SMART Village
A Sustainable Model for Community Development

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ABSTRACT

SMART Village is a pilot project of an integrated technology transfer to promote participating roles in local community, career development in harmony with village needs, and their local contexts and to follow the Self-Sufficiency Economy philosophy. The project provides a practical tool to develop farmers, agriculture production and necessary conditions though learning process and technology transfer activities. The main concepts are outstanding performance of the communities in order to bring up creative ideas of villagers' self-development to solve entire cycle of their own problems with farming, producing, and marketing of organic agricultural products such as strawberry, stevia, rice and herb. The village groups were set up which they had impact on Sustainability, Management by Grouping, Adding value in production process, Resources and conservation of soil, water, and forest, and Clean and Green Technology application for cleanliness to immunize community sustainability of basic infrastructure with self-support which the words of SMART village stands for.

Keywords: Sustainability, Management, Added Value, Resources, Technology

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1. Introduction

The global economy and food crisis have brought agriculture into high focus and demonstrated that agricultural growth reduce poverty and food insecurity directly by raising farmer’s incomes, increasing in products’ prices, and through creating employment opportunities indirectly. Thai society background is deeply rooted in agricultural community which is still lacks of economic and social stability. It is totally inability to be self-reliant due to poverty. Especially, it keeps repeating cycle of low-priced agricultural products and leads to destroy more natural resources. Importantly, development of a local community requires innovative technology to support every dimension and step of community participation by strengthening knowledge and appropriate technology to solve poverty and debt dismissal. The community is able to produce basic needs; such as food, clothes, shelter, and herbal medicine because of its own land, water, forest, and abundant natural resource in sufficient of not relying on outside factors.

Most of villagers in Sa-moeng District, Chiang Mai’s highland, Thailand are poor and work as farmers (DOAE, 2011)\(^4\), planting rice for household consumption. Strawberry is the main economic agricultural product. Farmers need to develop their agricultural products and community income. The overall existing problems and needs of farmer’s group are to improve product processing including the standardized package which could not meet the market requirement and the lack of supporting markets. Rice and strawberry farming are the main agricultural activities of Sa-meong’s villagers which their main drawbacks i.e. poor quality, high costs, lack of marketing support,\(^5\) and production system. The farmers need more knowledge support, practical and useful technology, and extensively supporting markets, including the package development. The direction of community development is the empowerment of knowledge and local

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wisdom, the use of local resource in harmony with appropriate technology, mixed theory and the core principle of Self-Sufficiency Economy in producing food and agricultural productivity. The most important is to recognize the role of small farmers who are in large numbers to establish food and health stability for the whole country.

SMART Village is a pilot project for continuously developing villages in Sa-moeng District, Chiang Mai’s highland, Thailand to achieve sustainability, based on the King’s Sufficiency Economy Philosophy in order to initiate the village model for human resource development and agricultural productivity through technology transfer, The agricultural products processing will be improved to be clean, safe, and environmentally friendly, to generate more household income and the long term increment of community economy.

**Conceptual Framework**

According to the five core principles, the categories are: (1) Sustainability; (2) Management by Grouping; (3) Adding Value to products and services; (4) Resources; (5) Clean and Green technology; that drive the development of community economy and this will be connected with the local management framework, as figure 1

![SMART Village Model](image)

**Figure 1** SMART Village Model

The Concept of development emphasizes on technology transfer and knowledge management within the farmers and community members in Sa-moeng District, Chiang Mai’s highland, Thailand District to understand the system and product mechanism

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6 Office of the National Economic and Social Development Board. Office of the Prime Minister, 2006: 81-82
such as clean, safe, and standard of agricultural plantation and processing, and environment-friendly production. It will also drive the design and implementation of innovative sustainable mechanisms, exchanging of ideas, perceptions, problems and possible solutions among participant actors (researchers, technicians, change agents and final users) in the planning and execution of concerted development actions and processes.

**Objectives**

1. To transfer technology and product processing, from upstream and downstream, for career building through developing agricultural products quality (strawberry, herbs, stevia, and rice) and get into a process associated with clean and green technology

2. To analyze and assess the performance of villagers, agricultural productivity, and community strengthening, as a model of community development, based on S-M-A-R-T criteria

**Research Area**

The study area were 7 villages in Sa-meong District, Chiang Mai Province which is around 1,002 Square Kilometers. Some areas are partially unused due to mountainous landscape but abundant with wild forest, headsprings, and other natural resources.

**Methodology**

The methodology used was a mixed methods research framework encompassing both quantitative and qualitative methods and measures in this action research. The samples were designed and collected directly from farmers, villagers and youths in Sa-moeng District, Chiang Mai’s highland, Thailand district, Chiang Mai Province, through activities, workshops, training and knowledge development process. The secondary data were reviewed and analyzed from reports and research documentation.

**Sampling Design**

- Data survey and coordination with the target group in study area.

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• Group meeting, discussion, study tour and knowledge exchange between selected group of farmers and activity venue.
• Launch activities of several training and workshop for target group which consist of:
  (1) Good Agricultural Practice (GAP) and organic farming of strawberry and stevia,
  (2) Good Manufacturing Practice (GMP) and plants development
  (3) Clean and Green Technology of product processing and preservation.
  (4) Management by grouping from upstream to downstream in the agriculture production process.
  (5) Adding value to agricultural product, package development and logo design, demonstrating quality development,
  (6) Marketing Promotion & Strategies.
• Summarize the assessment of SMART project based on S-M-A-R-T criteria, including farmers’ performance, agricultural productivity.

Results and Discussion

(1) Learning Outcome of farmers, villagers and youths

The activities focused on training farmers, villagers and youths on agricultural process skills in order to change to better process. They had field trips, attended demonstration workshop, visit practical plantation of drying process, which should enable participants to see their products differently from their previous quality and quantity, the use of energy and allocation of production cost, the needs to develop good quality by driving together as a group of representatives. They were trained and meet together twice a month in field work, guided by facilitators, learning by doing during a whole agricultural season. A preliminary study on the farming situation, showed that farmers start to know each other, learning agricultural planning and explore possible ways of group working of organic to grow a healthy crop and how good hygiene and nutrition can help them grow up healthy. They explore how diversity in food production helps support food security and respect for diversity help strengthen the community. At least 20 farmers,
from seven villages, explore how to develop everything they learned about GAP, GMP and transform to others. The total of 325 targeted farmers have been participated in various training programs and workshop, such as GAP, GMP, packaging, marketing development, online market and a green shop were established as an agricultural trade center for Sa-meong District.

The learning activities includes making pilot GPS map for development of agricultural area in villages. Moreover, the youth empowerment also calls for increased the skills to use that knowledge effectively and increased opportunities for youth participation. The process of knowledge management were conducted many times in various training programs, as stated in guidebook of Putakosa K, (2011)\(^8\) that learning communities is a process improvement, that can increase efficiency, of any organization where people continuously learn and need to create their capabilities.

Agricultural products and processing, based on organic standards and management by grouping, were produced. 1) rice, strawberry and organic products, and 2) drying operation and humidity control for agriculture products, dried stevia and herbal products of thunbergia, laurifolia and Moringa. etc. by energy-saving oven, clean and environmental-friendly technology, including manufacturing process based on GMP and safety food standards. Awareness of the importance towards safe food processing enables farmers, manufacturers, and consumers to understand better about health, agriculture, and ecosystem. The groups have agreed to create their own logos, increase online market, and a green shop where SMART village products could be bought and sold.

The results of this technical transfer project were outstanding performance of the communities in learning process by group participatory actions in co-thinking, co-doing, and self solution in career development managed by grouping together. Added value and quality dried herb products were conducted in alignment with the work on safe and organic oriented agricultural products. These findings support the concept of

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Suebsutho C, (2011) who offered strategies for occupations group development to increase competitiveness, a case study of weaving occupation group, Baan Kew Sub-District, Mae-Tha District, Lampang Province.

(2) Community Strengthening as a Development Model based on S-M-A-R-T criteria

Regarding community economy, by developing agricultural product quality, farmers and villagers have more opportunity to learn, plan, develop together from producing and processing throughout the year. It is essential and consistent to the locals needs income generating, occupation creating from farming the main corps, and bringing knowledge for improving the quality. The farmers do require new agricultural practices and strong network. Without participation and linkages among farmers and villagers in same products, the kind of long term collective action necessary to achieve a sustainable community is unlikely to occur. The best indicator of sustainability is the fact that farmers cooperatives on their own initiative and requested to extend the training to other villages.

The outcome of the project assessment is limited to that, for generating careers and integrated community development emphasizing on human resource and leader development to join activities and lead to a learning process and behavior modification on community reliance was known only within the targeted area and during crop season. Meanwhile, the infrastructure is essential and shall be prioritized first because it is difficult to solve social problems if individual farmers’ problems are still unsolved. The sustainable development concept has proposed the integration development of balance, environmental preservation along with economic development by having an individual for the center of developing the community economy, natural balance, peaceful society where people help each other.

The change of communities were learning exchange, empowering knowledge and building the opportunity for everyone to learn and self-develop continuously. The

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community participation also create coordination between local organizations and government units. This finding support the concept of Chitanon S. (2006)10, who has proposed the integration development of balance, environmental preservation along with economic development, natural balance, peaceful society where people help each other. The achieve factors are to lead people to have their own professional community leaders who have wide vision and able to know how to changes and develop themselves, the same as Wongwirath's concept (2011) 11, which has studied about the management of organic farmers, found that group leaders who are knowledgeable and being supported by the organizations and government sectors are the factor which is supporting the group management by using the principle of participatory grouping management, including having representatives in a committee.

The assessment of technology transfer achievement into the community economy is necessary to consider the important indicators which consist of progress, efficiency, effectiveness, impacts, relevance, sustainability, and equity. The scale of transformation needed demands new concepts, new ideas, new ways of engaging citizens and opinion leaders in the search for solutions. However, as an idea sustainability has been used and continues to be powerful, the concept of sustainability is widely recognized and discussed.

At present, five occupation groups from three villages were formed up where impact on Sustainability, Management by Grouping, Adding product value, Resources and conservation of soil, water, and forest, and Technology application for cleanliness to immunize community sustainability of basic infrastructure for the green innovative future with self support which the word of SMART village stands for development plan of Sa-moeng District, as figure 2

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11 Wongwirach k. (2011) Model of Occupation Agriculturist Group Banjam Moo 6 Pongyangkok region Hang chat district Lampang province, Faculty of Management Science Lampang Rajabhat University
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Figure 2 Web diagram represents the score of “S-M-A-R-T”, five indicators.

The development of community potential at village level to sustainable strength is necessarily to integrate all areas of work and receive cooperation from all stakeholders, government sector, private sector, local institutes, and grassroots. The community sustainability was developed through application of Sufficiency Economy Philosophy, a guide of development based on moderation, reasonableness, and social immunity, one that uses knowledge and virtue as guidelines in living which lead to real happiness in life. Communities in the project creatively set up the network to join and exchange the learning to gain knowledge and to initiate online internet marketing. Farmers and villagers have the right and equal opportunity to receive information and no gap of knowledge development both in and out of training programs.

For every dimensional development which is so-called economic dimension has initiated the balance of the economic development and stable foundation and the development of capability limitation in the self-reliance competition in line with the principle of the Self-Sufficiency economy which remains traditional path of lifestyle, culture, local wisdom, and religious institutes which will have created a newly integrated society and has impact for the changes of desirable community development by recognizing value of energy, soil, water, and forest. There shall be recovery and preservation of natural resources and environment in technology development and green and safe energy to be applied.

Conclusion
The SMART village model approach is based on experiential learning, whereby farmers learn good agricultural practices through observing, reviewing and making decisions. Knowledge and skills not only empower them economically, but also help them become responsible citizens with positive values regarding cultural and tradition. Many kind of activities are used when exploring sensitive issues such as psycho-social problems, rights and roles because they help to build trust, explore risks, solve problems and develop more equity. The villagers and farmers, the key drivers for changes, were trained more skill, received more knowledge and opportunities to access information. Governments, communities and businesses have all responded to the challenge of sustainability to some extent. Public awareness of environmental and social issues in development are in many cases now well developed. Farmers and young generation tend to feel that the quality of the environment is important both to their own well being. The green business has grown up in corporate with social responsibility.

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