

Knowledge Management of Indigenous Farmers of Serrated Mud Crab Fattening in the Mangrove Forest of La-NGU, Thailand

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Knowledge management on indigenous farmers of serrated mud crab fattening in the mangrove forest of La-ngu, Thailand was in actual practice via activities of earning a living and daily life. There is a transfer of knowledge and dissemination among the people of the community on the basis of an agricultural society that is self-reliant. The process of local wisdom management consists of 6 steps: 1) the occurrence of problems or curiosity; 2) finding a guideline for solving the problems and increasing knowledge; 3) practice in the real situation; 4) an analysis of practice outcomes; 5) recapitulation of the body of knowledge; and 6) body of knowledge application and transfer

Key words: *knowledge management, indigenous, self-reliance, serrated mud crab farmers, communication.*

Introduction

La-ngu is a district in Satun province where there are many tourist attractions. Most people in the La-ngu district engage in traditional fishing (3,281 households) with a total value of 5,196.20 million baht (Satun Provincial Fisheries Office, 2012). Local people there have a

culture of doing fattening of serrated mud crab as a form of self-reliance and they utilise natural resources as basic factors for earning a living. They help and rely on one another. Besides that, they catch aquatic animals for household consumption and the surplus is sold for household expenses. Baby serrated mud crabs are caught from natural water sources and cultured in earthen ponds for selling.

The fattening of serrated mud crab culture in the mangrove forest areas in La-ngu district relies on local wisdom. This begins with the observation of the lunar calendar inherited from ancestors and relatives and then by placing a bamboo crab trap to catch baby serrated mud crabs in natural water sources. The baby serrated mud crabs are cultured in an earthen pond that has brackish water from the mangrove forest. The principle of high tide and low tide is used for the circulation of water in the pond for sanitation and prevention of epidemics. When the fattening serrated mud crabs grow up to reach the market size, they are caught and tied with a nipa palm leaf to be sold in the market. In fact, the fattening of serrated mud crab culture in the mangrove forest areas in La-ngu district is diverse in terms of culture and management depending on each farmer there (Kaewploy et al., 2015).

The fattening of serrated mud crab culture is an important body of knowledge because it is very beneficial to the local people. It is local wisdom that illustrates the way of life and the local culture of the people living near to the mangrove forest. Polanyi and Nonaka (as cited in Bunyakit et al, 2005) have sorted the body of knowledge into 2 main types: explicit knowledge that is accumulated in the form of academic documents, operational manuals and textbooks, and tacit knowledge. Klaisuban (2007) also concluded that knowledge is the accumulated experience of man. According to the classification of this body of knowledge, it can be said that the fattening serrated mud crab culture in La-ngu district is tacit knowledge. This is because it is the accumulated knowledge and experience of an individual until it becomes local wisdom.

Many Scholars have Defined Local Wisdom as Follows

Kaewwanna (2006) cited that local wisdom is accumulated knowledge, experience or anything that local people have and use in their daily life activities, and is transferred from generation to generation. Chanpradab (2001) defined local wisdom as a body of local knowledge created by the local people to solve problems or earn a living appropriately. Panurat (2006) claimed that local wisdom is a process of adjusting the way of life of local people to be consistent with social change. Meanwhile, Wongprasert (2008) concluded that local wisdom means the knowledge and experience of local people used for appropriate problem-solving in their daily life activities. In conclusion, local wisdom is of two forms: 1) an intellectual process in local people that emerges from learning and knowledge transfer based on direct or indirect experience, and is considered as an identity of the local community; 2) a foundation and a body of knowledge that local people created from the intellect and capability to solve problems. It

can be a guideline for appropriate daily life activities that is consistent with current social change.

Local wisdom on the fattening of serrated mud crab culture in the mangrove forest areas of La-ngu district is transferred from generation to generation within the community only. The people there do not want to disseminate it to people outside the community because of the following: 1) it is a body of knowledge used for earning a living; 2) it is the reputation and dignity of the community; 3) their ancestors want it to be secret; 4) media and technology are not well developed (Siworasarn, 2013). The fattening of serrated mud crab culture is a local wisdom, which is transferred from generation to generation for maximising the benefits of earning a living.

Many scholars with local wisdom described the management of local wisdom. Panyakul (2013) cited that local wisdom management is the connection between the principle of knowledge management and the local value-added wisdom that will be beneficial to the local community. This can be found in rural areas of developing countries and in agricultural countries, and is a process of sustainable agricultural development. Tosakul (2005) presented the principle and concept of local wisdom management as the creation of activities to make local people discuss and exchange knowledge and experience gained from real practice leading to networking with academics and public/private sectors. Na Thalang (2003) claimed that local wisdom is a valued cultural knowledge as social foundation that accumulates from generation to generation and reflects the way of life of people in the community. Local wisdom management on the fattening serrated mud crab culture on the basis of self-reliance is in accordance with the concept of self-reliance initiated by His Majesty King Bhumibol Adulyadej—"small is beautiful". That is, it does not focus on growth or progress, but on thrift and simplicity in order to be responsive to the basic needs of life (Tantiwetchakul, 1993).

In addition, the study on indigenous knowledge management in fattening of serrated mud crab farmers in the mangrove forest areas of La-ngu district, Satun province, aims to maintain and conserve the local way of life and culture of fattening of serrated mud crab farmers there.

Research Objective

This study is aimed at investigating the process of local wisdom management in fattening of serrated mud crab farmers in La-ngu district, Satun province.

Review of Related Literature

Choo (1998) proposed a form of knowledge management on “knowledge organisations as learning organisations” with 3 steps as follows:

- 1) Sense-making step: It is the understanding of environmental change in an organisation or different environmental conditions having relationships with each other. The situation or data that was once formulated and selected in the past was once the current model. Experience from the past can promote sense-making, beliefs, or actions as guidelines for understanding certain things. Sometimes, understanding may change thoughts when there is conflict. Hence, understanding is based on beliefs and the interpretation of rules.
- 2) Knowledge creation step: This happens when knowledge gaps and the knowledge do not cover the entire organisation. This body of knowledge can be classified into 3 types: 1) tacit knowledge, 2) explicit knowledge, and 3) cultural knowledge. When there is an interchange between knowledge conversion, knowledge building, and knowledge linking, it creates a new body of knowledge.
- 3) Decision making step: It arises from a situation that must be chosen based on the principles, alternatives, and satisfaction. Any factor affecting the decision making must be rational, beginning with problem analysis, analysing, and finding an alternative. Decision making is based on rules, regular practice, past situations, and satisfaction.

Knowledge management in accordance with Choo’s theory begins with change and stimulation of the cycle of knowledge management within the framework of the ability to understand, create knowledge, and make a decision. Sense-making helps organisational members to have the same direction of beliefs with co-values and goals. It creates an identity for the organisation and helps it to be good. It also helps the organisation to achieve its vision and mission goals. However, the improvement of the organisation can be interrupted if there is a gap in the creation of new knowledge and learning exchange, as well as in analysis of tacit knowledge, explicit knowledge, and cultural knowledge. All these types of knowledge are connected between people, groups of people and organisations, and can create new innovations, products, services, and processes for an organisation.

Neto et al. (2009) investigated Choo’s knowledge management and used it to determine the vision of a business organisation. This is based on 3 principles: 1) sense-making, 2) knowledge creation, and 3) decision making. Each step has a knowledge management that plays an important role in determining the vision of knowledge management of an organisation. Sense-making, or the ability to understand, is a process to ensure that an organisation can adapt itself and exist in all situations. In fact, sense-making helps an organisation to understand the direction of various changes related to clients, producers, trading competitors and other factors. Meanwhile, knowledge creation serves its function as a process that makes an organisation

build new knowledge via learning new things that occur. Decision making serves its function as a decision-making process when it is based on an organisation's strategy.

Hess (2006) had conducted a study on knowledge management and knowledge systems for rural development and explained that a principle of body of knowledge management is essential for continuing development. That development is based on the body of knowledge management via the rapid channel of information and communication technology (ICT). This comprises the following:

- 1) Data: It consists of numerical information such as price, amount, income, temperature, etc.
- 2) Information: It is qualitative data obtained from outcomes of the process. The data sender must check correctness and clarity before sending the data to prevent misunderstandings.
- 3) Knowledge: This comprises explicit knowledge (clear concrete knowledge gained from learning through the educational system) and implicit knowledge (a body of knowledge that arises from practice).

Alvesson and Karreman (2001) had conducted a study on the knowledge management process, a theoretical-conceptual research that compared the difference of models of knowledge management in various forms. He made conclusions on the difference of the knowledge management model as follows:

- 1) Knowledge management of Poynder (1998): It is a model of knowledge management related to personnel resources that focuses on organisational culture and co-working. This knowledge management depends on an organisational development process that promotes the development of a body of knowledge and skills of personnel in an organisation.
- 2) Knowledge management of Swan (1999): It is a model of knowledge management of an IT model which focuses on a process of intensive data dissemination. The Community-based model is knowledge management via networks and coordination. The goal of this model is to make people have conversations with others.
- 3) Knowledge management of Lee and Kim (2001): It is a management model as the main tool for the development of organisation personnel. It comprises leadership, freedom of operation, measures, rewards, and organisational structure/culture.
- 4) Knowledge management of Lee and Kim (2001): It is a technical model in which knowledge management depends on information technology. It focuses on knowledge collection and dissemination through knowledge management systems, such as a data analysis process, discussion, internet systems, and computer systems of an organisation.
- 5) Knowledge management of Schultze and Leidner (2002): It is a subjective model having knowledge management related to the social experience of the personnel.

Review of Related Literature on Cultural Capital and Local Wisdom

According to Keawtep and Hinwiman (2008), a French cultural critical theorist defined capital as: anything will become capital when it functions as a social relation of power. Capital can be classified into 4 types as follows: 1) Economic capital: This capital arises from the accumulation of income prosperity and assets. This type of capital can be exchanged for other types of capital based on economic value. 2) Social capital: This capital is a form of structure, organisation, network, and relationship that an individual can employ for self-development and become a part of a social group as needed. Social capital is like a kind of resource that can contribute to the society, such as family, school, village, workplace, business group, etc. 3) Symbolic capital: It is status, reputation, or recognition of people and 4) cultural capital.

Bourdieu (1986) defined capital as an accumulated capital in an individual, object, and organisation. Each person is developed through the educational system and an outcome of cultural capital is the taste as a tool to maintain social class.

Griswold (2004) is a social science and cultural scholar who claimed that culture may be viewed as a kind of capital, which can be accumulated and invested like economic capital. Otherwise, it can be converted to be economic capital. In fact, cultural capital has an influence on arts, culture, taste and perception, as well as lifestyle.

Scope and Delimitation of the Study

- 1) The locale of the study was in La-ngu district, Satun province, which it is suitable because the fattening serrated mud crab culture is abundant.
- 2) The target group comprised of fattening of serrated mud crab farmers and their relatives.

Research Methodology

This study was a qualitative research with a case study. It included the following:

- 1) What needs to be investigated: local wisdom management of fattening of serrated mud crab farmers in the mangrove forest areas in La-ngu district, Satun province.
- 2) Target group of this study: this included the fattening of serrated mud crab farmers and their relatives.
- 3) Investigation Method
 - 3.1 Documentary review
 - 3.2 Interview
 - 3.3 Non-participatory observation
 - 3.4 Focus group discussion

4) Research instruments: document, interview schedule, observation recording form, and electronic equipment

5) Data analysis: this included 2 aspects:

5.1 Data collection through documentary review, interview, observation, and focus group discussion

5.2 Theory checking, correct application of concept, and correct interpretation of data

Results

Results of the study on the steps of local wisdom management of fattening of serrated mud crab farmers in the mangrove forest areas of La-ngu district, Satun province, are shown below. The target group of this study consisted of 20 persons from 6 families and there were 6 steps, shown as follows:

1. Problems in Fattening of Serrated Mud Crab Culture / Curiosity of New Things

This began with the farmers who were not successful in the fattening of serrated mud crab culture. They tried to find a way to solve the problems encountered. Some of them wanted to learn new culture methods, so it was the beginning of the first step towards managing the local wisdom for the fattening of serrated mud crab culture.

2. Finding Guidelines for Solving the Problems and Increasing New Knowledge

There are 3 ways as follows:

- 1) Self-concept and practice
- 2) Concept and practice from other sources, such as inquiries or conversations with local scholars or those who were successful in the fattening of serrated mud crab culture.
- 3) Combination of self-concept and other sources to solve the problem.

3. Practice or Implementation

It was the actual practice in accordance with the path chosen by the farmers.

4. Outcome Analysis

This was conducted when the farmers knew the result of solving their problems. In the case of successful problem solving (good yields and profits), it was a new body of knowledge gained from experience. In contrast, in the case of an unsuccessful problem solving, the farmers would change to another way.

5. Recapitulation of the New Body of Knowledge

This happened after the farmers knew the outcomes of their practice, which may be successful or unsuccessful. In general, however, fattening of serrated mud crab farmers had only successful results. In fact, ancestors and local scholars on fattening of serrated mud crab culture usually transferred their knowledge through real practice because there were no textbooks. There was a sharing of knowledge obtained from old and new knowledge bases, such as some farmers using other farmers' problem solving ways. This body of knowledge could be considered as the cultural capital that was gained from the combination of their way of life, local culture, and tradition.

6. Application of Knowledge to the Actual Practice and Knowledge Transfer/Dissemination

This was the step where the new body of knowledge was transferred/disseminated through continuous real practice in daily life activities among relatives and neighbours. As new problems occurred, they would solve them using their existing body of knowledge. They would have an increased body of knowledge gained from their accumulated experience.

Discussions

The Process of Local Wisdom Management of Fattening of Serrated Mud Crab Farmers in the Mangrove Forest Area of La-ngu District, Satun Province

1) According to the review of related literature, it can be seen that there was a difference between the theory and local wisdom management of fattening of serrated mud crab farmers in the mangrove forest areas of La-ngu district, Satun province, and knowledge management of Choo (1998) and Neto et al. (2009). That is to say, the development of the fattening of serrated mud crab farmers arises from knowledge management as a result of problems and their curiosity for new knowledge. It is the step of the knowledge management due to problems and curiosity that develops the local wisdom, which has a unique local identity. However, the knowledge management of Choo (1998) and Neto et al. (2009) arises from the creation and presentation of a new body of knowledge, which does not focus on the success of an individual but on the success of an organisation. The knowledge management of Choo (1998) and Neto et al. (2009) does not have the step of verifying the method for finding a new body of knowledge. In contrast, the fattening of serrated mud crab farmers have methods of verification when choosing real practice in accordance with 3 ways of problem solving. These are as follows: a) self-concept and practice; b) concept and practice from other sources; and c) combination of self-concept/practice and others' concept/practice. In fact, the fattening of serrated mud crab farmers have a body of knowledge management that focuses on an individual

who tries to solve a particular problem, because each farmer may face a different problem in each culture step.

Nevertheless, the researchers in this study observe that the body of knowledge management of the fattening of serrated mud crab farmers is similar to the knowledge management of Lee and Kim (2001). Alvesson and Kärreman (2001) conducted a study and compared the management model as a main tool for developing personnel in an organisation, which comprises leadership, freedom in operation, various measures, rewards, organisational structure and culture. The body of knowledge management of the fattening of serrated mud crab farmers has freedom in operation. This is because they can make the decision to select wisdom management by themselves. For example, they can select a way to solve problems by themselves and are not under the supervision of any agency or organisation.

Researchers have found an interesting issue in the steps in the body of knowledge management of the fattening of serrated mud crab farmers. It is the step of a new body of knowledge transfer/dissemination. It can be observed that knowledge transferred from ancestors to descendants is in the form of real practice, and this knowledge cannot be found in printed media or electronic media. This local wisdom is inherited, through continuous practice in daily life activities, and can strengthen the community through contribution and sharing.

2) The cycle of local wisdom management of the fattening of serrated mud crab farmers in the mangrove forest areas of La-ngu district begins with various problems related to culture and management. Hence, they try to find a way for solving the problems and some of them want to gain new knowledge for an appropriate culture and management. This includes 3 alternatives as follows: 1. Self-concept and practice, which is considered as tacit knowledge transferred from one individual to another, but it is through the explicit knowledge that reveals the concrete knowledge. It is the success of problem solving that advances through socialisation. 2. Concept and practice from other sources, such as inquiries or talking with local scholars or successful fattening of serrated mud crab farmers. 3. Combination of self-concept/practice and concept/practice of others. This is considered as tacit knowledge transferred from one person to another and it is through explicit knowledge. The disclosure of concrete knowledge is the success of problem solving. The fattening of serrated mud crab farmers will gain experience during their practice until there is an occurrence of implicit knowledge. After finishing their practice, there will be a process of outcome analysis-success and failure. The occurrence of a new body of knowledge comprises a new knowledge base and an old knowledge base. The fattening of serrated mud crab farmers will transfer or disseminate their new body of knowledge when they have already recapitulated the new body of knowledge produced (tacit socialisation). It was found that the fattening of serrated mud crab farmers prefer to employ concept/practice from other sources and combine self-concept/practice with that of others. It is the knowledge management that the fattening of serrated mud crab farmers gain by relying on

local wisdom as a cultural capital. Temawathn (2005) concluded that the cultural capital as defined by Bourdieu (1986) is an accumulated capital in each person inherited through the educational system. Yields obtained from the accumulation of cultural capital will create the difference and will be a tool for maintaining social class.

3) The process of local wisdom management of the fattening of serrated mud crab farmers focuses on self-reliance and knowledge transfer within their relatives and acquaintances. This conforms to a study by Dankelman and Davidson (1998) on the limitation of local wisdom in East Africa. It was discovered that local people there usually transfer knowledge about herbal plants to relatives and acquaintances only. Interestingly, local wisdom transfer of the fattening of serrated mud crab farmers is only practised within their family and relatives since they are all Muslims and have an extended family. They give importance to the philosophy of sufficiency economy initiated by His Majesty King Bhumibol Adulyadej.

Suggestions

- 1) Concerned agencies in the local culture in Satun province can use the results of this study as a guideline for planning on the collection and dissemination of local wisdom related to fattening of serrated mud crab cultures.
- 2) Concerned agencies in agricultural and agricultural extension in Satun province can utilise the results of this study in terms of the provision of aquaculture training of interested persons.
- 3) Concerned agencies in education in Satun province can utilise the results of this study as a guideline for policy planning and the preparation of a short training course for interested persons.
- 4) Concerned agencies in tourism in Satun province can use the results of this study as a guideline for policy planning on agrotourism or environmentally friendly tourism.

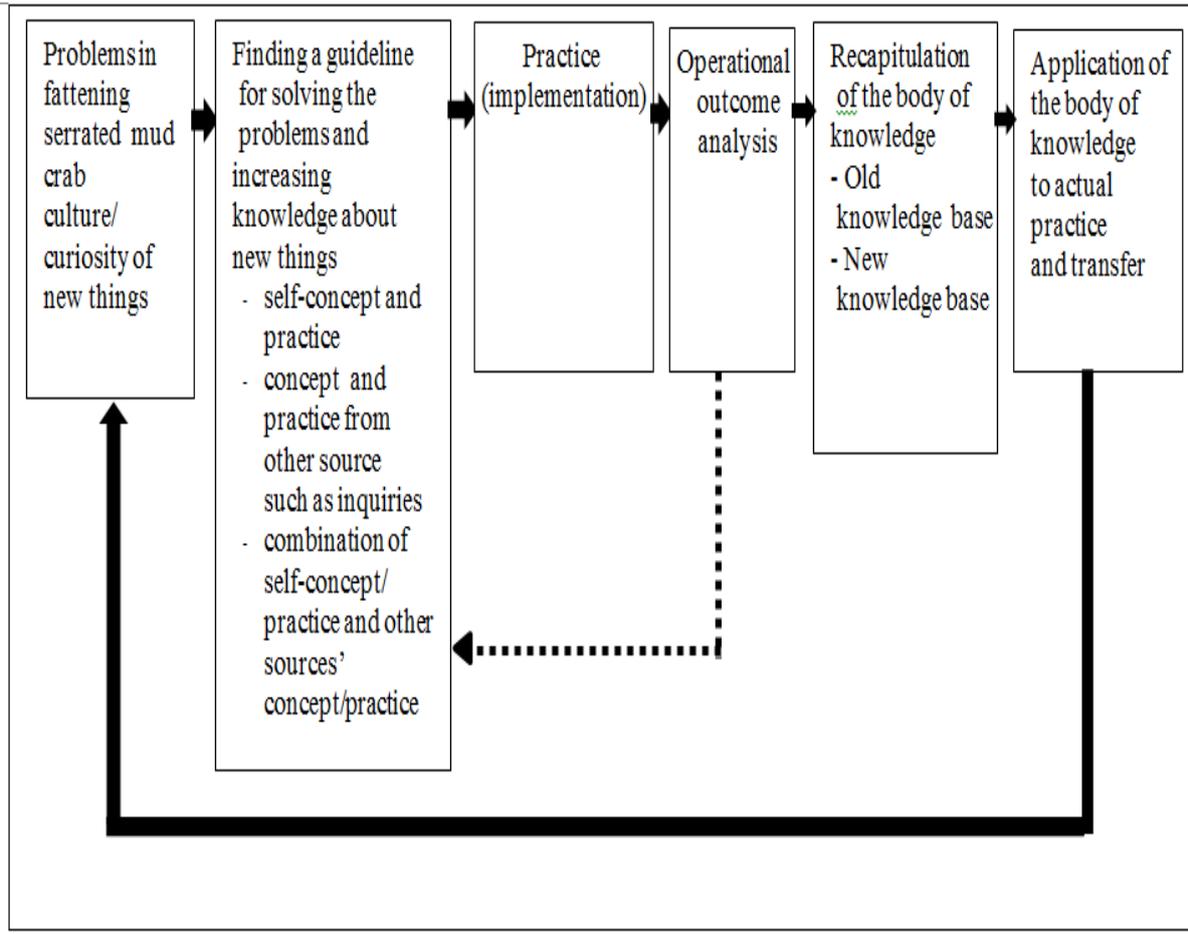
Conclusion

This study reveals the steps of the process of local wisdom management of fattening of serrated mud crab farmers in the mangrove forest areas of La-ngu district, Satun province. It is a unique identity exhibiting the local culture and way of life of extended families there. The fattening of serrated mud crab farmers attach importance to self-reliance, environmental friendly farming, experiential learning, and local scholars. However, the future local wisdom management on fattening of serrated mud crab cultures should be kept in print or electronic media to avoid the disappearance of the local wisdom on fattening of serrated mud crab culture.

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Figure 1. Knowledge management on indigenous farmers of serrated mud crab fattening





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