำมาจากสาขาที่ศรีสะเกษซึ่งเป็นศูนย์ซื้อและสีข้าวเปลือกใหญ่ของบริษัท แต่ขั้นตอนการผลิตทั้งกระบวนการสามารถอธิบายได้ดังนี้</p> <p><u>Production Stage @ Sriskate</u></p> <p>Raw Material Inspection (ตรวจข้าวเปลือก)</p> <p>Moisture Testing Yield Testing</p> <p>Buy Transaction (รับซื้อ)</p> <p>Storage (จัดเก็บวัตถุดิบ)</p> <p>Milling (สีข้าวเปลือกเป็นข้าวสาร)</p> <p>Weighting (ชั่งผลผลิต)</p> <p>Packing (บรรจุ)</p> <p>Loading and Distribution (ขึ้นตู้ จัดส่ง)</p> <p><u>Production Stages @ Patumthani</u></p> <p>Raw Material Inspection (ตรวจรับวัตถุดิบ)</p> <p>Moisture Testing Purity Testing Chemical Testing</p> <p>Fumigation (อบยาในกอง)</p> <p>ใช้ยาฟอสฟีนซึ่งเป็นยาที่ในอุตสาหกรรมเกษตรที่ไม่มีสารตกค้างในตัวผลิตภัณฑ์ เพื่อกำจัดมอดแมลงที่อาจติดมาในวัตถุดิบได้</p> <p>Stocking (จัดเก็บวัตถุดิบ)</p> <p>Pre-cleaner (ตะแกรงทำความสะอาด)</p> <p>Separate earth matter from rice paddies (แยกดินออกจากข้าว)</p> <p>Whitening Machine (ขัดขาว)</p> <p>De-stoner (แยกหิน)</p> <p>Polisher (ขัดมัน)</p> <p>Sorter (แยกสิ่งเจือปน)</p> <p>เป็นการขัดสีข้าวเปลือกให้เป็นข้าวสารด้วยเครื่องทดสอบ(เครื่องทดสอบลาดกระบัง)แยกให้เห็นว่าคงเหลือ ต้นข้าวก็เปอร์เซ็นต์เพื่อตีราคาซื้อขายกัน</p> <p>Multi sorter (ยิงแก้ว)</p> <p>Multi sorter เป็นเครื่องที่สามารถคัดแยกเศษแก้วหรือเศษหินที่มีสีสันคล้ายเมล็ดข้าวออกได้</p> <p>Pre sifting (ตะแกรงเหล็ยม)</p> <p>เป็นเครื่องที่คัดแยกขนาดของเมล็ดข้าวออกจากกัน เช่น คัดแยกปลายที่เล็กที่สุดและต้นข้าวออกจากกันเป็นต้น</p>
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<p>Drum Grader (ตะแกรงกลม)</p> <p>Separated out broken kernels (แยกข้าวสารหักออกด้วยขนาดของตะแกรง)</p> <p>Thickness Grader (ตะแกรงตัดอ้วนผอม)</p> <p>Separate out kernels that are not Jasmine by the thickness (แยกข้าวสารอ้วนออกเพราะข้าวหอมมะลิเม็ดจะเรียวยาว)</p> <p>Metal Detector (จับโลหะ)</p> <p>เป็นเครื่องมือที่ใช้เทคโนโลยีที่ทันสมัยซึ่งใช้สนามแม่เหล็กไฟฟ้าในตรวจจับโลหะที่ปนมาในสินค้า ลักษณะเครื่องจะเป็นอุโมงให้ข้าวไหลผ่านและเมื่อจับโลหะได้เครื่องก็จะแยกสินค้านั้นออกไปทันที</p> <p>Weighting (ชั่งผลผลิต)</p> <p>Final weighting of rice to ensure the right quantity before packing for the customers (ชั่งผลผลิตที่เหลือว่าได้น้ำหนักตามที่ต้องการหรือไม่)</p> <p>Packing (บรรจุ)</p> <p>Loading and Distribution (ขึ้นตู้ จัดส่ง)</p>
<p>6. สินค้าที่ได้จากการสีข้าวมีอะไรบ้าง</p> <p>สินค้าที่ได้จากข้าวนั้นมี 7 ส่วน คือ ตัวข้าวที่สมบูรณ์ ข้าวหัก ข้าวจืด ข้าวเหลือง ข้าวท้องไข่ ข้าวเสีย เปลือก</p>
<p>7. อะไรคือเกณฑ์มาตรฐานของสินค้าแต่ละชนิดที่ได้จากการสี</p> <p>เกณฑ์มาตรฐานของสินค้าที่ได้จากการสีข้าวจะต่างกันไปตามแต่ละชนิดของข้าวที่นำมาสีและชนิดของเครื่องสีข้าว สิ่งที่ดีที่สุดจึงเป็นการเก็บข้อมูลสถิติของการสีเอง โดยยึดหลักที่อัตราการสี ณ ขณะเครื่องจักรอยู่ในสภาพสมบูรณ์ที่สุด เพื่อที่จะได้รู้ว่าการผิดพลาดเกิดจากเครื่องจักรชำรุดหรือข้าว</p>
<p>8. ก่อนการบรรจุห่อ ข้าวที่สีแล้วต้องผ่านกระบวนการใดบ้าง</p> <p>ข้าวที่สีจนได้คุณภาพต้องได้รับการจัดเก็บในถังขนาดใหญ่ และอยู่ในที่ที่มีอากาศถ่ายเทและพาชนะปิดสนิทเพื่อป้องกันแมลงและหนู อุณหภูมิปกติไม่อัปขึ้น</p>
<p>9. ใครเป็นผู้ดูแลขั้นตอนการสีข้าว</p> <p>คนที่มีหน้าที่ควบคุมขั้นตอนการสีข้าวทั้งหมดคือหัวหน้างาน คนที่จะเป็นหัวหน้างานได้นั้นจะต้องผ่านการอบรมเกี่ยวกับขั้นตอนการผลิตและเข้าใจความสำคัญของการตรวจวัดค่ามาตรฐานของผลผลิตเป็นอย่างดี เพราะค่ามาตรฐานเหล่านี้เป็นตัวบ่งชี้ประสิทธิภาพของกระบวนการผลิตว่าเป็นไปตามที่ต้องการหรือไม่ และหากมีข้อผิดพลาดข้อผิดพลาดนั้นเกิดขึ้นที่ใด</p>
<p>10. ขั้นตอนในการบรรจุข้าวใส่ถุงทำอย่างไร</p> <p>ข้าวที่ต้องจัดส่งจะถูกนำออกมาจากคลังเพื่อบรรจุหีบห่อตามที่ตกลงกับลูกค้า ข้าวถูกนำเข้าสู่กระบวนการบรรจุห่อโดยไม่มีคนใด ๆ ทั้งสิ้น ในความเป็นจริงนั้นข้าวที่สีเสร็จสามารถถูกมือคนได้เพราะข้าวไม่ใช่อาหารที่รับประทานได้ทันที ต้องนำไปทำให้สุกก่อน ความร้อนจากการประกอบอาหารจะฆ่าเชื้อโรคที่ติดมากับมือคนไปเอง</p>
<p>11. ต้องทำอย่างไรขั้นตอนการทำงานจึงไม่ผิดพลาด มาตรฐานใดที่ต้องคอยดูแลรักษา</p> <p>จำเป็นต้องมีการวัดมาตรฐานอย่างเคร่งครัดในทุกขั้นตอน ตั้งแต่การตรวจสอบคุณภาพข้าวเปลือกที่นำมาสี วัดว่าข้าวเปลือกสามารถให้ yield ตามที่ต้องการหรือไม่ (yield ที่ต้องการก็คือ yield ที่วัดได้ตอนที่รับ</p>

ซื้อขายเปลือก) มีการจดบันทึกสถิติ yield ของข้าวแต่ละแหล่งที่มา ข้าวที่สีเสร็จแล้วถูกนำไปเก็บไว้อย่างถูกต้องหรือไม่ มีการเขียนวันที่ ชนิดข้าว และรหัสล็อตหรือไม่
12. ในมุมมองของนักบริหาร สิ่งที่สำคัญที่สุดในกระบวนการผลิตคือ สิ่งสำคัญที่สุดของขั้นตอนการผลิตคือการวัด yield ของข้าวเปลือกที่รับซื้อและการวัด yield ของข้าวที่นำมาสีว่าเป็นไปตามที่ต้องการหรือไม่ เพราะ yield ที่เปลี่ยนไปส่งผลกระทบต่อตรงกับการขาดทุนของโรงสี เพราะหาก yield ของข้าวที่สีได้ต่ำไป 10% ก็จะทำให้สีข้าวสารไม่ครบจำนวนที่ลูกค้าต้องการ จนต้องซื้อข้าวเปลือกเข้ามาเพิ่มทำให้ต้นทุนบานปลาย การควบคุมต้นทุนก็เป็นเรื่องจำเป็นเช่นกัน เช่นการวัดผลผลิตต่อจำนวนชั่วโมงที่เปิดใช้เครื่องจักรต่อวัน
การหมุนเวียนของสินค้า
13. รู้ได้อย่างไรว่าจะมีข้าวเปลือกเพียงพอต่อการผลิตข้าวถุงในจำนวนที่ต้องการทุกครั้ง อย่างที่ตอบมาข้างต้นนั้น โรงสีจะซื้อข้าวเปลือกเข้าก็ต่อเมื่อมีคำสั่งซื้อแล้ว แต่เพื่อความคล่องตัวในการหมุนเวียนสินค้าโรงสีจะเก็บสต็อกข้าวไว้หนึ่งเดือน จำนวนที่เก็บจะดูจากยอดขายเฉลี่ยต่อเดือนในอดีต
14. คุณจัดเก็บข้าวเปลือกที่อยู่ในระหว่างรอการผลิตอย่างไร ข้าวจะถูกเก็บในยุ้งฉางที่ควบคุมให้มีอากาศเย็นและความชื้นต่ำเพื่อรักษากลิ่นหอมของข้าว
15. คุณทำอะไรต่อกับสินค้าที่เกิดจากการสีข้าว ไม่นับรวมข้าวที่สีได้ ขายเหลือที่ไม่เหลือมากสามารถนำไปขายให้ผู้ค้าขายในภาคใต้ได้เพราะประชากรฝั่งใต้นิยมรับประทานข้าวเหลือง ข้าวเสีย ข้าวท้องไข่และข้าวเหลืองมากนำไปขายเพื่อทำอาหารสัตว์ แลกลบนำไปขายเป็นเชื้อเพลิงจุมูกข้าวนำส่งโรงงานอาหาร
16. อธิบายการจัดเก็บข้าวถุง โดยปกติจะไม่จัดเก็บข้าวถุงแต่จะบรรจุข้าวลงถุงเมื่อต้องจัดส่งให้ลูกค้า หากมีการจัดเก็บข้าวถุงควรระมัดระวังเรื่องความสะอาดของสถานที่จัดเก็บ ไปวางถุงข้าวบนพื้นไม้โดยตรงและไม่ควรลากถุงกับพื้น เพื่อเป็นการป้องกันการปนเปื้อนในข้าว
17. รู้ได้อย่างไรว่ามีข้าวถุงเพียงพอต่อความต้องการของลูกค้า เพราะเป็นการทำงานตามคำสั่งซื้อล่วงหน้าจึงรู้เสมอว่ามีข้าวเพียงพอ
18. มีใครเกี่ยวข้องในการจัดการสิ่งเหล่านี้บ้าง ผู้ที่เกี่ยวข้องโดยตรงมีสามฝ่ายคือ ฝ่ายขาย ฝ่ายผลิต และฝ่ายการเงิน โคนฝ่ายขายและฝ่ายผลิตต้องส่งประมาณการขายและประมาณการผลิตของทั้งปีให้กับฝ่ายการเงินเพื่อให้ฝ่ายการเงินสามารถจัดหาทุนและจัดเก็บเงินมาสนับสนุนการทำงานของทั้งสองฝ่ายได้อย่างราบรื่น
จัดส่ง
19. อธิบายการจัดส่งข้าวถุง โดยอะไร โดยใคร และไปส่งให้ใคร การจัดส่งข้าวสามารถทำได้หลายวิธีตามแต่ที่จะตกลงกับลูกค้า อาจส่งทางเรือ เครื่องบินหรือรถบรรทุก โดยในแต่ละช่องทางโรงสีจะมอบหมายให้บริษัทเฉพาะทางมารับช่วงต่อไป
20. มาตรฐานใดที่ใช้ในการตัดสินใจเลือกช่องทางการขนส่งแต่ละครั้ง โดยรวมทางโรงสีทำการตรวจสอบระบบภายในของบริษัทที่จะมารับช่วงต่อก่อนว่ามีความพร้อมทางด้าน

<p>ความรู้ความชำนาญและระบบมากน้อยเพียงใด และพิจารณาว่าบริษัทเหล่านั้นมีความสามารถในการทำงานร่วมกับมาตรฐานที่โรงสีวางไว้หรือไม่</p>
<p>21. ทำอย่างไรจึงจะไม่มีผลผลิตในการจัดส่ง ของไม่เสีย ส่งไม่ผิดไม่ช้า</p> <p>โรงสีมองว่าการที่จะได้มาซึ่งความไม่ผลิตผลในการจัดส่งนั้นมาจากสองทาง หนึ่งคือการวางแผนการผลิตที่ดีและการจัดส่งที่สอดคล้องกัน สองคือการใส่ใจการตรวจสอบกระบวนการอย่างสม่ำเสมอเพื่อมองหาข้อผิดพลาดและสิ่งที่ควรแก้ไขก่อนที่ความผิดพลาดจะเกิดขึ้นหรือเกิดซ้ำ</p>
<p>22. รู้ได้อย่างไรว่าค่าขนส่งของแต่ละครั้งไม่ทำให้ขาดทุน</p> <p>การกำหนดราคาของข้าวในแต่ละครั้งนั้นฝ่ายขายต้องคำนวณตั้งแต่ราคาต้นทุนข้าวสาร ค่าใช้จ่ายในการสีข้าว ค่าใช้จ่ายในการจัดเก็บและบรรจุหีบห่อ รวมไปถึงค่าใช้จ่ายในการขนส่งไว้ก่อนแล้วจึงบวกกำไรเสมอ หากทำตามนี้ก็มั่นใจได้ว่าจะไม่ขาดทุน</p>
<p>กิจกรรมอื่นที่เกี่ยวข้อง</p>
<p>23. อธิบายว่าตัดสินใจอย่างไรว่าจะเลือกขายสินค้าที่ไหน ที่ราคาเท่าไร</p> <p>หากรัฐแทรกแซงราคาของข้าวเปลือกแต่ละชนิดนั้นจะถูกกำหนดโดยรัฐ แต่ก็มีข้อสังเกตว่าราคาที่รัฐกำหนดนั้นเป็นราคา ณ ค่าความชื้นที่ไม่เกิน 15% แต่ข้าวที่ชาวนานำมาขายมักมีความชื้นมากกว่าดังนั้นโรงสีจึงสามารถหักราคาซื้อได้ตามความชื้นที่เกินมา ส่วนปัจจัยการผลิตอื่นที่ใช้จะคัดเลือกจากราคาคุณภาพและการบริหารงานที่ตรงตามมาตรฐานของโรงสี โดยปกติแล้วโรงสีจะสั่งซื้อปัจจัยการผลิตหนึ่งชนิดจากคู่ค้าตั้งแต่สองจำขึ้นไปเพื่อป้องกันการผิดพลาดหากมีจำใดไม่สามารถจัดส่งได้เนื่องจากระบบขัดข้อง</p>
<p>24. อธิบายผลกระทบของแผนส่งเสริมการขายและลักษณะพิเศษของสินค้าข้าวในตลาดปัจจุบัน</p> <p>ในปัจจุบันนั้นการแข่งขันด้านราคาในตลาดข้าวสูงมีมากขึ้น สาเหตุหลักเนื่องมาจากเศรษฐกิจที่ตกต่ำ และคู่แข่งใหม่ที่ตีตลาดด้วยราคาเพื่อแย่งพื้นที่ตลาดล่าง ทางโรงสีแก้ปัญหาโดยการส่งข้าวถูกราคาถูกได้ตราอื่นเพื่อช่วยยอดขายเป็นระยะ สินค้าที่เป็นตราโรงงานจะไม่ลดราคาลงไปสู้</p>
<p>25. อธิบายการทำงานในข้อ 23 และ 24 ในแง่การร่วมมือกับหน่วยงานอื่น</p> <p>ในการซื้อข้าวแต่ละครั้งนั้นจำเป็นอย่างยิ่งที่ฝ่ายขายและฝ่ายผลิตต้องทำงานร่วมกันในเก็บข้อมูลเกี่ยวกับราคาข้าว เนื่องจากราคาข้าวเปลี่ยนแปลงเป็นรายวัน และผันผวนตามสถานการณ์ เช่นหากมีเรือใหญ่เข้าข้าวก็จะราคาสูงเนื่องจากพ่อค้าเร่งซื้อข้าวเพื่อขายตลาดต่างประเทศ คำสั่งซื้อต้องส่งผ่านไปยังฝ่ายการเงิน ฝ่ายผลิตและฝ่ายจัดส่งเพื่อดำเนินการต่อ</p>
<p>26. อธิบายหน้าที่ของฝ่ายการเงินในการจัดการห่วงโซ่อุปทานของโรงสี</p> <p>มีหน้าที่จัดหาแหล่งทุน และจัดเก็บจัดจ่ายเงิน เพื่อสร้างสภาพคล่องให้แก่การทำงานของโรงสี</p>
<p>27. ทำอย่างไรข้อมูลของฝ่ายการเงินจึงจะเป็นประโยชน์สูงสุดในการจัดการห่วงโซ่อุปทานของโรงสี</p> <p>ฝ่ายการเงินควรมีการประชุมร่วมกันกับทุกฝ่ายเพื่อวางแผนบริหารการเงินเป็นรายปี ผู้นำควรเป็นฝ่ายขาย โดยการให้ประมาณการขาย เพื่อฝ่ายผลิตสามารถนำตัวเลขมาคำนวณหาต้นทุน ฝ่ายการเงินมีหน้าที่นำตัวเลขเหล่านี้มาประมวลเป็นแผนการใช้จ่ายเงินในปีนั้น และปรับปรุงแผนงานต่อเดือนตามจริงกับทุกฝ่าย</p>
<p>ความสัมพันธ</p>

<p>28. จากข้อ 1 ถึง 23 ระบุประเภทของความสัมพันธ์ของแต่ละหน่วยงานในการจัดการห่วงโซ่อุปทาน หน่วยงานต่างๆ ทั้งภายในและภายนอก มีความสัมพันธ์กันในเชิงพึ่งพา ทุกหน่วยต้องส่งผ่านข้อมูลและใช้ข้อมูลจากผู้อื่นเพื่อให้ดำเนินงานไปได้อย่างสะดวก และมีประสิทธิภาพ ความสัมพันธ์ภายนอกมีรูปแบบของคู่ค้าที่ทำงานร่วมกันเพื่อรักษามาตรฐานที่ตั้งไว้ มีการให้ความรู้และเงินทุนสนับสนุน</p>
<p>29. อธิบายว่าแต่ละสายสัมพันธ์ถูกทำให้ดำเนินต่อไปได้อย่างไรเพื่อประโยชน์ของโรงสี การดำรงอยู่ของสายสัมพันธ์กับหน่วยงานทั้งภายในและภายนอก โรงสีมีความสำคัญทั้งสิ้น การมีความสัมพันธ์ที่ดีกับผู้รับช่วงการผลิตที่ดี หรือกับคู่ค้าที่ดีจะส่งผลในการบวกกับโรงสีเองในยามจำเป็น เช่น การส่งงานผลิตให้โรงสีในเครื่องที่โรงสีเองยังสามารถผลิตเองได้ก็เพื่อรักษาความสัมพันธ์เอาไว้ เพราะหากไม่ส่งงานผลิตให้เลยโรงสีในเครื่องเหล่านี้ก็จะเลิกทำธุรกิจกับโรงสี และเมื่อยามเครื่องจักรในโรงสีเสียหายจนทำการผลิตไม่ได้ก็จะไม่สามารถส่งคำสั่งซื้อให้ในโรงสีในเครื่องทำได้จนเสียลูกค้า การทำงานกับหน่วยงานภายในก็เช่นกันหากสร้างบรรยากาศที่อำนวยความสะดวกการทำงานร่วมกันก็จะทำให้การประสานงานดีขึ้น</p>
<p>30. จัดอันดับสายสัมพันธ์ตามความสำคัญ มากไปมาน้อย ภายในองค์กรสำคัญที่สุดคือ ฝ่ายขาย รองลงมาคือฝ่ายผลิต แล้วจึงเป็นฝ่ายการเงิน</p>
<p>31. อธิบายความสำคัญของสายสัมพันธ์ที่อยู่ใน ๓ อันดับแรก สำคัญที่สุดคือ ฝ่ายขาย รองลงมาคือฝ่ายผลิต แล้วจึงเป็นฝ่ายการเงิน</p>
<p>32. ให้ความเห็นเรื่องนโยบายการสร้างความสัมพันธ์ที่วิสาหกิจชุมชนมีใช้อยู่ในปัจจุบัน การสร้างเครือข่ายที่สัมพันธ์กันทั้งด้าน ความสามารถในการตอบสนองคำสั่งซื้อและการบริการ</p>
<p>การถ่ายเทข้อมูล</p>
<p>33. จากข้อ 1 ถึง 23 ระบุประเภทของข้อมูลที่ถูกส่งผ่านเพื่อในการทำงานไร้ข้อผิดพลาด การส่งผ่านข้อมูลเช่นจำนวนการสั่งซื้อ วันเวลาที่จัดส่ง และราคาขายต้องถูกส่งผ่านได้ในส่วนต่างๆ</p>
<p>34. ทำอย่างไรข้อมูลที่ต้องใช้จึงจะส่งไปถึงคนที่ถูกต้อง ปัจจุบันมีการนำใบกรอกข้อมูลและระบบคอมพิวเตอร์เข้ามาใช้ แต่ก็ยังมีข้อผิดพลาดเกิดขึ้นบ้างจากการกรอกข้อมูลผิด</p>
<p>35. ทำอย่างไรข้อมูลที่ส่งไปจึงจะถูกเปิดอ่านและใช้อย่างถูกต้อง การวางระบบความรับผิดชอบตามตำแหน่งหน้าที่ และแผนผังการทำงานอย่างละเอียดสามารถช่วยได้ในระดับหนึ่ง แต่การผิดพลาดที่เกิดจากการกระทำของตัวบุคคลเองก็ยังคงมีอยู่</p>
<p>36. ในความเห็นว่าคุณต้องบริหารข้อมูลอย่างไรจึงจะทำให้การทำงานเป็นไปอย่างราบรื่น ปัจจุบันทางโรงสีกำลังนำระบบ ERP เข้ามาใช้เพื่อเพิ่มประสิทธิภาพในการส่งผ่านข้อมูล</p>

APPENDIX B

SAMPATUAN'S INTERVIEW RESULT (THAI)

การจัดการ
<p>1. อธิบายขั้นตอนการจัดซื้อข้าวเปลือก และแหล่งที่มา</p> <p>การจัดซื้อข้าวของวิสาหกิจชุมชนแยกเป็นสองฝ่าย ส่วนหนึ่งวิสาหกิจชุมชนทำการปลูกข้าวเอง (8%-10%) อีกส่วนหนึ่งได้จากการซื้อข้าวเปลือกจากชาวนา (90%-92%) มีการตรวจค่าความชื้นก่อนที่จะรับซื้อแต่ว่าการตรวจความชื้นไม่สามารถบอกได้ว่าข้าวเปลือกมีคุณภาพดีหรือไม่จึงมีการรับซื้อข้าวคุณภาพแย่มาก หากมีข้าวที่องุ่นมากก็ทำให้มีข้าวหักมากจนเสียน้ำหนักข้าวเต็มเม็ดที่คาดว่าจะได้ทำให้ขาดทุน เพราะข้าวหักราคาถูกกว่าข้าวเต็มเม็ดมากกว่าครึ่ง หากข้าวมีกลิ่นหรือรสสัมผัสไม่ดีก็จะไม่สามารถขายได้เลย วิสาหกิจชุมชนต้องการให้มีสัดส่วนของข้าวปลูกเองเข้ามาในการผลิตข้าวต่อข้าวเปลือกที่ซื้อจากชาวนาเป็นครั้งต่อครั้ง เพราะปลูกข้าวเองมีต้นทุนถูกกว่ามาก ปลูกข้าว1ไร่ใช้เงิน4000-5000บาทได้ผลผลิต600-900กิโลกรัม ซื้อข้าวเปลือกจากชาวนาใช้เงิน8400บาทจากการซื้อล่าสุดได้ข้าว1ตัน</p>
<p>2. ใครเป็นผู้มีอำนาจตัดสินใจในการซื้อข้าวเปลือก ข้อมูลใดบ้างที่ใช้ในการตัดสินใจซื้อข้าวแต่ละครั้ง</p> <p>การจะรับซื้อข้าวแต่ละครั้งขึ้นอยู่กับมติของคณะกรรมการ แต่เพราะคณะกรรมการไม่มีประสบการณ์ตรงในด้านนี้</p>
<p>3. อธิบายลักษณะความสัมพันธ์ที่เป็นอยู่ระหว่าง โรงสีกับผู้ขายข้าว สำคัญอย่างไรที่ความสัมพันธ์เช่นนี้ดำเนินต่อไป</p> <p>ความสัมพันธ์ระหว่างโรงสีชุมชนกับชาวนานั้นสร้างขึ้นบนฐานของการเรียนรู้ซึ่งกันและกัน ชาวนาเรียนรู้ว่าการนำข้าวมาสีโรงสีชุมชนนั้นทำให้ชาวนาไม่ต้องไปซื้อข้าวกินและยังประหยัดเงินเพราะได้ปริมาณข้าวมากกว่าไปซื้อจากร้านค้า ส่วนโรงสีชุมชนเองก็เรียนรู้ว่าการรับซื้อชาวนานั้น ไม่ใช่ปัจจัยหลักในการบริหารโรงสี แต่เป็นการสร้างเครือข่ายของชาวนาที่จะผลิตข้าวเปลือกที่มีคุณภาพมาขายให้</p>
<p>4. ในมุมมองของนักบริหาร หน้าที่สำคัญของผู้ซื้อข้าวเปลือกคือ</p> <p>ผู้รับซื้อข้าวไม่ได้มีหน้าที่สำคัญใดๆ ถึงแม้ว่าการเลือกซื้อข้าวเปลือกที่มีคุณภาพจะสำคัญต่อการคงอยู่ของโรงสีชุมชน หน้าที่สำคัญนั้นต้องอยู่ที่การทำงานร่วมกันของทุกฝ่าย กรรมการชาวนาจะทำหน้าที่จัดหาเมล็ดพันธุ์ที่มีคุณภาพมาสนับสนุนชาวนา การทำงานร่วมกับองค์กรของรัฐเพื่อสร้างความรู้ที่ถูกต้องในการปลูกและดูแลข้าว การมีกรรมการตรวจสอบการจัดซื้ออย่างเป็นระบบ</p>
การสีข้าว
<p>5. อธิบายขั้นตอนการสีข้าว</p> <p>นำข้าวเปลือกมาผ่านเครื่องร่อนเพื่อแยกหินและดินออก</p> <p>นำข้าวเปลือกที่ร่อนแล้วมาเข้าเครื่องสีเพื่อกระเทาะเปลือก</p> <p>นำข้าวกล้องที่ได้มาร่อนแยกขนาดเป็น ข้าวคั้นและข้าวจ้าว</p>
<p>6. สินค้าที่ได้จากการสีข้าวมีอะไรบ้าง</p>

เปลือกข้าว ข้าวต้น และข้าวจ้าว
7. อะไรคือเกณฑ์มาตรฐานของสินค้าแต่ละชนิดที่ได้จากการสี ไม่ได้กำหนดไว้ แต่ข้าวต้นคือข้าวที่มีส่วนของข้าวครบถ้วนมีจมูกเมล็ดไม่หัก ข้าวจ้าวคือข้าวที่หักเป็นท่อน เล็กๆ
8. ก่อนการบรรจุห่อ ข้าวที่สีแล้วต้องผ่านกระบวนการใดบ้าง นำข้าวต้นมาเป่าลมไล่เปลือกเปลือกที่หลงเหลืออยู่ ใช้มือเก็บหินขนาดเล็กที่หลุดลอกจากการร่อนหินครั้งแรกออก บรรจุข้าวกล่องใส่ถุง
9. ใครเป็นผู้ดูแลขั้นตอนการสีข้าว มีคุณสุกศลเท่านั้น
10. ขั้นตอนในการบรรจุข้าวใส่ถุงทำอย่างไร การบรรจุข้าวใส่ถุงนั้นจะทำโดยมือคนเท่านั้น ปัจจุบันมีคุณศรีนวลเป็นผู้บรรจุผลิตภัณฑ์
11. ต้องทำอย่างไรขั้นตอนการทำงานจึงไม่ผิดพลาด มาตรฐานใดที่ต้องคอยดูแลรักษา การสีข้าวจะเป็นรอบ แต่ละรอบทำการสีข้าวจนจบถึงการร่อนแยกข้าวต้นออกจากข้าวจ้าว คนที่ดูแล กระบวนการสีข้าวจะมีหน้าที่ดูแลกระบวนการนี้ตั้งแต่ต้นจนจบภายในหนึ่งวัน มีการปรับเครื่องสีข้าวให้ เหมาะสมกับการสีข้าวแต่ละชนิดก่อนการสี
12. ในมุมมองของนักบริหาร สิ่งที่สำคัญที่สุดในกระบวนการผลิตคือ การลดการสูญเสียของข้าวที่เกิดจากการจัดเก็บและการสี
การหมุนเวียนของสินค้า
13. รู้ได้อย่างไรว่าจะมีข้าวเปลือกเพียงพอต่อการผลิตข้าวถุงในจำนวนที่ต้องการทุกครั้ง มีการเก็บสต็อกข้าวเปลือกไว้หมุนเวียนจำนวน 1 ตันครั้งตลอดเวลา
14. คุณจัดเก็บข้าวเปลือกที่อยู่ในระหว่างรอการผลิตอย่างไร ปัจจุบันข้าวเปลือกที่ได้มานำการตากไล่ความชื้นที่ลานวัด 1 ถึง 2 แดดก่อน ก่อนเก็บใส่กระสอบเพื่อรอ การผลิต อีกทั้งการตากข้าวในที่แจ้งทำให้เกิดการสูญเสียจากนก แมลง และ หนู ที่มากินข้าว
15. คุณทำอะไรต่อกับสินค้าที่เกิดจากการสีข้าว ไม่นับรวมข้าวที่สีได้ เปลือกข้าวส่วนหนึ่งนำไปขายให้โรงงานทำดินปลูกต้นไม้ อีกส่วนนำมาบำรุงแปรงข้าวโดยการ ไปรยให้ทั่ว แปรงแล้วขำให้จมดิน ข้าวจ้าวนำไปข้าวทำอาหารสัตว์
16. อธิบายการจัดเก็บข้าวถุง กระสอบถูกวางไว้กับพื้นปูนธรรมดาทำให้เกิดการอับชื้นของข้าวกันถุงอยู่เป็นประจำ
17. รู้ได้อย่างไรว่ามีข้าวถุงเพียงพอต่อความต้องการของลูกค้า ความต้องการข้าวของโรงสีชุมชนมีความแน่นอนเพราะขายให้คนในชุมชนและชุมชนใกล้เคียงเป็นหลัก จึง รู้ว่าต้องเก็บข้าวเปลือกไว้เท่าไรจึงจะพอความต้องการ
18. มีใครเกี่ยวข้องในการจัดการสิ่งเหล่านี้บ้าง ณ ปัจจุบันมีเพียงคุณสุกศลและคุณศรีนวลเท่านั้นที่ดูแลการจัดเก็บสต็อก

จัดส่ง
19. อธิบายการจัดส่งข้าวถุง โดยอะไร โดยใคร และไปส่งให้ใคร การบรรจุข้าวใส่ถุงนั้นจะทำโดยมือคนเท่านั้น ปัจจุบันมีคุณศรีนวลเป็นผู้บรรจุผลิตภัณฑ์
20. มาตรฐานใดที่ใช้ในการตัดสินใจเลือกช่องทางการขนส่งแต่ละครั้ง การจัดส่งมีสองประเภทคือ ผู้ซื้อมารับไปเอง และการจัดส่งโดยรถจักรยานยนต์ ค่าใช้จ่ายที่เป็นตัวเงินจึงไม่เกิดกับโรงสีชุมชน แต่ที่เกิดเป็นค่าเสียเวลาเท่านั้น
21. ทำอย่างไรจึงจะไม่มีผลผลิตในการจัดส่ง ของไม่เสีย ส่งไม่ผิดไม่ช้า ไม่เกิดการผิดพลาดเพราะผู้ซื้อโทรศัพท์มาสั่งซื้อล่วงหน้าและถามก่อนมารับทุกครั้ง
22. รู้ได้อย่างไรว่าค่าขนส่งของแต่ละครั้งไม่ทำให้ขาดทุน เพราะไม่มีค่าใช้จ่ายในการจัดส่งจึงไม่ขาดทุน
กิจกรรมอื่นที่เกี่ยวข้อง
23. อธิบายว่าตัดสินใจอย่างไรว่าจะเลือกขายสินค้าที่ไหน ที่ราคาเท่าไร คณะกรรมการและคณะทำงานค่อนข้างมีความขัดแย้งในการเลือกสถานที่ขายสินค้า คณะกรรมการเห็นว่าควรขายสินค้าให้กลุ่มคนชั้นกลางนอกพื้นที่ก่อน (ทำตลาดโดยการออกร้านในงานต่างๆ) ส่วนคณะทำงานเห็นว่าควรขายให้คนในพื้นที่ก่อน กรรมการเป็นผู้ตั้งราคาขายโดยดูจากราคาดันทุนและราคาตลาด
24. อธิบายผลกระทบของแผนส่งเสริมการขายและลักษณะพิเศษของสินค้าข้าวในตลาดปัจจุบัน การลดราคาของบริษัทขายข้าวสารถุงมีผลกระทบมากกับชาวบ้านกลุ่มหนึ่งในชุมชนที่ยึดติดกับราคาเหนือคุณภาพของสินค้าทำให้ต้องทำข้าวผสมข้าวหักออกมาขายเพื่อสู้ในตลาด แต่อีกส่วนหนึ่งก็ไม่กระทบและซื้อข้าวที่โรงสีชุมชนไม่ผสมข้าวหัก
25. อธิบายการทำงานในข้อ 23 และ 24 ในแง่การร่วมมือกับหน่วยงานอื่น การทำงานร่วมกันของคณะกรรมการและคณะทำงานยังไม่ราบรื่น เพราะไม่ได้มองการบริหารเป็นองค์รวมต่างคนต่างทำงานและตัดสินใจเฉพาะหน้ากันเอง การประสานงานกับองค์กรของรัฐเพื่อขอความช่วยเหลือด้านความรู้และทุนทรัพย์ยังมีไม่มากนัก เนื่องจากการทำงานของโรงสีชุมชนยังคงเป็นการทำงานโดยคนคนเดียวเป็นหลักจึงมีปัญหาเรื่องเวลาการทำงานที่ไม่เพียงพอ
26. อธิบายหน้าที่ของฝ่ายการเงินในการจัดการห่วงโซ่อุปทานของโรงสี ฝ่ายการเงินทำหน้าที่เก็บข้อมูลรายรับรายจ่าย และดูแลเงินทุนที่มีอยู่ ยังไม่มีการจัดการวางแผนการเงินล่วงหน้าหรือติดต่อกับสถาบันการเงินเพื่อเพิ่มทุน
27. ทำอย่างไรข้อมูลของฝ่ายการเงินจึงจะเป็นประโยชน์สูงสุดในการจัดการห่วงโซ่อุปทานของโรงสี หากสามารถมีการวางแผนการพัฒนาและการใช้เงินล่วงหน้าได้ เป็นรายเดือนหรือรายปีก็ดี ก็น่าจะสามารถทำให้การสร้างเข้าใจและการถ่ายทอดข้อมูลทำได้ดีขึ้น แต่ก็อาจมีปัญหาเรื่องการโน้มน้าวให้ความเห็นของกรรมการไปในทิศทางที่ไม่เหมาะสมโดยกลุ่มคนภายนอก โดยเฉพาะหน่วยราชการที่เข้ามามีส่วนร่วม อีกทั้งการประชุมวางแผนงานเป็นรายปีอาจไม่สามารถนำมาปฏิบัติได้จริง เพราะขึ้นอยู่กับทุกฝ่ายให้ความร่วมมือกัน และมีจุดมุ่งหมายในการทำงานที่เหมือนกัน
ความล้มพันธ์

<p>28. จากข้อ 1 ถึง 23 ระบุประเภทของความสัมพันธ์ของแต่ละหน่วยงานในการจัดการห่วงโซ่อุปทาน โรงสีชุมชนเป็นองค์กรมนุษย์ดังนั้นความสัมพันธ์ระหว่างบุคคลที่ทำงานจึงมีความสำคัญสูงสุด ความสัมพันธ์นั้นแยกเป็น 5 ประเภท</p> <p>ความสัมพันธ์ภายใน – การสร้างวัฒนธรรมของการทำงานร่วมกันที่เปิดโอกาสในถามคำถามและถกเถียง ในเรื่องที่จำเป็นต่อการพัฒนาองค์กรและสร้างองค์ความรู้ท้องถิ่นนั้นสำคัญมาก แต่นิสัยพื้นฐานของคนไทย ที่ไม่ชอบตั้งคำถามและไม่อยากถกเถียงเพราะกลัวจะเกิดความขุ่นข้องหมองใจกันกลับเป็นผลเสีย เพราะทำ ให้เกิดความไม่เข้าใจกันในการทำงานของคณะทำงานและคณะกรรมการ</p> <p>ความสัมพันธ์กับชาวนา – การสร้างความเข้าใจและความมั่นใจในประโยชน์ของโรงสีชุมชนที่มีต่อชาวนา โดยการให้บริการสีข้าวและรับซื้อข้าวในราคายุติธรรม และการในความรู้ในการปลูก ดูแล และพัฒนา คุณภาพของข้าว</p> <p>ความสัมพันธ์กับองค์กรทางวิชาการ – การสร้างความสัมพันธ์กับองค์กรทางวิชาการมีประโยชน์ในด้าน การเพิ่มพูนองค์ความรู้ท้องถิ่นและการก้าวข้ามขีดจำกัดเดิมโดยการนำความรู้ท้องถิ่นมาควบรวมกับความรู้ ที่เป็นสากลจากภายนอกและปรับใช้ให้เหมาะสมกับท้องถิ่น</p> <p>ความสัมพันธ์กับองค์กรของรัฐ – การทำงานกับองค์กรของรัฐยังไม่สัมพันธ์กันเนื่องจากรัฐไม่ได้มองงาน ส่งเสริมกิจกรรมของโรงสีชุมชนในองค์กรรวม การช่วยเหลือมาไม่ต่อเนื่องและไม่มีทิศทางที่แน่นอน</p> <p>ความสัมพันธ์กับชุมชน – เพราะโรงสีชุมชนจะอยู่รอดหรือไม่ นั่นขึ้นอยู่กับว่าชุมชนจะซื้อสินค้า (ข้าว) ของ โรงสีเพื่อการบริโภคหรือไม่ ดังนั้นการสร้างความสัมพันธ์อันดีกับชุมชนจึงสำคัญเช่นกัน</p>
<p>29. อธิบายว่าแต่ละสายสัมพันธ์ถูกทำให้ดำเนินต่อไปได้อย่างไรเพื่อประโยชน์ของโรงสี</p> <p>ความสัมพันธ์ภายใน – ความสามัคคีและความมีวินัยต่อหน้าที่ของคณะทำงานและคณะกรรมการคือ ขับเคลื่อน</p> <p>ความสัมพันธ์กับชาวนา – การสร้างแนวร่วมหรือผู้นำชาวนา</p> <p>ความสัมพันธ์กับองค์กรทางวิชาการ – การเปิดรับการทำงานร่วมกับนักเรียน นักวิจัย</p> <p>ความสัมพันธ์กับองค์กรของรัฐ – อาจเป็นการดีหากรัฐจะจัดขบวนกรคิดเสียใหม่</p> <p>ความสัมพันธ์กับชุมชน – การมีปฏิสัมพันธ์กับคนในชุมชนจะมาในรูปแบบใดก็ได้ การไปส่งข้าวถึงบ้านเพื่อ สร้างโอกาสในการพูดคุยก็เป็นวิธีหนึ่งที่ทำอยู่ในปัจจุบัน</p>
<p>30. จัดอันดับสายสัมพันธ์ตามความสำคัญ มากไปมาน้อย</p> <p>ความสัมพันธ์ภายใน</p> <p>ความสัมพันธ์กับชาวนา</p> <p>ความสัมพันธ์กับชุมชน</p> <p>ความสัมพันธ์กับองค์กรทางวิชาการ</p> <p>ความสัมพันธ์กับองค์กรของรัฐ</p>
<p>31. อธิบายความสำคัญของสายสัมพันธ์ที่อยู่ใน ๓ อันดับแรก</p> <p>ความสัมพันธ์ภายใน</p> <p>ความสัมพันธ์กับชาวนา</p> <p>ความสัมพันธ์กับชุมชน</p>

<p>32. ให้ความเห็นเรื่องนโยบายการสร้างความสัมพันธ์ที่วิสาหกิจชุมชนมีใช้อยู่ในปัจจุบัน</p> <p>ยังต้องการการพัฒนาอีกมาก การให้ความรู้ความเข้าใจในบทบาทหน้าที่ยังไม่เพียงพอ คนยังคงไม่เข้าใจหลักที่แท้จริงของเศรษฐกิจพอเพียงที่เป็นรากฐานของโรงสีชุมชน ซึ่งโดยแท้จริงแล้วนี่คือเหตุที่ทำให้การทำงานของโรงสีชุมชนยังคงไม่ราบรื่น ต้องปรับความเข้าใจให้ตรงกันเสียก่อนว่าโรงสีชุมชนผลิตข้าวและให้บริการคนในชุมชนเป็นหลัก ไม่ได้ตั้งขึ้นมาเพื่อทำตลาดแข่งกับพ่อค้าใหญ่เพราะถ้าไม่ใช่สาเหตุหลักที่ก่อตั้งแต่เป็นการยกระดับการครองชีพของคนในชุมชนโดยเฉพาะชาวนาด้วยการพึ่งตัวเอง</p>
<p>การถ่ายเทข้อมูล</p>
<p>33. จากข้อ 1 ถึง 23 ระบุประเภทของข้อมูลที่ถูกส่งผ่านเพื่อในการทำงานไว้ข้อผิดพลาด</p> <p>การส่งผ่านข้อมูลของวิสาหกิจแบ่งออกเป็นสองส่วน ส่วนแรกคือระหว่างผู้จัดการและฝ่ายบัญชี (คณะทำงาน) ส่วนที่สองคือระหว่างกรรมการและคณะทำงาน ปัญหาที่เกิดขึ้นนั้นเกิดจากการทำงานที่ไม่สัมพันธ์กันระหว่างคณะทำงานและกรรมการ สาเหตุหลักอยู่ที่ การที่กรรมการเข้าประชุมไม่พร้อมเพรียง, ไม่ตรวจสอบ และให้คำปรึกษากับคณะทำงานอย่างใกล้ชิด ทำให้เกิดความไม่เข้าใจในการทำงานของคณะทำงานและติดขัดในการทำงานบ่อยครั้ง</p>
<p>34. ทำอย่างไรข้อมูลที่ส่งไปจึงจะส่งไปถึงคนที่ถูกต้อง</p> <p>คณะกรรมการและคณะทำงานจะจัดการประชุมร่วมทุกเดือน เดือนละหนึ่งครั้งเพื่อสรุปผลการทำงานในรอบเดือน และเปิดโอกาสให้คณะทำงานได้ชี้แจงปัญหา</p>
<p>35. ทำอย่างไรข้อมูลที่ส่งไปจึงจะถูกเปิดอ่านและใช้อย่างถูกต้อง</p> <p>ถึงจะมีการประชุมทุกเดือนแต่เพราะคณะกรรมการมักมาไม่ครบองค์ประชุมเสมอจึงทำให้การถ่ายเทข้อมูลเป็นไปอย่างล่าช้าและตกหล่น หลังประชุมเสร็จต้องตามหากรรมการที่ขาดประชุมเพื่อรายงานความเป็นไป ที่ประชุมมักถกเถียงว่าเกิดปัญหามากกว่าที่จะหาทางแก้มิให้ปัญหาเกิดซ้ำ</p>
<p>36. ในความเห็นที่ต้องบริหารข้อมูลอย่างไรจึงจะทำให้การทำงานเป็นไปอย่างราบรื่น</p> <p>การสร้างความรู้ความเข้าใจในบทบาทหน้าที่ของแต่ละบุคคลจะทำให้การส่งผ่านข้อมูลเป็นไปได้อย่างราบรื่นขึ้น</p>

APPENDIX C

COMPLETE INTERVIEW RESULTS (ENGLISH)

Question	Sampatuan MCE	Chiameng Co., Ltd. Group
<p>1. Please help explain the steps in which the paddies are bought and from whom?</p>	<p>The rice paddies come from 2 sources.</p> <p>1) From the rice farmers in the surrounding areas (90% - 92%).</p> <p>2) From MCE's own rice field (8%-10%).</p> <p>The rice paddies will be tested for moisture level before the buying decision is made. As a result, MCE ended up with many lots of bad quality paddies in the past. If there are many chalky kernels then MCE will end up with more fragmented kernel than originally anticipate and make a loss because fragmented kernels are worst less than half the price of the whole kernel. If the kernels have bad smell or texture then the whole batch cannot be sold at all.</p> <p>MCE wants to have 50% of its supply comes from own plantations and other 50% from local rice farmers. Planting own rice saves MCE's costs and help it stays out of financial tight spots whenever it replenishes inventory. MCE spends between 4,000 – 5,000 Baht/Rai and get the average harvest of 600 – 900 kilogram of paddies in return.</p> <p>The most recent buying price for 1 ton of local rice farmers' paddies is 8,400 baht.</p>	<p>The rice paddies come from 3 sources.</p> <p>1) From the rice farmers who have standing relationship with the miller.</p> <p>2) From independent rice farmers.</p> <p>3) From the middlemen.</p> <p>The rice paddies will be tested for moisture level (15% or less), purity level, yield level (% of whole kernels after milling) and undergone chemical testing (amylase and alkali level) before the buying decision is made. Aside from these tests, the origin of the rice paddies is also asked after to ensure that they come from the areas that make high-quality paddies.</p>
<p>2. Who is in charge of making decision to buy paddies from suppliers and what information do they based the decision on?</p>	<p>The MCE committee confers the buying power on the manager. The manager makes buying decision based on the stock level and the forecast on future supplies (referring to rice paddies). If there is no harvesting by any local rice plantation in the next couple of months, he will buy more paddies to stock up. In term of paddies' quality testing before purchase, only the moisture level test is conducted. The MCE often ends up with bad quality paddies which mean they cannot produce as much rice as predicted and suffer loss.</p>	<p>Purchasing department is in chart of making buying decisions. Information such as the future selling price (from sales department), historical data of rice paddies' quality from different plantation, records of weather and water condition during the growing season, and customers' orders (quantity, time of delivery and type of rice) are all used to make the buying decision.</p> <p>Keeping historical record of weather and water condition for each plantation allows the purchase department to anticipate the quality and quantity of the current harvest before hands.</p>

	with bad quality paddies which mean they cannot produce as much rice as predicted and suffer loss.	and water condition for each plantation allows the purchase department to anticipate the quality and quantity of the current harvest before hands.
3. Please describe the kind of relationship being maintained between you and the suppliers? How important is it that this relationship existed?	The relationship with rice farmers is still an on-going process. Rice farmers have just recently begun to understand the roles of MCE and come to sell their best portions of the harvest as oppose to before. An action is a result of a self-learning experience on the farmers' parts. They realize that selling good paddies to MCE means the community (including themselves) can now buy good quality rice for half the price they usually pay. It is important that this self-learning process continues to secure the MCE's future.	The relationship with middlemen is a normal buyer and seller relationship. The miller has a dependent relationship with contracted rice farmers, package suppliers, carriers, customers and sub-contracted millers. The miller integrates parts of their functions with compatible specialized enterprises (sub-contracted millers, package suppliers and carriers) and influences others through provision of knowledge and financial aids (rice farmers and customers). Sub-contracting off parts of the operations allows the millers to concentrate on the core activities, milling, and cuts down costs. Providing knowledge and financial aids to rice farmers and customers who are the key members of the value chain ensure the continuation of future business.
4. From the view point of a management, what is the most important duty of a buyer?	Keeping records of the harvesting circles for each suppliers, it help buyers make the right decision whether to stock up because there will be no supplies in the next couple of months. In term of paddies quality, the role of a buyer is not as important as the role of the producer. The buyers' role is only to buy. The producers' role is to make good quality paddies.	Keeping a record of yield number, and statistical data of each plantation are most important since they can be used to set a standard or minimum level of purchase criteria. Building a good relationship with the rice farmers enable a miller to bring good quality paddies into the system.
5. Please explain the rice milling processes?	Separate earth matter and stones from the paddies. Put the paddies through the huller to remove the husk. Grade the kernels with a sifter. The fragmented kernels are separated out. Blow the small bits of husk away from	Raw Material Inspection (come in as brown rice) Moisture Testing Purity Testing Chemical Testing Fumigate rice with Phosphine to ward off insects. Stock in airy room in normal

	<p>the brown rice with a large fan.</p> <p>Pick out the remaining small stones by hands.</p>	<p>temperature.</p> <p>Separate earth matter from rice</p> <p>Whiten the rice with whitening machine</p> <p>Separate stones out with a de-stoner</p> <p>Polish the rice with a polisher</p> <p>Sort out impurities with a sorter</p> <p>Sort out small glass and stones</p> <p>Separate out the fragmented kernels.</p> <p>Separate out broken kernels</p> <p>Separate out kernels that are not Jasmine by the thickness</p> <p>Sort out metal with a metal Detector.</p> <p>Final weighting of rice to ensure the right quantity before packing in a silo</p>
6. What are the products gotten by the milling process?	<p>Whole kernels</p> <p>Broken kernels</p> <p>Fragmented kernels (broken chalky kernels)</p> <p>Husk</p>	<p>Whole kernels</p> <p>Broken kernels</p> <p>Yellow kernels</p> <p>Damaged kernels</p> <p>Chalky kernels</p> <p>Fragmented kernels</p> <p>Germ</p> <p>Husk</p>
7. What is the industrial standard for milling paddies?	<p>None at the moment.</p>	<p>The standard differs depending on the huller's capacity and the genre of paddies. The miller must keep its own record and create a standard from the collected yield statistic (assuming the huller's capacity is always in a perfect condition).</p>
8. What else must be done before this rice can be packaged?	<p>Send to pack.</p>	<p>The finished rice is kept in a silo.</p>

<p>9. Who are the people in charge of monitoring the treatment of paddies thorough the process?</p>	<p>Only the manager.</p>	<p>The process is controlled by a team lead. This person is trained to understand the measurements of the milling standard and to recognize the possible sources of abnormality as well as how to resolve them.</p>
<p>10. What are the processes of packing a package of rice?</p>	<p>Hand-packed.</p>	<p>Finished rice is taken out of the silo and into the packing process. The packing will be done entirely by machine.</p>
<p>11. What must be done to ensure a smooth operation? What standards must be kept?</p>	<p>None specify.</p>	<p>Measurement of standard must be taken diligently at all stages. Starting from measuring the yield rate of paddies before putting them through the rice production process then again after the rice production process is complete. Data should be noted down and compared to assure that same number is obtained. Maintaining the yield rate is very important to the profit/loss of the rice mill because of the yield rate after rice production is 10% less than original measurement then the rice mill has 10% less than what the customer ordered in weight. The miller will then have to buy more paddies for the production in order to fulfill the customer's order which means more cost and profit loss. Record keeping (date, paddy genre, yield at purchase, yield after milling, weight, etc) and daily report help spot problems early.</p>
<p>12. From the view point of a management, what is the most important duty of the production process?</p>	<p>Minimize losses from storage and milling</p>	<p>Maintain yield rate.</p>
<p>13. How do</p>	<p>The demand has been rather stable</p>	<p>Pre-orders from customers as well</p>

you make sure you have enough rice paddies for production at all time?	so MCE is trying to keep 1.5 tons of rice paddies in stock every month. There are times they are not able to make it for lack of purchasing money.	as historical sales data are used to calculate stock to keep in each period. Normally a month worth of safety stock is kept as insurance.
14. How are the paddies treated after they are bought and before they can be milled?	The paddies are sun-dried for 2 – 3 times before packed in sacks. The paddies sacks are placed on the concrete floor under the shade. Placing the sacks on a concrete floor gives the paddies on the bottom a bad stench. The paddies are often eaten by birds and rats during the sun-dried.	The paddies are fed into a dryer to bring down the moisture level then kept in a climate controlled room to maintain the moisture level and keep out pests.
15. How is each of the by-products of rice milling treated afterward?	One half of the husk is sold to make soil. The other half is scattered back on the plantation to become natural fertilizer. The fragmented kernels are sold to be animal feed.	Yellow kernels are sold for consumptions in the South. Chalky kernels, damaged kernels, very yellow kernels are sold to be animal feed. Husk is sold to energy plant. Germs are sold to food factories.
16. Please explain your treatment of packaged rice?	Don't stock packaged rice. They are made to order.	Don't normally stock packaged rice. If the occasion calls the packs are placed on a plastic pallet or a plastic-covered wood pallet. The packs shall not to drag at anytime. The procedure is to prevent contamination since there was a case of splinters breaching the plastic and getting mixed with rice because the bag was placed on wood pallet and dragged.
17. How do you make sure you produce enough packaged rice for your customers?	Demand is rather stable so it is easy to predict when and how much to produce without having to hold the stock for a long-period of time.	Pre-ordering from customers makes just-in-time production possible. The finished products can be loaded into the trucks and shipped out as soon as they are out of the production lines.
18. Who are the people in charge of monitoring this process?	The manager and the accountants.	Team Lead
19. Please explain roughly how	The manager delivers the small order to people within the close proximity by a bicycle. The large	Sub-contracted to carriers.

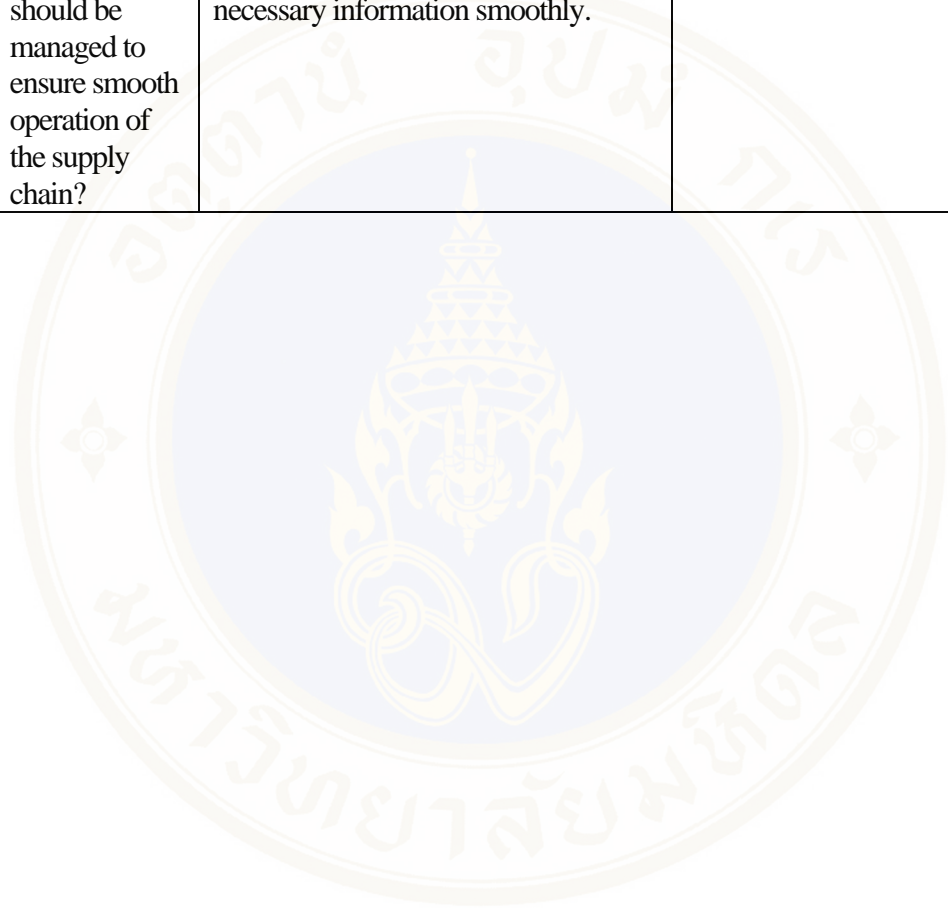
the packaged rice is delivered? (by what mean, by whom and to whom)	orders are picked by the customers themselves.	
20. What criteria are being used in making the transport decisions?	Normally the customers came to pick up the orders. If the order is small or the customers are elderly within the community, the manager will do the delivery.	The miller conduct periodic audit on the carrier's operation and work together to achieve the best performance.
21. How do you make sure flawless delivery? (no damaged product, no wrong delivery and no late delivery)	Customers always phone into to order and to check the readiness of the order before pick-up.	1) careful planning between the production and delivery 2) regular evaluation of the performance and process
22. How do you know that the billing amount will cover the delivery cost?	No cost ever occurs from delivery activities.	Sales must always calculate the cost of rice paddies, the cost of production, the cost of packing, the cost of storage and the cost of delivery before agreeing on a selling price to customers.
23. Please explain how you decide where to sell your packaged rice, at what price.	Dictating by MCE's philosophy, the rice is sold within the community and surrounding areas mainly. Occasionally, the committee will participate in a trade fare. The price is set with a decision of the committee. They will look at the current market (local retailers) price as main benchmark.	The miller does business everywhere; with modern trade, with wholesalers, with small retailers or with factories. Mostly, the price is set according to the price in the future market.
24. Please explain the roles that promotion and product attributes play in packaged rice market.	Pricing is important but not as important as taste. Customers will never return after one taste of bad rice. There were also times when the customers stopped buying because they found cheaper price elsewhere. It took time to explain to them that other rice were cheaper because their rice were of lower grade and mixed with more	The price war has become more prominent in the recent years. The economic downturn and the competitor's promotion do take sales down. Many customers have become more price-conscious and careless about quality. Although, there are also those customers who remain loyal to the brand because of the quality and customers who return after their financial status become better.

	percentage of broken rice. I did come back after.	
25. How do you manage the activities in question 23 and question 24 in alignment with other Departments?	MCE doesn't separate into departments; there are only 2 operative members monitoring the entire operation and 12 committee members who make policy decisions. Most often than not the issues are presented and discussed in the monthly meeting.	The miller sells rice in the future market i.e. the price and quantity of the order is agreed upon way in advance of the actual delivery date. The price is highly volatile; it changes daily. Sales and operation must work together to gather price information to set a selling price.
26. Please explain the roles that Financial Department in rice supply chain.	Keeping book of income, expenses, and principle.	Find financial sources and manage money transactions to facilitate sales and production activities.
27. How do you ensure that Financial information will be used effectively throughout the supply chain?	Nothing is in place.	Yearly finance, sales and production have a meeting to create a financial plan. Sales provide next year sales forecast. Production takes the forecast and work out the production costs. Finance consolidates the information into a detail financial plan for next year. 3 departments meet monthly to update the plan.
28. Considering Question 1 through 23, please list out the relationships between each performers in the supply chain (both within and outside of the organization).	<p>Relationship with rice farmers and surrounding community</p> <p>Relationship between the operation team (manager and accountant) and the committee</p> <p>Relationship with external academic entities</p> <p>Relationship with other MCE</p>	<p>Relationship with sub-contracted millers, package suppliers, and carriers</p> <p>Relationship with rice farmers</p> <p>Relationship with middlemen</p> <p>Relationship with key customers</p> <p>Relationship between sales, operation and finance department</p>
29. Can you describe in detail how each relationship is maintained to	Relationship with rice farmers and surrounding community is being maintained with simple gestures of home delivery and broadcasting educative messages on a local radio show. Interaction with the community	Relationship with sub-contracted millers, package suppliers and carriers is maintained for minimize the risk of production shutdown from material shortage. They work together as partners on the same set of standard

<p>the benefit of the organization?</p>	<p>helps endear MCE its people and create the sense of ownership. They will then support MCE's activities willingly and continuously.</p> <p>Relationship between the operation team (manager and accountant) and the committee is very fragile. The committee doesn't take active roles in the management of MCE so all the operations are done by 2 members, the manager and the accountant.</p> <p>Relationship with external academic entities and other MCE exists for MCE to exchange knowledge and information as well as bring in help (suitable technology) where it is needed. MCE cannot stand still, it must evolve and move forward however that move must be regulated to things at which are "right" for the community.</p>	<p>laid out by the millers.</p> <p>Relationship with middlemen is one of normal buyer and seller. The miller doesn't create special ties.</p> <p>Relationship with rice farmers is forged through provision of cheap seeds, financial support and training. The training helps rice farmers produce better crops in which are sold to the millers.</p> <p>Relationship with key customers is maintained by provision of consultation and after-services. These create brand loyalties that cannot be copied by others.</p> <p>Relationship between sales, operation and finance department is maintained through creation of friendly working environment and clearly stated workflow.</p>
<p>30. Please re-arrange the list of relationship in order, from one that has the most importance to the least.</p>	<p>Relationship with rice farmers and surrounding community</p> <p>Relationship between the operation team (manager and accountant) and the committee</p> <p>Relationship with external academic entities</p> <p>Relationship with other MCE</p>	<p>Relationship between sales, operation and finance department</p> <p>Relationship with sub-contracted millers, package suppliers and carriers</p> <p>Relationship with rice farmers</p> <p>Relationship with key customers</p> <p>Relationship with middlemen</p>
<p>31. Please help provide the reason for the top three most important relationships.</p>	<p>Relationship with rice farmers and surrounding community is being maintained with simple gestures of home delivery and broadcasting educative messages on a local radio show. Interaction with the community helps endear MCE its people and create the sense of ownership. They will then support MCE's activities willingly and continuously.</p> <p>Relationship between the operation team (manager and accountant) and the</p>	<p>Relationship with sub-contracted millers, package suppliers and carriers is maintained for minimize the risk of production shutdown from material shortage. They work together as partners on the same set of standard laid out by the millers.</p> <p>Relationship with middlemen is one of normal buyer and seller. The miller doesn't create special ties.</p> <p>Relationship with rice farmers is forged</p>

	<p>committee is very fragile. The committee doesn't take active roles in the management of MCE so all the operations are done by 2 members, the manager and the accountant.</p> <p>Relationship with external academic entities and other MCE exists for MCE to exchange knowledge and information as well as bring in help (suitable technology) where it is needed. MCE cannot stand still, it must evolve and move forward however that move must be regulated to things at which are "right" for the community.</p>	<p>through provision of cheap seeds, financial support and training. The training helps rice farmers produce better crops in which are sold to the millers.</p>
32. Please describe your opinions on the relationship building and sustaining strategies undertaken by your organization?	<p>MCE is a people organization. Its relationships can be made better by giving education to its people. Educate them to think and act responsibly for the community is what needs to be done.</p>	<p>Building a web of good relationship among the suppliers and the customers means a greater response rate in order fulfillment and service.</p>
33. Considering Question 1 through 23, please explain the kind of information needed to support the operation flow?	<p>Summary of monthly activities and problems are related to the committee by the manager once a month.</p>	<p>Not disclose.</p>
34. How do you ensure that the right information is available to the right people?	<p>Aside from a monthly meeting, there is nothing in place.</p>	<p>Paper forms and computers are used to manage data and information although there is still human-error.</p>
35. How do you ensure that the designated person will read and make	<p>There is none at the moment.</p>	<p>Clear job descriptions and workflow can regulate the information flow to a certain degree.</p>

<p>use of the information given appropriately?</p>		
<p>36. Please give your opinions on how information should be managed to ensure smooth operation of the supply chain?</p>	<p>By inducing the understanding of roles and responsibility within each member of MCE. With this, MCE can operate and, hence, pass on necessary information smoothly.</p>	<p>ERP system is being implemented to better manage information flow.</p>



APPENDIX D

PRELIMINARY RESEARCH INTERVIEWS

Ayutthaya Individual Farmers

Subject: จงรักภักดี ไกลสภาพ (40) และ สุริยชะ นัยยุดิ (48)

Experience: 3-4 generation farmers

Average cost/rai: 5,500 baht

Average output/productivity: 650 kilo during หนาว (harvest in January) and up to 1000 kilo during March-July plantation

Average milled rice output: 1 ton yield 600 kilo of milled rice

Cost of rice mill machine: 50,000 baht

Summary:

The subjects relay information on the lives of contemporary farmers in the area. In general, the farmers in the area do not solely rely on farming for living. They have long realized that the money they got from selling rice is not enough to sufficiently financial support to secure their comfortable lives in old-age. The farmers depend on part-time jobs from nearby industry for steady income source to pay for basic commodities, such as school fees, utilities bills, pension-saving and etc. The surrounding industries that provide part-time jobs for rice farmers are incense-stick makers and brick makers. The industries allow farmers to take the raw material home to process and exchange the finished products for a price. On average, a farmer will be able to earn 7,000 baht/month from incense-stick making and 10,000 bath/month from brick making.

Some farmers take on the new efficiency economy theory, such as ภูมิเศรษฐกิจ. They create self-independency through producing own organic fertilizers, growing vegetables and fruits for household consumption and etc. When probe the subjects for the reason from the unreliability of rice farming income, they agree that it is because for most of the time they can not sell rice at a good enough price. Although the government guarantees the rice price at 10,000 baht/ton, they will never get the full benefit. The average highest price/ton the subjects admitted to ever sell is 7,000 – 8,000 bath/ton. They confess how much will they get from their rice depend on 3 things. 1 is the high moisture in rice. 2 is the amount of rice already in the millers' stock. 3 is the quantity rice the farmer offered. The moisture level of rice is measured by millers or middlemen and taken for granted by farmers since they do not have the measurement machine. The farmers are very much a price taker in this relationship because they do not have the mean to stock the rice nor the access to markets outside of the area. Hence, once the millers/middlemen say they have enough rice, the farmer must sell rice at the very low price in order to get it out of their hand and reclaim some of the principle money. The money gotten, of course, will go back to the millers, the fertilizer stores or the banks who loan them money to farm.

MCE at Sampratuan – 3rd visit and telephone conversation with P’ Lak

Size: total of 93 member as of October 31, 2009

Age: 1 year and counting

Owner Equity: 259,339.48 baht

Organization Structure: MCE Committee (legislation) > Manager (Management) > Members (no real participation in the management except for taking vote in funding management at the annual meeting)

Event on the date of visit: the first annual meeting

Summary:

The group is run on the leadership of committee and manager. The president owns the milling machine used by MCE to produce the product. The manager usually works alone with some council from the committee members. The group relies heavily on the Micro Community Enterprise Act for management guideline and structure. The members still have little knowledge and awareness of how MCE operate as well as the purpose of MCE, although they are eager to learn given the chance.

Aside from the annual meeting, the committee members and manager meet once a week to discuss the direction and management progress. If fitting the management of MCE since beginning to now in a product development process, we get the following table.

Product Development Process and Decisions	Critical Questions
<p>Product Strategy and Planning:</p> <p>Concept Development And Product Design</p>	<p>What is the marketing and product strategy to maximize probability of economic success?</p> <p>What portfolio of product opportunities will be pursued?</p> <p>No tangible marketing strategy nor product strategy is being used by MCE. The group gets the product idea from searching for already successful product in the market. The original product is (white) rice with which is quickly discarded from inability to compete with the main stream brands. The current product portfolio is brown rice, rice oil, rice chaff, and half-polished rice. No specific target market is ever identified although the committee members express their intention to serve the mass with low price products.</p> <p>What is the timing of product development projects?</p> <p>No timing of product development project or the project is ever formally set-up. Little concern is put on industrial standard and consumer right. The real reason for such gap is not clear to the interviewer. Assume 2 reasons, lack of professional management and lack of consumer law knowledge.</p> <p>What, if any, assets (e.g., platforms) will be shared across which products?</p>

	<p>The milling facility is used to produce all products. The group is currently having problem with storage spaces. While they have the capacity to produce mass product, they do not have sufficient storage spaces to stock both raw materials and finished products.</p>
<p>Product Development Organization:</p> <p>Supply Chain Design</p>	<p>Will the functional, project, or matrix organization be used? No formal structure is set-up. The group relies on informal relationships between the group and outside merchants. The group is considering appointing a formal distributor to distribute the products. The group buys raw materials (paddies) from outside. Although they are moving toward planting their own rice.</p> <p>How will the team be staffed? No direction.</p> <p>How will project performance be measured? No measure set.</p> <p>What investments in infrastructure, tools, and training will be made? N/A</p> <p>What type of development process will be employed? N/A</p>
<p>Project Management:</p> <p>Performance Testing and Validation And Product Ramp-up and Launch</p>	<p>What is the relative priority of development objectives? The priority of projects is not planned before hand. The usual step is that the manager will commence with any project as see fit, the priority will be discussed when problem arises.</p> <p>What is the planned timing and sequence of development activities? N/A</p> <p>What are the major project milestones and planned prototypes? There has never been prototyping. The group operates on trail-and-error. The product will be immediately launched in to the market after produced. Any error found by the customers will be fed back to committees and manager to improve.</p> <p>What will be the communication mechanism among team members? Weekly meeting among committees.</p> <p>How will the project be monitored and controlled? N/A</p>

Rice Paddies Middlemen in Bangkok (interview result)**Subjects:** นางสุกัญญากุล สุวรรณโกสม และ นายศิริระพล ตั้งรัฐติภูมิ**Experience:** 30 – 40 years in rice business**Company Name:** บริษัทบุญพูนผล จำกัด

The subjects were born into the business. For as long as they realized, their families have been in the business.

Farmers cannot keep the paddies for they need money to pay off the money they owe the fertilizer stores and banks.

Farmers are experiencing more problems in rice growing because there is no resting time for the soils.

Rice being sold locally is aged rice. Normally rice is aged from 6-7 months before they are settled enough for local consumption. Thai people refer hard-textured rice. So the rice being sold in the sold hold the cost of storage and maintenance as well as the cost of paddies.

Thailand can produce 16-17 million ton of rice paddies yearly. The local market keeps an estimate of 8-9 million tons for local consumption each year, the left-over rice paddies are exported.

The local paddy price is tied to the export price so the local price will fluctuate in the same direction as the export price. The selling price of paddies at the central market is higher than should have been as a result.

The export price of Thai Rice is so over-priced that it is not competitive, especially for plain rice.

Today plain rice growing period has shortened to 2 months from 3 months with help from chemical. The quality of the rice is worsened as a result. The quality of rice was lower so much so that Thailand rice of this specie is on par with Vietnam's.

Jasmine Rice does not suffer the same faith since the species have been kept from deviating too much from original. It continues to be grown only once a year to keep the high quality.

The Government's dealing of rice issue is not effective. The officials cannot penetrate deep enough to fully understand the industry and give help to where it is most needed.

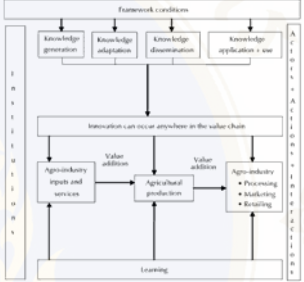


The quality of packaged rice sold in the market is also of some concern. The companies are at war over pricing so they operate to keep their costs down. As a result, the quality of packaged rice is not maintained the governmental standard. Good and bad quality rice is mixed to cut cost when needed.

The subjects provide that they receive 1% for their service.

The subjects comment that the rice market is now changing. Big millers and agricultural company (CP) are not attempting to weed out unnecessary players in the supply chain so they can sell to the end-users directly and make better profits. They start applying corporate farming which worries the subjects. They fear that the local market will be overrun by big agricultural corporations.

APPENDIX E

VALUE CHAIN ANALYSIS CASE STUDIES

Author	Book/Article Name	Publisher	Supply Chain Analysis Method
Anandajayasekeram, P. and Gebremedhin, B. (2009)	Integrating innovation system perspective and value chain analysis in agricultural research for development: implications and challenges.	Improving Productivity and Market Success of Ethiopian Farmers Project Working Paper 16. International Livestock Research Institute, Nairobi, Kenya. 67pp.	<p>The value chain analysis has become popular within the agricultural development field in the last decade for it provide a holistic view of the power-induced relationship and value-creation within the chain which, in turn, can be useful in developing a comprehensive model. Although, the technique is not without criticisms. It is often criticised for being inefficient in explaining the cross-industrial relationship and internal constraints. The comments are of no consequences however when the value chain analysis is being use to explain the relationship within a value chain.</p> 
Trienekens, J. and van Uffelen, R., and Debaire, J. and Onta, O. (2008)	Assessment of innovation and performance in the fruit chain: the innovation-performance matrix	British Food Journal, 110 (1), pp. 98-127	<p>The authors use the critical success factor (CSF) approach and the trade-off matrix to create the innovation-performance matrix of The Netherlands's apple supply chain. The CSF categories are defined as product, process, market and organization for innovation and efficiency, responsiveness, quality and flexibility for performance. The research starts off with the construction of process chain to enable the identification of indicators for each CSF category. The indicators are then aligned under respective category and arranged into table format before combine with the innovation-performance matrix.</p> 
Pieter van Donk, D. and Akkerman R. and van der Vaart, T. (2008)	Opportunities and realities of supply chain integration: the case of food manufacturers	British Food Journal, 110 (2), pp. 218-235	<p>The authors challenges the common knowledge that integration has a limited reach within the food supply chain. Although, nothing explicit is said regarding the analysis tool, it can be discerned that the authors employed a sort of supply chain mapping technique to determine the relationships and important factors.</p>
Taylor, D. H. (2005)	Value chain analysis: an approach to supply chain improvement in agri-food chains	International Journal of Physical Distribution & Logistics Management, 35(10), pp. 744-761	<p>The author attempts to develop a way to implement lean value chain onto the agricultural supply chain. He chooses to use the value stream management (VSM), the case study approach and action research as his main tools. Under VSM, he employed based theories from three literatures in particular. Hines and Rich (1997)'s process activity mapping and demand amplifying mapping. Rother and Shook (1998) for the visual mapping techniques. Jones and Womack (2002) for the whole supply chain mapping to use as data development and presentation platform. The value chain analysis has been summarized into 7 stages.</p> 

APPENDIX F

THESIS AMENDMENT REPORT

Date of Final Defense: 28 November 2010

Committee:

Lect. Nopporn Ruangwanit, Ph.D. (Chair)

Lect. Chairawee Anamthawat-Kierig, Ph. D. (Member and Main Advisor)

Lect. Pandej Chintrakarn, Ph. D. (Member and Co-Advisor)

Defendant: Miss Ploypun Khattiyakornjaroon

Thesis in Defense: Improve Supply Chain Efficiency: A Case of Sampatuan Micro Community Enterprise (MCE)

Amended Content

Committee's Comment 1: A clearer explanation is needed to support the Capitalistic Theories used in the beginning of this research. The linkage between Capitalistic Theories and Anarchy Supposition must be clarified.

Chapter 5 Discussion: Page 55 – Page 57

The five success factors presented are conceived under the conditions set by the Sufficiency Economy Theory. Although this research started off using theories from the Western World with strong inclination toward Capitalism, the researcher restricted the application of such theories to the minimal when composed a Supply Chain Model for Sampatuan MCE for three main reasons.

A. Sampatuan MCE is a living organization under the dictation of the anarchistic economic ideology where the well-being of the community people is the main concern. While profitability is important to its continued existence, it is not the main objective of MCE. The optimal objective is to manage the local resources in such a way that the community can comfortably survive with as little interferences from the outside world as possible. This concept extends to everything from funding,

World. Western theories were generally written based on an assumption that people involved within the chain behaved in educated manners and could be managed in a professionally detached and direct way. Such luxury is not allowed when handling the HRM aspect of MCE's supply chain in Thailand where seniority, close kinship, low-literacy level, local norm, and tendency to reject changes as well as criticism prevent effective implementation of western HRM theories (Phetprasert & Wongkul, 2007; and Bhumpanya Tok-Kra-Sair, 2008).

C. The anarchistic ideology does not reject all practices and theories under Capitalism as completely wrong and useless. Shiva (2008), Bhumpanya Tok-Kra-Sair (2008) and Norberg-Hodge & Merrifield & Gorelick (2008) emphasize Gandhi's philosophy of never rejecting new knowledge body but learn to truly understand the pros and cons then to apply the useable knowledge under the conditions of becoming self-efficiency. In translation, Gandhi supports continuous learning of new knowledge wherever they may come from so the people can equip themselves with enough tools/knowledge to comfortably sustain their lives in the ever dynamic world.

D. Taking into account the aforementioned rationale, the five success factors, depicted in figure 5.1, are the key priorities that must be achieved or controlled when running a small rice mill under the Sufficiency Economy Theory. The factors are especially craved to suit the current needs of Sampatuan MCE who is still at the beginning stage of corporate set-up according to its manager's testimony. The collective missions of these factors are sustaining the MCE's operation by reduction of excess waste and creating a sturdy foundation for its future development. Hence, it is safe to say that the five success factors are by no mean an abbreviated version of the seven primary activities of rice mills this paper started off with. Rather, the seven primary activities are combined, re-arranged and narrowed down into the five success factors for MCE under similar situation with Sampatuan MCE.

Committee's Comment 2: The contribution of this research can be made stronger with the addition of Sampatuan MCE's specific conditions and needs within the literature review chapter.

Chapter 1 Introduction: Page4

Amid the 2008 Rice Price Crisis, Mr Kekprayoon along with eleven other committee members set up the MCE with all intents to tap into the gold rush. In the very beginning, Sampatuan MCE bought paddies from other area and sold them off at a profit to local millers. Realizing the true purpose of MCE, the committee members quickly moved on to manufacturing rice products for retail within the community. Brown rice, white rice, rice oil, and rice chaff were the main products. Although the MCE managed to make a small profit in the first year of operation, with little knowledge of paddies property and milling, the MCE did and still do, run into many problems (Sampatuan MCE's 1st annual meeting, 31 October, 2009). Miss Chaidaisook and Mr. Kekprayoon admitted casually – in the conversation on 5 May, 2010 – that MCE's problems could be categorized into three major types; manpower, operation and communication. The problem that concerns her most is of operation inefficiency of Sampatuan MCE. The statement was also shared by Mr Kekprayoon (2010) and Miss Sawarak(2010) later in their separated interviews to various degrees of confidence and reasoning on how the MCE's operation could be improved. Such honest assessment of self and openness to other's suggestions were the qualities the researcher found unique in Sampatuan MCE. It was these qualities and the MCE's manager's commitment to improve operation efficiency via the adaption of appropriate technologies that had Sampatuan MCE selected as the subject for this study by the researcher.

Committee's Comment 3: Human Resource Capacity and Ability is, in fact, the highlight of this piece therefore more detail should be included as per the discussion in the final defense naming – the challenges of the local people's resistance to changes and the effect of internal politic within the community to the level of willingness to participate in MCE's activities.

Chapter 5 Discussion: Page 58 – Page 61

Combining this statement with the researcher's own observation of the inner-working within the community and the testimony of his co-workers, the following connotations can be discerned from his comment. **That is Sampatuan MCE interprets the human resource efficiency differently from that of Chiameng.** Sampatuan MCE seeks human resource efficiency beyond the professional

management of its employees/workers. It extends its reach to people within the community. In a sense, this phenomenon is the material form of the four principles for running a MCE by Phetprasert & Wongkul (2007) and Phongphit (2009) mentioned in the literature review. Having replied on its community's supports for fund, trade, labor and raw-materials, it is inevitable that Sampatuan extends its human resource management in two directions as depicts in figure 5.2.

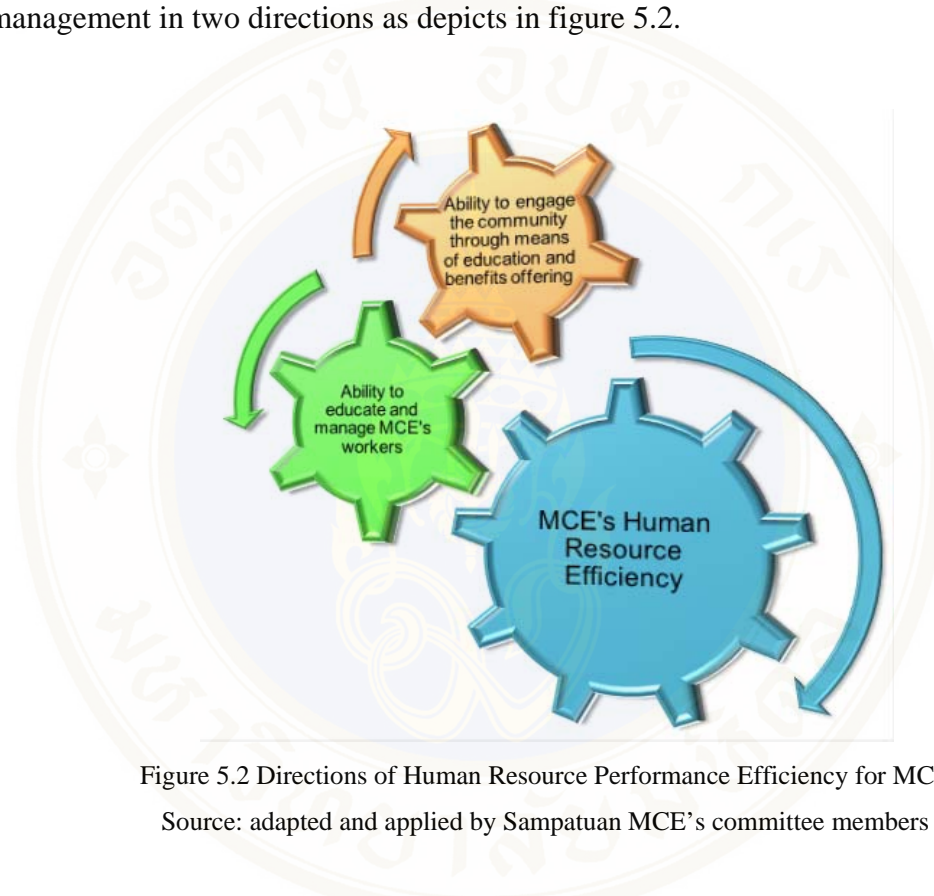


Figure 5.2 Directions of Human Resource Performance Efficiency for MCE
Source: adapted and applied by Sampatuan MCE's committee members

The MCE Manager's emphasis on creating sense of responsibility denotes the underlining issues – lack of leadership, lack of group management skills, and lack of responsibility – these issues are not unlike those suggested by Hantrakul (2000), Joonpongsatol (2007) and Phongphit (2009). Subject 2's answers from table 4.2.6 further show that, unlike, Chiameng whose relationships are conducted under professional business environment. Sampatuan MCE's work requires deeper dimensions of human resource management for it engages, on an interpersonal level, not only the people of which the MCE employed but other people living within the community as well. The differences in education/work experience and conflicts in opinions are inevitable and dealt with on a personal level. The people can hardly

separate their professional lives from the personal ones unlike what the researcher finds to be the case with Chiameng. This insinuation by the researcher was made certain by the following testimony on October 25, 2010 of the MCE's assistant accountant.

*“Relationship between the operation team (manager and accountant) and the committee is **very fragile**. The committee doesn't take active roles in the management of MCE so all the operations are done by 2 members, the manager and the accountant. Direct confrontations about the lack of responsibility among the committee members are often avoided for fear of conflict and seniority.”*

The above statement drives home that, for MCE, the state of internal operation is interrelated to the community's capability. The aforementioned issues found within the community manifest themselves in forms of management dysfunction and disruptions of information transfer. **And while Chiameng's key men, Hantrakul (2000), Joonpongsatol (2007) and Phongphit (2009) all dictate that clearly written job description and workflow implementation can alleviate these problems to a certain degree, they fail to recognize that such methods may not work as well under the complex human resource capital of MCE.** A simple, no non-sense, implementation of such methods can easily raise resistance and discontentment among well educated and capable workforce. The effect can only be expected to intensify among much less educated and seniority-driven population that Sampatuan MCE, or any MCE, must face and placate.

“Sukon did have a real tough time in the beginning before we could agree on a term. He is a good man – hard working - but people don't like him much (even within the committee) because they think he is all that. So I help persuade the others by explaining to them his idea and good intention after we become acquaintances.”

This comment was made casually during the conversation in the first annual meeting by one of the farmer committees who evidently played an intermediary between the manager and the locals. This fact does not escape the MCE Manager either. He admitted on many occasions that for him to work efficiently with the

community, he needed creative communication channels. As things stand, the key man explained the current difficulties as follows.

“It is not like in a classroom. Managing co-workers and the local needs more tactics and patience than that. It is an art. You cannot expect immediate compliance just because you have said something once or twice. In fact, you can keep preaching the same thing year in and year out, and they will still ignore you until they see the benefits for themselves. And that is just with the locals. With other committee members, you can expect to be ignored forever at best. You know how Thai Culture is.”

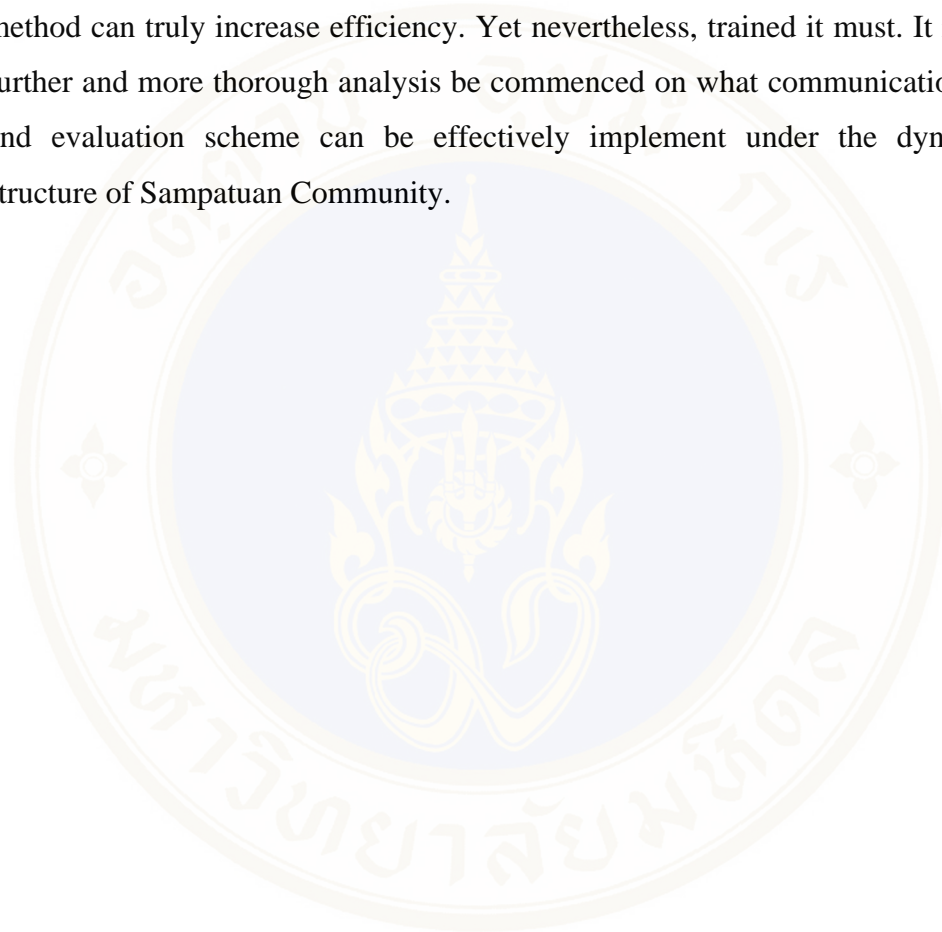
There is no one universal solution when it comes down to decipher the heart of man. As such is the difficulty of finding the right management tool/tools, let alone evaluation methods, for Sampatuan MCE. Fuel on by Thai Culture of conflict avoidance and respect toward seniority; it was almost impossible to unearth the real sources of human resource management inefficiency among the MCE’s workers. Despite the odds, two things remain clear according to the researcher, the MCE’s assistant accountant, the MCE’s secretary and the MCE’s manager.

One, there is a gap in cognitive understandings in term of leadership and responsibility among the committee members. The evident is clear as daylight from the fact that all operations and decision makings are handled by the manager with very little to no involvement or supervision from the committee members in charge of the matter. The MCE’s assistant accountant admitted the following.

“If possible, I’d like to have someone help train the committee or, maybe, put some systems in place so things run more smoothly. Although I know it wouldn’t be an easy task since I know that some members only took the position for the name only and some got involved not knowing the duties that they must do.”

Two, the things needed by Sampatuan MCE in order to increase its human resource efficiency are not KPI (key performance indicator) or well-written job-description and workflow as seen to be the suggestions of Chiameng and the academic alike. Sampatuan MCE’s need is something much more basic and considerably more

difficult to achieve. It is training and education. Phongphit (2009) suggested that educating the community on the meaning of MCE and the roles its members should play could help increase the chance of survival and should commence before an official forming of the MCE. An idea, I agree with only partly. While educating the mass may have help increase the level of understanding, there is no guarantee that the method can truly increase efficiency. Yet nevertheless, trained it must. It remains that further and more thorough analysis be commenced on what communication technique and evaluation scheme can be effectively implement under the dynamic social structure of Sampatuan Community.



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