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## **Development of an Efficiency in Chinese Noodle (Khanomjeen) Production of Koksa-ard Village, Kudtakai Sub-district, Plapak District, Nakhon Phanom Province, Thailand**

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This study was conducted to investigate: 1) general conditions of Koksa-ard community and Khanomjeen production group there; 2) conditions and problems in Khanomjeen production group of the Khanomjeen production group; and 3) a guideline for developing an efficiency in Khanomjeen production of the group by using the participation process. This study employed quantitative research, qualitative research, field survey research, rapid rural appraised (RRA), participatory action research, SWOT analysis, and focus group discussion. Informants in this study consisted of 254 committee and members of Khanomjeen production group. The following were used for data analyses: 1) Quantitative data—percentage, frequency, mean, and standard deviation were employed and 2) qualitative data—descriptive statistics was employed analysis induction, phenomena which had happened, and phenomena which were happening i.e. economic, social, cultural conditions, Khanomjeen consumption, and future tendency of Khanomjeen production activities. Results of the revealed the following:

1. Contexts of Koksa-ard community and the Khanomjeen production group

1.1 It was found that Koksa-ard community was 30 km. to the southwest of Nakhon Phanom city. Ancestors of people there were Laotians migrating to Thailand for seeking a better quality of life. At present, Koksa-ard community consists of 87 households with a total population of 448. Their main occupation is in-season rice growing and followed by hired workers. The following were there sources of supplementary incomes: group forming for Khanomjeen production, mat weaving, plastic basketwork, mushroom culture, and vegetable growing. The community had 2 natural water sources with the water catchment area of 15 rai—adequate for consumption and agricultural purposes. The community had a community forest covering an area of 10 rai and it was a source of natural food. People in the community had inherited traditional arts and tradition from generation to generation.

1.2 People in the community formed a group for Khanomjeen production (254 persons-10.58 shares/person). There were 235 persons selected to the group committee and producers. There was a rotation for producing Khanomjeen 8-10 persons per visit with 30 baht per person for remuneration and Khanomjeen was their lunch meal.

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## 2. Conditions and problems in Khanomjeen production

2.1 Khanomjeen Production, the following were found: 1) old and small place: After the research was finished, it was improved for convenience in operation; 2) equipment and supplies were suitable for traditional production and after the research was finished modern machines were used and firewood was replaced by gas; 3) control of production process was adjusted to be systematic, appropriate, and convenient for operation with good sanitary; 4) after the research was finished, sanitary was emphasized e.g. dressing was in accordance with GMP method and well was replaced by village waterworks; and 5) inconvenience in repairing and maintenance of machines/equipment and it was improved after the research was finished.

2.2 Competency of the Khanomjeen production group: previously, it was group forming among people in the community (5-10 persons) for ritual ceremony purposes as requested. Later on, local community leaders encouraged people in the community to form a production group to alleviate the problem in unemployment and local wisdoms were mostly employed. After the research was finished, however, there were educational trip and demonstration of the method of Khanomjeen production process.

3. Developing an efficiency in Khanomjeen production. It was found that the community needed for developing Khanomjeen production to be a big business or community enterprise. This could be a sideline job which relied on group management which was like that of a cooperative. There was the application of financial form for convenience of group members to ask for a loan. Regarding SWOT analysis based on participation process, the following were found:

1. Strengths, The Khanomjeen production group had topped up the local wisdoms for growth of quantity, quality, profitability, capital, and share in accordance with cooperative form. After the research was finished, there was an increase in the quality of Khanomjeen production.

2. Weaknesses, There was a limitation related to an increased price of production factors. This resulted in an increased price of Khanomjeen and decreased orders.

3. Opportunities, Good quality of Khanomjeen and it was popular regardless of a high price. Order volume was very high during various festivals.

4. Treats, The community was far away from Nakhon Phanom city having an effect on high expenses on input factors and yields. There was market share due to new Khanomjeen production groups. Besides, Khanomjeen was dietary supplement which had short shelf life.

As a whole, the research project was successful in accordance with all objectives in terms of increased quality and quantity, good managerial administration, readiness to be a model and knowledge exchange source. The Khanomjeen production group had production potential to cope with orders. Besides, attractive packaging was developed and the product passed standards set by the Ministry of Public Health.

**Keywords:** x Khanomjeen, Khanomjeen production group, participation process, local wisdoms, development

## Introduction

Human livelihoods rely on the four requisites of life: food, clothing, shelter, and medicine. This is an important issue which the United Nations Development Program (UNDP) had adopted it as a criterion for the assessment of 189 countries in the world community. It is under the Millennium Goals

project (MDG). The assessment criterion consists of 4 aspects as follows: 1) poverty and food security; 2) education and sexual equity; 3) public health; and 4) management of natural resource and environment. All of these are criteria used for the classification of the countries in the world community into 3 groups: 1) developed countries, 2) developing countries, and underdeveloped or less developed countries. This aims to be data for assisting countries in need of assistance and making balance of the world community countries (National Social and Economic Development Council, 2009).

Thailand is a country member of the world community and asks for the assessment in accordance with MDG since the initial stage (2005-2007). The target areas identified include Mae Hong Son, Trang, and Nakhon Phanom provinces due to its 4 aspects of assessment criterion are lower than the criterion as set (Hongmaneerat *et. al.*, 2007). Prior to 2005, most people in Nakhon Phanom province were engaged in agriculture e.g. first rice crop which mainly relied on the rain and they were hired workers for supplementary incomes. Importantly, they wisely exploited existing natural resources and environment in their community. However, it was inadequate due to an increase in population. In the past, these provinces did not have higher education institute which cause lack of social opportunities or most people there were in the cycle of "Foolish, Poor, Painful" (Hongmaneerat, *et.al.* 2007). After the first round of assessment and data obtained from SWOT analysis, Nakhon Phanom province has been developing until it passes the standard criterion due to coordination of all concerned parties. However, it is the holistic matter since some other parts of the province need for promotion and support to be a strong community.

According to a study on Rapid Rural Appraisal (RRA) and Area-based Collaborative Research (ABC) of Koksa-ard village, Moog, Kudtakai-sub-district, Plapak district, Nakhon Phanom province, it was found that people in Koksa-ard village attempted to form a group for the construction of careers for supplementary incomes e.g. Chinese Noodle Production group, plastic basketwork group, and home grown vegetables group which all of these are under the sufficiency economy philosophy. As a matter of fact most people in Koksa-ard village are engaged in farming or agriculture and they mainly grow rice. Some of them form a group for career and additional income purposes. With regards to focus group discussions with the Head of Sub-district Administrative organization and his staff, the organization continually offers assistance to career groups in terms of budgets and group operation. Nevertheless, these career groups still have many problems e.g. production factors, structures, production materials/equipment, packaging, marketing benefit sharing, managerial administration, etc.

Regarding focus group discussion with members of Chinese noodle production group of Koksa-ard village, problems found included group management, production, product development, and marketing restriction. To enhance strength of the community, therefore, the researchers and the sub-district administrative organization proposed the participatory process to the Chinese noodle group for the improvement of quality and efficiency in terms of production factors, production, marketing, and benefit sharing. This will lead to the occurrence of supplementary career or it can be topped up to be the main career. Also, it will have an effect on the development of quality of life as well as strong, stable, and good society.

### **Objectives of the Study**

Specifically, this study aimed to investigate:

1. some aspects of Koksa-ard community context and the Chinese noodle production group;
2. conditions and problems encountered in Chinese noodle production of the groups; and
3. development of the efficiency in Chinese noodle production based on group member participation.

### **Research Questions**

1. What were the traits of Koksa-ard community context and Chinese noodle production group there?
2. What were conditions and problems in Chinese noodle production of the group?
3. What should be a guideline for developing the efficiency in Chinese noodle production in Koksa-ard community based on the participatory process?

## Conceptual Framework

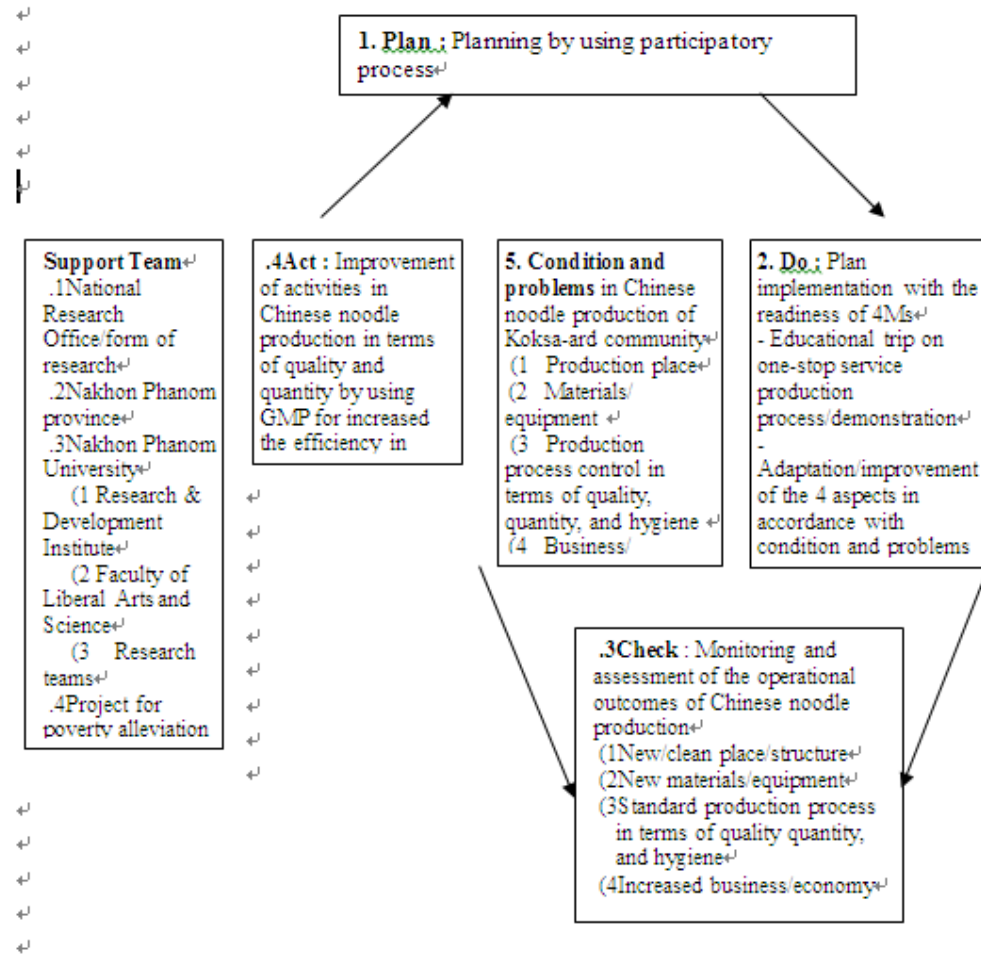


Fig. 1 Research Conceptual Framework

## Research Methodology

### Methodology

This study employed the combination of quantitative and qualitative research. Also, field survey research, Rapid rural appraisal, Area-based collaborative research, and SWOT analysis were employed in this study. All of these would lead to apply obtained data to the improvement and support supplementary career (Chinese noodle production) of people in Koksa-ard

community. In this study, steps under the conceptual framework were as follows:

1. Group forming for Chinese noodle production in Koksa-ard community
  - 1.1 Traits of community context and Chinese noodle production group member.
  - 1.2 Background of group forming
  - 1.3 Purposes of Chinese noodle production
  - 1.4 Operational method of Chinese noodle production group
2. SWOT analysis for finding strengths, weaknesses, opportunities, and threats
3. An analysis of problems encountered in Chinese noodle production and group management
4. Developing the efficiency in Chinese noodle production of the group, Koksa-ard community

### ***Population and Sample Group***

This included members and committee of Chinese noodle production group, Moo 9, Koksa-ard village, Kudtakai sub-district, Plapak district, Nakhon Phanom province (254 persons) – Qualitative research.

### ***Research Instrument***

1. Participatory observation, This involved various activities of the Chinese noodle production group in Koksa-ard community.
2. Questionnaire, It was administered with 254 members of the Chinese noodle production groups. This was related to some aspects of basic condition of Koksa-ard community and the Chinese noodle production group.
3. Focus-group discussion, This aimed to mutually investigate problems encountered in Chinese noodle production of the group. Participatory process and SWOT analysis were employed.
4. Activity holding, It comprised activities enhancing the development of professional skills e.g. training and educational trip, led by successful resource persons in Chinese noodle production and selling.

### ***Data Analyses and Statistical Treatment***

Regarding obtained quantitative data, percentage, frequency, mean and standard deviation were used for the statistical treatment. For obtained qualitative data, descriptive analysis and analysis induction were employed for

the phenomenon which had already happened or were going to happen. This included socio-economic conditions, culture, Chinese noodle consumption and future tendency of Chinese noodle business.

### ***Project Planning***

Implementation plan of each time interval had been set. The following were details shown in Table 1.

**Table 1.** Research questions, methodology, activities, expected outcomes, and date/time

| Research question  | Methodology  | Activities   | Expected outcomes   | Date/time             |
|--|--|--|---|-----------------------|
| 1. What are some basic aspects of Koksa-ard community and the Chinese noodle production group?           | 1. Participatory observation<br>2. Focus group discussion  | 1. A survey on community context   | 1. A database enhancing the strategies of the management of Chinese noodle production as a supplementary career for poverty alleviation and food security of Koksa-ard community  | February–March, 2015  |
| 2. What are problems encountered and guidelines for developing Chinese noodle production groups forming? | 1. Participatory observation<br>2. Focus group discussion  | 1. Investigate background of group forming<br>2. Investigate purposes of project implementation<br>3. Explore basic data of group members<br>4. Explore the method of project implementation of the group<br>5. Explore potential and readiness of the group<br>6. Investigate internal group management<br>7. SWOT analysis<br>8. Analyze problems encountered in the project implementation and group management | 1. Learning exchange and career training center for interested persons both inside and outside the community<br>2. Professional experience training center for students at Nakhon Phanom University (Learning by Doing) | April–June, 2015      |
| 3. How to develop the efficiency in Chinese noodle production e.g. diverse liquid noodles and marketing? | 1. Participatory observation<br>2. Focus group discussion<br>3. Questionnaire<br>4. Activities holding | 1. develop the Chinese Noodle Production group in terms of group management, production, and marketing   | 1. Research & Study network in which RDI/NPU are the centers  | July 2015–March, 2016 |

### ***Output goals and Indicators***

Expected output after finishing the project implementation must be consistent with the research questions and this was classified into 3 months period.

| Time span | Output   | Indicator  |
|-----------|--|--|
| Month 1-3 | 1. Database for supporting the management of Chinese noodle production group in Koksa-ard village. This aimed to alleviate poverty and to construct food security.<br>2. Research/learning exchange and professional practice training center for interested persons both inside and outside the community, Professional practice training center for students at Nakhon Phanom University based on “Learning by Doing”  | Strong group forming<br><br>Strong group forming                       |
| Month 3-6 | 1. Database for supporting the management of Chinese noodle production group in Koksa-ard village. This aimed to alleviate poverty and to construct food security.<br>2. Research/learning exchange and professional practice training center for interested persons both inside and outside the community, Professional practice training center for students at Nakhon Phanom University based on ‘Learning by Doing’<br>3. Research networks in which RDI/NPU and iTAP as the centers | Internal group management for effective and standard noodle production |

### ***Outcome Goals and Impacts***

1. Data on supplementary careers to alleviate poverty and construct food security as well as obtain a strong Chinese noodle production group

2. Research/learning exchange and professional practice learning center based on ‘Learning by Doing’ of concerned personnel, government/private agencies, educational institutes; particularly on Social and Environmental Development students, Faculty of Liberal Arts and Science, Nakhon Phanom University.

3. Research networks in which the community, RDI Research Institute of Nakhon Phanom University, and iTAP project as the centers

4. Quality research team

### **Results and Discussions**

1.1 Koksa-ard community and Chinese noodle production group contexts, Regarding Koksa-ard community context, the following were found:

1) Koksa-ard community was 30 Kilometers to the southwest of Nakhon Phanom city. People there were Laotian ethnic group migrating to Thailand



seeking for a better quality of life. Today, Koksard community comprises 87 households with a total population of 448 persons. Their main occupation is rice growing and they are hire-workers as a supplementary occupation. Besides, people there have formed groups for extra incomes such as Chinese noodle production group, Carpet group, Plastic Basketwork group, Mushroom Culture groups, etc. There are 2 main water sources with a water catchment area (15 rai) for agricultural purpose. The community forest there covers an area of 10 rai as a source of natural food. Besides, community members there have been inheriting traditional arts and culture of the community up to the present.

2) Chinese noodle production group arised from group forming of people in the community with a total 254 group members (10.58 stocks/person). Twenty-five persons were committee members and another 25 persons were Chinese noodle producers. There was a rotation for Chinese noodle production for 8-10 persons each time and with compensation for 30 baht per person. Less than one-half (43.31%) of Chinese noodle production group members were male and the rest (56.69%) were female. Their an average age was 42.35 years. Most of them (70%) were elementary school graduates. More than one-half (60%) of them were group members for less than 3 years. Least stock holding was only 1 stock and most stock holding was 20 stocks. Less than one-half (45%) of them usually joined activities of the groups since they also joined other community activities. Ninety-five percent of them put the importance on activities of the group because it was a participatory process and the rest (5%) was found at a moderate level due to marketing constraints.

#### 1.2 Problems encountered in Chinese noodle production and group management

Traditionally, group forming to produce Chinese noodle occurred in some occasions such as house-building, rice growing and harvesting, creation ceremony, etc. At present, however, it also becomes to be a supplementary career. Results of the study showed some problems as follows:

1) Chinese noodle production, The problems included: 1) old and small production place and the researchers suggested that the Chinese noodle production room should be 6x12x4 square meters in size with a good ventilation system; 2) provision of new equipment and materials for the production of Chinese noodle for 150 kg. and above per day; 3) the hygiene system was in accordance with GMP and certified by Ministry of Public Health (Ministry of Public Health, 2008); and 4) production tools, materials, and equipment were cleaned every day and the production room was also always clean as agreed by all group members.

2) Knowledge and capability in management, The researchers gave suggestions, provided resource persons for demonstration and educational trip

was also conducted. This conformed to a study of Aksaeng and Poomphraphu (2014) on the improvement of the Chinese Noodle Production process in 5 communities of Pathoomrat district, Roi Et province. Findings also showed that Chinese noodle production group members had a limitation of knowledge and understanding about economy and marketing. Thus, there was a training on knowledge management about production cost reduction, inexpensive production factors, standard production procedures, marketing system, appropriate technology using, etc. this also conformed to a study of Wongwirat (2014) which proposed a guideline for solving problems and development of the management of non-toxin vegetable production in Ponyangkok sub-district, Hangchat district, Lampang province, in addition, the researchers contacted resource persons from a sub-district administrative organization and concerned agencies to extend knowledge in various forms e.g. training, seminar, educational trip, etc. and this mainly focused on economic process management and marketing.

3) Needs for assistance of Chinese noodle production group members of Koksa-ard community Finding showed that they needed for support on capital, materials/equipment, machines, and technology on Chinese noodle production most. This was followed by product inspection system, business system on commercial Chinese noodle production, academic knowledge, and supporting media such as manual, C.D., and IT, respectively.

### 1.3 An increase in the efficiency in Chinese noodle production

Due to visions of the past village head and people in the community who wanted to have extra incomes, they decided to form a group to produce Chinese noodle for selling (around 30 kg. per day). In order to develop quantity and quality of Chinese noodle, the researchers had conducted SWOT analysis for development planning. Eventually, the following were found: 1) Strengths—there were the inheritance of Chinese noodle production on the basis of local wisdoms and account preparation in accordance with the cooperative form and with profit sharing; 2) weaknesses—high production costs but local selling price was only 35 baht per kg.; 3) opportunities—the Chinese noodle production group was supported by Kudtakai sub-district administrative organization in which Chinese noodle of Koksa-ard community was one of the OTOP (One Tambon One Product); and 4) threats—a limitation of market due to high production costs. Besides, Koksa-ard community was 30 km. away from Nakhon Phanom city so the transportation cost was high.

Results of the SWOT analysis were used as data for developing the efficiency in Chinese noodle production at Koksa-ard community which focused on the participatory process. This included the construction of buildings, provision of appropriate equipment/materials, educational tour, and

resource person finding. After this development, the production of Chinese noodle could reach more than 100 kg. per day and it was certified by Ministry of Public Health.

### **Suggestions**

1) Management, The Chinese noodle production group should make a plan on production covering all dimensions. Besides, the group must have a method of personnel resource management in terms of increased welfare, compensation and incentives. This can encourage them to fully devote their available time to work for the group and the find knowledge/data which can be applied to group development.

2) Production and operation, The Chinese noodle production group must have a monitoring process on quality of Chinese noodle production related to structure, materials, equipment, raw materials, etc. Also, activities enhancing passion and unity should be held.

3) Finance and marketing, The Chinese noodle production group must make a plan on the construction of financial discipline for group members. Also, financial and marketing management must be accountable or transparent. Group members should have knowledge and understanding about accounting system and basic finance as well as various data. All of these can be used for analyses and planning on project implementation. Besides, a reserved fund should be prepared for liquidity.

4) Maintain in of standard and quality of Chinese noodle production, This includes: 1) provision of good services and product development for competitive potential; 2) customer data seeking; 3) convenient access to distribution channel; 4) attractive public relations; 5) networking/internet/website; and 6) recruitment of professional marketing personnel.

### **References**

- Aksaeng, R. and Poomphraphu, S. (2013). Improving the Process of Chinese Noodle at the Villager level in Five Communities Pathumrat District, Roi Et Province. Department of Agronomy, Faculty of Agriculture, Khonkaen University, Khonkaen Province.
- Hongmaneerat, K. (2007). Management of Natural Resources and Environment, teaching material. Faculty of Liberal Arts and Science, Nakhon Phanom University.
- Hongmaneerat, K. (2014). Project for a Study and Development of the Community Welfare Fund Management: A Case Study of the Community Welfare Fund of Piman Sub-district, Nakae District, Nakhon Phanom Province. Division of Social and Environmental Development, Faculty of Liberal Arts and Science Nakhon Phanom University.

- Ministry of Public Health (2008). Epidemiology Office Department of Disease Control. Project for Survey. Readiness Situation of the Chinese Noodle Production Place in Accordance with GMP. Ministry of Public Health.
- National social and Economic Development Council. (2009). A report on the assessment of Nakhon Phanom Province Development. Nakhon Phanom Provincial Office.
- Wongwirat, K.(2014). A Model of Toxin-free Vegetable Production Group, Baan Cham, Moo 6 Ponyangkok Sub-district, Hangchat District, Lampang Province. Faculty of Management Science, Lampang Rajabhat University, Lampang Province.