

STRENGTHENING THE POTENTIAL OF COMMUNITY ENTERPRISE
IN ACCORDANCE WITH THE LOCAL DEVELOPMENT STRATEGY
OF PHRANAKHON SI AYUTTHAYA RAJABHAT UNIVERSITY
: A CASE STUDY OF KLONG-JIK SUB-DISTRICT
COMMUNITY ENTERPRISE, BANG PA-IN DISTRICT,
PHRANAKHON SI AYUTTHAYA PROVINCE*

การเสริมสร้างศักยภาพวิสาหกิจชุมชนตามยุทธศาสตร์เพื่อการพัฒนาท้องถิ่น
ของมหาวิทยาลัยราชภัฏพระนครศรีอยุธยา :กรณีศึกษาวิสาหกิจชุมชนตำบลคลองจิก
อำเภอบางปะอิน จังหวัดพระนครศรีอยุธยา

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Abstract

The objectives of this research were: 1. To present the method for strengthening the potential of Khlong-Jik Sub-district Community Enterprise in Bang Pa-In District, Phranakhon Si Ayutthaya Province, 2. To develop the method for upgrading the local products in order to match the product requirements for commercial use via the scientific methods and technology, and 3. To develop the group management approach to a model community enterprise from the results of this qualitative research combined with participatory action research (PAR).

The achievement of Khlong-Jik Community came from the participation of all peoples together with the public and private sectors in every process. Therefore, these research results had directly impact to the community in so many ways such as the popularity, the growth of income rate and tourism and so on. According to these impacts, the Khlong-Jik Sub-

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district Community Enterprise received award for being the best community enterprise in Phranakhon Si Ayutthaya province.

Keywords: Local development; Strengthening; Community Enterprise; Mushroom Products

บทคัดย่อ

งานวิจัยนี้มีวัตถุประสงค์ 1) เพื่อพัฒนาแนวทางเสริมสร้างศักยภาพวิสาหกิจชุมชน ตำบลคลองจิก อำเภอบางปะอิน จังหวัดพระนครศรีอยุธยา 2) เพื่อพัฒนาแนวทางการยกระดับผลิตภัณฑ์สู่เชิงพาณิชย์ด้วยกระบวนการทางวิทยาศาสตร์และเทคโนโลยี และ 3) เพื่อพัฒนาแนวทางการจัดการกลุ่มสู่วิสาหกิจชุมชนต้นแบบ จากผลการดำเนินงานผ่านการวิจัยเชิงคุณภาพร่วมกับการวิจัยเชิงปฏิบัติการแบบมีส่วนร่วม (Participatory Action Research, PAR)

พบว่า ความสำเร็จของชุมชนคลองจิกมาจากการมีส่วนร่วมของทุกภาคส่วนร่วมกับภาครัฐ ภาคเอกชน และภาคีเครือข่ายต่าง ๆ ใน การพัฒนา และหนุนเสริมทำให้เกิดการเปลี่ยนแปลงหรือผลกระทบต่าง ๆ ตามมาหลายด้าน ได้แก่ ชุมชนเป็นที่รู้จักมากขึ้น จำนวนนักท่องเที่ยวหรือคณะศึกษาดูงานเพิ่มขึ้น และรายได้ของคนในชุมชนเพิ่มขึ้นจากการดำเนินกิจกรรมต่าง ๆ ของกลุ่ม จากผลกระทบข้างต้นจึงทำให้วิสาหกิจชุมชนตำบลคลองจิกได้รับรางวัลวิสาหกิจชุมชนที่ดีเด่นของจังหวัดพระนครศรีอยุธยา

คำสำคัญ : การพัฒนาท้องถิ่น; การเสริมสร้างศักยภาพ; วิสาหกิจชุมชน; ผลิตภัณฑ์จากเห็ด

Introduction

Most of the universities in Thailand have continuously transferred a lot of essential knowledge in order to develop the community through learning process, academic research, community services and art- culture conservation. For this research, the researchers have studied the ways to encourage the community of all universities in Thailand. Especially for the universities in Rajabhat group, one of their duties aims to help the community service. In Rajabhat University Act, B.E 2538, Rajabhat institutes were adapted from teacher college system and declared as the institute for community. After that, all Rajabhat institutes were elevated to be universities (Rajabhat University Act, B. E 2547). Due to the principal duty in supporting the

community requirements, a Rajabhat University has been established all important provinces. Goals of Rajabhat University are to educate local students, to improve the research quality and to transfer the beneficial knowledge to the community (Khongsatid & Suksamran, 2018).

The principal duty of Phranakhon Si Ayutthaya Rajabhat University is to improve and to empower the people in the community through research projects, community service projects and community development strategies, *viz.* development and upgrading the qualities of food products and mushroom cube production. Khlong-Jik community in Bang Pa-In district, Phranakhon Si Ayutthaya province is quite an urban area and the size of population is high. Most of population in this area are private workers, industrial workers and agricultural workers. The people in Khlong- Jik community runs the project 9101 with these activities such as mushroom cultivation, mushroom product development and a community- based tourism (CBT). In order to improve the knowhow of mushroom cultivation, these processes (mushroom spore collection, aseptic technique, food product development from mushroom, product standardization, branding development and packaging design) must be improved. Based on the Phranakhon Si Ayutthaya Rajabhat University's strategy in community improvement, the researchers conducted the participatory action research (PAR) for encouraging the Khlong-Jik community and improving the product standard based on the product requirements for commercial use. The results of this research will improve the quality of life of Khlong- Jik community and increase the income rate towards the sufficiency agriculture community with sustainable ways.

Research Objectives

1. To present the method for strengthening the potential of Khlong-Jik sub-district community enterprise in Bang Pa-In district, Phranakhon Si Ayutthaya province.
2. To develop the method for upgrading the local products in order to match with the product requirements for commercial use via the scientific methods and technology.
3. To develop the group management approach to a model community enterprise.

Methodology

This research used a qualitative research method combined with participatory action research (PAR). For the analytical unit in the research, Khlong-Jik sub-district community enterprise in Bang Pa-In district, Phranakhon Si Ayutthaya province was chosen for the research area. Documentary analysis and participation observation were used. A group interview with 60 key informants is divided into of 3 groups, including community leaders, representatives of Khlong-Jik sub-district community enterprise and community scholars. The five major step in PAR procedures are as follow; 1) a community data was collected by conducting a forum of opinions in Khlong-Jik community, 2) educating the people about mushroom growing technique and developing the mushroom products was essential, 3) online and offline product marketing must be developed for community, 4) mushroom learning center was developed in order to help the people, and 5) knowledge management about mushroom project was achieved and transferred for improving the quality of life of people in the community. The researchers analyzed the preliminary data from the interview after collecting the data from the research area and presented the research results with a descriptive manner and analytical description.



Figure 1: The participation among people in the Khlong-Jik community in Bang Pa-In district, Phranakhon Si Ayutthaya province

Results

This research uses a participatory action method to emphasize the community's participation and action with the researchers as depicted in Figure 1. With support of Phranakhon Si Ayutthaya Rajabhat University, the researchers conducted various activities to empower the community abilities. Based on the community needs, mushroom-spore cultivation seminars were conducted. There are two main topics in the seminars which are mushroom cube production skill and mushroom spore selection. During the first seminar, all the problems and needs had been prioritized under the project policy and resources. The mushroom cube production was the most wanted issue of the community because mushroom cultivation is the main source of community income. Formerly, all of mushroom cubes were bought from other districts which cost quite a lot in the mushroom cultivation process, so the mushroom cube production project was developed in order to decrease the cost and get the better mushroom product. Thus, the purposes of this project were to increase the income and get more mushroom product in each mushroom cube.



Figure 2: The preparation of sterile PDA and sorghum seed with community participation at Khlong-Jik sub-district community enterprise.

With supporting both Faculty of Science and Technology laboratory, Phranakhon Si Ayutthaya Rajabhat University, and Khlong-Jik sub-district community enterprise laboratory, the aseptic technique for improving the quality of mushroom cube were transferred to the community. The people, therefore, developed the aseptic skill for producing their own mushroom cube. During the aseptic technique demonstration, Potato Dextrose Agar (PDA) preparation, sterile sorghum seed preparation, disinfection spore transferring and spore selection were discussed.



Figure 3: The aseptic technique for mushroom cube production and transferring the mushroom tissue culture.

For PDA preparation, the compositions of PDA included 200 g of potato, 20 g glucose, 15 g of agar powder and 1 L distilled water. The potato cubes were prepared to the size of $1 \times 1 \times 1 \text{ cm}^3$ and cooked in boiled distilled water for 15 minutes. Next, glucose and agar powder were added into the boiling water until all the ingredients diluted and mixed well (1 liter). After that the flesh PDA was filled into the flat bottles and sterilized at 121°C for 30 minutes. The sterilized PDA was plated on sterile petri dish. Set PDA were used for mushroom culture selection. For the preparation of sterile sorghum seed, the seeds were cleaned and soak in water overnight before steaming for 30 minutes. The cooled seeds were filled into the flat bootless ($3/4$ of the container) and covered with cotton wool and aluminum foil/paper before

sterilization at 121°C for 30 minutes. The preparation of sterile PDA and sorghum seed with community participation are shown in Figure 2.

The steps of aseptic technique for culturing the mushroom tissue were as follows; 1) disinfect the work area with 70% alcohol and wipe the work area clean, 2) light the alcohol lamp, 3) burn the inoculation loop (wait until it cools down), then use it to transfer the tissue to the PDA, 4) disinfect the inoculation loop by burning again, and 5) check the result of the tissue growing after 48 h incubation. From the workshops, only some people in the community enterprise members can achieve the aseptic technique and correctly conducting it. However, all targeted members can conduct the aseptic technique after repeatedly demonstration. The good culture selection must be done via those mentioned methods by selecting and cutting the good quality mushroom based on the aseptic technique. The mushroom tissues (size 0.5 x 0.5 mm) were plated on PDA and then incubated at room temperature until the mycelium grow. Subsequently, the growth cultures were transferred into the PDA and sorghum seed bottles, respectively (Figure 3).

Besides the improvement of aseptic technique skill, it was found that the member of community enterprise has been gained and realized the importance of improving the working area for having the better results of mushroom culturing. With the university support, the community, therefore, developed their own laboratory in Khlong Jik district (Figure 4).

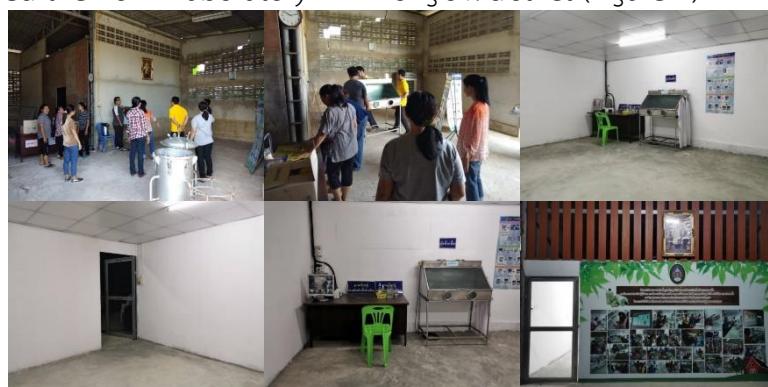


Figure 4: The comparison of working areas for mushroom cultivation before and after receiving the support from Phranakhon Si Ayutthaya Rajabhat University.

The next process was to improve the qualities of mushroom products to the commercialization. The research procedures were 1) community opinion observation (upstream), 2) product improvement, skill improvement, marketing and public relations (midstream), and 3) increasing the income and improving the local business in the community (downstream). Firstly, the seminar for community was conducted in the topic of mushroom product development. Based on the limitations and resources in the community such as community ability and member skills, the recipe of fried mushroom with herbs called “*Snack Hed*” were developed. Its recipe consists of 1) 700 g of dried mushroom, 2) 500 g of palm sugar, 3) 150 g of soil sauce, 4) 2 cups of white sesame, 5) 500 g of kaffir lime leaves, 6) 3 cups of chopped shallot, 7) 100 red peppers, 8) 4 cups of peanuts, and 9) a little palm oil. The process of making *Snack Hed* is as follows

1) Mix shredded baked mushroom, kaffir lime leaves and chopped shallot and corn flour powder before frying all the mixture with the medium heat. When it turns brown, lift it up and let it cool down.

2) Put soil sauce, palm sugar and a little bit of water into the frying pan, and stir it until the texture of the mixture is consistency. Then put the mixture in the first process into the mixed sauce and mix them altogether.

3) After that, bake all the mixture with the temperature of 150°C around 10 minutes, then let it cool down. Finally, put the product in the sealed container with the silica gel.



Figure 5: Mushroom product from Khlong-Jik sub-district community enterprise after receiving the support from Phranakhon Si Ayutthaya Rajabhat University.

In this term, the shelf life of the *Snack Hed* and microbial qualities were determined. It was illustrated that the product's shelf life was 1 month. The physical characteristics and sensorial properties of the product were similar to the sample on day 1. The indicator microbes such as yeasts, molds and other microorganisms were lower than 10 CFU/g. Next, product tag was developed in order to illustrate the uniqueness of Khlong-Jik community, as shown in Figure 5. The details on the tag consists;

- 1) Name of the product called “*Snack Hed*”.
- 2) The logo of mushroom and an amateur woman with cap is rolling the boat in the canal surrounded by Jik trees illustrates the lifestyle of people in Khlong-Jik community.
- 3) The word “ຄລອງຈິກ” is on the tag.
- 4) Back ground is the water mark image of Rachutis pagoda, which is the historical site of Khlong-Jik community located at the front of Wiwekwayupad temple.
- 5) Recipe, producer address, suggestion, contact details and product story QR code.



Figure 6: The marketing channel of the mushroom products

Additionally, the online and offline models of public relation and marketing of the product were developed such as booth in the government and private exhibition. With the university support, Khlong-Jik sup-district community enterprise can sell their products in the weekend market in the university without paying any fee. For online marketing, Fanpage on Facebook called “ວິສາກົງຈຸນຕຳບຄລອງຈິກ – ເທັດຄຣບວງຈຣ” depicted in Figure 6 were developed in order to increase the channel for selling the product.

Apart from improvement of Khlong-Jik community, the research project based on sufficiency economy theory has transformed the community by establishing the mushroom learning center and creating the mushroom

products. The management of Khlong-Jik community has separated all the staff in the group, and each group has its own duty such as mushroom cube producing, mushroom cultivation, mushroom product transformation and making benefit out of old mushroom cube. From these results, many government agencies interested and came to study these activities (Figure 7).



Figure 7: The visitation for mushroom learning center in Khlong-Jik sub-district community enterprise.

From 2019 to 2020, the researcher team of Phranakhon Si Ayutthaya Rajabhat University with stakeholders has continuously conducted the community services in Khlong-Jik community area. With the effectiveness of the management plan of our team and the participation of public and private sectors, the consequence of the community services is receiving the best community enterprise awards in the provincial level, as shown in Figure 8.



Figure 8: The best community enterprise award in the provincial level.

Discussion

Community participation is the key to success which community want to improve. In order to drive the community towards the great improvement, both participation of the people and selection of the worthy community leader are required. Due to Khlong-Jik community located in the industrial area (Bang Pa-In district), participation among people has been one of the hardest things for this community. With the lifestyle of the urban area, most people are the commuters and have not got much time for the community services, so the participatory action research has been quite an issue for the researchers. Most of the people participating in our projects are elderly people because they stay at home most of their time. Based on relationship between the government and the community, the officers have apprehended this issue and tried to connect with the community for making an improvement. The methodology of our participatory action research with Khlong-Jik community is depicted in Figure 1. We found that there are 5 levels of engagement in the community development process for the accomplishment as follows.

- 1) The project planning is the first process building the two ways communication between the community and the researchers to realize the area situation, needs and community uniqueness. In order to improve the ability and the quality of life in the community, the planning process based on the community participation must be understandably conducted.
- 2) Conducting process with the community participation must be carefully implemented.
- 3) Utilizing the results must be executed.
- 4) Beneficial gaining to the community is the process that all the benefits from the community services have been distributed to all people in the community.
- 5) Evaluation process with the community participation is very important in order to assess the collaboration between both results and objectives of all the finishing projects.

The participation theory correlated to the idea of Cohen and Uphoff (1980). There are 4 participation factors which are 1) topic decision making process, 2) conducting process, 3) resource selection and partners' participation process, and 4) evaluation process. Knowles et al (2005) described about the collaboration between human ability and the environment by using former experiences to form new experiences. However, the differences of human intelligence, experiences and interests lead to different translation and new experiences. Therefore, the improvement and the behaviors of each person will be different even they had same experiences in the past. The creativity theory based on learner center and environment collaborating with the research finding of Agrandoff (2007) is the key to extract the tacit knowledge from people and communicate it to others. Similar to James (2007)'s report, who stated that knowledge distribution in the community must be transfer based on trust in the meeting group in order to get the best impact to the community.

With the effectiveness of the management plan of our researcher team of Phranakhon Si Ayutthaya Rajabhat University cooperated with various stakeholders, Khlong-Jik sub-district community enterprise has been awarded to be the best- provincial level community in Phranakhon Si Ayutthaya province. Marshall and Rossman (2016) proposed the idea of combining a practical research with participation for workshop members. Most of the members are acquaintance, so all members will be able to communicate and do all activities with each other. Based on the participatory action research, the workshops about mushroom cultivation and mushroom product development are perfectly achieved and expanded through the community. Therefore, Khlong-Jik community gained all the benefits and the good impacts from our community services.

The finding of this research is the achievement of Khlong-Jik sub-district community enterprise in Bang Pa-In district, Phranakhon Si Ayutthaya province based on the participatory action research. In overall, the Khlong-Jik community was firmly formed and active. Planning, conducting, beneficial gaining and evaluation process have caused the great impact to the

community which are 1) the Khlong-Jik community are well-known, 2) the CBT business is getting better and 3) the people have more income. Based on all great impacts occurred in the community, Khlong-Jik sub-district community enterprise has been awarded to be the best-provincial level community in Phranakhon Si Ayutthaya province.

Body of Knowledge

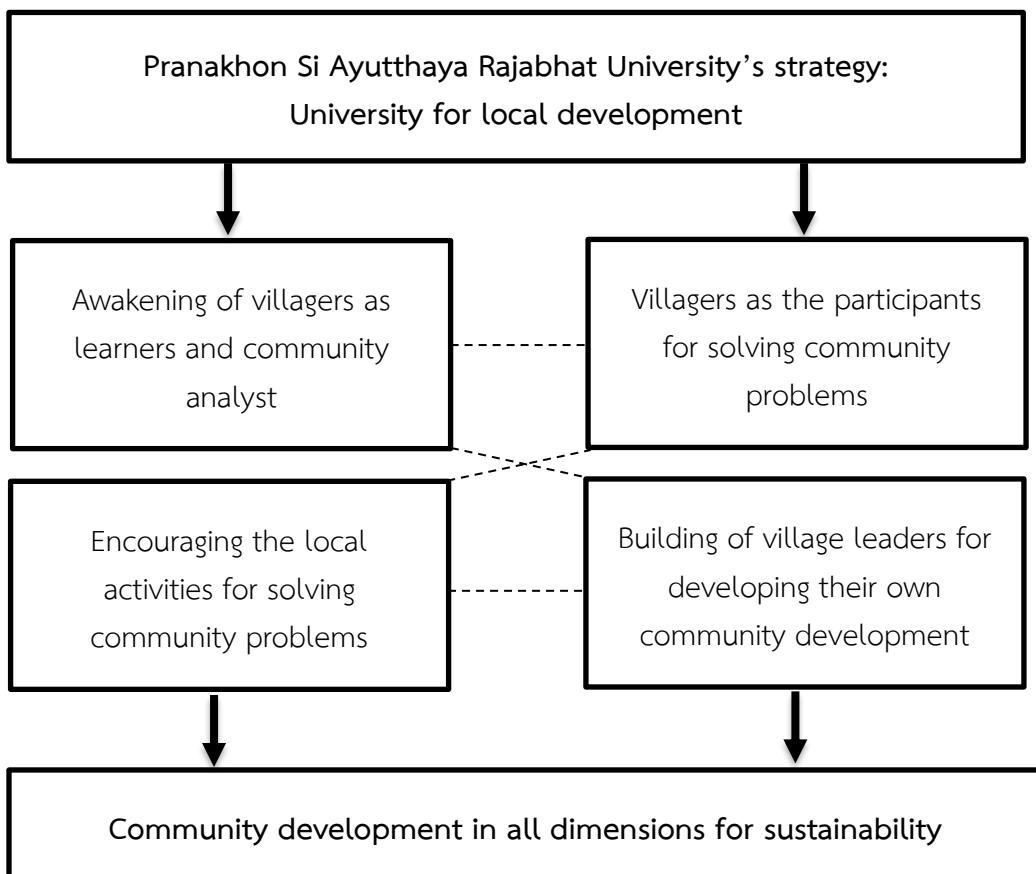


Figure 9: Knowledges from this research.

The participatory action research process will enable the local people? as the target group in the research area to benefit from being part of the study, *viz.* 1) villagers are awake as learners and community analyst, 2) encouraging the activities of villagers for solving the community problems, 3) villagers are the participants in solving community problems, and 4) creating

the villager leaders for developing their own communities (Figure 9). Factors affecting the success of Khlong-Jik sub-district community enterprise are strong community leaders and participation of people in the community in driving to become a learning resource. Finally, Khlong-Jik sub-district community enterprise is use as a good practice for other community enterprises.

Recommendations

From the present findings, policy recommendations for Khlong-Jik community are as follows;

- 1) Establishing the information center or database for efficiency on product selling.
- 2) Supporting the community with fund to improve the product standard by managing the suitable area for the production process in accordance with the Good Manufacturing Practice (GMP) standard or Thai Industrial Standard Institute (TISI).
- 3) Developing new food products from mushroom in order to increase current income and create a new career for local people.
- 4) Improving the CBT management of community researchers in Klong-Jik sub-district area under the local development strategy of Phranakhon Si Ayutthaya Rajabhat University.

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