

Knowledge Management of Role-Model Farmers in Premium-Grade Beef Production^{*}

การจัดการความรู้ของเกษตรกรต้นแบบผู้เลี้ยงโคขุนคุณภาพสูง

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Abstract

The purpose of this qualitative research was to study knowledge management of role-model farmers in premium-grade beef production. Data were collected by interviewing five successful farmers using adult learning and knowledge management as informing theoretical framework. The study found that knowledge management of role-model farmers was a continuous process that occurred at an individual level within six stages :1) Knowledge determination from the changes of cost and marketing conditions.; 2) Knowledge Identification including the acquiring wisdom tips and techniques from famer's ancestors or other people who have a good personal rapport, and academic knowledge from agricultural agencies and institutions.; 3) Knowledge Creation involving the consideration of new data or information received by thinking and comparing with their own previous experience, looking at cost and feasibility of implementation, screening by conducting the experiment by themselves to see the result before accepted or rejected its. Knowledge was sometimes created from their trial and error leading to knowledge discovering by chance.; 4) Knowledge Storage in the form of individuals' perception as new experience (Tacit Knowledge) and also written notes (Explicit Knowledge).; 5) Knowledge Sharing by way of non-formal assimilation onto the way of life without specific set of objectives and themes, and also formal formation according to the social role with clearly defined objectives and activities.; 6) Knowledge Using in terms of academic-based and context-based as appropriate to their own context.

Keywords: Knowledge Management, Farmers, Beef Production

^{*} This article is a part of Dissertation Knowledge Management Process for Premium-Grade Beef Production Farmer บทความเรื่องนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่อง กระบวนการจัดการความรู้ของเกษตรกรต้นแบบผู้เลี้ยงโคขุนคุณภาพสูง

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บทคัดย่อ

การวิจัยเชิงคุณภาพครั้งนี้ ศึกษาการจัดการความรู้ของเกษตรกรผู้เลี้ยงโคขุนคุณภาพสูง เก็บรวบรวมข้อมูล โดยการสัมภาษณ์เชิงลึกเกษตรกรต้นแบบที่ประสบความสำเร็จ จำนวน 5 ราย โดยใช้กรอบแนวคิดเชิงทฤษฎีเกี่ยวกับการเรียนรู้ของผู้ใหญ่ และ การจัดการความรู้ ผลการวิจัยพบว่า การจัดการความรู้ของเกษตรกรเป็นกระบวนการที่เกิดขึ้นต่อเนื่องระดับบุคคล ดังนี้ 1) การกำหนดความรู้มาจากระบบการตลาด และต้นทุนที่เปลี่ยนแปลงส่งผลต่อความต้องการความรู้ของบุคคล 2) การค้นหาความรู้ ซึ่งจำแนกเป็นความรู้ภูมิปัญญาจากบรรพบุรุษ หรือจากบุคคลอื่นที่มีสายสัมพันธ์ส่วนบุคคลอันดี และความรู้ตามหลักวิชาการจากหน่วยงานสถาบันที่เกี่ยวข้องกับการเกษตร 3) การสร้างความรู้จากข้อมูลที่ได้รับมา โดยพิจารณาตามความสนใจด้วยการคิดเปรียบเทียบกับประสบการณ์เดิม กลั่นกรองก่อนยอมรับ ดูความเป็นไปได้ความคุ้มค่า ทดลองปฏิบัติด้วยตนเอง และประเมินผลลัพธ์ ก่อนการยอมรับหรือปฏิเสธ และมีการสร้างความรู้แบบบังเอิญเกิดจากการลองผิดลองถูกด้วยตนเอง 4) การจัดเก็บความรู้ ด้วยการจดจำ และจดบันทึก 5) การแบ่งปันความรู้ที่เป็นแบบตามธรรมชาติในวิถีชีวิต ไม่มีการกำหนดวัตถุประสงค์และรูปแบบแน่ชัด และเป็นแบบทางการตามบทบาทสังคม มีการกำหนดวัตถุประสงค์และรูปแบบกิจกรรม 6) การใช้ความรู้ มีใช้แบบยึดหลักวิชาการ ควบคู่กับการนำหลักวิชาการมาปรับตามความเหมาะสมกับบริบทของตนเอง

คำสำคัญ: การจัดการความรู้/ เกษตรกร/ การเลี้ยงโคขุน

Introduction

Beef cattle production of Thailand is an economic value of more than 7 billion bahts. Groups of beef cattle farmers are approximately 1.3 million households. The extension of beef cattle production is one of the restructuring agricultural plan of livestock in order to increase farmers' income continuously. The beef industry has an impact on contributions related industries such as feed industry: bagasse, molasses, corn and cassava. The beef cattle market today, especially in the need for high quality beef production (Premium Grade) found also higher both in domestic and international markets. Even beef imports were boosted following the signing of a free trade agreement (FTA) between Thailand, Australia and New Zealand since 2005, expanding the high grad beef market has still demanded. Premium beef accounts for only about 1 per cent of the beef produced in Thailand. It is beef produced from cattle that are to cross between imported and native breeds. Thailand also has high capacity to manage the quality production. (Thani Phakuthai, 2010) in addition, trends of global consumer demands for the quality meat products, particularly the Muslim market is a market with high potential for consumption also requires beef quality increasingly. However, the overall of cattle presently found that the beef production is not much, the past five years, the beef cattle population has decreased at the rate of 13.41% per year (DLD, 2011) There are

several reasons for that such as the manipulation on the beef price market, Farmers turn to cultivate the economic crop revenue insurance, lack of motivation as a result, the number of beef production farmer decreased. Thailand has to import beef quality (Premium Grade) from Australia, New Zealand, the United States to enter the high-end market in the industrial sector, tourism, hotels, restaurants and shopping malls.

Thus, the Strategic Development of Beef Cattle 2011-2014 of the Department of Livestock Development is to promote the raising of beef production of the country. In particular, to transfer knowledge and technology of beef production efficiency extends to farmers. One of the approaches to develop the beef production farmers is focusing on learning development to increase farmer knowledge and skills to increase beef production efficiency through increasing learning opportunities and initiate the knowledge management process into farmers potential development thoroughly both the individual and group level. Such a developmental approach is guided by the National Economic and Social Development Plan (2012-2016) under the "philosophy of sufficiency economy" and "people-centered development" focus on the development of the lifelong learning society. It means the activities that enable people to learn by themselves according to their interests, potentialities, readiness and including learning opportunities available for individuals, families, communities, environment, or other sources of knowledge which are consistent with the interests and lifestyles of learners.(NESDB,2011) This concept is beneficial to Thai people, especially, who are out of school mostly are farmers a huge group of people in the local communities.

The research of the Office of the Education Council 2009 found that farmers were likely to be less access to formal and informal education. The number of farmer estimates is 40 million, mostly there were poor and the educational average level was not high. (ONEC, 2010). Its affects to their qualities of life, lifestyle, occupation and income. (DOAE,2010) Knowledge management(KM), a concept to develop and enhance the knowledge of people in the community and society is recognized today to guideline the lifelong learning of farmers. This concept gives precedence to knowledge sharing and learning intra-individual. (Wijarn Phanit, 2004: 5) This is consistent with the concept of agricultural extension covers principles and methods associated with non-formal teaching and lifelong learning for adult, community based extension that focuses on improving their careers and quality of life transforming knowledge, skill and attitude to farmers through learning activities. However, looking at the farmers who raised beef cattle found that they still lack of knowledge development systems

such as a learning process, training or KM-sharing and learning in Premium-Grade Beef production, lack of storing knowledge of farmers Premium-Grade Beef production groups, transfer to other groups to access knowledge and apply and the coordination among networks Premium-Grade Beef production groups, for participatory development is not enough.

Research questions/Objectives

The research question of this research was how the farmer who is successful in Premium-Grade beef production manages his knowledge: process, methods, techniques? The objectives of this research were (1) To study the Premium-Grade beef production efficiency of Role-Model farmers and (2) To study Knowledge Management process of the Role - Model farmers.

Research Methodology

This research was conducted based on qualitative methodology design consists of the documentary study and field study, in order to design the guideline of semi-structured interview, the content validity measure was proved by the index of item-objective congruence (IOC) method before going to In-depth interview stage.

The scope of this study was divided into 2 parts as follows:

1. Contents: the related theories were adult learning process, knowledge management, beef production in Thailand and previous relevant research. The 7 stages of the KM conceptual framework of Wijarn Phanit (2004: 25) and Boondee Boonyakit and others (2004: 28-29) was used in seven states as the guideline issues informing the interview: 1) Knowledge determination 2) Knowledge Identification 3) Knowledge Creation 4) Knowledge Screening and Processing 5) Knowledge Storage 6) Knowledge Sharing and 7) Knowledge Using.

2. Population: there were 5 Role-Model Farmers selected purposively into the study under the criteria as follows: 1) The farmer who had been accepted as the National Outstanding Farmer Award in Livestock between 2005-2015, approved by the Department of livestock development. /or the farmer who had been accepted as the best practice case or got the Farmer of the Year Award approved by 3 of the Cooperative Livestock (1) Pon Yang Kham Livestock Breeding Cooperative National Security Command Ltd., Sakon Nakhon (2) Nong Sung Agriculture Cooperative Ltd., Mukdahan and (3) KU Kamphaeng Saaen Campus Beef Producer Cooperative Ltd., Nakhon Pathom; and 2) Has yielded grade beef within 3 – 5 (intermediate –good to premium grade) (DLD,2013).

The criteria for grades of carcass beef was based on The National Bureau of Agricultural Commodity and Food Standards of Thailand. (ACFS,2004: 4-5) There were 5 quality grades based on meat marbling fat, meat color and brightness, firmness and texture and luster and quality of fat. The classification of grade was as follows:

No.1	mean	Poor
No.2	mean	Below average
No.3	mean	Intermediate
No.4	mean	Good
No.5	mean	Premium

Summary of Results

The Premium-Grade beef production efficiency of Role-Model farmers

The first thing to consider before to raise beef cattle was the attitude of farmers who thought they must love and readiness. It required more time to look after, had grass growing area managers with good hygiene farm. Summary of Premium-Grade Beef Production Knowledge of Role-Model Farmers And knowledge of cattle meat quality was important and necessary as follows:

1. Cattle breeder: Should be a Brahman breeder because there was not too large, the raising of the tight structure of the meat was faster than other types, and they had the ability to withstand hot and humid weather and resist insects that was suitable in Thailand.
2. Beef Breed Type: There were 4 types of beef cattles that popular and appropriate for Premium-Grade Beef production, (1) Charolais (2) Simmental (3) Limousin and (4) Kamphaeng Saen, named from European Bloodline . The ratio of beef breed type was a half-breed of Brahman 25% plus Native Breed 25% plus European Bloodline 50%up.
3. Feeding Stage: The young beef cattle at approximately 2 years up to 3 years of age, or if aged only a year, weigh at least must be 300 kg appropriate for start feeding.
4. The Byre : The byre lengthen along the east - west. Stay away from housing farmer, having feed and water tracks. It should be the concrete floor dry and high floor drain. The space size per one beef cattle was 2 multiply 2.5 square meters.
5. Disease control: Before start feeding, Vaccinations and parasite controls must be done in (1) Foot and Mouth Disease and (2) Internal parasites such as roundworms, lungworms, and liver flukes and External parasites include horn flies, face flies, stable flies, heel flies, and lice.

6. Feedstuffs: There were 4 kinds of feedstuffs for beef feeding (1) Roughages: hay, silage and grass, (2) Concentrate feed: protein (3) Byproduct: molasses, brewer's grain and (4) Mineral blocks. Providing feed 2 times a day in the morning and evening should be scheduled at the same time every day.

7. Fattening period: Fattening period from 8-12 months and weight must not less than 400 - 450 kg were appropriate.

Knowledge Management of Role-Model Farmers

Knowledge Management of 5 Role-Model Farmers found that occurred within individuals divided into six stages was summarily as follows :

1) Knowledge determination The changing of cost and marketing conditions affected on the knowledge determining of need for individuality such as the shortage of cattle breeder breeding cattle and feed prices soared, or not enough of beef demand.

2) Knowledge Identification The acquiring knowledge was one from the farmer's ancestors to transfer their own knowledge and experience to the next generations by teaching and doing together, this includes from the relatives and other people who have a good personal rapport and relationship. Knowledge mainly in the term of wisdom, tips and techniques. The another was from the agencies and institutions such as Livestock development unit or educational institution where working related to agriculture support. Knowledge mainly in the term of theoretical knowledge that was researched and extended to farmers, this including the practical knowledge had approved as its good and should be published through training, seminars, demonstrations to farmers.

3) Knowledge Creation There was divided into three steps as follows : the first step was receiving new information. When farmer got data or information both from articulated knowledge, called Explicit knowledge, such as posters, brochures, documents, sample models, through reading, listening, seeing and from people who share each other's data idea or experience, called Tacit knowledge, through communication or observation, all messages was taken directly to the next step; the second step was primary screening. All received new data or information would be considered from the individual attention by thinking and comparing with his own previous experience, with talking and discussing with farmer's family members or other farmers, considering at cost and how ease and convenience to implementation. Sometime the farmer's decision would be ignore to this information, but if the farmer was interested in that information, the farmer would have done for the next step; the third step was proof and decision-making, all received information would be moderated before

acceptance. The farmer was to conduct the experiment by himself to trial and evaluate that information acquired and to see the result. Then he would make decisions to reject or accepted to be his knowledge. However, it could be accepted knowledge, but not implement if the cost was higher or somewhat difficult to do, even if it was good. Moreover, from his trial and error doing may lead to found the knowledge happen by chance

4) Knowledge Storage The accepted knowledge of farmer would be existing within individuals' perception as new experience (Tacit Knowledge) and also taking notes (Explicit Knowledge) to record information such as account numbers, the proportion of feeding, sometime writing or drawing simply in order to easy understand.

5) Knowledge Sharing There were two ways of knowledge sharing, one was non-formal form assimilating with the way of life which no specific set of objectives and themes, like to talking with farmer's family members, relatives, friends or person who had a good relationship. Another was formal form according to the social role of the individual which was clearly defined objectives and activities such as participate in short-term training of a beef cattle group or invited as the speakers from various organizations to share their experience.

6) Knowledge Using The guiding principles were used with the concurrence of the adjustment as appropriated as to their own context. Those knowledge would be continue used, until some situations changed and affected on need of farmer, knowledge determining stage will start again.

Thus, the 6 stages of Knowledge management of role-model farmers can be summarized as shown in the figure 1 below.

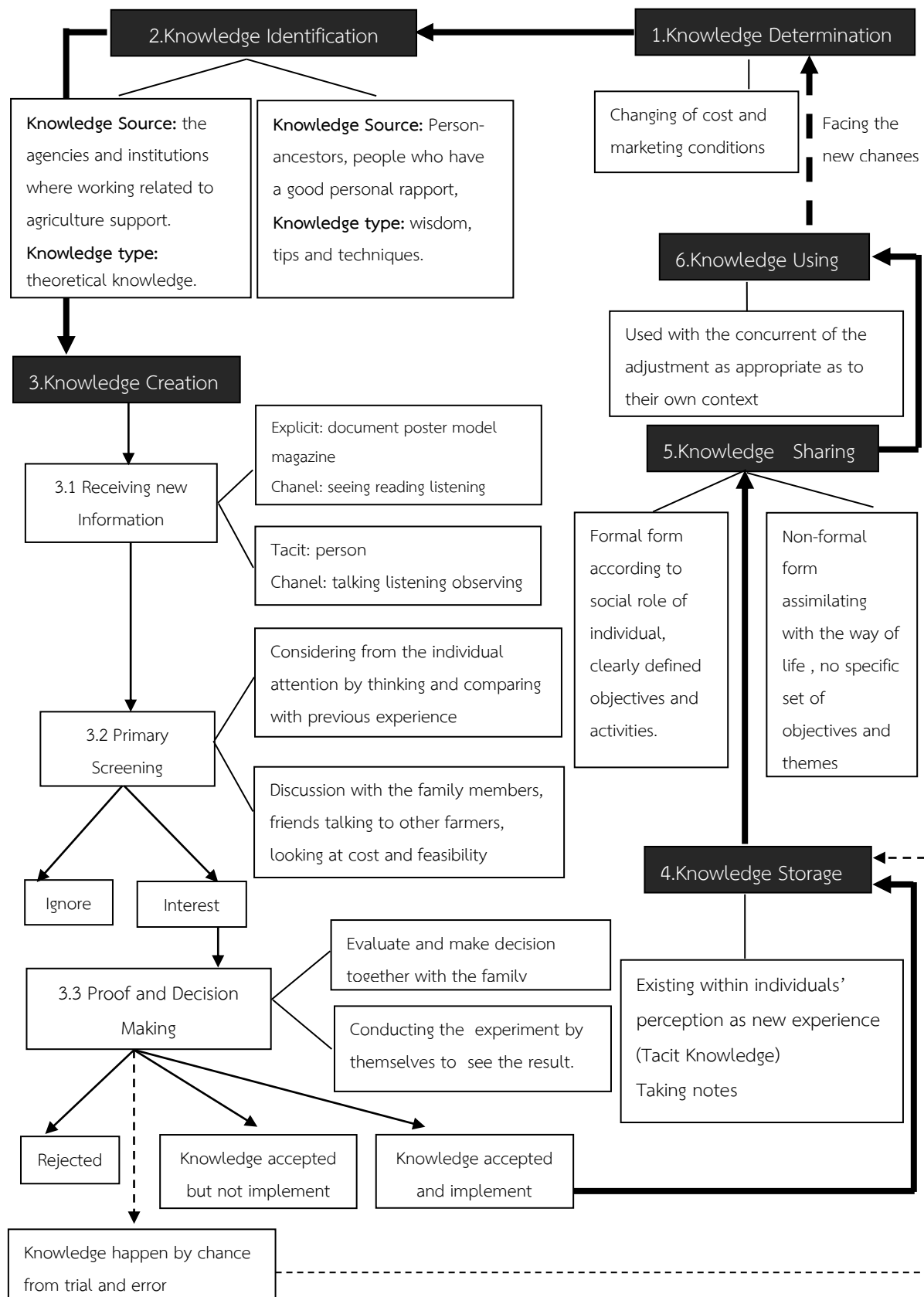


Figure 1: Knowledge Management of Role-Model Farmer.

Discussion

Knowledge management was the continuous process intra-individual. The conditions of the market and cost changing affected the requirements of the knowledge directly. These findings were consistent with the adult learning concept. They needed to learn something when they realized that its be beneficial to real life. (Life-Centered). They would be self-directed to start learning according to their interests (Chairit Photisuvan,1997:8) Family members, the personal relationships and the access to a source of knowledge such as the agencies and institutions where working related to agriculture support were very important to knowledge identification. The knowledge transfer approach was based on the concept of Learning by Doing of Jone Dewey. Knowledge Creation also consistent with adult concept Knowles (1978: 56-59) person focused to learn the utility that was useful immediately in real life. In addition, Knowledge Storage Knowledge Sharing and Knowledge Using were consistent with the Capture-Tracking KM model (Wijarn Phanit, 2006: 56) describes the purpose of knowledge collection and knowledge using was considering the context, the feasibility in practice that's appropriate for each person. This was also consistent with the study of Suthida Chadsing and others (2014: 978) explained that two of Indicator elements of dairy farmer's self – reliance which had statistically significance are data recording and have a chance to share his experience with other people. Moreover, when considering the knowledge skills and experience through learning within the individual, it was contributing to the development of professionalism apparent in four characteristics to the farmer as follows:

1) Maintaining the quality of product, beef from farm of the farmer had the average of 3 quality grade and above.; 2) Knowledge and skills, the Farmer had a lot of experience in the knowledge and skills as a guru of premium-grade beef production.; 3) Intrinsic Value, this divided into one was proud of himself as noted form the farmer by his expression, another was proud of his value that other person or society to accept. For example, he was invited as a guest speaker or consultant in the meeting, invited as committee in some extension projects or he got provincial or national awards. This was self-esteem of the farmer that conform with the study of Parinya Jitaram (2011: 453) explained that the opportunity for people to share their knowledge or experience to others was encourage and promoting self-respect, increase the potential of humanity and self-esteem.; 4) the existence of a career, it meant the farmer so proud on his profession inherently, and had confidence in the current profession that can gain income to his family.

Acknowledgement

This research was supported by Kasersart University Research and Development Institute.

References

- Boondee Boonyakit and other.(2004). **Knowledge Management from theory to practice**. Bangkok: Jirawat Express.
- Chairit Photisuvan.(1997). **Self-directed Learning Readiness of Adult learners of Some Adult Educational Activities**. Department of Adult Education, Kasetsart University.Bangkok.
- Department of Agricultural Extension.(2010). **Summary of Knowledge Management of DOAE 2004 – 2010**. DOAE. (Online). Available: http://km.doe.go.th/WebKM_24-02-54/sum_sent_UN-24-02-54.pdf. March 14, 2013.
- Department of Livestock Development.(2011). **Annual Report of Beef Cattle and Farmer Data 2010**. Bureau of Livestock Development and Technology Transfer.
- Department of Livestock Development.(2013). **Criteria of the National Outstanding Farmer Award Selection**. Department of Livestock.
- Knowles, Malcolm S. (1978). **The adult learner: A neglected species**. Houston. TX: Gulf.
- National Bureau of Agricultural Commodity and Food Standards. (2004). **The criteria for Grades of Carcass Beef**. Ministry of Agriculture and Cooperatives.
- Office of the National Economics and Social Development Board.(2011). **National Economic and Social Development Plan No.11 BE 2555 to 2559**. NESDB document.
- Office of the National Education Council.(2010). **Research for Educational Model / Approach Development to Increase Educational Opportunities for the Out of School Population 15-59 Year of Age**. ONEC.
- Parinya Jitaram (2011). **The Development of Indicators on Knowledge Management in Community Health Center**. Veridian E-Journal SU Vol.4 No.1 May - August 2011: 453.
- Suthida Chadsing, Somkiert Prasanpanich, and Supaporn Thaipakdee. (2014). **Self – Reliance Analysis of Dairy Farmers in Thunglooknok Sub-district Kamphaeng Sean District Nakhon Pathom Province**. Veridian E-Journal SU Volume 7 No.3 September – December 2014: 978
- Thani Phakuthai.(2010). **The Competetive Advatage Analysis of Beef Industry under Thailand-Australia Free Trade Agreement**. Department of Livestock Development.

Wijarn Phanit. (2004). **Education and Knowledge Management for Society**. Bangkok: Pimdee print.

Wijarn Phanit.(2006). **Knowledge Management: The Pragmatist**. 3^{ed}: Bangkok.