

Participation of Community in Knowledge Management: Case Study of Paganyaw Way of Upland Rice Cultivation in Prachuap Khiri Khan

Thitima Vechpong¹, Pantipa Na Chaingmai², and Pitakpong Pompranee³

In Thailand, there are many ethnic minority groups, and one of them is Paganyaw. As the largest ethnic minority group in Thailand, the Paganyaw have a unique culture and way of living, such as their wisdom of upland rice farming. This research aimed to collect a body of knowledge originating from the wisdom of Paganyaw people. Employing the action research method, this study involved an investigation of the people's daily life, upland rice farming, way of life, as well as beliefs and culture. Participants of this research included three researchers, one community leader, 15 Paganyaw people, and 10 research assistants. The first phase of this research dealt with finding 15 people who were interested in knowledge transferring. The second phase was concerned with the process of participatory action research, which included action planning; finding areas, equipment and research participants; action; observation and reflection using the knowledge management (KM) technique, which involved knowledge formation and exploration; systematic knowledge management; knowledge evaluation; knowledge access planning; and knowledge dissemination. Participation and observation techniques were employed in the process of meeting and transferring and exchanging knowledge of participants. The final finding was about the upland rice farming of the Paganyaw tribe: their lifestyle is very simple and they have been growing rice with the process of upland rice production.

Keywords: participatory of community, knowledge management, upland rice, Paganyaw, rice, Prachuap Khiri Khan

Upland rice is grown by farmers in highlands mainly for consumption or use in some rituals and ceremonies in their everyday life. Basically, this farming practice relies on rainfall and provides low productivity (Rice Department, 2007). Although upland rice has no significant role in the development of national economy, many ethnic groups in northern Thailand depend on upland rice as their staple food. Paganyaw (a sub-group of Karen living along the Tenasserim Mountain Range) have been growing upland rice for a long period of time. This helps boost their household and community financial stability. Still, there are problems of genetic contamination in the yield caused by various factors. Many authorities and organizations are doing everything that can minimize the risks that the crops would grow and prevent the contamination. Therefore, most Paganyaw farmers work in Thailand's lower central provinces, such as Prachuap Khiri Khan, a province partly located along the Tenasserim Mountain Range; and they cultivate upland rice and low-water-use vegetables to support themselves. Furthermore, upland rice provides an opportunity to solve the household-based food availability and income in general. However, there is no research or useful information about upland rice given to the farmers and the community.

¹ Lecturer, Faculty of Management Science, Silpakorn University, Thailand

² Lecturer, Faculty of Animal Science and Agricultural Technology, Silpakorn University, Thailand

³ Lecturer, Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Thailand

To examine further the genetic research aiming to achieve maximum productivity with low budget, it requires the cooperation from the community to collect information and determine the guidelines for farming. Production of upland rice is a way of life and tradition for many ethnic groups. They know about original varieties of upland rice. The study attempted to prevent the loss of genetic resources in the future and to understand problems due to limited opportunity for land. The target area for this study was a Paganyaw community in Moo 3, Ban Pala-U Noi, Huai Sat Yai sub-district, Hua Hin district, Prachuap Khiri Khan province in Thailand. Farmers in this community still grow upland rice and spend their lives in accordance with natural resources.

The main objectives of this research were to gather information that is associated with the community and get the community to be involved in the management process that is associated with the way of life of the Paganyaw people, in terms of rice cultivation and traditions. They were encouraged to discuss and share ideas and strategies for developing upland rice production methods. This will, hopefully, build a useful database for upcoming generations and further problem-solving plans.

Method

Materials and Procedure

This research employed the action research method and involved three groups of people: 1) three researchers from Silpakorn University and one community leader, who was selected by the community to participate in the research, 2) fifteen upland rice farmers from Ban Pala-U Noi, who were purposively sampled, and 3) two young assistants from the community and eight students from the Faculty of Management Science, Silpakorn University, Thailand.

The study process included: 1) contact the community leader in Ban Pala-U Noi, Huai Sat Yai sub-district, 2) study the basics of upland rice production in the target area, and 3) conduct the research and create the process of knowledge management about upland rice production of the Paganyaw people. Action research procedures in this study consisted of four steps: planning, executing, observation, and evaluation of results, which took two years to complete (2011-12).

Data collected were divided into two parts: 1) information that was gathered from documents including concepts and theories and other works related to this study, and 2) information that was gathered from discussions, observation, and the assessment of satisfaction from the participants.

The research tools that were used in data collection were: 1) survey in the brainstorming session and interviews to explore knowledge about cultivation of upland rice, in terms of strains, investment, rituals, beliefs, and problems, 2) observation in all steps, i.e. planning, executing, observation, and evaluation of results, and 3) assessment of the research participants' satisfaction with, and knowledge they gained from, this research, by means of interviews. The results were analyzed using the content analysis method by looking at the evaluations from the participants and the knowledge management (KM) technique.

Results

The findings are discussed in two issues related to the Paganyaw people's participation in the process of management of knowledge about upland rice production.

The process of management of knowledge about upland rice of the Paganyaw people

The use of the knowledge management technique focuses on all parties participating in the research cycle. A brief summary of the research is shared about the knowledge management system which develops from, 1) input: of researchers, co-researchers, assistant researcher; wisdom of upland rice production and preparation; 2) process: planning, execution, observation, and evaluation using knowledge; and 3) output: knowledge about upland rice, leaders and participatory working process, and the information network about upland rice. So these show details of the process of management of knowledge about upland rice of the Paganyaw people.

1. Preparation

1.1 Sent an invitation to the meeting that presented the objectives and steps of the research – This aimed to seek people who were interested in participating in this research. There were 15 people who showed their interest in this research.

1.2 Explained the research and management process to the 15 people for their better understanding about upland rice production and awareness of cultural conservation.

1.3 Build a group of research assistants, which consisted of two young Paganyaw people and eight students outside the community.

2. Operation

This dealt with the operation of the participatory action research cycles. Each cycle has two parts, each of which can be divided into four more parts: planning, materials/equipment preparation, execution, observation and evaluation of the results. The research results provided people involved in this research with knowledge about upland rice and awareness of the conservation of upland rice cultivation with Paganyaw's way of living. The Knowledge Management (KM) System (Office of the Public Sector Development Commission and the Thailand Productivity Institute, 2005) was used to evaluate, access, and distribute the information.

2.1 Planning the activity. Assigned work equally to each farmer from the target area. Researchers also observed and photographed every process of upland rice production.

2.2 Execution and observation using the knowledge management technique.

2.2.1 Building and collecting. Researchers collected information from meeting farmers and conducted in-depth interviews and observed real-time rice plotting from December 2011 to 2013. On November, 27th 2011, the meeting was held to collect and transcribe all data that had been gathered during the years. Information from the interviews included the background of upland rice, production investment, maintenance, rituals or ceremonies involved, and problems during the process.

2.2.2 Knowledge management. Researchers collected and analyzed every detail of the information and had the farmers recheck the accuracy of the information and correct or re-organize the information if needed.

2.2.3 Knowledge processing. On November 11th, 2012, a meeting with Paganyaw farmers was organized to review and exchange information about upland rice production. All participants had to verify the data and add more information as well. On the same day, a Paganyaw community leader from Inthanon Mountain in Chiang Mai was invited

to talk about his experience in upland rice production at the Pha Mon Village, lifestyles, and water management. Finally, all farmers exchanged their experience, summarized the meeting, and made an appointment to plan an exhibition about upland rice.

2.2.4 Information accessibility and distribution. Farmer leaders from each group met again on February 28th, 2013 to prepare the establishment of the Paganyaw's upland rice learning center. Each of them designed the layout of the learning center and displayed harvesting tools. The center was opened on May 27th, 2013, and two days, on May 29th, a group of students paid a visit to the center. On 24th October, 2013, one farmer gave a lecture on Paganyaw lifestyle to a group of 40 students from Ban Huai Hang, Ban Pa Deng, and Ban Pala-U.

2.3 Evaluations from community leaders, upland rice farmers, researchers, and research participants. The majority were satisfied with the distribution of information, such as Paganyaw way of life and traditions, upland rice production, and the learning center. Things that needed improvement: 1) Incorrect information about upland rice in books on upland rice, which needed to be fixed quickly, and 2) More exchange with other communities about upland rice production and solutions to pests, such as insects, birds, and rats.

The researchers and assistants then planned to operate the second cycle of the action research method. The team needed to update some contents in books and comics about upland rice and organize more activities to exchange information about upland rice. On September 7th, 2013, the researchers requested the Rice Center of the Rai Makham Community in Ban Lat district, Phetchaburi province, and the rice center awarded the 1st prize at the provincial level, to help organize an activity. On September 21st, 2013, the activity was successfully held, and students from the Phetchaburi Welfare School were given the updated version of the books and comics. Finally, the results from the activity suggested that farmer leaders, farmers, researchers, and students who attended the activity were very satisfied with the overall outcomes.

Results of the study and the process of upland rice production using the action research method were conducted twice and started anew from planning, preparation, execution, observation, and evaluation. The researchers, co-researchers, assistant researchers, as well as community members were involved in every process, so data collection was very accurate and more effective. All participants learned a lot about upland rice production and had better cultural awareness and understanding of Paganyaw way of life. Another significant result from the study was the development of leadership in some community members. The Paganyaw Learning Center that developed from the contribution of each participant would exist forever within the community.

Paganyaw People and Knowledge about Upland Rice

1. The lifestyle of Paganyaw people is very simple. They learn how to live with nature without destroying the resources. They rely on natural water source for consumption. Their houses are built with bamboo and thatched roof panels made out of Ceylon oak leaves.

2. The Paganyaw people have been growing upland rice for a very long time. The production methods have been transmitted to them through the collective wisdom of their ancestors. There are two varieties of upland rice that are widely grown: a) glutinous rice and b) grain rice. They have cultural rituals and ceremonies associated with upland rice from the beginning of planting, during planting, and after planting.

For example some quotes from the Paganyaw people are shared from the research findings:

“The man has grown rice since he was young, when he helped his grandfather and grandmother to grow rice. So he knows how to grow rice.” (P1)

“Upland rice cultivation of Paganyaw people is inherited from their ancestors. During childhood, Paganyaw people see their parents grow the rice, and they help. This is why they know how to grow it. They keep rice to grow and eat.” (P1)

“Growing glutinous and Phae Toe rice takes five months. The period from July to November gives the best yield. We just put just a small number of rice seeds in a hole, and the rice tillering ability will be high. Each year will have a high yield. The product will be heavy grains, and they will be fluffy when cooked.” (P2)

3. The process of upland rice production consists of preparing land and rice seeds, excavating, sowing rice seeds, waiting for rice yields, drying rice in the sun, and storing rice in the barn.

4. Common agricultural problems found are pests, dry weathers, barren soil, and rice diseases. For example one person from the Paganyaw said:

“Drought affects the life of rice. Rain can be forecast through fig trees and water monitors. If there is enough rain, fig trees will produce a lot of fruits in each layer. As for water monitors, if their tail becomes yellow, drought will occur, and this will affect rice.” (P1).

Furthermore he said, *“Rice diseases include worms, leaf blight, sheath blight, rice blast, and brown spots.”*

A brief summary of the findings is presented in the figure 1.

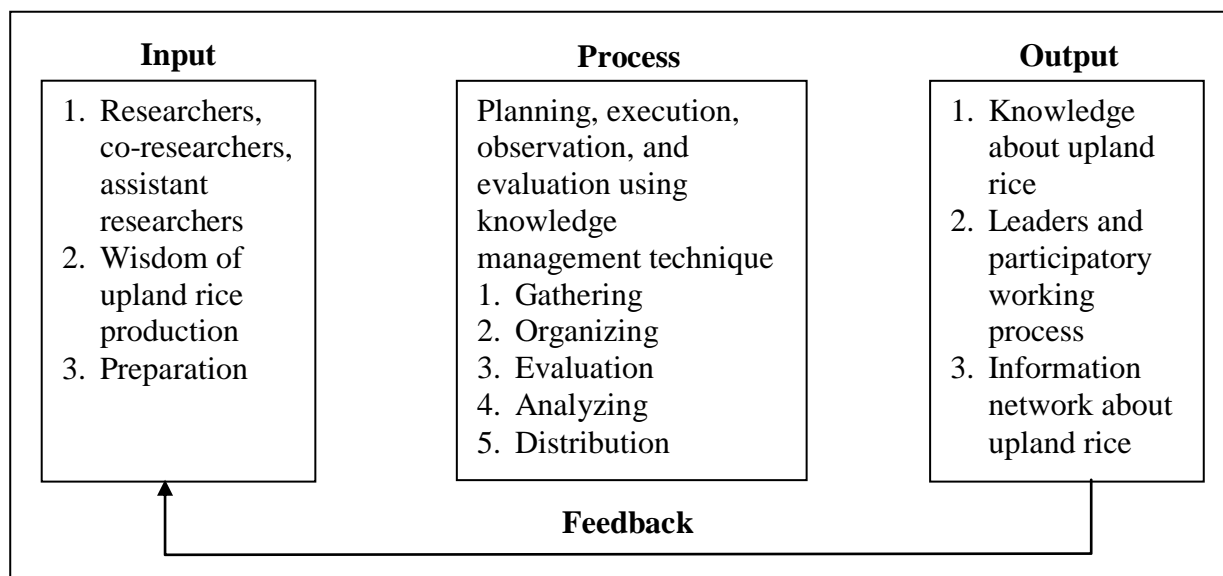


Figure 1. Knowledge management of upland rice production.

Discussion and Conclusion

This research was conducted based on the action research method. The research process consisted of planning, execution, observation, and evaluation; the outcomes were successful. The discussion is as follows:

1. The process of management of knowledge about upland rice of Paganyaw people. The researchers and assistant researchers conducted the research using the action research cycle, which consisted of execution, observation, and evaluation. The use of the knowledge management technique focuses on all parties participating in the research cycle, which can be divided into two parts.

1.1 The research process using the knowledge management technique helped upland farmers who participated in the research to continuously learn the process of working as a group. Another interesting finding was that the collaborative working process helped the team to collect quite detailed information of Paganyaw people's lifestyle by following nine steps of the knowledge management process presented in the study of Bunmepipit (2008). The nine steps are: 1) organizing, 2) supervising, 3) sharing, 4) capturing, 5) adapting, 6) planning, 7) interacting, 8) socializing, and 9) rewarding.

1.2 The leadership and followership were found within the minds of the Paganyaw upland rice farmers after they participated in the research and took responsibilities for work assigned. According to Phothong (2006) suggested that change leadership was found to have moderate relationship with the work efficiency of local administrators. Another similar study also suggested that change leadership was found to have positive relationship with the work efficiency (Samanphun, 2005).

1.3 The exchange of knowledge creates a network to share information about upland rice production between Paganyaw farmers and those in Phetchaburi province. According to the study of Tepwan (2011), the exchange of information or knowledge has effects on many aspects: 1) Socialization, sharing information and experience required people to socialize, and 2) Externalization, sharing information and experiences can also be done through various media forms: documents, books, and photographs.

1.4 The production of upland rice is environment friendly. Phongphit (2009) stated that when people, community, and students are proud of their cultural heritage, they will protect and develop their traditions. Wijitsoontorn (2008) said that the Karen people truly live with nature. They have been farming using some systems, such as shifting cultivation for 7-8 years without any change. They also have never used pesticides or any chemical with their crops.

1.5 After the end of the research, the exhibition was still held in the Paganyaw Learning Center. This activity benefits everyone from both inside and outside the community. The knowledge gained from the activity or from the exchange with other people could prove useful and would spread further in the future (Sitthilertaroon, 2002).

2. Paganyaw people's knowledge about upland rice Paganyaw people's knowledge of upland rice found in this research is similar to that in a study of Ratanavilaisakul (2008). Planting procedures include preparation of the land, mowing and burning grass, as well as starting rituals before and after planting until harvesting. Excessive rice seeds will be stored for planting in the following year.

Recommendations

Recommendations from this research can be applied at various levels.

Local level

1. Encourage to assign the knowledge about upland rice in schools in Huai Sat Yai sub-district as the local curriculum.
2. Encourage schools in Huai Sat Yai sub-district and the Huai Sat Yai Sub-district Administrative Organization to translate books and comics about upland rice into Paganyaw, English, and Burmese.
3. Request the Huai Sat Yai Sub-district Administrative Organization to allocate budget for the establishment the Paganyaw Learning Center and provide tools and equipment and information covering every aspect of Paganyaw way of life.

Local level with external agencies

1. Promote the exchange of information among the farmers' network in order to share and learn how to maximize productivity and lessen the uses of chemicals.
2. Develop water management system from natural resource for long-term cultivation.

In addition, this research recommends:

1. In the past, Paganyaw people relied on their wisdom to eliminate weeds and pests with natural methods. But currently, the Paganyaw turn to chemicals to eliminate weeds and pests. So, the study of herbs that can be used as pesticides instead of chemicals without disturbing the ecosystem could be undertaken.
2. To study more about the Paganyaw way of life in various aspects.
3. Development of agricultural use of farmland to achieve maximum productivity without invasion of national park areas.

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