



Group and Network Management: Lessons Learned from the Solar Energy Group of Pesticide Free Vegetable Growers in Phutthaisong District, Buriram Province

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Abstract The Solar Energy Group of Pesticide Free Vegetable Growers was organized to collaboratively solve problems and manage a water-sharing system using solar energy and land management to grow pesticide free vegetables. The achievements of the administration of the group and network were truly astounding. Therefore, a study was undertaken to investigate the following: 1) the group and network management, 2) the factors contributing to the success of the group, and 3) the lessons learned and recommendations made for managing groups and networks. Qualitative data were collected from the group chairman, group committees, and 40 group members during an organized forum. Additional data were collected from the group chairman and three committees using in-depth interviews and this was analyzed for content. The results of the study were as follows: 1) The administrative structure of the group was based on community enterprise. The group planned their operations, especially activities in an appropriate production system and special rules for vegetable planting activities to control safety standards. They also followed regulations for water-sharing in vegetable production and met regularly once a month to discuss problem issues and group planning. They raised money from their members to establish funds for the operations and coordinated with other groups and agencies regarding support and joint activities. 2) Factors contributing to the success of the group were: (i) the unity of the members, (ii) the moral of the members, (iii) the self-sacrifice of the group with a patient, knowledgeable, and strong leader, (iv) the facility of joint production, land and water use management, (v) producing vegetables together which created a sense of pride and ownership, and (vi) operating a network and coordinating with outside agencies for support, especially to fill knowledge gaps. 3) The lessons learned and recommendations were seamlessly integrated and assimilated through group management using both informal and formal mechanisms. Knowledge network with information sharing among members derived from direct learning or real experiences through practical problem solving.

Keywords group management, network management, lessons learned, pesticide free vegetable growers, pesticide free vegetable, Buriram province

INTRODUCTION

Due to the critical water shortages which restricted agricultural activities, Phuthaisong Sub-district Administrative Organization collaborated with the Energy Office of Buriram to establish the Solar Energy Group of Pesticide Free Vegetable Growers. The necessity of social learning development was considered with the aim of mobilizing activities to empower negotiability and widen visions and worldviews through the exchange of knowledge, abilities, and experiences to solve problems and develop the effectiveness of the group (Phuttakosa, 2011). The Solar Energy Group of Pesticide Free Vegetable Growers was organized to collaboratively solve problems and manage a water-sharing system using solar energy and land management to grow pesticide free vegetables. The group was adopted by several sectors including government, private sectors, private development organizations, and the interested general public. Once a week, various sectors made study trips to observe the group activities. In addition, the success in overcoming the critical drought experienced by the community became a water management model for others to follow. The collaboration among the group members resulted in several advantages including strengthening the resolve of the people, to build a strong community culture and improving the standard of living and health with safe food to consume in a secure environment without toxic contamination.

The achievements of the administration of the group and network were truly astounding. Therefore, a study was undertaken to examine the process of group administration of the Solar Energy Group of Pesticide Free Vegetable Growers, especially regarding group and network management factors to generate a model for the safe production of pesticide free vegetables. Lessons learned and recommendations for group management and networks were made to promote water management in drought areas through the administration of local agricultural groups.

OBJECTIVES

This research investigated the following issues: 1) the group and network management, 2) the factors contributing to the success of the group, and 3) the lessons learned and recommendations for managing groups and networks.

METHODOLOGY

Research approach: An evaluation research was administered in the case study.

Population / Sample of the research: The research population consisted of the group chairman, committees, and 40 members of the Solar Energy Group of Pesticide Free Vegetable Growers in Phuthaisong District, Buriram Province.

Data collection: The data collection was conducted as follows.

- 1) Forums were organized to assemble the qualitative data from the group chairman, the group committees, and 40 group members.
- 2) Semi-structured in-depth interviews to collect data were conducted with key informants involved in group and network management, including the group chairman and three committees.

Data analysis: The data were evaluated using content analysis.

RESULTS AND DISCUSSION

Background of the Case Study

A brief history

1) Lack of water: The group of pesticide free vegetable growers was organized because of the shortage of water. People in the area require water for daily consumption and little remained for agricultural purposes. Therefore, the Buriram Office of Energy selected Phuthaisong Subdistrict Administrative Organization as a group to join the alternative energy project to propose solutions to

the water problem and increase the income of the people. With support from the Buriram Office of Energy, a project to produce vegetables was initiated using solar energy. The project began with the recruitment of volunteers and 40 interested people. The volunteers held a meeting and formulated a plan for project operations. Initially, 20 rai of wasteland in the community was set aside for vegetable planting. In Phutthaisong, vegetable plantation areas were small and most used a lot of pesticides. Members of the group agreed to plant pesticide free vegetables in the wasteland.

2) Collective investment on groundwater system with solar energy: The project did not have an operating budget so conditions for members to join were established. Members were required to invest some money and become seriously involved in the management processes as well as accepting the risks of loss. As a result, 40 members decided to initiate sustainability of living in this drought area, and they applied for an agriculture credit loan of 20,000 baht for each household to use in the operations of the project from the Bank of Agriculture and Agricultural Cooperatives (BAAC). The 40 members who invested the money were given ½ rai (1.600 Sqm.) of plantation with enough amount of water delivered. The groundwater supply system was operated using solar energy from the available budget. The process began by drilling large boreholes and installing the solar powered system, pumping machinery, water supply network, and a pressure-controlled tank to supply water to the vegetable plot.

3) Formation of the group planting pesticide free vegetables using solar power: The members of the group had planted vegetables since 2011. The project group was supported by many sectors including government, private sectors, private development organizations, and many other interested people. Every week, study trips were organized to observe activities within the project.

Group and network management

The group and network management of the Solar Energy Group of Pesticide Free Vegetable Growers were operated as follows:

1) Specify the structure of administration: The group followed administrative management in the form of a community joint enterprise. The chairman played an important role in group organization. Fourteen group representatives were chosen from 40 households and given responsibility for various jobs such as secretary, treasurer, and assistant treasurer. The remaining committee members were responsible for other jobs within the group.

2) Plan the working process system: The group operated a systematic plan following land management, water management, human resource management, and administration of the production. The group initially set guidelines and prepared an effective production system. They agreed to plant pesticide free vegetables and produce safe food for their community which was harmless to consumers and the environment, and also made their vegetable products unique.

3) Determine the regulations of the group: The group identified the regulations of the project as follows.

3-1) Regulations for vegetable plantation: To control the safety standards and product quality of the group the use of hazardous chemicals and insecticides was prohibited. However, chemical manure could be mixed with farmyard manure. If insects and worms were found in the vegetable plots, then the insects and worms had to be removed as quickly as possible.

3-2) Regulations for water-sharing in vegetable production: Because of the limitation of water, the members could not produce enough vegetable products to satisfy the market needs. Therefore, regulations were set out to control water use through proper equipment maintenance by individuals or the groups. Soil management followed safety standards which prohibited the use of hazardous substances or planting vegetables that required excessive water (i.e., lotus, water mimosa, etc.). Every group member respected the rules and followed them seriously. For example, a timetable of water use for each vegetable plot was set in advance. As a result, there was no problem regarding water sharing.

Data obtained from interviews also revealed that since the first year when the group was established, none of the members had broken the rules. This was because everybody aimed to improve their standards of living and did not want other problems to hinder their community development.

4) Organize the group activities: The group regularly organized meetings. An official meeting was held once a month to discuss any problems and formulate future group planning.

The group members learned together about pesticide free agricultural practices through study visits and training sessions operated by several organizations. The group made organic substances for soil improvement from local commodities, sought and shared seeds, and communally planned the production process so that a variety of vegetables could be sold to suit market needs.

The mixed production of the group consisted of over 70 varieties of vegetables. Before planting, a survey was conducted so that each household grew different kinds of vegetables. The group planted seasonal vegetables which took 14 days to mature. They achieved income of approximately 18,000 baht for each household. During the rainy season there were floods in other areas and the group gained higher incomes. Moreover, the group also collected local vegetable seeds such as Pak Choi Cilantro and local vegetables.

5) Financial management of the group: The group raised money from the members to fund the operations. Each member invested 20,000 baht for installing the groundwater system and solar energy panels. This cooperative management enabled the members to gain advantages with low risks. A study by Kaewpan (2015) regarding the financial analysis of the project showed that investment in solar energy for vegetable production in an area of 20 rais was a low level risk.

6) Networking: The networking is constituted internal and external group networks as follows.

6-1) Internal group network: The group regularly organized monthly meetings as a tool to strengthen relationships. The members also frequently exchanged knowledge socially at the vegetable garden. In other words, this kind of networking allowed the members to learn and do activities together.

6-2) External group network: The group made contact with external organizations related to the field such as the Office of Energy of Buriram, the Phutthaisong Subdistrict Administrative Organization and the Population and Community Development Association of Phutthaisong to ask for help or support in their operations. Also, the group engaged in networking for learning with the Somboon Agriculturist Group, Tamiang, Phanom Dong Rak, Surin, and the Baan Rong Laew Border Patrol Police School, Lahansai, Lahansai, Buriram.

Factors Contributing to the Success of the Group

Factors contributing to the success of the group were as follows.

Internal factors

- 1) The unity of members: The members cooperated in solving problems.
- 2) The moral of members: As mentioned earlier, none of the members broke the rules or regulations. This was because every member desired passionately to develop their standard of living.
- 3) Having a patient, knowledgeable and strong leader
- 4) Having joint production, land and water use management
- 5) Working together which created a sense of pride and ownership of the group
- 6) The members produced products based on their experiences through exchanging knowledge at the vegetable garden.

Group factors

1) Obvious goals: The group members set goals as follows:

1-1) to learn and exchange experiences between members in terms of production, administration, review and analysis of previous problems and solutions,

1-2) to empower negotiability of the group and network with others in production, marketing, bargaining and buying the products,

1-3) to be the center of development for the members and networks, and to promote the members' capacities through organized study trips and meetings to provide and exchange ideas.

2) Upstream, midstream, and downstream management: The group collaboratively managed the land, water resources, production plan for the whole year, and inexpensive innovations for production by volunteers. The group also had a systematic marketing plan, collecting enough crop products for customers' needs, and operating green marketing management by monitoring members' selling following the regulations of the group.

Networking factors

- 1) Having a network and coordinating with agencies for support and especially for knowledge.

- 2) Depending on each other to help and solve problems, such as collecting standard products to sell in the market as a community joint enterprise related to customer requirements. Moreover, their internal management controlled the standard of products, process, and qualifications.
- 3) Having an effective coordinating center. The group had space for discussion and coordinators who effectively offered knowledge or clarified the processes and problems of operations.

Lessons Learned and Recommendations

Lessons learned and recommendations generated from this group management and network of pesticide free vegetable growers using solar energy were as follows.

Natural and formal mechanisms employed

Both informal and formal mechanisms were compatibly employed in group management. Informal mechanisms included chatting in the vegetable gardens and visiting. This allowed members to monitor each other's products and also to discuss problems encountered during work, leading to better ways management. Formal organized meetings were conducted once a month. These mechanisms empowered the group to succeed.

Sharing the same problems through cooperation of the group and network

The drought crisis obstructed the development of the community and reduced their standard of living. Thus, the members cooperated to solve these problems. Cooperation led to achieving many good things, including establishing a group and network system in the community for healthier lifestyles. More importantly, the community now enjoyed a better standard of living, with healthy food and a safe environment free from toxic contamination. Moreover, the water management of the group became the model for other areas facing drought crises. This concept agreed with the ideas of the Health Education Division (2013) that working in a network significantly led the group to achieve its goals through communication techniques and strategies to exchange knowledge and experiences, and cooperate together to increase negotiating power. Networking was not only important for group members to share interests and ideas; it also established interrelationships among groups, bringing the members together to do activities and accomplish team goals.

Knowledge network

The members planted vegetables regularly and had a chance to talk and exchange knowledge and ideas in the vegetable gardens. This led to a knowledge network with information sharing among members derived from direct learning or real experiences through practical problem solving. The members shared knowledge, skills, and experiences to discover correct, feasible and reasonable solutions to their problems (Chareonwongsak, 2015).

Organizing activities among groups and networks to respond to needs and solve problems

The activities were organized concretely and completely to respond to the needs of the members by employing the appropriate technology; this was a major factor leading to group success. Activities within the group were appropriate, and responded to the members' needs, thereby allowing management within the organization without dependence on external factors (Phuttakosa, 2011).

CONCLUSION

The Solar Energy Group of Pesticide Free Vegetable Growers was organized to solve the problems experienced by drought. The administration of the group management and network used both informal and formal mechanisms. The administrative structure of the group was based on a community enterprise. The group planned its operations, especially activities related to appropriate production systems and selected individual members to produce safe food. The group set regulations for vegetable plantations to control and monitor safety standards and the quality of the products. They also followed regulations for water-sharing in vegetable production. The group met regularly once a month to discuss problem issues and group planning. They raised money from members to establish funds for the operations. The group coordinated with various external organizations and agencies for support and organized learning activities through networking.

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