TOKYO METROPOLITAN UNIVERSITY

Sustainability of Rural Tourism in Thailand:
A Comparative Analysis of Remote Area and Urban Fringe Area

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BY
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CONTENTS

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ABSTRACT

In Thailand, community-based tourism (CBT) has been used as an important tool for economic revitalization and poverty elimination in over 150 rural communities both in a remote and an urban fringe area, which is associated with the philosophy of "sufficiency economy" (SE) applied in agricultural practice in terms of "sufficiency economy agriculture (SEA)," and the national campaign titled "one *tambon*, one product (OTOP)." It is assumed as a model for sustainable rural tourism development in rural Thailand, which has never been evaluated its performances in overall.

To analyze the sustainability of rural tourism, the sustainability indicators are employed as devices to help people understand themselves and what they want in sustainability development. This paper, therefore, aims to develop the sustainability indicators within a created conceptual framework for measuring the implementation of the model and analyzing its sustainability with discussion on factors influencing the success or failure for tourism development of two case studies: a remote and an urban fringe community. Mae Kampong village in Chiang Mai province, is a case of remote rural tourism community, and Bang Nam Phueng village in Samut Prakan province, is an urban fringe rural tourism case study. Mae Kampong is an upland village in northern Thailand, where the forest tea called *"miang"* has been cultivated to produce the traditional chewing gum for a century, and currently commoditized for rural tourism. This unique natural and cultural resource has been used as an opportunity-based approach to initiate and promote rural tourism in the community. Bang Nam Phueng is an urban fringe village of the Bang Kachao area, the Bangkok metropolis, where the floating market called "*taladnam*" has been established after the restructuring of urban farming due to economic crisis, and promoted as a rural tourism attraction close to the city by a strategy of problem-based approach.

The development of sustainability indicators for measuring rural tourism performances of the case studies, employ a conceptual framework emerging from the elements of five community capitals: natural, social, human, financial or built, and cultural capital. These capitals are generated from rural tourism, which lead to the dimension of sustainability development: economic, social, environmental, and institutional sustainability. The sustainability indicators were developed via a Delphi technique, which is employed to collect the opinions of tourism experts who cooperate with the community of the case studies (i.e., community developers, Tambon (sub-district) Administrative Organization officers, researchers, and company and NGOs staff) and local people (i.e., community leaders and committees). After two rounds of the Delphi technique, finally 22 of the 112 candidate indicators were chosen. They consist of 12 CBT indicators, 4 OTOP indicators, and 6 SEA indicators. The selected indicators are used to measure and manifest the real performance of the case studies. The analysis of data from the 22 selected indicators, which collected by household questionnaire surveys, and tangible and intangible evidences indicates that

the overall rural tourism development underpinning the model of the cases is potentially sustainable (Mae Kampong $\bar{X}$ = 5.95 and Bang Nam Phueng $\bar{X}$ = 5.22).

However, when considering performance outcomes of each element of the model, there have been interesting factors affect those successful development and risk to achieve unsustainable. CBT management in Mae Kampong and Bang Nam Phueng is potentially sustainable ($\bar{X}$ = 6.42 and 5.50). Factors that corroborate the achievement of sustainable community-based tourism in Mae Kampong comprising increased numbers of tourist and tourism income from tour programs, high level of local and tourist satisfaction, standardized homestay management, varieties of ecotourism activities, planning land use for recreation and tourism carrying capacity, knowledge and skills concerning tourism management, accepted community leaders, and high level of community participation of locals. However, one of the factors that may result in achieving unsustainable development is uneven tourism income distribution. Factors influencing the sustainability of CBT management in Bang Nam Phueng are associated with an increased tourism income from the floating market, high level of local and tourist satisfaction, standardized homestay management, varieties of ecotourism activities, planning tourism carrying capacity, strong community leaders and community participation of locals. However, there have been four factors considering as a risk management to achieve unsustainable of development. Those comprise of a fluctuated numbers of tourist, uneven tourism income distribution, lack of recreational land use plans, and few trained persons in tourism support.

Considering on OTOP, Mae Kampong is potentially sustainable ($\bar{X}$ = 5.00) but Bang Nam Phueng is potentially unsustainable ($\bar{X}$ = 4.75). Although the mean score of Mae Kampong indicates a good performance of product management, it differs not much from Bang Nam Phueng's performance. Thus, it should consider the risk factors toward this implement. Factors affecting unsustainable management of OTOP in Mae Kampong and Bang Nam Phueng are focused on net benefits and product development due to low quality and unattractive packages.

For implementing SEA, the performance is potentially sustainable in both Mae Kampong ($\bar{X}$ = 5.67) and Bang Nam Phueng ($\bar{X}$ = 5.00). The strength of sufficiency economy agriculture in both villages appears from the stability of deposit or capital in the community's financial institutions, reducing cost of living by self-growing vegetables from households' kitchen gardens, and organic substance uses in agricultural practices. However, the nexus of sufficiency economy agriculture that should be discussed is health and community welfare. People's health in Mae Kampong village tends to be potentially unsustainable toward rural tourism development because of the consumption of non-organic food purchased outside their community to provide for tourists. As a result, the community takes the advantage opportunity of the community-based health tourism project to promote growing organic vegetables for self-consumption and distribution for homestays. Inequality receiving community welfare generating

from tourism benefits is a critical issue of Bang Nam Phueng village which should be extremely considered toward this circumstance.

Consistent with these factors, they affect the sustainability of each element of sustainable development. First is the economic dimension, Mae Kampong village is potentially sustainable ($\bar{X}$ = 5.33), while Bang Nam Phueng village is potentially unsustainable ($\bar{X}$ = 4.83). This is because the financial capital stock derived from OTOP's income has a tendency to continually decrease due to lack of supply and demand-driven forces. Second, the socio-cultural sustainability is potentially sustainable in both Mae Kampong ($\bar{X}$ = 5.83) and Bang Nam Phueng ($\bar{X}$ = 5.33). Third, the environmental dimension is potentially sustainable in both Mae Kampong ($\bar{X}$ = 6.60) and Bang Nam Phueng ($\bar{X}$ = 5.80). Last, the institutional dimension, Mae Kampong village manifests the potentially sustainable trend ($\bar{X}$ = 6.20) which differs from Bang Nam Phueng that seems to be potentially unsustainable ($\bar{X}$ = 4.80) due to low of local participation in tourism training caused by urbanization.

In overall, rural tourism development in the case studies trends to achieve the sustainability although the approach of development is different. Mae Kampong village takes the opportunity-based approach to promote tourism and obtains 18 strong tourism performances from the evaluation. On the other hand, Bang Nam Phueng takes the problem-based approach to achieve a tendency of sustainability development considering by 13 strong tourism performances. However, unless consideration in some weak performances, tourism management may risk to achieve unsustainable development, particularly the quality of OTOP products and tourism income distribution, which are the same problems occurring in both communities.

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I. Introduction

In the first chapter, the research background including the purpose of this study, a general context of sustainability indicators with conceptual framework for measuring sustainability of rural tourism, and research methodology are described.

1. Research background

Since the Rio Earth Summit in 1992, sustainable tourism management has been advocated to apply in all forms of tourism (Mahdavi et al., 2013), which take environmental, economic, and social sustainability into account (Cawley and Gillmor, 2008). Particularly rural tourism, which adopts sustainability practices (Melson, 2012), is becoming more involved in ensuring that the visitors do not adversely affect the environment or host community (Briggs, 2001). Rural tourism is not just farm-based holidays but also comprises special interests in nature holidays and ecotourism, sport and health tourism, educational travel, cultural and heritage tourism, and in some areas, ethnic tourism (Irshad, 2010).

In Thailand, rural tourism is currently moving toward merging with community-based tourism (CBT) in over 150 villages around the country (CBT-I, 2011). CBT has been used as an important tool for poverty elimination in rural communities since the Asian economic crisis in 1997. Because of the crisis, His Majesty the King Bhumibol Adulayadej has reiterated the philosophy of "sufficiency economy" (SE) to recover the economy and sustainability development. Later in 2001, the former prime ministry Taksin Chinnawatra has advocated this philosophy into practice with the project "one *tambon* (sub-district) one product" (OTOP), the adopted idea of "one village one product" (OVOP) from Oita prefecture, Japan. This movement has been progressed in community-based tourism in order to extend the distribution channel of OTOP products known as "OTOP tourism village." In 2008, the Ministry of Interior has encouraged the rural communities to apply sufficiency economy into practice, particularly in agriculture which is called *"kasetpopieng"* or "sufficiency economy agriculture (SEA)" by establishing the sufficiency economy village role model project.

As a consequence, rural tourism movement in Thailand can be divided into 3 stages of sustainable rural development, which initiated with CBT at the first stage, the OTOP project underlying CBT at the second stage, and the application of sufficiency economy in agriculture at the third stage. Three stages of development can be assumed as an integrated rural tourism model in rural Thailand (Fig. 1-1), which aims to mitigate the poverty in rural areas and leads to achieve the sustainability of rural development. Addressing on the terms of sustainability, implementing a rural tourism model requires system managers to measure progress and assess the system health by using indicators (Miller and Twinning-Ward, 2005). Sustainability indicators (SIs) based on local data provide a practical method to monitor progress towards movement of sustainable rural development (Reed et al., 2006). Through this notion, implementing the integrated rural tourism model, which is associated with CBT, OTOP, and SEA, should be extremely evaluated its sustainability.

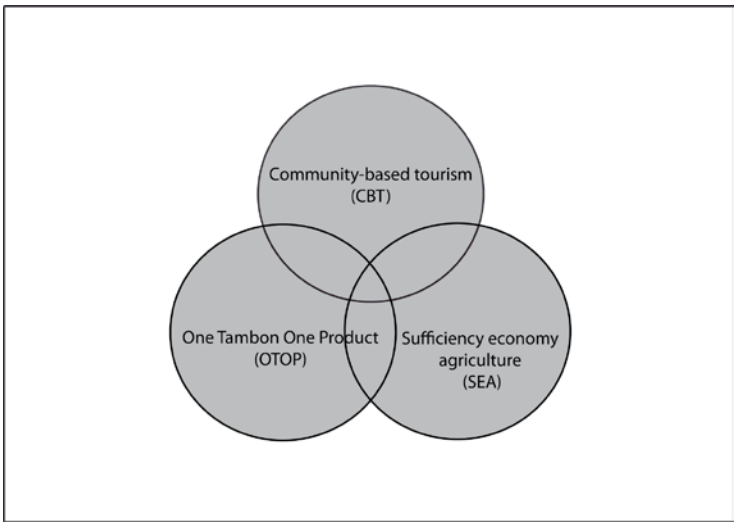

Figure 1-1 An integrated rural tourism model in rural Thailand

To evaluate the integrated rural tourism model in this study, two rural tourism villages have been selected as representatives of a remote and urban fringe community, which manage tourism underpinning three elements of the model, CBT, OTOP, and SEA. Mae Kampong village is a representative of those remote rural tourism communities in Chiang Mai province, and Bang Nam Phueng village, one of the Bangkok metropolitan fringe communities has been chosen to examine its tourism performances.

Focus on Mae Kampong village, Sangkakorn (2008) has assessed the standard of CBT implementation and benchmarked with other six rural tourism villages in Thailand (Mae Klang Luang, Pha Nok Kok, Plai Pong Pang, Huay Hee, Uom Yoam, and Huay Mae Sai village). The assessment comprises six criterion with 33 indicators: organizational structure and community participation (4 indicators; grouping stakeholders, proportion of villages involved in community tourism, ability to contact village about tourism, and benefit sharing); marketing (5 indicators; brochure, website, publicity, marketing team, and fee); product development (6 indicators; tourist activities, hospitality, homestay service, tour guide skill, community and souvenir shop, and application of local knowledge); safety and sanitation (4 indicators; security, travel safety and convenience, public restrooms, and parking); environmental management (7 indicators; attractive environment, land use planning, solid waste management, water quality management, noise disturbance management, environmental conservation practices, and preservation of natural environment); and homestay management (7 indicators; house selection for homestay, house structure, housing area, bedding, bathroom, water supply, and food containers). Among those villages, Mae Kampong has most successfully developed a high quality CBT standard. The village is situated in an appealing natural environment for tourists; the local residents participate in soundly managing their tourism product through a village tourism committee; marketing includes websites and brochures; offers a variety of local products; and received the “Thai Standard Homestay” award from the Ministry of Tourism and Sports of Thailand.

For Bang Nam Phueng village, the Community Development Department, Ministry of Interior has measured “gross village happiness (GVH)” as one of the sufficiency economy village role models in Thailand. The measurement consists of six criterion with 22 indicators: economy (3 indicators; job stability, income distribution, and career extension activities); community management (5 indicators; institutional relationship, community administration, supported organizations, communication and learning, and cultural conservation); environment (4 indicators; housing, safety, sufficient infrastructure, and abundance of natural resources); governance (4 indicators; human right, social responsibility, good governance, and problem solving and solidarity); family (3 indicators; family relationship, child care, and senior care); and health (3 indicators; health knowledge, mind health, and life value). The village has achieved high scores (98.5 from 100), which indicates the successful development based on sufficiency economy (Plate 1-1).

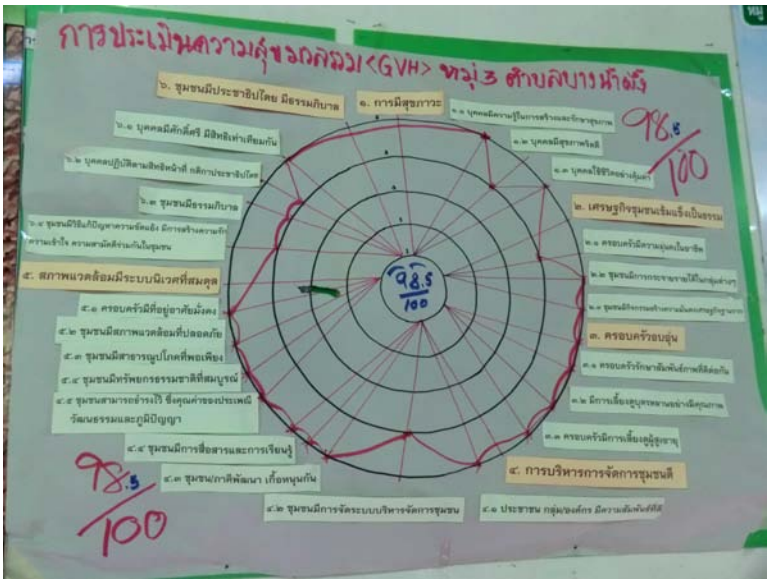

Plate 1-1 GVH measuring score in Bang Nam Phueng village
Taken by the author, September 2013

Although, both of Mae Kampong and Bang Nam Phueng village have been evaluated some aspects concerning sustainable rural development, the evaluation of sustainability of rural tourism covering all elements of the integrated rural tourism model has never been conducted and verified the achievements obtaining from the model. As Phillips and Pittman (2009) state, the evaluation helps communities to develop, evolve, and improve in a constantly changing environment, evaluating sustainability of rural tourism, therefore, is a crucial process of community development.

To help make rural tourism more sustainable, the communities need tools that can both measure and facilitate progress toward a board range of social, environmental and economic goals (Reed et al., 2006) due to lack of monitoring tools, the term of sustainability is meaningless (Butler, 1998 site in White et al., 2006).

As such, the "sustainability indicators" as they are a tool (Ceron and Dubois, 2003 site in Miller and Twining-Ward, 2005), are prerequisite to be developed. Thus, this study involves the process of developing sustainability indicators, which can be used for measuring sustainability and benchmarking the outcomes of rural tourism management based on the integrated rural tourism model in both the case of remote area and urban fringe area. The sustainability indicators in this study are developed by a top-down and bottom-up approach within the conceptual framework based on the community capitals identified by George (2009). With this reason, the procedure of sustainability indicators development in this study differentiates from previous studies. The developed sustainability indicators may be further adapted in other Thailand rural communities where the integrated rural tourism model (CBT, OTOP, and SEA) is implemented.

2. Research objectives

This study aims to measure the sustainability of rural tourism management in a remote and an urban fringe community. Sustainability indicators were used to determine outcomes of tourism development based on three elements of an integrated rural tourism model: community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA). The factors influencing the sustainability development on each element of the integrated rural tourism model would be discussed for a comparative case study. This comparative study is not intend to frame one case study as better or worse than another, but rather, to help local residents and policy makers understand the current circumstances of their development. The contributions from this analysis also introduce some consideration issues in relation to strategic planning to stakeholders. Furthermore, the developed sustainability indicators from the preliminary step of this research are expected to be conducted into other rural tourism communities.

3. Sustainability indicators for measuring sustainability of rural tourism

In order to measure the sustainability of rural tourism in the case studies, the sustainability indicators as an important tool for conducting this study is a prerequisite task to be developed. In this chapter, literatures concerning the development process of sustainability indicators have been reviewed and involved to be identified a conceptual framework and research methodology for this study.

3.1 Overview of sustainability indicator

The adoption of the principles of sustainable development to tourism has become widely accepted as embracing environment, cultural and economic elements (Newsome et al., 2002). There is general agreement in the literature that one of the main obstacles to attaining sustainable tourism is the difficulty in measuring the sustainability in the tourism destination (Fernandez and Rivero, 2009) and developing meaningful indicators of sustainability is never likely to be easy (Smith, 2002). Over the past decade, the key issues in sustainability for tourism and the means by which indicators can support better decisions and actions. The

development and use of indicators is increasingly viewed in tourism planning and management. Sustainability indicators are measures of the existence or severity of current issues, signals of upcoming situations or problems, measures of risk and potential need for action, and means to identify and measure the results of actions (UNWTO, 2004). In addition, they can also facilitate community capacity building and identifying sustainable development goals and suitable management strategies (Schianetz and Kavanagh, 2008). The term "indicator" has a technical, which conjures up assumptions of numbers and statistics (Bell and Morse, 2006). In sustainability indicator (SI) literatures, characteristics of a good indicator should meet the following criteria (Bell and Morse, 2006: Whit et al., 2006: European Commission, 2001: Sirakaya and Choi, 2006):

- Measurable (implies that it must be a quantitative indicator, can be used to collect available data)
- Usable (practical and easily interpreted)
- Participative process (meets the needs and interest of target audience)
- Relevant (relate to local, regional, national policy and to local concerns)
- Specific (clearly relate to outcomes)
- Sensitive (must readily change as spatial and temporal change)
- Reliability (can be used over time)
- Economically viable (cost-effective, not expensive task to access the data)

The number of indicators adopted in measuring sustainability seems entirely arbitrary and example range from as few as ten to one hundred or more (White et al., 2006). Hart (cited in Miller and Twinning-Ward, 2005) suggests that the number of indicators that a community selects depends on the size of the community, the number of critical issues, and the resources available to track and report on the indicators but the final list should not be so short that critical problems or areas are overlooked or so long that measuring and reporting them on an ongoing basis is an overwhelming task. Sustainable tourism indicator programs have been generally more successful in limiting the number of indicators used (Miller and Twinning-Ward, 2005) and simple and easy to interpret in order to make them useful for policy-decisions (European Commission, 2001). For example, Park and Yoon (2011) develop 33 indicators used in measuring sustainability of rural tourism in Korea, Partalidou and Lakovidou (2008) identify 17 indicators to evaluate quality standards for rural tourism management in Greece, Kuo et al. (2010) employ 50 indicators to collect data on evaluating the Eco-inn, the environmentally friendly accommodation in Taiwan' rural areas, Rojchanaprasart et al. (2013) develop 16 indicators for measuring sustainability of coastal community-based ecotourism in Trang province, Thailand, and Jitpakdee and Thapa (2012) consider 9 indicators for sustainability analysis of ecotourism on Yao Noi island, Thailand.

Sustainability indicators are selected from either top-down (expert-led) approaches or bottom-up approaches. Indicators that emerge from top-down approaches are generally scrutinized by experts and assessed for relevance using statistical tools. However, this sort of approach often fails to engage local

community. Indicators from bottom-up approaches, which focus on the local context is derived by local perceptions of environment and society. This sort of approach offers the opportunity to enhance community capacity for learning and understanding (Reed et al., 2006).

Types of indicators

There are different types of indicators, each with different utility to decision-makers.

- early warning indicators
- indicators of stress on the system
- measures of the current state of industry
- measures of the impact of tourism development on the biophysical and socio-economic environments
- measures of management effort
- measures of management effect, results or performance

An indicator can be applied in practice only if there is a feasible mechanism to measure it. To find the adequate measures is critical in the design and use of indicators, considering that the data gathering and processing must be technically and economically feasible. A certain indicator can have different alternative and complementary methods of measurement and can be portrayed in different forms of quantitative and qualitative measurements.

Quantitative measurements are portrayed in forms of raw data (e.g., number of tourists), ratio (e.g., ratio of the number of tourists to local residents in high season), and percentage (e.g., % of waste water receiving treatment). Qualitative measurements are forms of category indices which describe a state or level of attainment on a graded list (e.g., level of protection of natural areas according to the IUCN index), normative indicators which is related to existence of certain elements of tourism management and operation (e.g., existence of tourism development plan, “Yes” or “No” questionnaires of evaluation in certification systems such as existence of zoning), nominal indicators which are in essence labels (e.g., a standard homestay certification), and opinion-based indicators which are normally based on questionnaires and may be expressed as numbers or percentages (e.g., level of tourists’ satisfaction or level of satisfaction of local residents relative to tourism).

Components of sustainability indicators

The problems associated with constructing composite indices of sustainability have focused on setting indicators, which can be applied to the different components of sustainability. To being objective and usable, indicators need to be holistic, covering environmental, social, economic and institutional aspects of sustainability (Fig.1-2) (Smith, 2002 ; Reed, 2006).

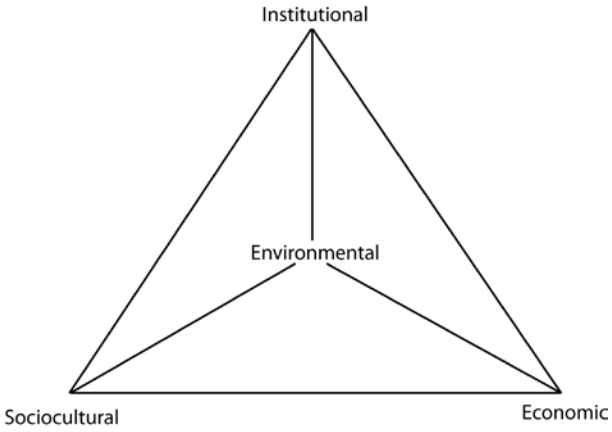

Figure 1-2 Four elements of measuring sustainability

Environmental indicators

Environmental indicators include: (1) measures of resource use or depletion, (2) measures of ecosystem health and risk, and (3) measures of the impact of environmental conditions on human welfare. Measures of resource use or depletion address the use of both renewable (e.g., water, soils, and forests) and non-renewable resources (mineral), which are often linked to an economic sector. Measures of ecosystem health and risk identify indicators of the pressures or risk that threaten the viability of particular ecosystems such as population and livestock densities, infrastructure and industrial pollution. Measures of the impact of environmental conditions on human welfare focus on health and human wellbeing such as housing condition, noise in the workplace.

Social indicators

Social indicators are a crucial component in measuring sustainability, both as pressures on the state of environment (e.g., number of cars, leisure activities) and as responses to environmental conditions in terms of conservation. A range of social indicators sustainability ranging from population growth rates, literacy rates, the availability of basic sanitation, levels of immunisation against childhood diseases, and infrastructure expenditure per capita.

Economic indicators

Economic indicators reflect the need to shift from conventional measures of economic wellbeing, which may encourage resource consumption, to indicators which measure the underlying resource base on which growth in GNP depends. Such indicators range from measures of the costs of water and air pollution, fuel and irrigation subsidies, to money evaluations of critical natural resources, and the value of social cohesion.

Institutional indicators

Institutional indicators are measures of those rules and arrangements that structure political decision-making and shape behavior. Such indicators specify the institutions concerned, including legal arrangements, financial institutions, community groups, indigenous authorizes and schools. Spangenberg et al., (2002) divide institutions into institutional orientations (norms), institutional mechanisms (procedures, legal norms) and organizations. Williamson (site in Brousseau at el, 2009) classifies institutions into four social levels. The first level is composed of norms, customs, moral and traditions, which are difficult to monitor. The second level is qualified as "the institutional environment," which includes the executive, legislative, judicial, and bureaucratic functions of government as well as the distribution of powers across different levels of government. The third level is "where the institutions of governance are located" with a focus on the governance of contracts. The fourth level deals with the governance of resource allocation.

3.2 The development process of sustainability indicators

The methodology for sustainability development is a phased approach that results in operational indicators for a destination. The UNWTO (2004) divides the development process of sustainability indicators into three phases: initial phase, indicator development phase, and indicator implementation phase as shown in Table 1-1.

Table 1-1 Sustainability indicator development process guided by the UNWTO

Development stages	Indicator development process	Explanation
Initial phase	1.Identification of community sustainability goals	Wide consultation and community participation (e.g., surveys, focus groups, meeting) to establish broad-based stakeholder defined sustainability goals.
	2. Scoping	Determine target audience; consider spatial and temporal bounds; include institutional partners; establish relevant number of indicators.
	3. Choose indicator framework	Select a framework that maximizes ability of indicators to assess progress towards sustainability.
	4. Define selection criteria	Indicator selection criteria should be based on community values and sustainability goals determined through stakeholder involvement.
Indicator development phase	5. Identify potential indicators	Use existing indicators lists as a guide and stakeholder input to refine listing to what is potentially viable.
	6. Select final indicators	Apply framework and selection criteria to select final set.
Indicator implementation Phase	7. Collect necessary information	Collect data on each indicator-this may involve both quantitative and qualitative techniques.
	8. Analyze indicator results	Compare indicator values and trends to specific target levels based on community sustainability goals.
	9. Report indicator results	Report indicators to target audience e.g., through the use of amoeba diagram and solicit feedback.
	10. Review indicators	Over time indicators may need to be adapted to any system change, abandoned altogether and new ones adopted.

Ko (2005) developed the procedure for tourism sustainability assessment into eight steps: identifying the systems; identify dimensions; identify indicators; scale the indicators; determine gradations of sustainability; develop SAM; extend sustainability overtime; and evaluate the outcomes (Table 1-2).

Table 1-2 Conceptual framework for tourism sustainability assessment

Society	1.Systems	2. Dimensions	3. Indicators	Information Requirements (to assess the three elements of STD objectives)	Data gathering methods	4-8.Data analysis methods
	(A)The human system	(a) Political		Tourism's contribution to needs of local residents	Household questionnaire survey of local residents	Determine scale of indicators
		(b) Economic				Determine gradations of sustainability
		(c) Socio-cultural				Develop sustainability assessment maps (SAMs)
		(d) Production structure		Tourism's contribution to needs of tourists	Street (site or visitor) questionnaire survey of tourists	Extend sustainability over time
	(B) The ecosystem	(e) General environment impacts		Tourism's contribution to needs of the natural environment	Delphi technique (or in-depth interviews, focus group interviews) of environmental experts/groups	Evaluate the outcomes
		(f) Ecosystem quality				
		(g) Biodiversity				
		(h) Environmental policy and management				

Source: Ko, 2005.

1. Identifying the systems – the human system and ecosystem

The human beings are an integral part of the ecosystem, society, including a tourist destination, is to improve and maintain the well-being of people and ecosystem. Therefore, tourism sustainability assessment needs to simultaneously examine the human system and the ecosystem.

2. Identify the main dimensions – eight dimensions for sustainable tourism development (STD)

Sustainable tourism development (STD) is unlikely to be achieved unless the dimensions in a tourist destination are sustainable. Eight dimensions are suggested. The human system includes the political;

economic; socio-cultural aspects; and production structure (the quality of services and products for tourists), while the ecosystem consists of general environmental impacts; ecosystem quality of water, land and air; biodiversity of flora and fauna; and environmental policy and management.

3. Identifying the main indicators – indicators for sustainable tourism development

Indicators for measuring sustainability of tourism development can be developed from eight dimensions for STD as sustainability indicators (SIs). The indicators can also be derived from extensive literature on positive and negative impacts. The WTO also has developed a group of indicators for STD, although they focused on ecological dimensions. In relation to assessment of the needs of tourists, factors impacting on tourist satisfaction can also be considered. The assessment process builds from specific measured from bottom-up to top-down approach.

4. Scale sustainability

The assessment process requires a clear scale to compare and evaluate one thing against another. For determining scale of indicators, ordinal or interval scales are normally used. For example, Prescott-Allen's Barometer of Sustainability uses an interval scale of 1-100, which can be mapped onto the ordinal scale: bad-poor-medium-OK-good (Prescott-Allen, 1997).

5. Determine gradation (sectors of scale) of sustainability

Graded levels of sustainability are necessary for convenience of communication. For instance, IUCN (1995) and Prescott-Allen (1997) have proposed a five-sector scale (1-20, bad; 21-40, poor; 41-60, medium; 61-80, OK; and 81-100, good) in the Barometer of Tourism Sustainability (BTS). Sasin (2010) has provided a seven rating scale (1 – unacceptable, 2 – poor, 3 – marginal, 4 – acceptable, 5 – good, 6 – excellent, and 7 – best practice) for assessment of corporate sustainability under the Sufficiency Economy Philosophy.

6. Develop tourism sustainability assessment maps

The outputs from a tourism sustainability assessment using the scales of sustainability levels can be presented in a graph form. There are alternatives, and the "Barometer of Sustainability" or BTS (Prescott-Allen, 1997) is gaining in literature reviews. This involves mapping the particular state of a system on to a two-dimensional axis of human and ecosystem wellbeing matrix (Bell and Morse, 2006). Each system moves along a gradient of "unsustainable" to "sustainable," along the axis of the matrix. If the number of tourism Sis are 32 (each 16 indicators for the human system and ecosystem, respectively) and the sustainability scale is given to each indicator (with a hypothetical 10-point scale), the average score (e.g. 6.4 vs 3.8) of the 16Sis in the two systems can be produced, and the BTS map can be drawn as seen in figure 1-3. However, the BTS map fails to demonstrate the sustainability of individualized tourism indicators. Thus, another is AMOEBA diagram (Bell and Morse, 2006) is applied to illustrate the sustainability level of individualized tourism indicators, to overcome the shortcoming identified in the BTS map (see example in Fig. 1-5).

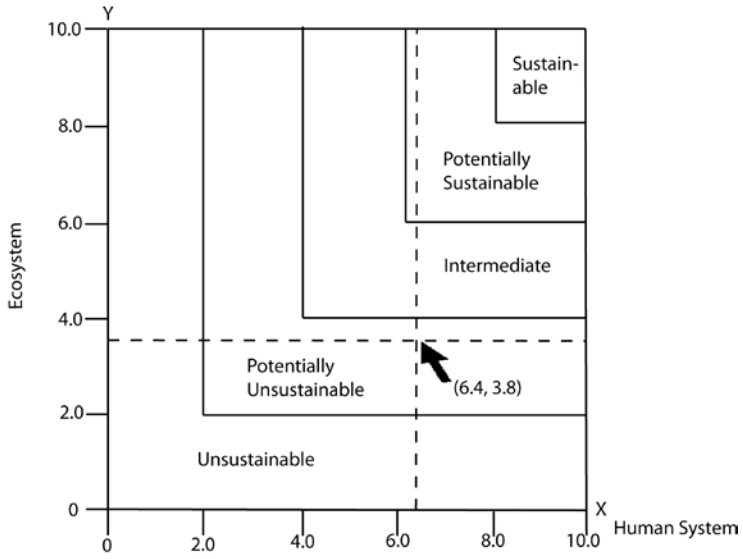

Figure 1-3 BTS – hypothetical data, adapted from Prescott-Allen (1997)

Source: Ko, 2005

7. Extend sustainability over time

Determining sustainability requires a sequential assessment process over a period of time (e.g. for 5 or 10 years). Tourism sustainability requires much shorter time scale because tourist destinations tend to be influenced sensitively by internal and external factors.

8. Evaluation

Evaluation of the outcomes of the assessment is crucial to present findings, which can take two forms. First, the process can be evaluated technically, in term of the effectiveness and efficiency of the data collection and analysis process. Second, a model can also be evaluated in terms of its usefulness to stakeholders in a practical exercise (going back to stakeholders, presenting them with the results of the analysis and asking whether this assists them in decision-making).

According to the sustainability indicator development process as aforementioned, in this study, the approach for measuring sustainability is adaptive and roughly divided into 4 stages: stage 1 indicators identification, stage 2 indicators selection, stage 3 evaluating preparation, and stage 4 sustainability evaluation.

Stage 1 Indicators Identification

Identifying sustainability indicators initials with defining sustainability goals determined through the community and stakeholders involvement. Then an indicator framework and numbers of sustainability indicators are established. The indicators of sustainable development for tourism destinations provided by the UNWTO are broadly used as a guide to indentify the candidate sustainability indicators.

Stage 2 Indicators Selection

Applying an approach to select the final set of potential indicators is crucial for this stage. One of the scientific approaches is a Delphi technique. The Delphi method is the best-known qualitative and structured

technique for predicting future events by reaching consensus (Choi and Sirakaya, 2006). The selected sustainability indicators will be employed to collect the data and analysis the sustainability of tourist destinations.

Stage 3 Evaluating Preparation

Identifying methods for collecting data and sustainability values are needed to be prepared before taking the selected sustainability indicators to measure the tourism performance in the destinations. Methods for collecting data are a wide range of qualitative and quantitative approach such as a record, interview, field observation, and survey. Making tools for each method are a prerequisite task, which subjects to each indicator.

Stage 4 Sustainability Evaluation

Taking sustainability indicators to measure tourism performances are conducted by different tools of each indicator. The collected data, then, will be analyzed with the sustainability values and community sustainability goals. Reporting indicator result can be presented through the use of Amoeba diagram.

4. **Conceptual framework for measuring and analyzing sustainability of rural tourism**

In moving sustainable development from concept to action, there still remain two key challenges for many decades. One, the broad range of interpretations of the term and two, is the lack of reliable tools of measurements in achieving sustainability (Saunders et al., 2010). For measuring sustainability of rural tourism, new alternative frameworks will give communities the opportunity to reflect, rediscover, recreate and reconstruct a community spirit (George et al., 2009) even developing meaningful indicators of sustainability was never likely to be easy (Smith, 2002).

This study applies the concept of capitals as an alternative framework for sustainability measurement of rural tourism. Many scholars have considered the multiple capital framework in their terms as an reliable approach. Bell and Morse (2003) consider sustainability in terms of capitals (natural, human, social, physical and financial) and the vulnerability context (trends, shocks, stress). Saunders et al. (2010) define the condition for sustainability as “a non-declining capital stock over time,” which includes human, social, cultural, human-made, and natural capital. George et al. (2009) modifies five community capitals for sustainability: natural, social, human, financial or built, and cultural capital.

The framework for measuring sustainability of this study use the concept of community capitals modified by George et al. (2009), which can be generated from rural tourism and lead to the dimension of sustainability development: social, economic, environmental, and institutional sustainability (Smith, 2002) as shown in figure 1-2. According to the model of community capital and system sustainability created by George et al. (2009), the five types of community capital are defined as follows.

Human capital is the stock of human resources that has its value embedded in the community's ability to produce benefits from tourism; it consists of strong leaders, skilled villagers, well-educated persons, creative people, laborers, other employees, youths, and other stakeholders engaged in CBT, such as occupational groups.

Social capital is the stock of accumulated obligations that can yield economic returns to the villagers through the societal investment of time and effort; it includes such social networks as the participation of local people, volunteers, educators, researchers, students, and investors.

Natural capital consists of renewable natural capital, non-renewable natural capital, and cultivated natural capital. Renewable natural capital is the abundant ecosystem of the forest, including indigenous forest, community forest, and agro-forest. Non-renewable natural capital consists of the quality of the community's environment, such as the soil and water. Cultivated natural capital is the long-term utilization of agricultural areas.

Financial or built capital is stock from investment by the community in creating new resources, generating income, valuing the new wealth from good land use (e.g., homestays, organic food and herbal products), and distributing the equity of benefits through the financial community management institution such as a cooperative.

Cultural capital is the stock of cultural knowledge (e.g., ways of life, traditional massage, herbal medicine, music, dance, cuisine, and local wisdom), community uniqueness, and identity that returns value from rurality through developing specialized tourism products.

To measure the sustainability of rural tourism, the framework employs community capitals into the sustainability indicators, which applies an approach based on the community sustainable development indicators (CSDIs). CSDIs are generally used as devices to help people understand themselves and what they want in sustainability development (SD) (Bell and Morse, 2003). Although CSDIs are indirect effect on policy that conduct by experts and communicate within the policy maker or manager group, they direct facilitate change at local level. CSDIs are divided into four categories: data poetry, core, background, and deep. Purposes of use differentiate in each type (Table 1-3). For this framework, type "Core" has been chosen in the process of indicator development which employed top-down and bottom-up approach. Top-down approach refers to indicator selection by tourism experts, and bottom-up approach conveys the cooperation of locals. This method of selecting indicators is useful for local residents as well as external groups such as researches and policy makers. Furthermore, it can be used to compare the performance among diverse communities.

Table 1-3 Community Sustainable Development Indicators (CSDIs)

Type of CSDI	Purpose	Linkages	Main use	Potential Limitations
Data poetry (community)	Highly linked indicators that are most useful for stakeholders (internal groups) Designed to help transform the discussion of the community towards a more long-term view	high	internal	do not allow for comparisons across neighborhoods focus more on action steps than complete picture of local sustainability concerns
Core (community and experts)	Linked indicators useful for local residents as well as external groups (researches, funders, policy makers) Designed to allow comparisons among diverse communities	high	internal and external	difficult to define one set of indicators that apply to diverse neighborhoods
Background (experts)	Offer interesting background information that helps define the context in which SD takes place Useful for both internal and external groups	few	external	less integrating than data poetry and core indicators
Deep sustainability (community and experts)	Help local stakeholders to define a long-term vision for their community Highly linked and look for into the future Evoke long-term visioning	high	internal and external	may be impractical to implement in the short term

Consistent with the concept of community capitals and CSDIs, the development of sustainability indicators for measuring sustainability of rural tourism is detailed with four broad categories and as follow:

1. Economic indicators provide measurements of income and people's wellbeing.

2. Social and cultural indicators illustrate the aspects of society and cultural identity such as life quality, health, welfare, community participation, customs, and practices.

3. Environmental indicators consist of the built environment and natural environment such as tourism carrying capacity, organic farming, and biodiversity of flora and fauna.

4. Institutional indicators which attribute to human capital concern support or financial organizations, community groups, and capability of community leaders.

A conceptual framework for measuring sustainability of rural tourism development based on the community capital approach can be illustrated in figure 1-3.

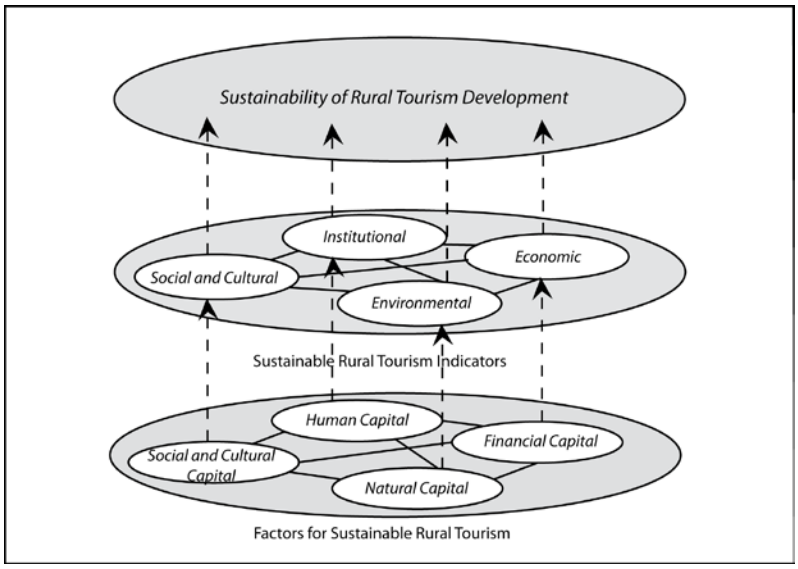

Figure 1-4 The conceptual framework for measuring sustainability of rural tourism

In this framework, the sustainability indicators are initially identified based on five community capitals; human, financial, natural, social, and cultural capital, which could lead to achieve the sustainability of rural tourism development in four dimensions. Namely, the economic sustainability is emerged from financial capital, the environmental sustainability is sustained by natural capital, social and cultural sustainability are derived from social and cultural capitals, and the sustainability of institution is strengthened by human capital. With application of CSDIs' concept, the sustainability indicators will be selected by top-down and bottom-up approach through the process of developing sustainability indicators, which is a part of this research methodology. In analysis of sustainability of rural tourism, community capitals as crucial factors will be discussed towards the current and future tourism circumstances in the case studies.

5. Research methodology

The study of sustainability of rural tourism in the case studies was conducted with the staged process of developing and implementing sustainability indicators which was divided into four stages: stage 1 indicators identification, stage 2 indicators selection, stage 3 evaluating preparation, and stage 4 sustainability evaluation.

Stage 1 indicators identification

At the first stage, indicators for measuring sustainability of rural tourism was identified by considering issues on targets of tourism development in the case studies collected by interviews of key informants in each case. Besides, a set of sustainability indicators for tourism destinations guided by the United Nations World Tourism Organization (UNWTO) (Box1-1) and Thai CBT standard indicators for

community-based tourism management provided by the Thailand Community Based Tourism Institute (CBT-I) (Box 1-2) were reviewed and chosen to use with the case studies (Box 1-2). The key informants giving the interviews consisted of 6 community leaders: a present village headman, a former village headman, two leader members of OTOP community enterprises, one representative of homestay owners, and one representative of farmers. The interviews focus on targets of rural tourism development based on three elements of rural tourism management in the villages: community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA). The interviews were conducted on September, 2013 for two weeks. The issues collected from the interviews were identified as candidate indicators as well as the indicators selecting from the lists of indicators of UNWTO and CBT-I.

The identified indicators have been categorized into four groups based on five types of community capitals, which achieve to four elements of sustainability development; economic sustainability indicators, socio-cultural sustainability indicators, environmental sustainability indicators, and institutional sustainability indicators. As a result, the 112 candidate indicators were proposed in an open-end questionnaire so that a panelist of tourism experts would select at the second stage.

Stage 2 Indicators Selection by Delphi technique

At the second stage, the proposed candidate indicators were selected by the Delphi technique for two rounds. The Delphi technique was developed by Dalkey and Helmer in the 1950s and was designed as a group communication process which aims to achieve a convergence of opinion on a specific issue. The Delphi is widely used and accepted method for gathering data from a panel of experts by using a series of questionnaires. In the literature, Delphi has been applied in various fields such as program planning, needs assessment, policy determination, and resource utilization (Hse and Sandford, 2007). New applications of the Delphi method continue to be tested in relation to developing indicators. In the tourism industry, Delphi has also been applied to predict future tourism potential by getting expert opinions on the development of indicators at a company level to measure movement of tourism products towards sustainability (Mabotja, 2013). In this study, Delphi was applied to select the sustainability indicators for measuring tourism performance at a community level. This method is the most effective means for participants to identify criteria and indicators for measuring sustainability of tourism (Barzekar et al, 2011) due to the strengths of its advantaged characteristics. The Delphi method is characterized by three significant features (Hsu et al, 2007; Trinh Hai et al, 2009; Barzekar et al, 2011; Mabotja, 2013).

1. Anonymity of participants which can reduce the effects of dominant individuals to collect and synthesize information.
2. Iteration process occur in round, allowing individuals to change their opinions.
3. Statistical group response: allows for a quantitative analysis and interpretation of data.

As noted above, the Delphi process can be continuously iterated until consensus is determined to have been achieved. In this study, two rounds of questionnaires were organized to select the sustainability indicators.

Round 1: The identified candidate indicators were proposed in an open-ended questionnaire for a panelist of tourism experts to select and propose the additional indicators or their opinions. The panel consisted of twenty-two members who were selected by top-down and bottom-up approach based on their expertise and experience in tourism development in the study areas. Top-down approach potential panelists, which comprise eleven people were drawn from five categories of tourism supported institutions: governmental organization (community developers of the Community Development Office, Ministry of Interior: one from Mae On district and two from Phra Pradeang district), university (researchers cooperating research with the case studies: two tourism lecturers of Chiang Mai university, doing research in Mae Kampong village, and two professors of Phranakhon Rajabhat university conducting research with Bang Nam Phueng village), private organization (one staff of the Thai farmer bank, the PTT public company, and the Bangchak Petroleum public company), and NPOs (one tourism developer of the CBT-I) Bottom-up approach potential panelists, which consist of eleven people were selected from the village's committees (four people from each village) and local administrative organizations (one administrator from the Huey Kaew Tambon Administrative Organization and two officers from the Bang Nam Phueng Tambon Administrative Organization).

The first round questionnaire with the candidate sustainability indicators was instructed to rate panel members' opinions in terms of agreement or disagreement within a 5 point Likert scale (strongly agree to strongly disagree: 5 = strongly agree, 4 = agree, 3 = neutral, 2= disagree, 1 = strongly disagree). A cutoff point of items' mean score was 3.5 or higher for the first round. For the first round, 52 sustainability indicators were chosen (47 from the lists of candidate indicators and 5 from the new additional indicators proposed by the panelists).

Round 2: The second round was a closed questionnaire which the additional and selected candidate indicators from the first round were proposed to choose. The second round questionnaire were sent to 19 respondents of the first round and 14 (73.7%) were returned. Respondents were instructed to rate their opinion in terms of agreement or disagreement within a 5 point Likert scale questionnaire as same as the first round. However, a cutoff point of items' mean score was 4.0 due to limitation in over numbers of potential indicators. From the second round, 22 sustainability indicators were selected to measure the sustainability of rural tourism in this study.

Stage 3 Evaluating Preparation

In this stage, methods for collecting the existing data have been identified based on four approaches: a record, interview, field observation, and questionnaire survey. The record refers to available sources of both

qualitative and quantitative data recorded by the community, related organizations or persons such as a statistic record, project report, research publication, or certification. The interview collects the qualitative data in which those cannot be found in any records such as policy or plan. Field observation examines an evidence of performances by photography such as changes in development of community products. The questionnaire survey was used to collect households data related to the indicators. Besides indentifying methods for collecting data, sustainability values have been established to determine level of performance by considering from target of indicators. Sustainability values have been identified by percentages and rating scores from 1 to 7, adapting from a seven rating score for measuring cooperate sustainability under the Sufficiency Economy Philosophy conducted by Sasin (2010). The percentages and related rating scores manifest a level of performances and sustainability interpretation. The accepted score as an ideal performance is 5, which indicates potentially sustainable. Sustainability values are shown in Table 1-4 and the barometer of tourism sustainability (BTS) in figure1-5, which adapted from a five-point scale proposed by Prescott-Allen (1997) and a seven rating score of sustainability assessment under the Sufficiency Economy Philosophy (Sasin, 2010).

Table 1-3 Sustainability values considering from percentage of each indicator

Percentage	Rating scores	Level of performances	Interpretation of sustainability values
80-100	7	Best Practice	Sustainable
70-79	6	Excellent	Potentially sustainable
60-69	5	Good	
50-59	4	Acceptable	Intermediate
40-49	3	Marginal	Potentially unsustainable
30-39	2	Poor	
0-29	1	Unacceptable	Unsustainable

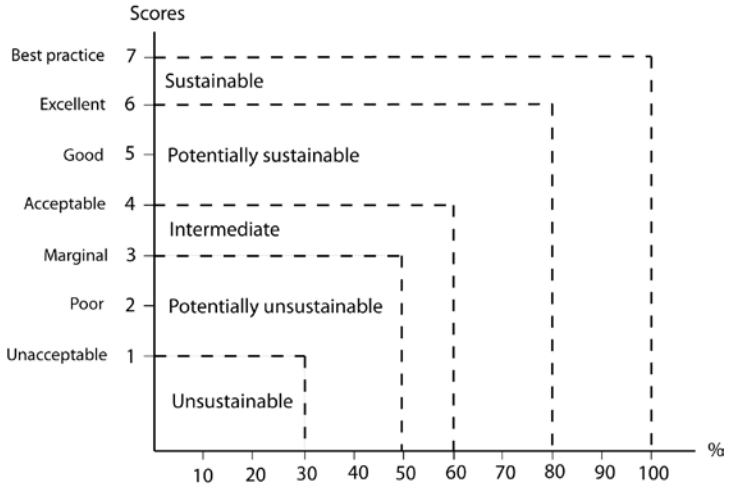

Figure 1-5 The barometer of tourism sustainability (BTS) in this study

Sources: adapted from Prescott-Allen,1997 and Sasin, 2010.

As shown in Table 1-3, levels of performances and the sustainability values were interpreted from quantitative data, which presented in percentages and rating scores. In this study, all the quantitative data could be obtained from diverse sources (i.e., records, interviews, field observations, and questionnaire surveys). The data or evidences not conducted by the questionnaire surveys are quite difficult to determine due to the difference in quality context. Setting the criterions for considering the different condition of data for identifying percentages and rating scores are a prerequisite task of each indicator. (See Table 3-22 to 3-35, page 68-73).

Stage 4 Sustainability Evaluation

This stage employed the selected sustainability indicators from stage 2 to collect the existing data of each indicator in the case studies. The collected data was analyzed with the criteria of each indicator in percentage, and scored for indicating level of performances and interpreting sustainability values. The scores of each indicator were illustrated with an Amoeba Diagram for benchmarking the tourism performances of Mae Kampong village and Bang Nam Phueng village. In correspond with the barometer of tourism sustainability (Fig.1-4), an example of the Amoeba Diagram can be seen in Figure 1-4, where the part 0-1 refers to unsustainable, part 1-3 refers to potentially unsustainable, part 3-4 refers to intermediate, part 4-6 refers to potentially sustainable, part 6-7 refers to sustainable, similar as levels shown in Table 1-1. Besides, the line score of 5 manifests the ideal baseline of tourism performance. As the example shown, the sustainability indicators can be put around the circle. Then the Amoeba can be brought out by using all indicators, and the sustainable bands with a certain length can also be presented to drop a hint on the current situation. The Amoeba can clearly show the sustainability of the system, while larger band implies more sustainable, on the other hand, smaller band means a less sustainable system (Ko, 2005; Huang, 2011).

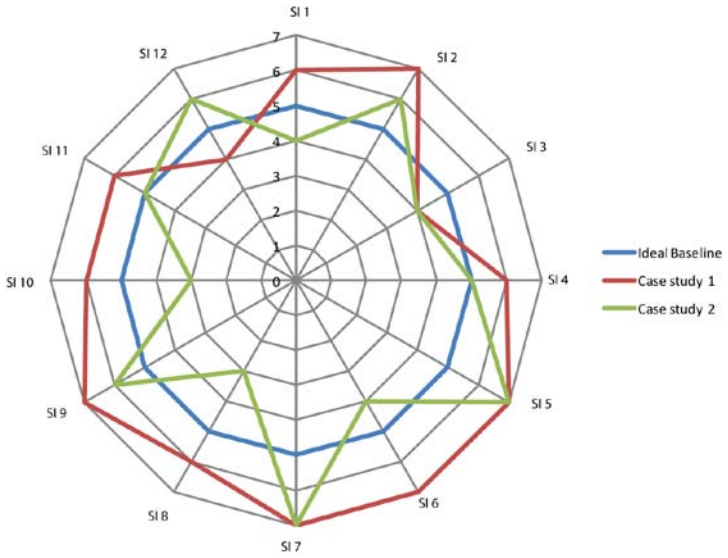

Figure 1-6 The example of presenting tourism sustainability by the Amoeba Diagram

As aforementioned, the staged process of this study can be summarized as shown in figure 1-6

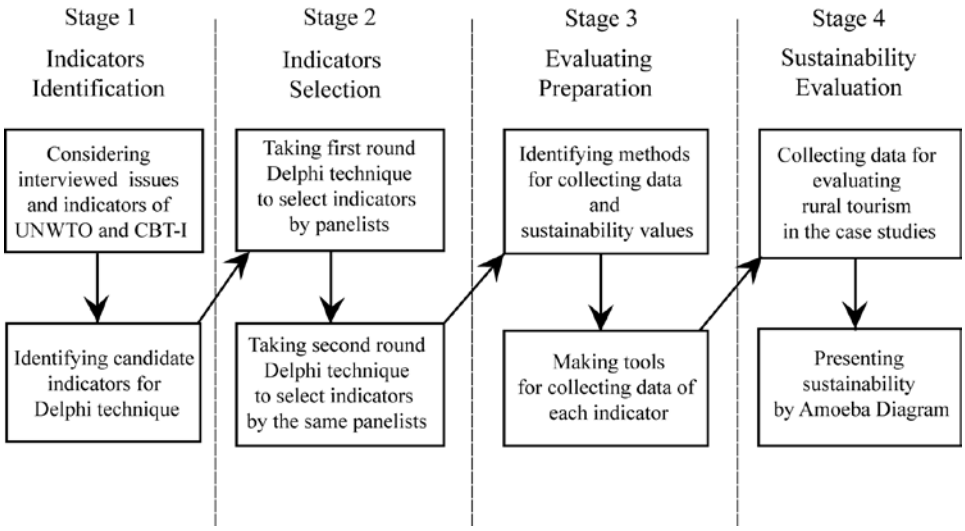

Figure 1-6 A chart of research methodology

Box 1-1 Examples of indicators of sustainable development for tourism destination guided by the UNWTO

The United Nations World Tourism Organization (UNWTO) provides guidance to indicators that respond to issues common to many destinations since the early 1990s. It is a menu, allowing planners and managers to select the issues to their destinations and gain ideas for application from the suggest indicators within 13 themes. The following list is examples of proposed indicators.

1. Wellbeing of host communities
   - Number of complaints by local residents
   - % locals participating in community events
2. Sustaining cultural assets
   - Number and type of new legislation or amendments introduced to preserve structures at local, provincial/state/or national levels.
3. Community participation in tourism
   - Number (%) of tour companies in destination offering tours/guides with trained knowledge of sustainable tourism practice/ information on local management plan
4. Tourist satisfaction
   - Level of satisfaction by visitors, % of return visitors
5. Health and safety
   - Number of visits by tourists to local doctors
6. Capturing economic benefits from tourism
   - Number (%) of employees qualified/certified
   - Annual total income generated by the community
7. Protection of valuable natural assets
   - Existence of protected area(s) at the destination
8. Managing scarce natural resources
   - % business participating in energy conservation programs, or applying energy saving policy
9. Limiting environmental impacts of tourism activity
   - Total tourist numbers categorized by their type of activity
   - % of tourists who believe that the destination is too crowded and local residents who believe it is too crowded
10. Controlling tourist activities and levels
   - Existence of a spectators management plan (Y/N)
   - Level of facilitation of information related to safety issues (e.g. clear information on event scheduling, place, access, safety issues of buildings and spaces, availability of services, etc.)
11. Destination planning and control
   - Leakages from the economy
   - Local and tourist satisfaction
   - Degree of stakeholder participation in the planning process (e.g. number of meetings, dissemination channels and other consultation mechanisms used, level of participation)
12. Designing products and services
   - % clients who are satisfied with their experience (exit questionnaire –ask specifically about green products);
   - % of tourists who have a positive image of the destination (exit survey)
13. Sustainability of tourism operations and services
   - Training of staff on environmental issues (% trained)
   - Existence of company policies aiming at social issues of employment and relation with host communities (e.g. sourcing of employment and supply of goods from local community, staff training, support to community development, etc.)

Source: WTO, 2004.

Box 1-2 Examples of the Thai CBT standard indicators provided by CBT-I

As the number of community-based tourism (CBT) destinations in Thailand began to increase, the Thailand Community Based Tourism Institute (CBT-I) provides the Thai CBT standard as a tool for participatory community development. The Thai CBT standard consists of 5 main criteria groups with 176 indicators for checklists to assess as "yes" or "no."

1. Sustainable tourism management for community-based tourism
   - The CBT group has defined a carrying capacity appropriate to the community
   - Regular meetings or consultations of CBT group members at least monthly
   - Opportunity for training are shared among CBT group members
   - The CBT club collects feedback from visitors
   - The CBT group disseminates the rules and regulations in the community
2. CBT distributes benefits broadly to local area and society, and improves quality of life
   - Income from CBT is regularly contributed to support social activities which benefit the community
   - CBT group members are supported to develop new products based on local materials and wisdom
   - The CBT club does not support the sale of drugs, intoxicants and prostitution
3. CBT celebrates, conserves and supports cultural heritage
   - Information is collect and recorded about local history, way of life, local wisdom, art, culture, ceremonies
   - Opportunities are created to built youth capacity in cultural interpretation
   - Tourism does not disrupt or impact historic or sacred site
   - The CBT group participates in supporting, conserving, and passing on culture
4. Systematic, sustainable natural resource and environmental management
   - Rules and regulations about how to behave to protect the environmental exist and are communicated inside the community and to guests
   - Environmentally friendly activities have been developed
   - Local knowledge in natural resource management is passed on to the next generation
   - Efficient was management in tourism destinations
   - Homestay homes and activities use water efficiently
   - Support environmentally friendly products made from local materials
5. CBT service and safety
   - Tourism routes are surveyed and safety of guests and community members is assessed
   - Equipment in accommodation is clean and sufficient for the number of tourists.
   - The house is solid and strong, not damage or dangerous
   - Food is clean and made from mostly local ingredients
   - Transport is cleaned and checked before use
   - Qualities of a good guide: appropriate for the situation, punctual, able to solve problem, self-controlled, trained with good knowledge about the community
   - Homestay hosts are able to facilitate cultural exchange between community and tourists
   - Existence of booking system
   - Safety is included in planning

Source: CBT-I, 2013.

II. Sustainable Rural Tourism Development

This chapter reviews the concept of rural tourism by focusing on Thailand's context: community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA). It provides information background of rural tourism in the case studies at the end of the chapter.

1. Concept of rural tourism in a remote and an urban fringe area

Rural Tourism generally refers to visits to places outside major metropolitan areas which specifics agriculture-based activity (Lane, 1994 and Melson, 2012). However, the concept has developed over the years to become a complex, multifaceted activity where it is no longer viewed as just tourism taking place in the countryside and agricultural concerns. (Melson, 2012). In particular, rural tourism extends beyond farm-based tourism it includes special interest holidays, nature-based and ecotourism holidays, walking, climbing, cycling and riding holidays, adventure, sport and health tourism, hunting and angling, educational travel, arts, heritage and historic recreation, festivals and events, food and cultural tourism, and in some areas, ethnic tourism (Lane, 1994; Butler et al, 1998; Hall et al, 2005; Gorge et al, 2009; Wijaya, 2013; Sillignakis, 2014).

Consequently, these notions are likely to promote forms of rural tourism supply which build on the inherent character of rural areas, notably their attractive natural environments, original local culture and traditional systems of land use and farming (Bramwell, 1994). Rural tourism, therefore, is identified as a tool for rural revitalization where a socio-economic imbalance (Torre et al., 2013) by the characteristics of rural area, which include small settlements, low population densities, land use, agrarian and forest-based economics, traditional societies, and community identity and heritage (Bramwell, 1994; Okech et al., 2012:). From this array of varying definitions, one point to clarify definition in my opinion is describing in terms of the word "rurality," which is associated with the characteristics of rural spaces, areas where rural communities exist and rural activities occur (Kikuchi, 2010). This is because all tourism which takes place in rural areas is not rural tourism but it can be "urban" in form such as theme parks and leisure hotels (Lane, 1994a). Tourism growth can be an urbanizing influence, which by destroying rurality, a unique selling point for holidays in rural areas (Lane, 1994b).

Rural tourism in this study means the experiencing of rural areas where rurality is existent and motivates to do many forms of tourism based on agricultural society which is managed by the community.
As this definition, promoting many forms of tourism in rural areas operating by locales aims to increase the net benefits to rural people, and increase their participation in managing the tourism product. If more tourism can be developed in rural areas, particularly in ways that involve high local participation in decisions and enterprises, then poverty impacts are likely to be enhanced (Okech et al., 2012).

Rural tourism has advanced and diversified in time and space, becoming an element of the rural development policy (Baltes and Ciuhureanu, 2010). Rural tourism in this study focuses on agrarian community in a remote and urban fringe area. Rural tourism in the remote area is examined by many scholars

due to attractive rurality. Rural tourism is well-adapted and successful in Europe due to a balanced development method to protect and capitalize patrimony. The rural travel product is consider as a fundamental equation: accommodation in an agrotourist boarding house = holiday in a village + spending free time in the rural surrounding. The elements of this equation are the crucial strategies to attract tourists spending their holidays in the rural hinterlands. Furthermore, the travel trips' motivation in the rural areas is represented by the unchanged natural environment by traditions and habits, by the activities practiced in these surroundings. One of the countries with the success experience is France (Baltes and Ciuhureanu, 2010). Focusing on Asia, rural tourism was first positioned as an important measure to realize positive changes in depopulated farm villages. In Japan, the agricultural experiences along with farmer enthusiasm are used to attract visitors which is becoming of value to developing tourism as a form of rural diversification (Wijaya, 2013). In Taiwan, rural tourism has promoted by two methods. One is to proceed from the agricultural products, to provide fresh fruits and vegetables, organizing agricultural festivals to attract urban dwellers to rural areas. Another way is through the rural community building to create and shape the characteristics of rural communities to provide a quality living environment, urban residents away from the metropolitan area to relieve work pressure (Yung Feng and Ching Lee, 2013).

For rural tourism taking place in the urban fringe, it has drawn much less attention compared with remote area. However, featuring natural sceneries of the urban fringe such as lakes, rivers, mountains, or parks attract more and more tourists to this region due to the easy access from the city center (Zhang, 2006). Urban fringe is the foreland in the process of urban sprawl (Morshed, 2010) at the soft margins of urban areas which merges into rural area, sometimes called the peri-urban, rurban or urban-rural (SURF, 2012). Urban fringe is related to the growth of cities and has strong interaction with present city and bears an urban reflection of on the physical, occupational and demographic characteristics (Morshed, 2010). As a consequent, the rurality of urban fringe communities is easily exploited by urbanization. On the other hand, rural tourism can sustain and revitalize the rurality. Rurality-based ecotourism in Totoro forest of the Tokyo outer urban fringe in Kikuchi (2008)'s study is one of the rural tourism approaches to promote forest conservation through collaboration between urban dwellers and rural residents.

2. Thailand's rural tourism

Rural tourism in Thailand, is currently moving toward merging with community-based tourism (CBT), which expanded during the "Amazing Thailand" years, 1998-1999. In 1999, Tourism Authority of Thailand (TAT) promoted agritourism and homestay to strengthen CBT (Wirudchawong, 2014). There are over 150 rural communities developing CBT (Sangkakorn, 2008). Communities which are implementing CBT require several steps of training to develop knowledge and skills such as tour operation, marketing, activities, programs, prices, booking systems and other essential elements of a success CBT. Thailand's

Community-Based Tourism Institution (CBT-I) is one of the NGOs supporting knowledge and skills including encouragement of the CBT communities to achieve the sustainability by the standard of CBT. The expectation for CBT encouraged TAT to present "The Most Outstanding Community-Based Tourism Award" to 62 communities out of 183 candidates in 2007(Suriya, 2010). TAT assists CBT in various activities, particularly in marketing, which more than 30 tour agents are interested in CBT promoted by TAT. Those travel agents are cooperating with rural communities, which have a tendency to grow in the tourism market (Wirudchawong, 2014).

Regarding with the facilitation and promotion of CBT, Thailand's rural tourism has been advocated underpinning the philosophy of sufficiency economy with two projects: one *tambom* one product (OTOP) movement, and sufficiency economy agriculture. Thai government, the Ministry of Interior supports OTOP, and the Ministry of Agricultural and Cooperatives promotes sufficiency economy agritourism (Khaokhrueamuang, 2014c). Accordingly, the development of rural tourism in Thailand involves three aspects: community-based-tourism, one *tambon* one product, and sufficiency economy agriculture.

2.1 Community-based tourism in Thailand's context

Community-based tourism (or CBT) describes a bottom-up approach to tourism planning and development (Robinson 2012), which is tourism owned and/or by communities and intended to deliver wider community benefits (Goodwin and Santilli, 2009). Although it is not a new concept, it is increasingly relevant for many smaller destinations, particularly small villages in developing countries. The CBT concept was first introduced in the 1950s as an approach for rural development but it was overtly top down. The 1960s and 1970s saw CBT promoted by the United Nations to empower communities and enhance local education. By the 1990s, CBT had become embedded in tourism education and had emerged as a management philosophy towards sustainable tourism by the early 2000s (Robinson 2012).

Accordingly, CBT has become a popular tool for achieving sustainability by alleviating poverty in rural communities where the people are mostly farmers (Phayakvichien, 2007), and for biodiversity conservation which is considered as community-based ecotourism (or CBET) (Kiss, 2004). However, CBT which is implementing in different settings and contexts, has been defined various meanings.

Hiwasaki (2006) examining CBT in the context of tourism in protected areas states that CBT can be immersed in the context of two developments: first, recent worldwide activities that promote sustainable and responsible form of tourism; second, the emergence of alternative approaches for conservation efforts that link biodiversity conservation with local community development. She defines CBT in her study on CBT in Japan's protected areas that comprises of four aspects; (1) empowerment and ownership of local community through participation in the planning and management tourism, (2) conservation of natural and cultural resources by having a positive impact on environment, (3) social and economic development through enhancing or maintaining economic and social activities with substantial benefits to local community, (4)

quality visitor experience by ensuring that visitor expectation is of high quality and is socially and environmentally responsible. Her definition is relevant to the concept of community-based ecotourism (or CBET), which is popular as a means of supporting biodiversity conservation, based on the principle that biodiversity must pay for itself by generating economic benefits for local people, particularly in developing countries (Kiss, 2004).

Boonratana (2011) defines CBT within Thailand's context as an economically, environmentally, socially, and culturally responsible visitation to local indigenous communities to enjoy and appreciate their cultural and natural heritage, whose tourism resources, products, and services are developed and managed with with their active participation, and whose benefits from tourism, tangible or otherwise, are collectively enjoyed by the communities. Khaokhrueamuang (2014) defines CBT in terms of sustainable development that it is traveling to a rural community in which the tourism management is conducted through the cooperation of the local people with an equitable income distribution and tourism activities, for example, agritourism which facilitates the sustainability of land use.

In Thailand, the concept of CBT is better captured by The Thailand Community-based Tourism Institute (CBT-I) as "*Tourism that takes environmental, social and cultural sustainability into account. It is managed and owned by the community, for the community, with the purpose of enabling visitors to increase their awareness and learn about the community and local ways of life"* For the context of Thailand, the term "homestay" and "community-based ecotourism (or CBET) are often used synonymously with CBT and frequency labeled as "One Tambon One Product" or OTOP for short. By concept, OTOP refers to local products, and these may include handicrafts, garments, pottery, household utensils and foods (Boonratana , 2010).

For CBT to be successful, it must fully engage community members and leadership should come from within the community (Robinson, 2012). However, community members frequently have different perceptions and attitudes, the challenges of CBT are found (Robinson, 2012). Suriya (2010) notes that CBT in Thailand has encountered two problems: low income generation in the introductory stage and uneven tourism income distribution. His discussion supports the notion from Mitchell and Muckosy (cited by Senyana and Moren, 2011) that many CBT projects have failed because of financial viability. The viability of finance is sustained by four dimensions of community viability: culture, well-being, local participation, and knowledge (Himberg, 2008). Particularly in the dimension of local participation, although the concept of CBT is delivered through bottom-up approaches, in fact, it is almost practiced by the default of top-down approaches because the suggestion or support for development is often made by an outside party with a vested interest, who then ignores the true sense of community (Robinson, 2012).

Okazaki (2008) has developed the CBT model to examine the local participation, which is one of the important factors to indicate the success of CBT and helps in understanding the situation of tourist destination

communities and current state of local involvement in tourism development. This model has been applied "the ladder of citizen participation" introduced by Arnstein in 1969 and "the evolutionary model of tourism partnerships" elucidated by Selin and Chavez in 1995 and De Araujo and Bramwell in 2002.

The ladder has a further eight rungs (Fig.2.1). The first rung is "manipulation": power holders utilize participation as a distorted means of public relations. Second, "therapy" : local citizen values and attitudes are adjusted to those of the larger society with power. Third, "informing": the locals are informed of their rights, responsibilities and options. Fourth, "consultation": residents are encouraged to express their opinions. Fifth, "placation": public influence gradually grows, but it is still largely tokenism. Six, "partnership": negotiation is conducted between citizens and power holders for planning and decision-making. Seven, "delegated power": the public achieves dominant power over the decision making. Eight, "citizen control" : citizens are awarded full control and power for policy and management (Okazaki, 2008).

The evolutionary model of tourism partnerships consists of five processes. First, " antecedents", such as crisis, facilitator, mandate, common vision, existing networks, leadership, and incentive. Second, "problem setting" by independence, consensus, legitimate stakeholders, and common problem. Third, "direction-setting" to establish goals, set ground rules, joint information search, and explore options. Fourth, "structuring" by formalizing relationship, roles, tasks, monitoring, and control systems. Fifth, "outcomes" represented by programs, impacts, and benefit derived (Okazaki, 2008). The CBT model created by Okazaki is shown in figure 2-1.

According to the Okazaki's CBT model, a two dimension graph places the collaboration process and bridging social capital on the horizontal axis, and Arnstein's participation ladder, power redistribution and bonding and linking social capital on the vertical axis. In the collaboration processes, as Selin and Chavez assume, the *outcomes* of collaboration will be fed back to the stage of *antecedents* due to their cyclical nature. In short, the five stages of the collaboration process will be repeated progressively after the *outcomes* stage. Once the community reaches the stage of *partnership* (level 6) on the vertical axis, (a) the graph will continue to move upwards if other stakeholder agree with or are forced to agree with further community participation and power redistribution to the community; (b) it will stay constant if the community and other stakeholders are satisfied with the level of participation achieved and do not desire a further power redistribution; or (c) the graph will move downwards if the other stakeholders reject the power shift to community or if the community is internally divided (Okazaki, 2008). However, if it is used to specific forecasting in terms of sustainable development, CBT's local participation performance should be placed on the position (a) or (b).

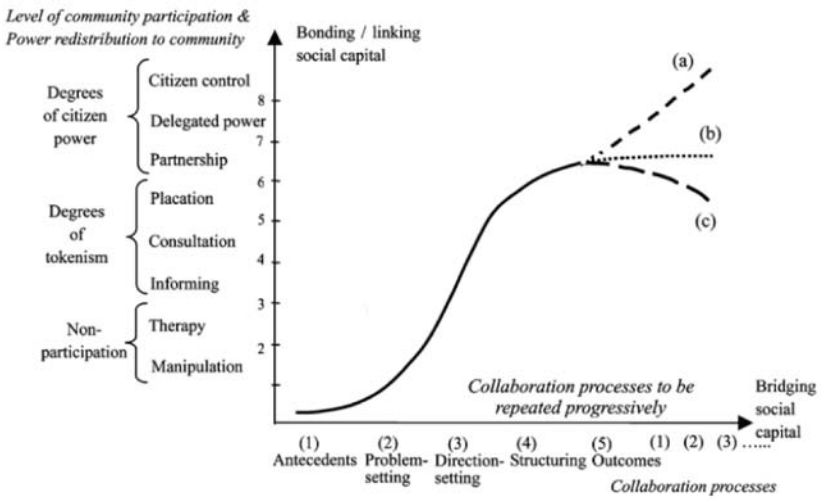

Figure 2-1 A model of community-based tourism

Source: Okazaki, 2008.

2.2. One *Tam Bon*, One Product (OTOP)

One of Thailand's sufficiency economy concept is an innovative program *One Tam Bon, One Product* (OTOP) that was launched in 2001 by the government under former Prime Minister Dr. Shinawatra Taksin to revitalize and diversify the rural economy as a part of national economic restructuring (Kurokawa et al, 2010). OTOP was conceptualized from the *One Village, One Product* (OVOP) of Oita Prefecture, Japan, which underpins three principles: creation of globally acceptable products/services based on local resources, self-reliance and creative, and human resource development (Natsuda et al, 2011). The project has employed Oita's experiences with assistance and the promotion of the scheme's products from Japanese organizations such as the Japan External Trade Organization (JETRO), the Japan Overseas Development Corporation (JODC) and the Japan International Cooperation Agency (JICA) (Natsuda et al, 2011). OTOP has numerous objectives to address, such as a poverty reduction in rural areas, self-sufficiency at the grassroots level, generating employment and supplementary income-earning opportunities, preservation of local indigenous knowledge, strengthening and diversifying rural livelihood system, and promoting rural tourism (Routray, 2007).

The Development of Community Development, Ministry of Interior of Thailand divides OTOP into five categories: fresh and processed food, alcoholic and non-alcoholic beverages, clothes and garments made of natural and mixed fibers, ornamental products and handicraft, and herbal products made of natural ingredients. The OTOP National Administrative Committee and the Ministry of Interior has set four criterions for selecting quality products via the OTOP champion contest (OPC) in 2003: (i) the product is exportable and has a brand quality, (ii) production can be sustainable and with consistent quality, (iii) the product can provide customer satisfaction, and (iv) the product has an impressive background story (Kurokawa et al,

2010). Entrepreneurs must register as manufacturers of OTOP products to participate in selection process and send only one product for contest. The contest is conducted under the OTOP selection guideline of each year and determined the products from district level, provincial level, regional level to national level by the committee of related products. For instance, the Ministry of Public Health is responsible for OTOP herbal products. Products are classified by a grading system, which the 1-5 star branding indicates the quality of products (Table 2-1).

Table 2-1 A grading system of OTOP product

Grading	Scores	Product quality
5 stars	90 and above	Good quality with high potential to export.
4 stars	80-89	Fairly good quality with high potential to distribute in national level and able to improve for export.
3 stars	70-79	Average quality with able to attain 4 stars upon improvement.
2 stars	50-69	Able to attain 3 stars.
1 star	below 50	Weak quality with unable to attain 2 stars due to its difficulty for improvement.

Products which are selected as the OTOP champion will be certified and branded with OTOP logo as shown in figure 2-2. The certification is closely associated with financial and other benefits. Four-stars or five-stars awardees have a better opportunity of obtaining public subsidies or being sent overseas (Kurokawa et al, 2010). Furthermore, above 3-star producers are eligible to participate in OTOP EXPO, the so-called "OTOP City" (Natsuda et al., 2011).

Figure 2-2 OTOP's logo and certificate

As a result of those OTOP product champion contest (OPC), entrepreneurs which consist of community-based enterprises (CBEs), small and medium-sized enterprises (SMEs), and single owner enterprises have been increasingly registered each year. According to a report of Community Development

Department, Ministry of Interior, registered OTOP producers as of 2012 were 36,092, of which were 24,327 CBEs (67.4%), 11,204 single owner enterprises (31.0%), and 561 SMEs (1.6%). Those entrepreneurs produced 71,739 OTOP products , of which were 25,813 handicrafts (36.0%), 18,400 food products (25.6%) , 17,196 fabric products (24.0%), 7,865 herbal products (11.0%), and 2,465 beverages (3.4%). OTOP enterprises have been generally successful in increased revenue. Sales revenue grew from 245 million baht in 2001 to 72,051 million baht in 2013. Although it is becoming more successful, OTOP program cannot eradicate completely rural poverty in Thailand. Robert and Kanchana (2007) argue that the program has four serious limitations and can succeed only if these basic conditions exist. First, local agriculture and forestry resource bases are substantial and readily accessible, second, community are well organized and experienced and comfortable with cooperative activities, third, local people have strong workplace attributes, and fourth, communities are experienced in gaining "outside" financial and technical assistance from government and more advanced private companies.

With an attempt of poverty elimination and OTOP promotion, the OTOP policy has been modified and refocused each year (Table 2-2) since its inception in 2001. In 2002, OTOP products were indentified in parallel with manifold government-led marketing activities in major provinces through the post-production activities such as exhibitions, events, and fairs. In 2003-2005, more concentration has been placed on export linkages under the Department of Export Promotion. During these years, a logo for OTOP products, E-commerce, and the OTOP Product Champion (OPC) scheme were introduced (Natsuda et al, 2011). Besides the scheme of OPC, the OTOP village champion (OVC) was also initiated in 2006 to promote rural tourism by integrating with various OTOP related elements including unique OTOP products, nature, agriculture, health, culture, and craftworks. Addressing on rural tourism promotion, the scheme of OVC has extended with the "OTOP tourism village" project in 2009. The project serves the theme "Tourist Knowledge- based Society," which aims to turn mass tourism in Thailand into sustainable tourism with a positive experience for both local people and tourists (Sukmuen, 2014).

Table 2-2 OTOP policy from 2001 to 2010

Year	Activities
2001	Ministerial integration
2002	Search for OTOP products
2003	OTOP product champion (OPC)
2004	Standard champion
2005	Marketing OTOP
2006	Search for excellent OTOP and OTOP village champion (OVC)
2007	Knowledge-based OTOP
2008	Entrepreneur promotion
2009	OTOP tourism village
2010	Sustainability of OTOP

Source: Natsuda et al., 2011

Addressing on rural tourism, the OTOP tourism village has been continually supported by Community Development Department. Up to date, there are 36 villages were granted for promoting OTOP products and tourism in which are managed underpinning the community-based tourism.

2.3 Sufficiency Economy Agriculture (SEA)

Since Thailand has transformed to a newly industrialized country over the past two decades, national development has centered on urban-based industrialization and expanded global trade through direct foreign investment and international capital flows. Since 1985, the country's real per capita income grew by an annual average of between 6.0-8.5 percent (Robert and Kanchana, 2007). However, inequalities in income and wealth distribution between urban and rural areas emerged as critical social and economic problems. In order to solve such problems, the government has promoted the community-based enterprises (CBEs) for additional source of income for in rural and farm households since the 5th National Socio-economic Development Plan (1982-1986) (Natsuda et al, 2011). Until 1997, Thailand encountered the Asian Economic Crisis, the "Economic Self-Sufficiency" for sustainable rural development was propagated based on the King's philosophy "Sufficiency Economy" (Routray, 2007). Promoting and sustaining development, therefore, is the greatest challenge for the government to mitigate the poverty in rural areas. Sufficiency's theme is that a successful development strategy must be an integrated mix of rural, agriculture and community based-private sector initiatives supported by government organizations (Robert and Kanchana, 2007).

The sufficiency economy is a philosophy for moderating the forces of globalization that comprises three elements: moderation, reasonableness, and self-immunity, and it requires two conditions: knowledge and integrity (NESDB, 2007). Moderation is a way to avoid suffering from unreasonable situations. Reasonableness entails planning for causes and effects of relationships in advance. Self-immunity refers to personal approaches to unexpected shocks. Knowledge means accumulating information, local wisdom, and technology for the improvement of human capital, and integrity refers to ethics and virtues, patience, honesty, and greed control (Calkins, 2012; Jitsanguan, 2012). Reasonableness indicates moderation, and moderation builds self-immunity, and self-immunity is a requisite for reasonableness (Fig. 2-3). Sufficiency economy practices on the middle path to withstand internal and external changes regarding economic, social, environmental, and cultural factors (Mongsawad, 2009) and that can be applied in any fields at all levels, but particularly in agriculture (the new theory); these practices allow farmers to become self-sufficient, self-reliant, and frugal in a three stage process.

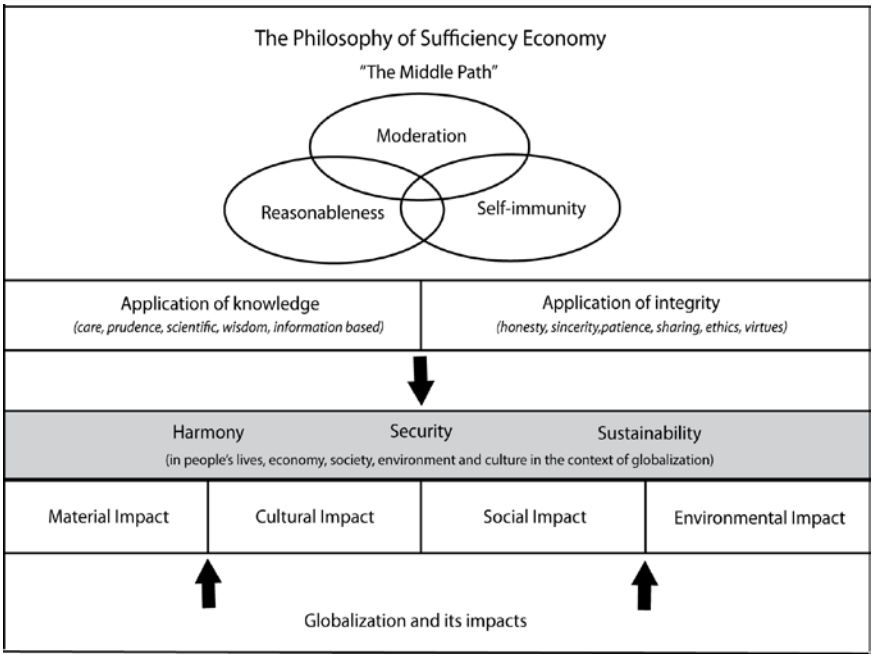

Figure 2-3 Principles of sufficiency economy

Source: UNDP, 2007

The first stage of implementing sufficiency economy in agriculure is aimed at securing adequate food by optimizing farmland in a ratio of 30%:30%:30%:10%. The first 30% is designated for a pond to store water and raise aquatic animals. The second 30% is for rice cultivation. The third 30 % is set aside for growing fruits, perennial trees, vegetables, field crops, and herbal plants. The last 10% is reserved for housing, animal husbandry, and other activities. The second stage entails that the farmers pool their efforts and resources in groups or cooperatives for production and marketing. The third stage involves networking and coordinating to establish social capital (Chaipattana Foundation, 2012).

A case of sufficiency economy application in agriculture from my previous study is Bang Kachao area, the Bangkok metropolitan fringe. This study elucidates a three staged process of sufficiency economy (Fig. 2-4) applied in sufficiency economy agritourism (SEAT). The first stage concerns moderation in cultivation by utilizing organic materials to optimize farmlands and includes producing diversified organic crops to reduce production risk and increase income, which is in line with reasonableness and self-immunity. These practices lead to sustainable agricultural systems that could be achieved with the cooperation of both traditional and modified agricultural systems at the farm level, which is a significant input for the process.

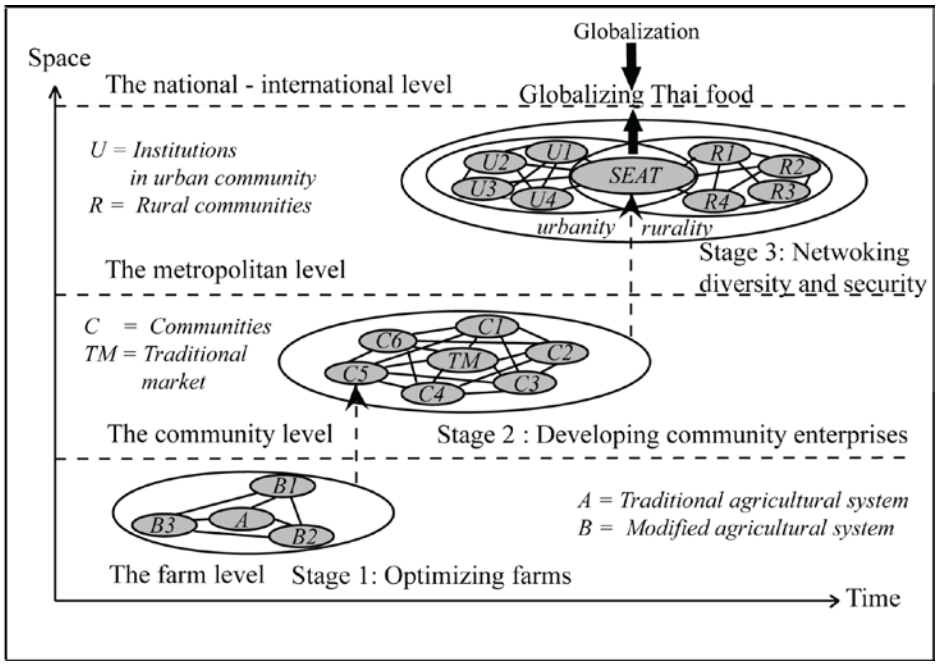

Figure 2-4 The three staged process of sufficiency economy in sufficiency economy agritourism in Bang Kachao area, the Bangkok Metropolitan fringe.

The second stage is an extension of the spatial-temporal scale from self-reliant farms to self-reliant communities. That is, communities established traditional markets to distribute several commodities from community enterprises and generate income from local initiatives and rural tourism. The uniqueness of the traditional market is an essential tactic for cultural allure, so the case of Bang Kachao, the floating market that offers such local authenticity, can attract volumes of domestic and international tourists spending vacations in the area.

The third stage concerns networking for diversity and security in accumulating knowledge and cultivating a future generation of leadership (UNDP, 2007) by the coordinating between urban institutions and rural communities. In the Bang Kachao area, Bang Nam Phueng village is a model sub-district that induces other sub-districts to participate in the development of sufficiency economy based on agritourism, linking the networks to other rural communities. Considering this process, urban institutions support rural communities' sufficiency economy projects that imply building resilience against the shock of globalization. With the emphasis on globalization, globalizing Thai food should be deliberated as a sufficiency economy strategy in agriculture, where agricultural and tourism commodities are crucial outputs of the process.

This study has found that the economy and agritourism could be integrated into the staged process of sufficiency economy taking place in the urban fringe. Furthermore, it introduced a new type of Thai rural tourism called "sufficiency economy agritourism," which enables globalization of Thai food through the promotion of local agiproducts and agritoursm activities involving food consumption.

3. Sustainable rural tourism development in the case studies

3.1 A remote area: Mae Kam Pong village

Mae Kam Pong is situated in Mae On district, Chiang Mai province, 50 km east of Chiang Mai city. (Fig.2-5) The village occupies the position between 18° 87' North latitude and 99° 35' East longitude, covered the area of 622 hectares of Mae On national reserved forest on Pee Pun Nam mountain range, about 1,300 meters above sea level. The highest peak is Doi Mon Lan (1,831m).The village is also near the famous tourist attractions, such as the Muang On cave (10 km), the San Kamphaeng hot spring (18 km), and Bo Sang, a village well-known for hand-made umbrellas (25 km). Villages adjacent to Mae Kampong are Mae Lai to the north, Mae Ruam to the south, Tarn Thong to the west, and Chae Son National Park in Lampang province to the east. The village was divided into six village settlement groups along the west-east valley which the Mae Kampong river flows through from the east. The six village groups are Pang Nok, Pang Klang, Pang Khon, Pang Thon, Pang Nai 1 and Pang Nai 2. The village can be accessed to all year round although there is no public transportation to the village.

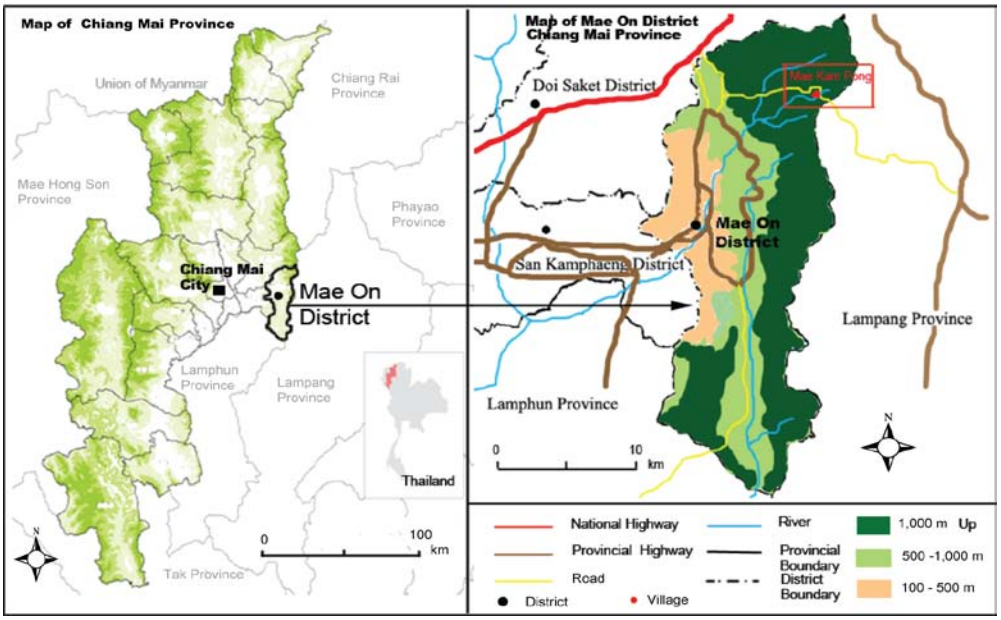

Figure 2-5 The situation of Mae Kampong village

The community started more than 100 years ago by immigrants from Doi Saket district to search the land for forest tea cultivation and then was officially set up in 1914. When the settlement grew larger both from the natural increase and migration, the temple was built to serve as the village spiritual center. At present, about 95 % of villagers are Buddhists. As of 2011, the village contained a total population of 386 persons with 132 households. The majority of the populations were in the working age group and 97% of villagers are

currently engaged in fermented tea production, locally called *"miang"* (a Thai northern style chewing snack made of tea leaves). It is the main agricultural product, and is one of the unique attractions because the production of *miang* is now rarely seen. In the fermented tea production cycle, the leaves can be harvested four times a year. However, in recent years, the villagers have turned to grow coffee in the space of tea forest orchard because of the decline of cultural consumption of *miang* in young generation and to gain an additional income. The average household revenue from agricultural production was 35,000-120,000 baht per annum.

Land use patterns and tourism resources

The village occupies 622 hectares, which can be classified into three kinds of land use: residential, agricultural, and forest (Fig.2-6). The residential area ranges from the western to the eastern foothills over an area of 70 hectares. The residences are scattered along a narrow valley with a stream passing through it. In the past, most of the households were settled in two groups called Pang Nai and Pang Khon in the eastern part of the valley. Because of increased population, the residential area has been extended to the outer western part. At present, the village is further divided into six village groups with 132 households: Pang Nok (30 households), Pang Klang (19 households), Pang Khon (19 households), Pang Thon (15 households), Pang Nai 1 (13 households) and Pang Nai 2 (36 households) (Fig.2-7). In this area, various kinds of construction are used for almost any function: in particular, houses have been modified into homestays, grocery shops, and restaurants. Homestays have expanded from 7 homestays in 2001 to 22 in 2011. Other business, like coffee shops, resort hotels and long-stays to serve the tourism business, have also been gradually increasing. In particular, long-stays are influenced by urban dwellers and foreigners who bought the land and built their houses as vacation homes, which can also serve as rental houses for long-stays. Similarly, rental houses built by the villagers have tended to increase, particularly in Pang Nai 2, which has become a center for tourist accommodations because of its proximity to a waterfall and a main forest for tea cultivation.

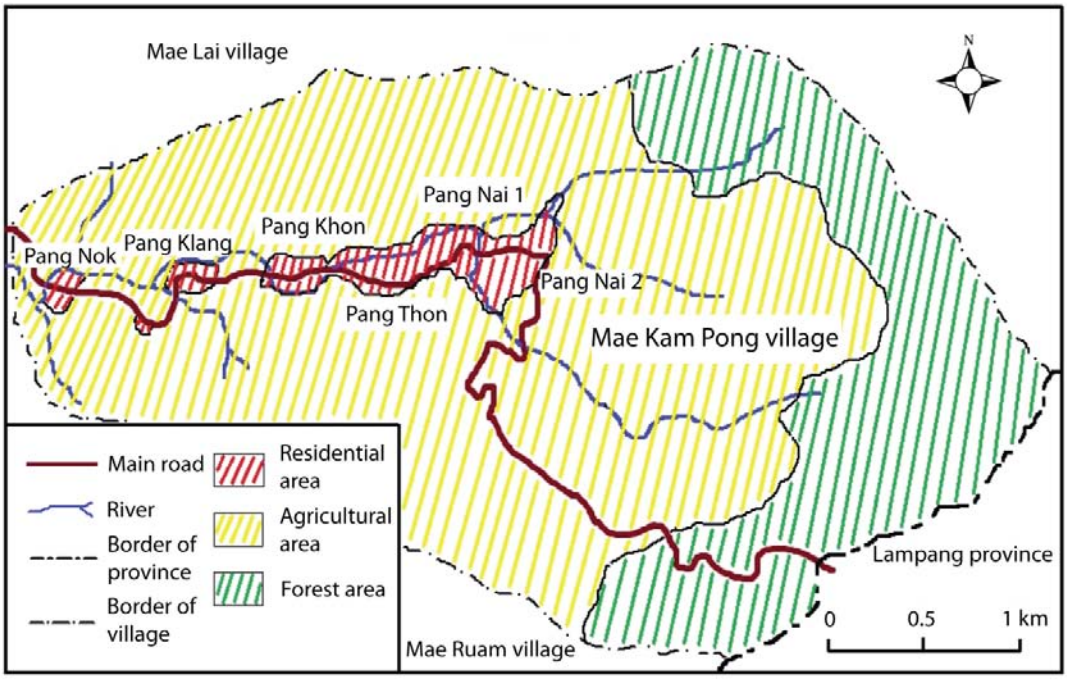

Figure 2-6 Land use in Mae Kam Pong village
Sources : Field survey and interviews based on the village-based map

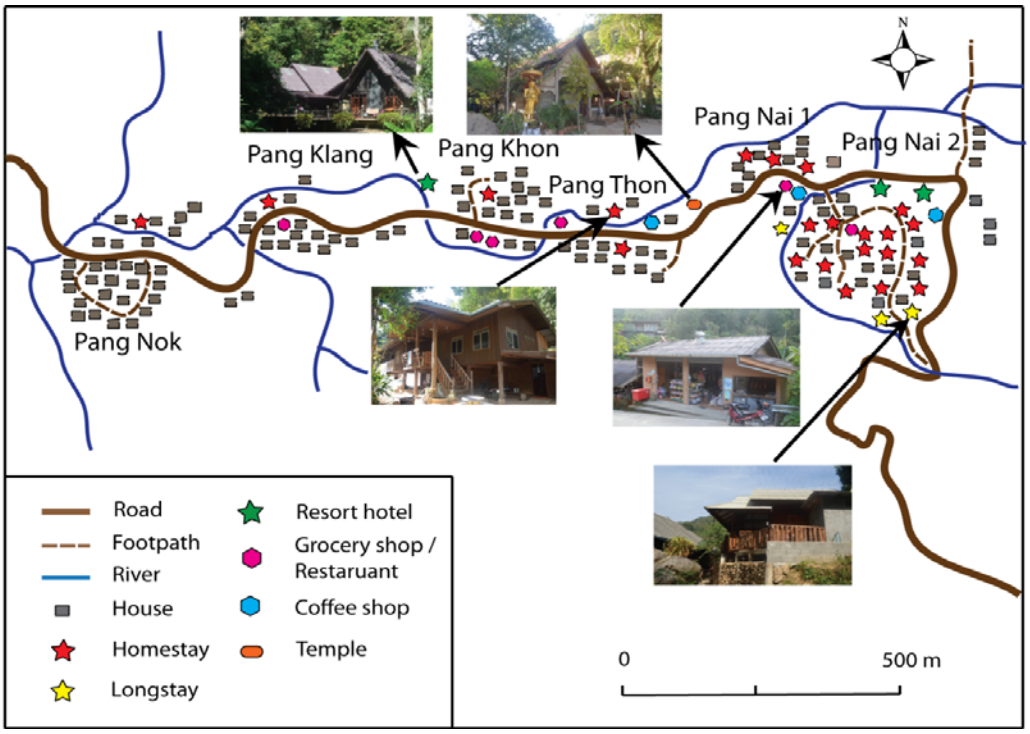

Figure 2-7 The settlement of houses and other constructions in the residential area.

Sources: Field survey and interview, December 2011.

Forest tea cultivation takes up the largest portion of land use at 403 hectares, covering all of the agricultural area. Corresponding to the history of the settlement of the village, forest tea has been grown for more than a hundred years, and it remains a major crop in the agricultural area. In fact, it has been cultivated alongside Arabica coffee, herbal medicines, and the stunning natural forest, so it is considered as agroforestry (Fig.2-8). Much of the forest tea is used to produce *miang*, which local people chew as a snack after dinner or if they feel tired. To produce *miang*, only the tips of the tea leaves are picked to allow sunlight to reach the old leaves; thus, the farmers can harvest all year round. Knowledge of producing fermented forest tea, from cultivation to harvesting and processing, is part of the local wisdom of Mae Kampong, which has been accumulated and passed on for many generations. Though the forest tea leaves are available all year round, those harvested in winter are small, yellowish-green, and of low quality. Therefore, the farmers harvest coffee seeds instead during this period. Thus, Arabica coffee, which is cultivated with forest tea, can be harvested each year from the end of November to January after it has been planted for two years. The cultivation of coffee has been promoted for a decade because it generates more income and increases the value of the agricultural land-use area. Accordingly, it can be said that the agricultural land is in use almost all year round, implying that such tourism activities as harvesting forest tea or coffee with the farmers can be done in every season.

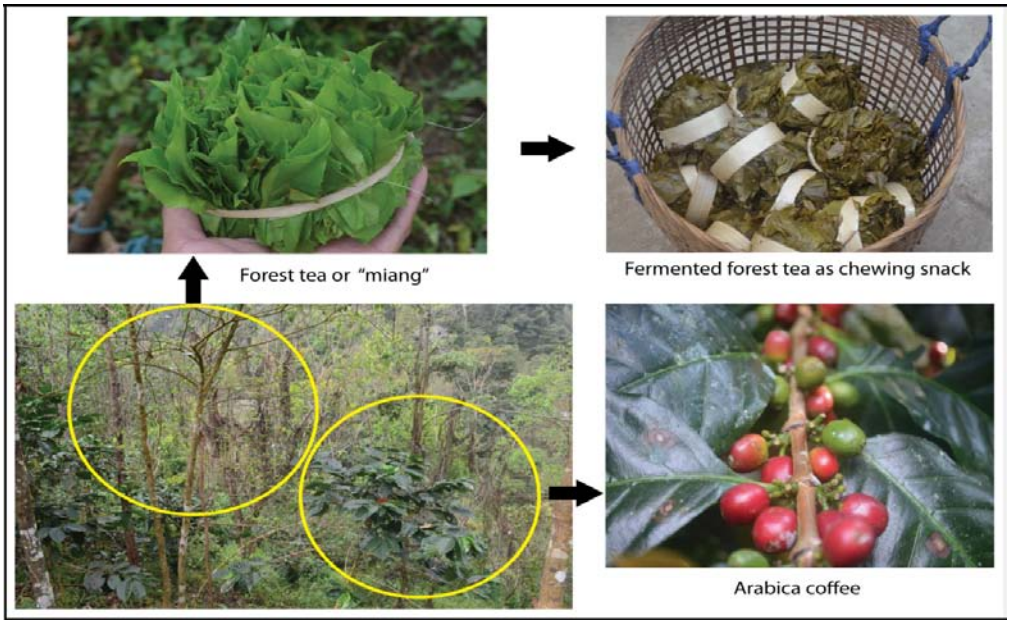

Figure 2-8 Forest tea and Arabica coffee have been cultivated together
Taken by the author, December 2011.

Another part of land use that is important for tourism is the forest. This area is occupied by hills of evergreen forest with mixed deciduous forest as undergrowth and pine forest at the highest point (Fig.2-9). Forest area has been preserved as community forest, which is called *"pa chum chon"*. It covers an area of 149 hectares to the north and east of Pang Nai 2, and is a dense forest, providing habitat for diverse species of flora and fauna. A distinctive flora are the cherry trees, locally called*"Thai sakura"*or*"Nang Phraya Sue Krong"*,which can be found on the high mountain near*"Doi Mon Lan"*, the highest point of the village (1,700 m.), where a large area has been reforested with pines to provide a campsite for ecotourism (Plate 2-1). In the forest area, the community had set apart 3.2 hectares to be a herbal garden; thus, many species of local medical plants have been added to this herbal forest with its indigenous herbs. Besides the conservation of the forest, the watershed is well preserved. The Mae Kampong waterfall guarantees an abundance of streams, which enable the village to produce hydro electricity and pure drinking water, and serve as a major tourist attraction for the village (Plate 2-2). Accordingly, the forest generates both biodiversity and non-timber forest products (e.g., hydro-electricity, drinking water and herbs) that serve tourism.

Plate 2-1 Scenery from ecotourism campsite near Mon Lan mountain

Taken by the author, September 2012

Plate 2-2 Mae Kampong waterfall

Taken by the author, December 2011

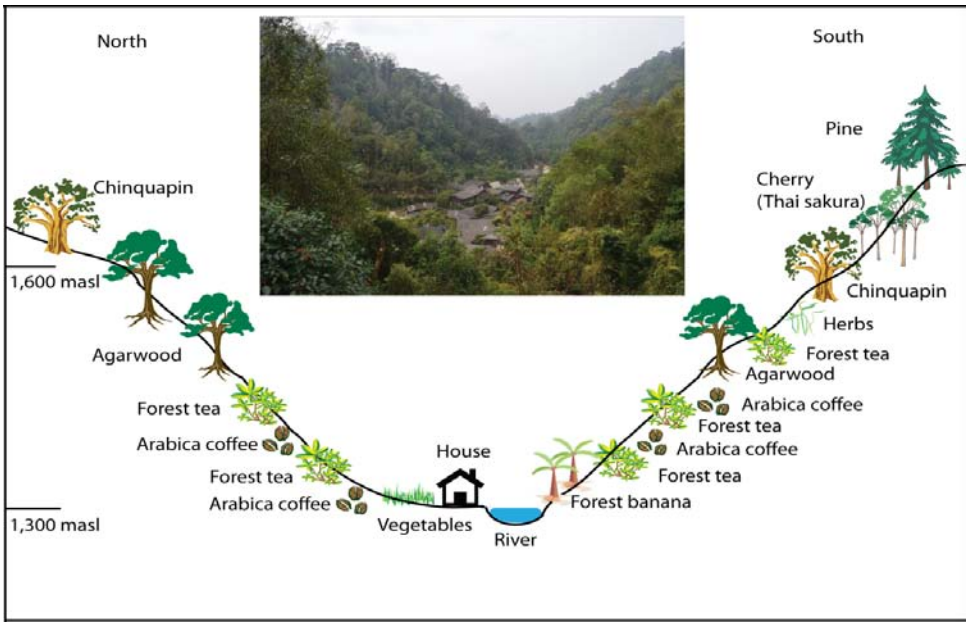

Figure 2-9 A sample of land use transect of Mae Kampong village (Pang Nai 2)

Sources: Field survey and interview.

Rural tourism management in Mae Kampong village

Mae Kampong, a small, upland-forest tea cultivation village in Chiang Mai province, is one of the communities that take community-based ecotourism as a tool for adding value to land use. Because the demand for *"miang"*, a traditional chewing snack made from fermented forest tea since the days of ancient Lanna (a kingdom in northern Thailand from the 13^{th} to 18^{th} centuries) has recently decreased, the land for forest tea cultivation has also been abandoned. Between 1996 and 2004, the forest tea area decreased by 11% (Iamcheun 2004). This situation also affects new generations who have been moving away to work in urban areas and have let the land remain idle. In order to recover the wealth of land use to generate income, tourism in the village was officially initiated in 2000 and is continually promoted by the Tourism Authorities of Thailand (TAT). With this opportunity offered by TAT, the village has been set the tourism committees to manage benefits and cooperate with local residents for decision making.

Tourism management in the village has recently been based on the "Community-Based Sustainable Ecotourism Management", in which two types of tourism have been well managed and promoted: ecotourism and community-based tourism (Puangmala,2006). Ecotourism management in the village concerns both nature-based and culture-based tourism. Nature-based tourism management primarily involves encouragement of environmental awareness in the management of walking trails in forest tea plantations, the waterfall and community forest, and a zipline canopy walk (i.e., "flying" from tree to tree by hanging in a sling that is attached to a rope strung between the trees in the jungle) in an abandoned forest tea plantation that belongs to a foreign investor. Culture-based tourism management refers to managing, conserving, and promoting the way of life unique to the cultivation and production of forest tea. Community-based tourism management is a strong point of the village. The income from tourism goes to a cooperative whose members receive dividends from the benefits. The engaged members come from seven occupational groups: homestay, tea pillow, tea and coffee, tour guide, massage, herbal, and musical and performance. Despite the existing tourism model of the village, the management of health therapy by traditional massage, herbal use, and local organic food consumption has been emphasized in community service, particularly in homestay. In addition, investments in resort hotels and rental houses in residential areas have been appearing gradually.

Tourism income management based on the existing tourism model offers three tour programs, which are operated by community members. More than 30 households in Mae Kampong are actively involved in CBT. Villagers contribute towards the local cooperative, which generates income for all community members, in addition to funding a range of social and environmental activities. Income from tourism comes mainly from the service fees of the three tour programs: the one day, homestay, and study tours provided to several target group of tourists.

***Program 1* (*One-Day Tour*).** This program includes a waterfall visit, short treks through the forest and forest tea cultivation area with local guides, and participating in such occupational activities as tea-pillow

making. The major targets of this program are both domestic and international tourists who visit without prior inquiry. Domestic tourists are mostly walk-in visitors, whereas the international tourists are mostly westerners who buy the package from tour companies. No service fees will be charged to walk-in tourists, but the villagers obtain direct income from tourists' expenditures. For example, they patronize the local restaurants and shops, hiring a local guide that costs 200 Baht (6.66 USD) per day. Therefore, the main part of the benefit shares from this program that are allocated to the village will be derived from tour companies. One tour company that commands the biggest segment of profit is Flight of the Gibbon, which provides mainly the zipline canopy tour. It has joined this program, paying 10% for forest conservation and including the annual rent for setting up its activities in the village.

Program 2 (Homestay). This program offers two main tour packages (either one- or two-night accommodation with meals and optional purchase of cultural activities at night), with advance reservations made either directly through the village's officer or indirectly through tour agencies. The one-night accommodation package costs 550 Baht (18.33 USD) per person with three meals for each. The two-night package costs 900 Baht (30 USD) per person, and it comes with six meals. In addition, the program offers Lanna cultural performances by local musicians and student dancers (for1000 Baht, 33.33 USD) and a welcome ceremony called "Bai Sri Sukhwan" (for 1,000-1,500 Baht or 33.33-50 USD). The main activities of these programs are sightseeing in the forest tea and coffee cultivating areas, waterfall visits, short or long treks in the community forest with local guides, tree planting, participating in occupational groups, and staying in homestays. This program targets community-based tourists, both domestic and international, who want to stay overnight and do rural-based activities.

Program 3 (Study Tour). This program targets the group of domestic tourists who make reservations in advance through the village. Those are students, educators, private and government organizations, and other villagers who want to study any special interests, such as the forest tea or coffee cultivation and production, hydro-electric power plant, homestay, and tourism management. The program may take one day or longer. If they choose an overnight stay, cultural activities (i.e., Lanna cultural performances and welcome ceremony) are also available if there is a request. The price of this program is subject to the numbers of visitors and activities. As mentioned before, all tour programs are linked to attractions by roads and walking trails (Fig. 2-10).

Tourism management is designed as a part of the Mae Kampong Mini-Hydro Cooperative, the community financial institution which was initially established to manage generated incomes and benefits from hydro-electricity distribution producing from the Mae Kampong waterfall. Because all villagers are members of the cooperative, incomes from the tourism will be shared equitably by means of annual dividends to the households. Even villagers who do not participate in the tourism can get profit shares. The villagers who participate in homestay will get around 60% of all the income, and about 40% of the income belongs to

the village, along with income derived from other tourism services, of which 10% belongs to the village. That is, the income generated from all tourism programs are allocated to village development, which is divided into five budget funds: the Mae Kampong Mini-Hydro Cooperative (30%), the village development fund (20%), administrative management (25%), the community welfare fund (15%) and compensation to the community committee (10%).

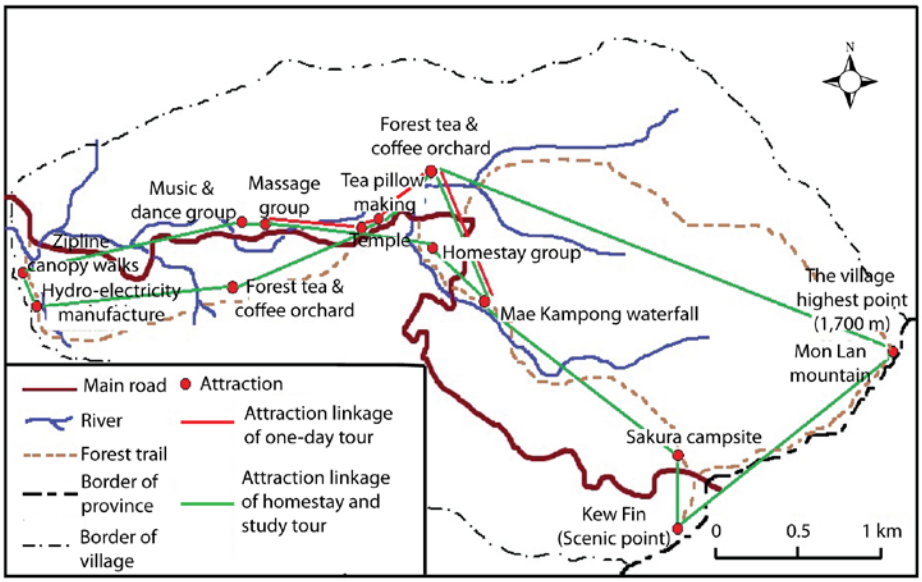

Figure 2-10 The linkage of tourist attractions with the tour program management.

Sources: Field survey and interview.

The Mae Kampong Mini-Hydro Cooperative fund managing by the cooperative committees is an all-purpose, neutral budget used for community development, including the annual dividend to all the households. The village development fund is used for any development projects (e.g., environmental and forest conservation), and the administrative management fund is used for village administration (e.g., advertisement, marketing). The community welfare fund is a compensation fund used for health and education, and compensation to the committee village leaders. Table 2-3 shows an example of income management from the homestay program in which the one-night/two-day package is bought by one tourist. As noted already, the package price is 550 Baht (18.33 USD). The homestay owner will get 350 Bath (11.66 USD), and the village receives 200 Baht (6.66 USD). Then, the income allocated to the village will be distributed to the five budget funds and thence returned to the community and local people (Fig. 2-11).

The circulation of income distribution indicates that community land use, tourism resources, and tourism income are involved with each other in terms of management. Because of the village funds, the community capital has been built up and the profits allocated fairly. Community capital is the most important factor for community sustainability, which involves its land use value and resources over the long term. For

example, projects from the village development fund (e.g., infrastructure development, environmental management, and forest conservation) support the management of sustainable tourism. Generally speaking, the sustainable tourism management of Mae Kampong consists mainly of managing the community's land use, resources, and tourism income.

Table 2-3 Tourism income distributions from homestays.

Types of fund	**Income distributions**		**%**
	Thai baht	**US dollar**	
1. The Mae Kampong Mini-Hydro Cooperative	60	2	30
2. The village development	40	1.33	20
3. The administrative management	50	1.66	25
4. The community welfare	30	1	15
5. The compensation to the committee	20	0.66	10
Total	**200**	**6.66**	**100**

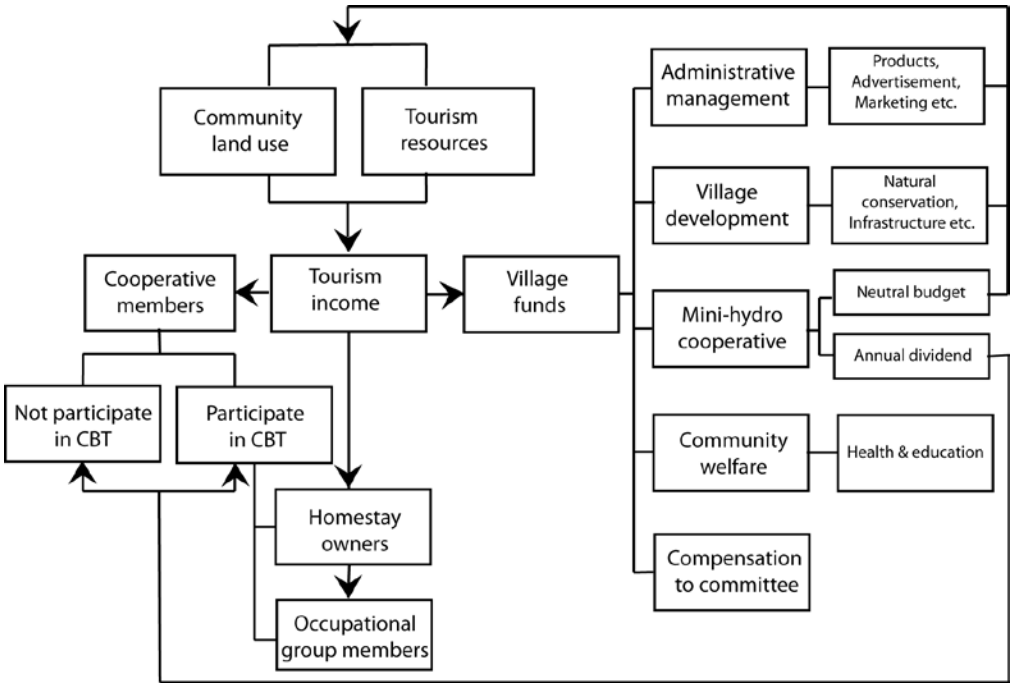

Figure 2-11 Tourism income distributions to the community and local people

Sources: Interview the village headman, December 2011.

3.2 An urban fringe area : Bang Nam Phueng Village

Bang Nam Phueng, as a famous community-based tourism village, is situated in Bang Nam Phueng sub-distric, Phra Pradeang district, 10 km west of Samut Prakan city. It is located in the conservative area called Bang Kachao, one of the Bangkok Metropolitan fringe (Fig. 2-12 and Plate 2-3). The village occupies 11 hectares with 275 habitants and 70 households. The settlement of houses was along the Chao Phraya river since the ancient time, and extended into the inner land, which is covered by the traditional mixed orchard. The area has considerable ditches and mangrove forests because it borders on the river and is located only 20 km from the Gulf of Thailand (Krul, 2012). Thus, the agricultural area consists of three kinds of aquatic environments: fresh water, seawater, and brackish water, which contributes to the unique taste of fruits (Caichompoo, 2011). At present, most of worker populations are employers, merchants, and government officers. Full-time farmers are few groups of population (13 households). The average revenue from wages is 35,000 baht per annum.

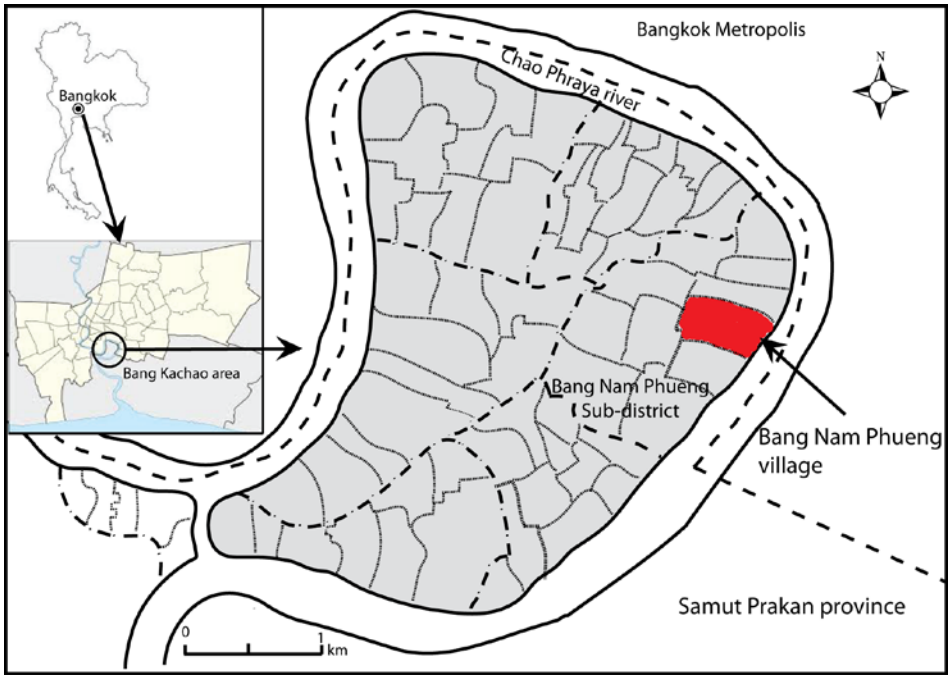

Figure 2-12 Location of the Bang Kachao area and Bang Nam Phueng village

Plate 2-3 Bang Nam Phueng village with the high buildings of Bangkok

Land use patterns and tourism resources

Although the size of land is rather small, the area is divided into three types of land use: residential area, agricultural area, and forest area.

The residential area is mainly zoned along the river and canal which can access by a narrow bridge. In this area, 7 homestays are provided for weekends (Fig 2-13). Among the residential area, three plots of government land have been preserved as community forest to grow some crops for public use such as bamboo. The community forest has been well managed with convenient walkways (Plate 2-4). However, the largest area is orchard which cultivates crops in different agricultural systems. In Bang kachao area (including Bang Nam Phueng village), the agricultural systems can be divided into 4 categories: traditional mixed orchard, monoculture, integrated farming, and agroforest (Fig. 2-14).

Plate 2-4 Residential area and forest area in Bang Nam Phueng

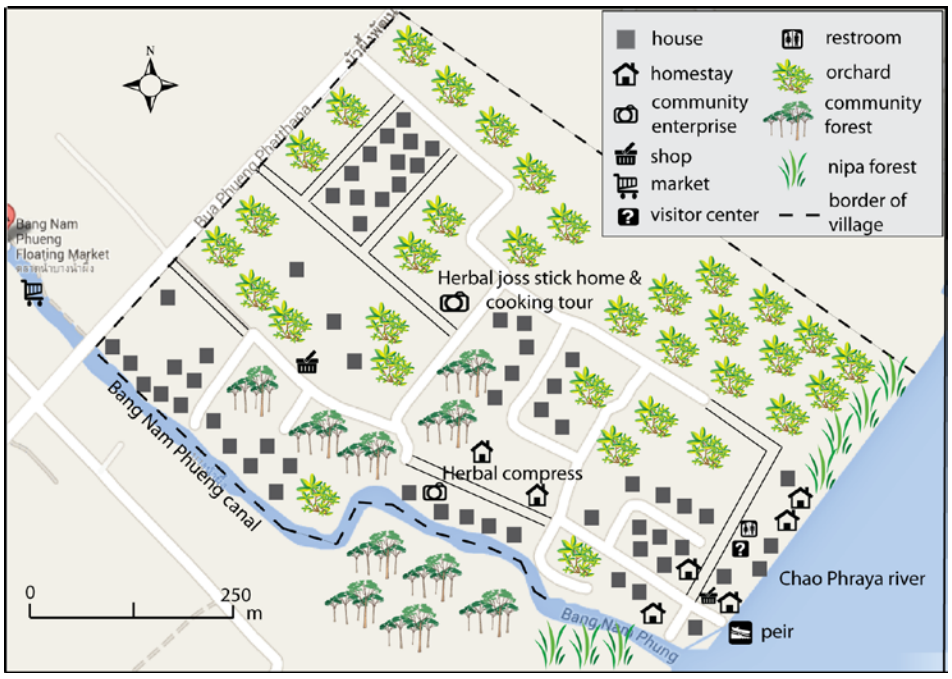

Figure 2-13 Land use in Bang Nam Phueng village

Traditional mixed orchard

The traditional mixed orchard is the oldest agricultural system in central Thailand, dating from ancient times. It is characterized by an agricultural landscape of ditches and dikes that normally connect with natural or man-made canals. The uniqueness of traditional mixed orchards is the cultivation of various kinds of fruit and other crops in the same dike. The traditional main crops are coconuts, betel nuts, bananas, lemons and oranges. The term *Benchaphun* refers to the cultivation of five crops. To date, the five crops have been

grown continuously except for oranges because that crop was damaged by floods during the late 1960s. Instead of oranges, hybrid mangoes, rose apples, and ornamental plants (i.e., cordyline leaves) have been grown. Furthermore, another unique trait of traditional mixed orchards is that they produce coconut sugar for both self-consumption and sale. However, the expansion of urbanization has led to a gradual decline in coconut sugar production.

Monoculture

Because of floods in the Bang Kachao area in the late 1960s and economic growth between 1970 and 1997, the agricultural system that relied on subsistence farming changed, and the cultivation of commercial crops began. Some traditional mixed orchards have been converted to monoculture systems that produce solely a main crop for market but are still cultivated in the traditional agricultural landscape of ditches and dikes. Coconut, lipstick palm, and hybrid mango are main crops cultivated in this system. Coconut, which once produced coconut sugar, came to be planted in large amounts for producing coconut juice from fresh and boiled coconut. Lipstick palm was also once favored owing to the high price it commanded. Meanwhile, hybrid mango, called *nam dok mai*, is the most cultivated fruit and will be supported as an important agricultural commodity of Bang Kachao in the near future because of its unique taste.

Integrated farming

Since the economic crisis in 1997, agricultural practices have been modified to the system of integrated farming based on the new theory farming system. This system aims to help small-scale farmers gain the highest benefits by dividing their land into four parts: 30% for pond, 30% for rice, 30% for fruits, vegetables, herbs, and perennial trees, and 10% for residences and animal husbandry. Because the Bang Kachao area is limited in scale for rice growing, this ratio has been adopted as integrated farming, which normally cultivates fruits, vegetables, herbal plants, and perennial herbs such as bamboo and includes raising animals such as fish and frogs. For raising fish or frogs, the agricultural landscape was modified by extending the ditch to a pond.

Agroforestry

Agroforestry in Bang Kachao has been implemented in abandoned traditional mixed orchards owned by the government. It was created following the king's advice of "three forests, four benefits," meaning growing a mixed forest with three kinds of trees for fruit, for fuel, and for timber with the additional benefit of increasing humidity and soil retention (UNDP, 2007). Thus, government lands in this area were developed as a forest park where people were allowed to cultivate crops by growing forest trees and preserving the fruit trees left in the former orchards. The crops on the government lands were mostly herbs and vegetables for community utilization and consumption.

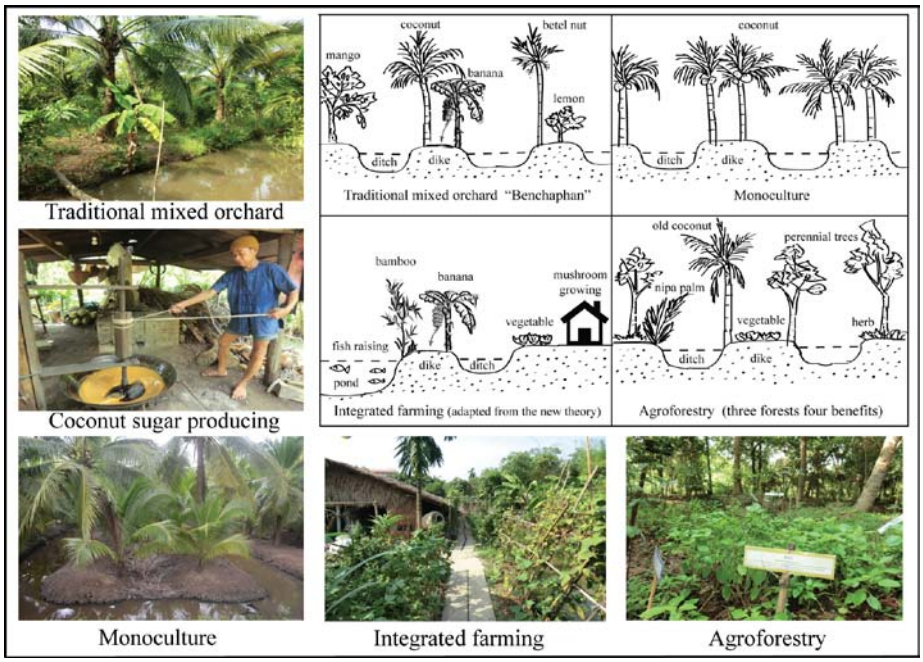

Figure 2-14 Four agricultural systems featured by ditch and dike

Rural tourism mangement in Bang Nam Phueng village

Since Thailand encountered the economic crisis in 1997, H.M. King Bhumibol Adulyadej proposed a "sufficiency economy" philosophy for sustainable development to face the emerging challenges of globalization (NESDB, 2007). It has been applied in agriculture as the "new theory," a set of principles of the proper management of lands and water resources to benefit small-scale farmers (Chaipattana Foundation, 2012). The advocacy of the principles in agriculture is broad, even in Bang Kachao area, a conserved green zone of the Bangkok metropolitan fringe. The agricultural area of Bang Kachao has dramatically disappeared because of urbanization since the 1960s. Even though it has been protected as a conserved green zone since 1977, the agricultural area has still decreased. Since the economic crisis in 1997, some of the abandoned orchards have been recovered and have increased in importance in the local economy.

Because of the economic crisis in 1997, some villagers working in factories and companies were laid off. The Bang Nam Phueng sub-district headman (or recently called the president of Bang Nam Phueng Tambon Administrative Office) gathered unemployed villagers to revitalize the abandoned orchards and generate income from agriculture. Nearly 20 (19.2) hectares of the abandoned orchard area, were thus recovered as farmlands and divided into 17 plots managed by 50 unemployed households, 10% of the unemployed villagers. This project was called "the community farms on new approaches," which applied the new theory farming system based on sufficiency economy by growing various crops and raising fish as integrated farming. Even though only a few villagers were involved at first, this project was later successful in establishing the Bang Nam Phueng floating market (a traditional type of market at which the commodities are

sold on boats or nearby the waterfront; in 2004, they were mostly found in central Thailand, although the original ones are rarely seen today) for distributing their agricultural products, and they attracted close to 75,000 tourists per month (Caichompoo, 2011). As a consequence, the floating market encouraged other farmers in other types of agricultural systems to participate in the project. It also attracted villagers to establish several community-based enterprises producing local commodities for the floating market.

In Bang Kachao area, each year around 800,000 domestic tourists visit the Bang Nam Phueng floating market to eat local food (Caichompoo, 2011, p. 68). As regards international tourists, around 50,000 people come to take cycling tours every year (Table 2-4). These offer tourists opportunities to taste various Thai foods in the floating market on weekends and cook lunch at a herbal joss stick home or a part-time farm in Bang Nam Phueng village (Fig. 2-15). From an interview with the herbal joss stick home's owner, who produces herbal joss sticks for the floating market and operates Thai cooking tours for cycling groups, most international tourists are European, particularly Dutch (40%) and Finnish (25%), target groups of the contacted tour agencies. In this farm, tourists will learn, after cycling, how to produce a herbal joss stick, which is made from vegetables used for Thai dishes such as lemongrass, cook Thai cuisine, whose ingredients are mostly produced in local farms, and have lunch after cooking (Fig. 2-16).

Table 2-4 Numbers of tourists per year (as of December 2011)

Years	Numbers of tourists	
	Domestic (Shopping at the floating market)	International (Cycling tours)
2007	566,654	45,090
2008	792,836	47,945
2009	869,058	43,850
2010	942,260	62,065
2011	811,710	67,840
Average per year	**796,504**	**53,358**

Source: Bang Nam Phueng Tambon Administrative Office, 2012

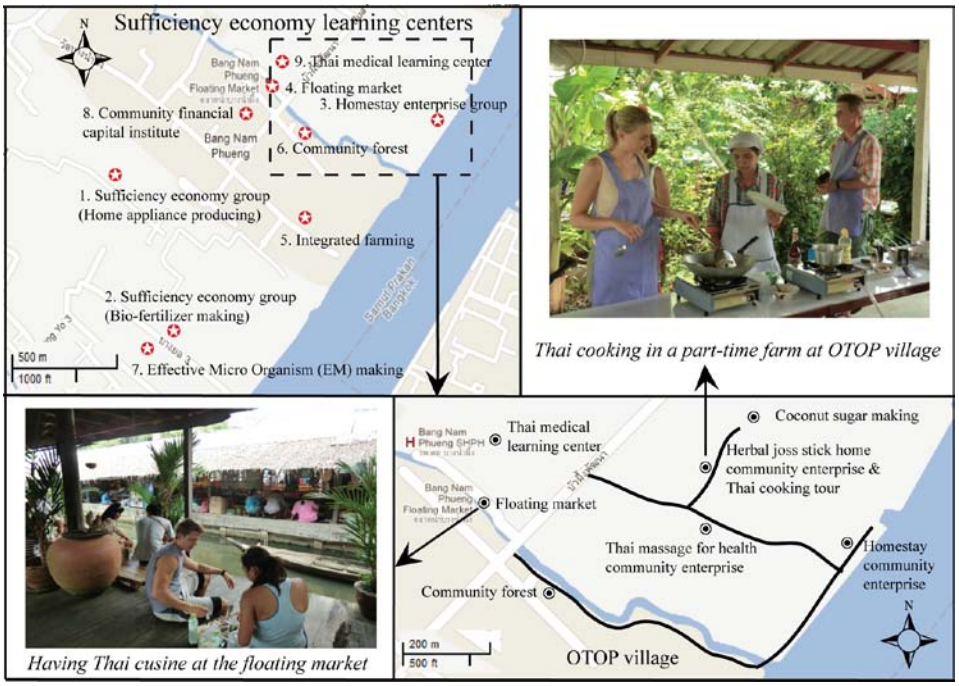

Figure 2-15 Sufficiency economy attractions in Bang Nam Phueng sub-district

Source: based on a Google map and photographs by the author, December 2012

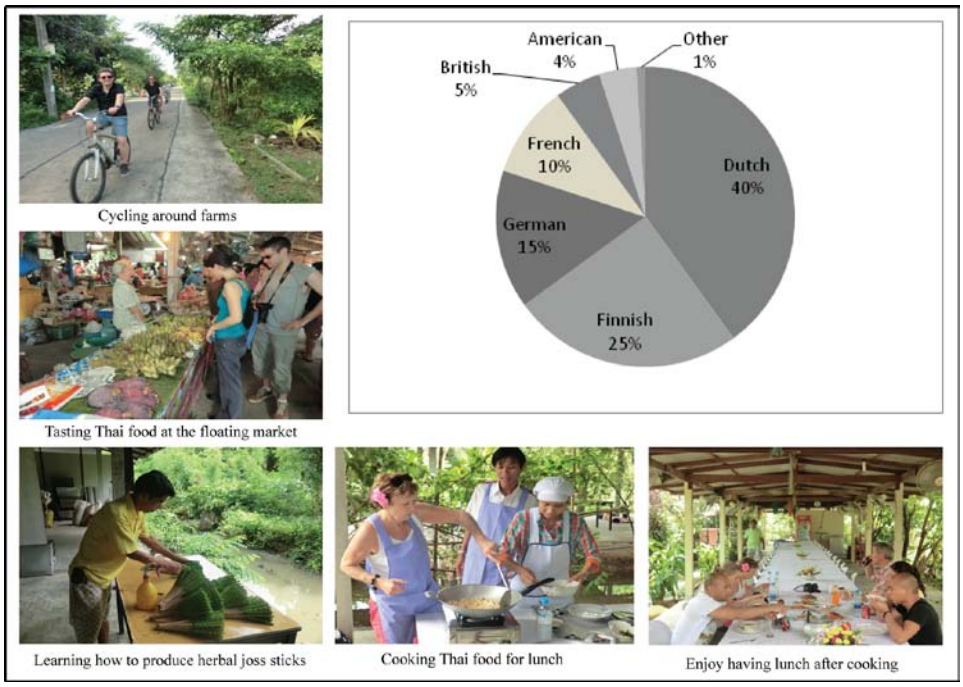

Figure 2-16 Market segments of international tourists by nationality in the herbal joss stick home

Source: interview, December 2012

Tourism income generated from rural tourism in the area directly allocate to villagers who own tourism business or empolyed in related tourism jobs. For example, merchants get profits from selling products in the floating market, homestay owners receive income from guests. Tourism management in the area is administrated and organized by the Bang Nam Phueng Tambon Administrative Office (TAO) and cooperated with local residents. However, 10 % of income will be allocated to Bang Nam Phueng TAO in order to be the neutral budget for any village development projects and community welfare such as a birthday present, a handicape support fund (Fig. 2-17). Moreover, the income will be shared to tourism related stakholders such as a supplyer. For example, homestay program costs 400 bath (13.33 USD.) will be allocated to TAO for 40 bath (1.33 USD.), paying 50 bath (1.66 USD.) for service costs such as a mortorcycle-taxi driver who transfer guest to homestay, and food supplyer).

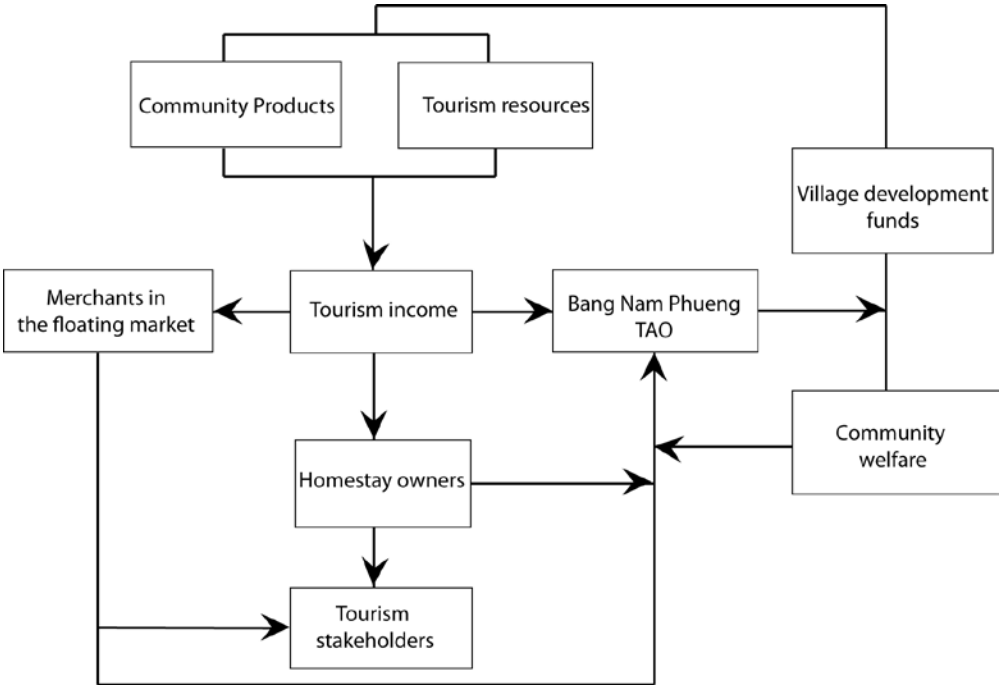

Figure 2-17 Tourism income distribution to the community in Bang Nam Phueng village

Sources: Interview the village headman and manager of Bang Nam Phueng floating market, December 2012

4. Sustainable rural tourism development in Thailand and the case studies: conclusion

Sustainable development of rural tourism in Thailand is associated with community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA). The element of rural tourism development is assumed as an integrated rural tourism model in Thailand which appears in both remote area and urban fringe area. This study which aims to measure the outcome of such tourism

development notes that the performance outcome from such model is subject to its approach and factors influenced it. In the case of Mae Kampong village, the village takes rural tourism as an opportunity-based motivation factor to promote its rurality and recreate new resources based on the cultivation of forest tea and coffee managed by the community. While, Bang Nam Phueng village employs rural tourism as a problem-based motivation factor to reconstruct agriculture by promoting the floating market organized by the local government. However, the tourism performance in both villages should be evaluated to understand the current circumstances and future tourism phenomenon in term of sustainability, which the contributions of this measuring will lead the community to the right way of sustainable development.

III. Developing Sustainability Indicators for Rural Tourism Analysis

Developing sustainability indicators follows the staged process of the research methodology underpinning the conceptual framework based on community capitals. This chapter presents the results of sustainability indicators development from the stage 1-3.

1. Stage 1 Indicators Identification

Sustainability indicators was identified by considering issues on targets of tourism development in the case studies collected by interviews of key informants in each case. Besides, a set of sustainability indicators for tourism destinations guided by the United Nations World Tourism Organization (UNWTO) (Box 1-1) and the Thai CBT standard indicators for community-based tourism management provided by the Thailand Community Based Tourism Institute (CBT-I) (Box 1-2) were reviewed and chosen to use with the case studies. The key informants giving the interviews of each village consist of 6 community leaders: a present village headman, a former village headman, two leader members of OTOP community enterprises, one representative of homestay owner, and one representative of farmers. The interviews focus on targets of rural tourism development based on three elements of rural tourism management in the villages: community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA). The interview questions associated with 19 themes (7 for CBT, each 6 for OTOP and SEA).

The present and former village headman gave the information on CBT's goal of development, which focused on 6 themes: tourism policy, occupational groups, environment, community participation, tourism income distribution, and tour operator. The representative of homestay owner provided information on homestay management. The leader members of OTOP community enterprises gave details on OTOP's development target, which addressed on 6 themes: attributes of community enterprises, product quality, product distributions, materials, package, and knowledge and skill transformation. The representative of farmers and village headmen were asked to share the opinions on SEA's target with 6 themes: household account doing, saving, agricultural practice, cooperative, welfare, and networks.

The results from interviews can be concluded as considering issues for identifying the candidate sustainability indicators as shown in Table 3-1 to 3-3.

Table 3-1 Targets of sustainable rural tourism development based on community-based tourism

Interview themes	Mae Kampong	Bang Nam Phueng	Considering indicators
Tourism Policy	Increase income and community welfare	Increase income, reduce expense	% of increased income and welfare % of decreased expense
Occupational groups	8 groups *(i.e.,tea, coffee, herbal, guide, music and dance, massage, bee farming, and homestay)*	9 groups *(i.e. herbal joss stick, massge, herbs, fruit cultivating, foods, drum, sweets, innificial flowers, and homestay)*	% of villagers in all occupational groups per village population
Environment	Carrying capacity 100 tourists/day	Organic substances use *(e.g., EM)*	Carrying capacity, % of organic substances
Participation	Tourism management by members of cooperative	Setting the annual community plan by villagers	Numbers of participants
Income distribution	All households	Some households	% of income/households
Tour operator	About 20 companies	About 2-3 companies	Numbers of tour company
Homestays, accommodation	Standard homestays , outsider investors and local investors	Standard homestays, outsider investors and local investors	% of certified homstays, ratio of outsider and local investment

Table 3-2 Targets of sustainable rural tourism development based on OTOP management

Interview themes	Mae Kampong	Bang Nam Phueng	Considering indicators
Community enterprises	2 enterprises (tea pillow, and homestay)	3 enterprises (herbal joss stick, herbal compress, and homestay)	Increase of numbers of certified community enterprises
Product quality	Registered as OTOP products	Registered as OTOP products	Ratio of certified standard OTOP products
Distributions	Wholesale to ordered customers and retail in the village for tourists	wholesale ordered customers and retail in the village and the floating market	Numbers of various distribution approaches
Materials	Local materials	Local natural materials	% of local natural products
Package	Reflex the identity of village	Reduce cost of producing	% of customer satisfaction
Knowledge and skill transformation	Teach to interested persons	Teach to interested persons and students	Increase of members of group and learners

Table 3-3 Targets of sustainable rural tourism development based on sufficiency economy agriculture

Interview themes	Mae Kampong	Bang Nam Phueng	Considering indicators
Household account doing	Some households	Some households	% of household accountant doing
Saving	Saving group for production	Community fund management institution	Numbers of villager participating saving institution
Agricultural practice	Organic forest tea and coffee	Organic integrated farming	% of organic farm
Cooperative	Hydro-electricity cooperative	Floating market merchants group	Numbers of group members
Welfare	Health and education	Health and career	% of villagers getting welfare
Networks	Community-based tourism model	Community-based tourism and sufficiency economy village model	Numbers of group of visitors to study in the village

According to Table 3-1 to 3-3, twenty-two considering indicators obtained from the targets of sustainable rural tourism development have been used for making an open-ended questionnaire on four criteria of sustainable rural tourism: economic, socio-cultural, environment, and institution. Moreover, the candidate sustainability indicators have also selected from the WTO's sustainability indicators for tourism destinations and Thai CBT standard indicators introduced by CBT-I. The open-ended questionnaire comprises 112 sustainability indicators and has been employed by the tourism experts following the first step selection of Delphi technique.

2. Stage 2 Indicators Selection

To select sustainability indicators for this study based on the Delphi technique, twenty-two panel members carried out the questionnaires for two rounds. The panelists were selected in two ways: top-down and bottom-up approach (See appendix). The expert panel members of both top-down and bottom-up approach were selected based on their expertise and experience in tourism development in the study areas. Even though the sample size for this study is relative small, limiting size of panel members makes it easier to control the work generated because too much input might bury good data (Choi and Sirakaya, 2006). The panelists in this study were properly selected with a pool of knowledgeable and representative rural tourism expert groups.

Results of round 1

The first round questionnaire with 112 sustainability indicators was instructed to rate panel members' opinions in terms of agreement or disagreement within a 5 point Likert scale (strongly agree to strongly disagree) A cutoff point of items' mean score was 3.5 or higher for the first round. The questionnaire was distributed to 22 panel members and 19 (86.4%) were returned. Table 3-4 to 3-8 shows results from the first round selection. The results of the first round open-ended questionnaire were synthesized for use in the second round.

Table 3-4 Sustainability indicators for the economic dimension

Model components	Economic Sustainability Indicator (financial/built capital)	Criterion	Mean	S.D.
Community-based tourism	1.Tourism income	Number of tourism income	3.89	0.88
	2. Expenditures	Number of expenditures per households	3.26	0.81
	3.Tourism income distribution	% of households gaining income from tourism	3.68	0.75
	4. Income from tour companies	Number of income from tour companies	2.52	0.77
	5. Income from outsider investors	Number of income from outsider investors	2.74	1.10
	6. Income from entrance fee	Number of income from entrance fee	2.42	1.30
	7. Income from donation	Number of income from donation	2.42	1.26
	8. Average length of stay	Average length of stay in community	3.43	1.01
	9. Homestays	Number of homestays	3.31	1.00
	10. Tourist expenditures	Amount of tourist expenditures per day	3.42	0.90
	11. Rural industries and services	Number of rural industries and services (e.g., restaurants, stores, resort hotels)	3.42	0.69
	12. Investment from villagers and outsider investors	Number of investment from both villagers and outsider investors	3.47	0.70
	13. Value of property	Cost of property	3.68	0.75
OTOP	14. Net profits from OTOP products	% of net profits from OTOP products	3.58	0.84
	15. Unit cost	% of unit cost reduction	3.42	0.84
	16. Distribution channel of OTOP products	Variety of distribution channel of OTOP products	3.63	1.07
	17. Category of OTOP products	Variety of category of OTOP products	3.56	1.11
	18. Sale promotion activity	Existence of sale promotion activity plan for tourists	3.36	1.07
Sufficiency economy agriculture	19. Household accountant doing	% of Household accountant doing	3.32	1.06
	20. Deposits or capital accumulation	Amount of deposits or capital in community financial institution	3.68	0.89
	21. Loan in community financial institution	Amount of loan in community financial institution	3.16	0.60
	22. Cost reduction in agricultural practice	% of Cost reduction in agriculture practice such as compost making, EM using	3.52	0.70
	23. Agricultural revenue	Number of agricultural revenue	3.42	0.77
	24. Average income	Number of average income per household	3.48	1.02

Table 3-5 Sustainability indicators for the socio-cultural dimension

Model components	Socio-cultural Sustainability Indicator (social and cultural capital)	Criterion	Mean	S.D.
Community-based tourism	1.Community participation of local people	% of households participating in community meeting, planning, and events	4.16	0.76
	2. Local satisfaction	Level of satisfaction in community-based tourism management	4.21	0.53
	3. Community plan	Existence of community plan, which includes tourism development projects	4.26	0.65
	4. Community plan review	Existence of community plan review	4.21	0.71
	5. Monitoring	Existence of monitoring program for planning implementation	3.43	0.93
	6. Educational tourism activities	Existence of educational tourism activities	3.95	0.70
	7. Accommodations	Number of accommodations	3.47	0.83
	8. Restaurants and stores	Number of restaurants and stores	3.42	1.02
	9. Public toilets	Number of public toilets	3.15	1.30
	10. Facilities for handicap tourists	Number of facility services providing for handicap tourists	2.84	1.38
	11. Safety	Number of securities	3.10	0.99
	12. Interpretation	Number of signs, information and knowledge boards in Thai and English in community.	2.89	1.32
	13. Parking	Existence of parking areas with capability for supporting number of vehicles	3.00	1.05
	14. Smoking area	Existence of smoking areas	2.89	1.20
	15. Transportation services	Existence of transportation services available provided by the community	3.21	0.92
	16. Reservation system	Existence of advanced reservation system	3.43	0.93
	17. Telecommunication services	Existence of telecommunication services (e.g. public telephone, the Internet)	3.31	0.82
	18. Homestays	Number of standard homestays certified by the Ministry of Tourism and Sport	4.21	1.03
	19. Learning activities in homestays	Existence of learning activities in homestays reflecting culture and identity of the community	3.36	0.89
	20. Local cuisine in homestays	% of local cuisine serving in homestays	4.21	0.71
	21. Tourist satisfaction on homestay services	% of level of satisfaction in tourism activities and services in homestays	4.11	0.81
OTOP	22. OTOP product champions	Ratio of OTOP product champions to community products (rating a star for indicating quality of OTOP products)	3.42	1.12
	23. Safety food products	Ratio of a registered safety food products labeled by the Food and Drug Administration	3.05	1.08
	24. Customer satisfaction on OTOP or community products	Volume order of products	3.58	0.83
	25. Product development	Changes in product development	3.58	1.01

	26. Community welfare	% of residents receiving community welfare	4.00	0.82
	27. Health	% of villagers having health problems	3.79	0.63
	28. Healthy food services	% of healthy food serving (e.g., organic food) in homestays and community restaurants	3.79	0.63
	29. Physical check	% of villagers having physical check	3.63	0.76
Sufficiency economy agriculture	30. Households free alcoholics and drug addicts	% of households with non-alcoholics and drug addicts	3.89	0.88
	31. Households free vices	% of households with non-vices	3.79	0.92
	32. Crime	% of criminals commit the crime in community	3.47	1.50

Table 3-6 Sustainability indicators for the environmental dimension

Model components	Environmental Sustainability Indicator (natural capital)	Criterion	Mean	S.D.
	1. Tourism carrying capacity	Limiting number of tourists per day	3.58	1.02
	2. Sewage management	% of using EM per household	3.89	0.94
	3. Household waste management	Existence of household waste management systems	3.44	1.09
	4. Waste from tourists	Number of public litter bins	3.48	1.08
	5. Waste quantity	Quantity of waste per day	3.45	1.10
Community-based tourism	6. Parking management	Parking capacities and use levels	3.47	0.97
	7. Ecotourism projects	Numbers of ecotourism projects	3.43	1.05
	8. Ecotourism activities	Existing management of environmentally friendly activities	4.16	0.68
	9. Nature walk trails	Management of nature walk trails with interpreters or interpretation	4.05	0.78
	10. Regulations on Environmental conservation	Existence of regulations on community's environmental conservation	4.36	1.07
	11. Environmental policy implementation	% of implementing environmental policy in accommodations (e.g., resort hotels, homestays)	3.48	0.88
	12. Forest area	Increasing number of planted trees in indigenous forest or community forest	4.16	0.90
	13. Flora and fauna	Existence of indigenous flora and fauna	4.10	0.74
	14. Community forest	% of utilizing the community forest per household	3.40	1.13
	15. Recreational land use	Existence of zoning for tourism activity	4.11	0.88
	16. Land tenure	% of land tenure by outside investors	3.15	1.07
	17. Natural products	Number of OTOP products or community products producing from natural materials	4.11	0.94
OTOP movement	18. Recycle products	Number of OTOP products or community products producing from recycle materials	3.48	1.00
	19. Green product	Impact on environment	4.00	1.11
	20. Packaging	% of packaging made from recycle materials	3.26	1.10
	21. Environmentally friendly products	% of OTOP products or community products not producing from rare flora and fauna	3.32	1.53

	22. Product satisfaction	% of satisfaction on Environmentally friendly products OTOP products or community products	3.68	1.11
Sufficiency economy agriculture	23. Organic substance use in agriculture	% of farmer households using organic substances to profit productivity	3.89	0.88
	24. Organic farms	% of organic farms	3.48	1.02
	25. Manure or compost making	% of farmer households making manure or compost	3.48	0.98
	26. New Theory Farming System	% of farmer households applying the New Theory Farming System into agricultural practice	3.42	0.90
	27. Natural resource use	% of households using natural resource economically	4.00	0.75

Table 3-7 Sustainability indicators for the institutional dimension

Model components	Institutional Sustainability Indicator (human capital)	Criterion	Mean	S.D.
Community-based tourism	1. Supported organizations	Number of supported organizations	3.52	0.90
	2. Volunteers	Number of volunteers supporting rural tourism promotion	3.36	1.01
	3. Community outside researchers	Number of community outside researchers	3.53	0.90
	4. Local researchers	Number of local researchers	3.00	1.15
	5. Tourists or study visitors	Number of tourists or study visitors per year	4.42	0.69
	6. Repeated visitors	% of repeated visitors	3.42	1.07
	7. Supported budgets from NPOs	Number of supported budgets from NPOs	3.21	0.92
	8. Tour companies cooperating with community	Number of tour companies is of benefit to community	3.11	1.20
	9. Community outside investors	Number of community outside investors	2.57	1.22
	10. Local investors	Number of local investors	3.00	1.25
	11. Local guides	Number of local guides	3.00	1.33
	12. Local traditional performers	Number of local traditional performers (e.g., musicians, dancers)	2.95	1.13
OTOP	13. Career extension	Number of organizations promoting the community career extension	3.32	1.16
	14. Career extension budgets	Number of career extension budgets	3.00	1.00
	15. Registered community enterprises	Number of registered community enterprises	3.11	0.88
	16. Community career development	Number of community career development projects	3.26	0.99
	17. Special interest in producing community products	Number of tourists who are interested in producing community products	3.68	1.15

	18. Product learning activities	Number of product learning activities for tourists	3.42	1.01
	19. Occupational groups or community enterprises	Number of members of occupational groups or community enterprises	3.63	0.83
	20. Human development	Number of villagers attending the process of producing the OTOP or community products	3.68	1.10
Sufficiency economy agriculture	21. Cooperatives or financial institutions	Number of members of a cooperative or other community financial institutions	3.79	0.92
	22 .Networks of Cooperatives or financial institutions	Number of networks of cooperatives or other community financial institutions	3.58	0.90
	23. Registered farmers	% of registered famers	3.26	1.05
	24. Agricultural extension organizations	Number of agricultural extension organizations	3.10	0.94
	25. Farmer groups	Number of farmer groups	3.26	1.10
	26. Agricultural extension funds	Number of agricultural extension funds each year	2.89	1.10
	27. Agricultural networks	Number of agricultural networks	2.95	1.03
	28. Network of sufficiency economy role models	Existence of sufficiency economy role models networking	3.44	1.19
	29. Linkage of rural tourism in sufficiency economy role models	Existence of rural tourism linkage between sufficiency economy role models	3.49	1.18

Note: Mean: each candidate indicator of each category has been rated by 19 panel members from strongly agree (5) to strongly disagree (1). Cutoff point: 3.5 or higher.

From the first round open-ended questionnaire, the panel members have proposed five sustainability indicators for the second round selection. The proposed indicators have shown in Table 3-8.

Table 3-8 Proposed sustainability indicators from the first round selection

Model components	Proposed sustainability indicators	Criterion	Types of sustainability indicators
Community-based tourism	Youth participation in tourism management	% of youth participation in tourism management	Socio-cultural
	Tour programs	Existence of tour programs with local guides	Economic
Sufficiency economy agriculture	Kitchen garden	% of doing kitchen garden	Economic
	Training	% of households participating training projects or knowledge discourses organized by supported institutions	Institutional
	Community leaders	Acceptance of residents toward the potential of community leaders	Institutional

From the first round selection, 52 sustainability indicators were chosen (47 from candidate indicators and 5 from proposed indicators). Those indicators were used for making the second round Delphi technique questionnaire and proposed to the final set of selecting indicators.

Results of round 2

The second round questionnaire with 52 sustainability indicators were sent to 19 respondents of the first round and 14 (73.7%) were returned. Respondents were instructed to rate their opinion in terms of agreement or disagreement within a 5 point Likert scale (strongly agree to strongly disagree) as same as the first round. However, a cutoff point of items' mean score was 4.0 due to limitation in over numbers of potential indicators. From the second round, 22 potential indicators for measuring sustainability of rural tourism in the case studies were selected which covered four dimensional criteria of sustainability and three components of rural tourism model. Results from the second round survey were presented in Table 3-9.

Table 3-9 Sustainability indicators for the economic dimension

Model components	Economic Sustainability Indicator (financial/built capital)	Criterion	Mean	S.D.
Community-based tourism	1.Tourism income	Number of tourism income	4.31	0.73
	2.Tourism income distribution	% of households gaining income from tourism	4.14	0.84
	3. Value of property	Cost of property	3.98	0.83
	4. Tour programs	Existence of tour programs with local guides	3.14	0.97
OTOP	5. Net profits from OTOP products	% of net profits from OTOP products	4.21	0.63
	6. Distribution channel of OTOP products	Variety of distribution channel of OTOP products	3.79	1.05
	7. Category of OTOP products	Variety of category of OTOP products	3.79	1.25
Sufficiency economy	8. Deposits or capital accumulation	Amount of deposits or capital in community financial institution	4.14	0.53
	9. Cost reduction in agricultural practice	% of Cost reduction in agriculture practice such as compost making, EM using	3.21	0.97
	10. Kitchen garden	% of kitchen garden doing	4.07	0.85

Table 3-10 Sustainability indicators for the socio-cultural dimension

Model components	Socio-cultural Sustainability Indicator (social and cultural capital)	Criterion	Mean	S.D.
Community-based tourism	1.Community participation of local people	% of households participating in community meeting, planning, and events	4.21	0.70
	2. Youth participation in tourism management	% of youth participation in tourism management	3.07	0.99
	3. Local satisfaction	% of households satisfying in community-based tourism management	4.14	0.86
	4. Community plan	Existence of community plan, which includes tourism development projects	3.94	0.66
	5. Community plan review	Existence of community plan review	3.64	1.08
	6. Educational tourism activities	Existence of educational tourism activities	3.86	0.95
	7. Homestays	% of standard homestays certified by the Ministry of Tourism and Sport	4.43	0.65
	8. Local cuisine in homestays	% of local cuisine serving in homestays	3.87	0.99

	9. Tourist satisfaction on homestay services	% of level of satisfaction in tourism activities and services in homestays	4.07	0.47
OTOP	10. Customer satisfaction on OTOP products or community products	Volume order of products	3.86	0.66
	11. Product development	Changes in product developmet	4.11	0.73
Sufficiency economy agriculture	12. Community welfare	% of residents receiving community welfare	4.29	0.91
	13. Health	% of villagers not having health problems	4.14	0.77
	14. Physical check	% of villagers having physical check	3.92	0.83
	15. Healthy food services	% of healthy food services in homestays and community restaurants	3.86	0.86
	16. Households free alcoholics and drug addicts	% of households with non-alcoholics and drug addicts	3.71	1.07
	17. Households free vices	% of households with non-vices	3.79	1.12

Table 3-11 Sustainability indicators for the environmental dimension

Model components	Environmental Sustainability Indicator (natural capital)	Criterion	Mean	S.D.
Community-based tourism	1. Sewage and solid waste management	Existence of sewage and solid waste treatment systems	3.50	1.09
	2. Ecotourism activities	Existing management of environmentally friendly activities	4.21	0.58
	3. Nature walk trails	Management of nature walk trails with interpreters or interpretation	3.87	0.65
	4. Forest area	Increasing number of planted trees in indigenous forest or community forest	3.93	0.92
	5. Flora and fauna	Existence of indigenous flora and fauna	3.94	0.58
	6. Recreational land use	Existence of zoning for tourism activity	4.21	0.58
OTOP movement	7. Natural products	Number of OTOP products or community products producing from natural materials	3.71	1.20
	8. Local products	Number of OTOP products or community products producing from local resources	4.07	0.73
	9. Product satisfaction	% of satisfaction on OTOP products or community products	3.86	0.77
Sufficiency economy	10. Organic substance use in agriculture	% of farmer households using organic substances to profit productivity	4.00	0.78
	11. Natural resource use	% of households using natural resource economically	3.57	0.93

Table 3-12 Sustainability indicators for the institutional dimension

Model components	Institutional Sustainability Indicator (human capital)	Criterion	Mean	S.D.
Community-based tourism	1.Supported organizations	Number of supported organizations	3.79	0.80
	2. Outsider researchers	Number of researchers	3.79	0.58
	3. Training	% of households participating training projects or knowledge discourses organized by supported institutions	4.21	0.89
	4. Special interest in producing community products	Number of tourists who are interested in producing community products	3.86	0.95
	5. Community leaders	% of households accepting the potential of community leaders in community-based tourism management	4.29	0.72
	6. Tourists or study visitors	Number of tourists or study visitors per year	4.07	0.92
	7. Tourism carrying capacity	Limiting number of tourists per day	4.00	1.11
	8. Regulations on environmental conservation	Existence of regulations on community's environmental conservation	3.96	0.74
OTOP movement	9. Occupational groups or community enterprises	Number of members of occupational groups or community enterprises	4.07	0.65
	10. Human development	Number of villagers attending the process of producing the OTOP or community products	3.43	0.94
Sufficiency economy	11. Cooperatives or financial institutions	Number of members of a cooperative or other community financial institutions	4.57	0.89
	12. Networks of Cooperatives or financial institutions	Number of networks of cooperatives or other community financial institutions	3.79	0.89

Note: Mean: each candidate indicator of each category has been rated by 14 panel members from strongly agree (5) to strongly disagree (1). Cutoff point: 4.0 or higher.

According to results from the second round selection, the selected sustainability indicators were 22: 12 CBT indicators, 4 OTOP indicators, and 6 sufficiency economy agriculture indicators. Some indicators have been rearranged and grouped due to related data collection and explanation as shown in Table 3-13.

Table 3-13 Sustainability indicator of community-based tourism

Sustainability Dimension	Indicators	Criterion
Economic	1.Tourists	Number of tourists
	2.Tourism income	Number of tourism income
	3. Tourism income distribution	Percent of households gaining income from tourism
Socio-cultural	4. Local satisfaction	Percent of households satisfying in community-based tourism management
	5. Homestays	Percent of standard homestays certified by the Ministry of Tourism and Sports
	6. Tourist satisfaction	Level of satisfaction in tourism activities and services in homestays
Environmental	7. Ecotourism activity	Existing management of environmentally friendly activities
	8. Recreational land use	Existence of zoning for tourism activity
	9. Tourism carrying capacity	Limiting number of tourists per day
Institutional	10.Supported organizations	Percent of households getting knowledge or skills on rural tourism from supported organizations
	11. Community leaders	Percent of households accepting the potential of community leaders in community-based tourism management
	12. Community participation	Percent of households participating in community events, meeting, planning, and decision-making

Table 3-14 Sustainability indicators of OTOP management

Sustainability Dimension	Indicator	Criterion
Economic	13. Net benefit of products	Number of net benefits of products
Socio-cultural	14. Product development	Changes in product development
Environmental	15.Green products	Impacts on environment
Institutional	16. Solidarity of community enterprises	Number of members of community enterprises producing OTOP products

Table 3-15 Sustainability indicators of sufficiency economy agriculture

Sustainability Dimension	Indicator	Criterion
Economic	17. Deposits or capital accumulation	Amount of deposits or capital in community financial institution
	18. Kitchen garden	Percent of households doing kitchen garden
Socio-cultural	19. Community welfare	Percent of households receiving community welfare
	20. Health	Percent of family households having health problems
Environmental	21. Organic substance use in agriculture	Percent of farmer households using organic substances to profit productivity
Institutional	22. Cooperatives or financial institutions	Number of members of cooperative or financial institution

3. Stage 3 Evaluating Preparation

Methods for collecting data have been conducted by four approaches: record, interview, field observation, and questionnaire survey. Record refers to available sources of both qualitative and quantitative data recorded by the community, related organizations or persons such as a statistic record, project report, research publication, or certification. Interview collects the qualitative data in which those cannot be found in any records such policy or plan. Field observation examines an evidence of performances by photography such as changes in development of community products. Questionnaire survey employs to all households to collect the percentages of each performance based on 9 indicators (indicator 3, 4, 10, 11, 12,18,19,20, and 21). The method of each indicator has identified in Table 3-16.

Table 3-16 Methods for collecting data or evidences of CBT

Sustainability Dimension	Indicators	Criterion	Methods
Economic	1.Tourists	Number of tourists	Record or interview
	2.Tourism income	Number of tourism income	Record or interview
	3. Tourism income distribution	Percent of households gaining income from tourism	Household questionnaire
Socio-cultural	4. Local satisfaction	Percent of households satisfying in community-based tourism management	Household questionnaire
	5. Homestays	Percent of standard homestays certified by the Ministry of Tourism and Sports	Record (homestay standard certification)
	6. Tourist satisfaction	Level of satisfaction in tourism activities and services in homestays	Record or tourist questionnaire
Environmental	7. Ecotourism activity	Existing management of environmentally friendly activities	Observation and interview
	8. Recreational land use	Existence of zoning for tourism activity	Observation and interview
	9. Tourism carrying capacity	Limiting number of tourists per day	Record or interview
Institutional	10.Training	Percent of households getting knowledge or skills on rural tourism from supported organizations	Household questionnaire
	11. Community leaders	Percent of households accepting the potential of community leaders in community-based tourism management	Household questionnaire
	12. Community participation	Percent of households participating in community events, meeting, planning, and decision-making	Household questionnaire

Table 3-17 Methods for collecting data or evidences of OTOP

Sustainability Dimension	Indicator	Criterion	Methods/tools
Economic	13. Net benefit of products	Number of net benefits of products	Record or interview
Sociocultural	14. Product development	Changes in product development	Interview
Environmental	15.Green products	Impacts on environment	Interview
Institutional	16. Solidarity of community enterprises	Number of members of community enterprises producing OTOP products	Record or interview

Table 3-18 Methods for collecting data or evidences of sufficiency economy agriculture

Sustainability Dimension	Indicator	Criterion	Method/tool
Economic	17. Deposits or capital accumulation	Amount of deposits or capital in community financial institution	Record or interview
	18. Kitchen garden	Percent of households doing kitchen garden	Household questionnaire
Sociocultural	19. Community welfare	Percent of households receiving community welfare	Household questionnaire
	20. Health	Percent of family households having health problems	Household questionnaire
Environmental	21. Organic substance use in agriculture	Percent of farmer households using organic substances to profit productivity	Household questionnaire
Institutional	22. Cooperatives or financial institutions	Number of members of cooperative or financial institution	Record or interview

Besides indentifying methods for collecting data, sustainability values have been established to determine level of performance by considering from target of indicators as shown in Table 3-19.

Table 3-19 Targets of CBT's sustainability indicators

Sustainability Dimension	Indicators	Criterion	Target
Economic	1.Tourists	Number of tourists	Increase
	2.Tourism income	Number of tourism income	Increase
	3. Tourism income distribution	Percent of households gaining income from tourism	> 60%
Socio-cultural	4. Local satisfaction	Percent of households satisfying in community-based tourism management	> 60%
	5. Homestays	Percent of standard homestays certified by the Ministry of Tourism and Sports	> 60%
	6. Tourist satisfaction	Level of satisfaction in tourism activities and services in homestays	High level
Environmental	7. Ecotourism activity	Existing management of environmentally friendly activities	Existence
	8. Recreational land use	Existence of zoning for tourism activity	Existence
	9. Tourism carrying capacity	Limiting number of tourists per day	Existence
Institutional	10.Trainning	Percent of households getting knowledge or skills on rural tourism from supported organizations	> 60%
	11. Community leaders	Percent of households accepting the potential of community leaders in community-based tourism management	> 60%
	12. Community participation	Percent of households participating in community events, meeting, planning, and decision-making	> 60%

Table 3-20 Targets of OTOP's sustainability indicators

Sustainability Dimension	Indicator	Criterion	Target
Economic	13. Net benefit of products	Number of net benefits of products	Increase
Sociocultural	14. Product development	Changes in product development	Better outcome
Environmental	15.Green products	Impacts on environment	Positive
Institutional	16. Solidarity of community enterprises	Number of members of community enterprises producing OTOP products	Increase or stable

Table 3-21 Targets of sufficiency economy agriculture's sustainability indicators

Sustainability Dimension	Indicator	Criterion	Target
Economic	17. Deposits or capital accumulation	Amount of deposits or capital in community financial institution	Increase
	18. Kitchen garden	Percent of households doing kitchen garden	> 60%
Sociocultural	19. Community welfare	Percent of households receiving community welfare	> 60%
	20. Health	Percent of family households not having health problems	> 60%
Environmental	21. Organic substance use in agriculture	Percent of farmer households using organic substances to profit productivity	> 60%
Institutional	22. Cooperatives or financial institutions	Number of members of cooperative or financial institution	Increase or stable

According to the targets shown in Table 3-19 to 3-21, sustainability values have been identified by percentage and rating scores from 1-7, which manifest a level of performances and sustainability interpretation (Table 1-3 and Fig.1-4). The accepted score for drawing an ideal baseline in the Amoeba diagram is 5, which indicates good performance and potentially sustainable. This sustainability value is used for all types of indicators: percentage indicators deriving from the household questionnaire survey (indicator 3,10, 11,12,18,19, 20 and 21), raw data indicators from records consideration (indicator 1, 2, 5, 13, 14, 16, 17, 22), opinion-based indicators from the household questionnaire survey and statistical data of other previous studies (indicator 4 from the household questionnaire survey and indicator 6 from the statistical data of other previous studies), and normative indicators from interview, field observation, and other records (indicator 7, 8, 9, and 15).

However, the data or evidences not conducted by the questionnaire survey are quite difficult to determine due to the difference in quality context. Setting percentages and rating scores are specified in each indicator by comparative criteria with the barometer of sustainability (Fig.3-3). The following tables describe the condition for giving percentages and rating scores.

Raw Data indicators (indicator 1, 2, 5,13, 14, 16, 17, 22)

Indicator 1: tourists

Table 3-22 The condition for identifying sustainability values of indicator 1

Condition	Percentage value	Rating score
Steadily increase in a number of both domestic and international tourists throughout the periods of measurement.	80	7
Fluctuate in a number of either domestic or international tourists but increase in a current period year of measurement.	70	6
Fluctuate in a number of either domestic or international tourists but is stable in a current period year of measurement.	60	5
Fluctuate in a number of either domestic or international tourists but decrease in a current period year of measurement.	50	4
Stability in a low number of either domestic or international tourists throughout the periods of measurement.	40	3
Continually decrease in a number of either domestic tourists or international tourists throughout the periods of measurement.	30	2
Continually decrease in a number of both domestic tourists and international tourists throughout the periods of measurement.	20	1

Indicator 2: tourism income

Table 3-23 The condition for identifying sustainability values of indicator 2

Condition	Percentage value	Rating score
Steadily increase in an amount of tourism income throughout the periods of measurement.	80	7
Fluctuate in an amount of tourism income but increase in a current period year of measurement.	70	6
Fluctuate in an amount of tourism income but is stable in a current period year of measurement.	60	5
Fluctuate in an amount of tourism income but decrease in a period year of measurement.	50	4
Stability in a low amount of tourism income throughout a period year of measurement.	40	3
Fluctuate in a low amount of tourism income and decrease in a current period year of measurement.	30	2
Continually decrease in an amount of tourism income throughout the periods of measurement.	20	1

Indicator 5: homestay

Table 3-24 The condition for identifying sustainability values of indicator 5

Condition	Percentage value	Rating score
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 80 percent or above.	80	7
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 70 - 79 percent.	70	6
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 60 - 69 percent.	60	5
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 50 - 59 percent.	50	4
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 40 - 49 percent.	40	3
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 30 - 39 percent.	30	2
Numbers of standard homestays certified by the Ministry of Tourism and Sports are 29 percent or below.	20	1

Indicator 13: net benefits

Table 3-25 The condition for identifying sustainability values of indicator 13

Condition	Percentage value	Rating score
Steadily increase in an amount of net benefits throughout the periods of measurement.	80	7
Fluctuate in an amount of net benefits but increase in a current period year of measurement.	70	6
Fluctuate in an amount of net benefits but is stable in a current period year of measurement.	60	5
Fluctuate in an amount of net benefits throughout a period year of measurement.	50	4
Stability in a low amount of net benefits throughout a period year of measurement.	40	3
Fluctuate in a low amount of net benefits and decrease in a current period year of measurement.	30	2
Continually decrease in an amount of net benefits throughout the periods of measurement.	20	1

Indicator 14: product development

Table 3-26 The condition for identifying sustainability values of indicator 14

Condition	Percentage value	Rating score
A total score of the marketing mix is 80 or above.	80	7
A total score of the marketing mix is during 70 – 79.	70	6
A total score of the marketing mix is during 60 – 69.	60	5
A total score of the marketing mix is during 50 – 59.	50	4
A total score of the marketing mix is during 40 – 49.	40	3
A total score of the marketing mix is during 30 – 39.	30	2
A total score of the marketing mix is during 20 – 29.	20	1

The score of marketing mix in Table 3-26 is given by the consideration of product criteria as shown in Table 3-27.

Table 3-27 Criteria for scoring the marketing mix (4P's)

4P's	Consideration items	Item scores (10)	Total scores (100)
Product	Quality standard of product certified by 4-5 stars OTOP	10	40
	Up grading product to obtain 4 or 5 stars OTOP or keeping standard of 5 stars OTOP	10	
	Local identity (reflection of village culture and uniqueness)	10	
	Attractiveness of packages (label, information, brand, OTOP's logo)	10	
Price	Variety of prices subjects to size and design of products	10	20
	Reasonable prices with the same standard for Thai customers and foreigner customers distributing at the local markets.	10	
Promotion	Creative marketing through various forms of advertisement (e.g., media, the Internet)	10	20
	Promotion sales and customer services	10	
Place	Attractiveness of place for selling products	10	20
	Variety of distribution channel	10	

Indicator 16: community enterprises

Table 3-28 The condition for identifying sustainability values of indicator 16

Condition	Percentage value	Rating score
Steadily increase in a number of community enterprise's members throughout the periods of measurement.	80	7
Fluctuate in a number of community enterprise's members but increase in a current period year of measurement.	70	6
Fluctuate in a number of community enterprise's members but is stable in a current period year of measurement.	60	5
Stability in a number of community enterprise's members throughout a period year of measurement	50	4
Fluctuate in a number of community enterprise's members throughout a period year of measurement.	40	3
Fluctuate in a number of community enterprise's members and decrease in a current period year of measurement.	30	2
Continually decrease in a number of community enterprise's members throughout the periods of measurement.	20	1

Indicator 17: deposits or capital accumulation

Table 3-29 The condition for identifying sustainability values of indicator 17

Condition	Percentage value	Rating score
Steadily increase in an amount of deposits or financial capital in the community financial institution throughout the periods of measurement.	80	7
Fluctuate in an amount of deposits or financial capital in the community financial institution but increase in a current period year of measurement.	70	6
Fluctuate in an amount of deposits or financial capital in the community financial institution but is stable in a current period year of measurement.	60	5
Stability in an amount of deposits or financial capital in the community financial institution throughout a period year of measurement.	50	4
Fluctuate in an amount of deposits or financial capital in the community financial institution throughout a current period year of measurement.	40	3
Fluctuate in an amount of deposits or financial capital in the community financial institution and decrease in a current period year of measurement.	30	2
Continually decrease in an amount of deposits or financial capital in the community financial institution throughout the periods of measurement.	20	1

Indicator 22: cooperatives or financial institutions

Table 3-30 The condition for identifying sustainability values of indicator 22

Condition	Percentage value	Rating score
Steadily increase in a number of cooperatives or financial institution's members throughout the periods of measurement.	80	7
Fluctuate in a number of cooperatives or financial institution's members but increase in a current period year of measurement.	70	6
Fluctuate in a number of cooperatives or financial institution's members but is stable in a current period year of measurement.	60	5
Stability in a number of cooperatives or financial institution's members throughout a period year of measurement.	50	4
Fluctuate in a number of cooperatives or financial institution's members throughout a period year of measurement.	40	3
Fluctuate in a number of cooperatives or financial institution's members and decrease in a current period year of measurement.	30	2
Continually decrease in a number of cooperatives or financial institution's members throughout the periods of measurement.	20	1

Opinion-based indicators (indicator 4 and 6)

Indicator 4: local satisfaction and indicator 6: tourist satisfaction

Table 3-31 The condition for identifying sustainability values of indicator 4 and 6

Level of satisfaction	Percentage value	Rating score
Highest	80	7
High	70	6
Neutral	50	4
Low	40	3
Lowest	20	1

Noted: The percentage value of 60 and 30 are disappeared because the level of satisfaction is ranged on a five-Likert scale. Therefore, 60 % is merged with 70 % due to the same sustainability value at "potentially sustainable" and 30 % is merged with 40% due to the same sustainability value at "potentially unsustainable."

Normative indicators (indicator 7, 8, 9 and 15)

Indicator 7: ecotourism activity

Table 3-32 The condition for identifying sustainability values of indicator 7

Numbers of ecotourism covering five elements of environmental conservation (forest, wildlife, soil, water, and air)	Percentage value	Rating score
Ecotourism activities which cover five elements of environmental conservation	80	7
Ecotourism activities which consist four elements of environmental conservation	70	6
Ecotourism activities which consist three elements of environmental conservation	60	5
Ecotourism activities which consist at least two elements of environmental conservation	50	4
Ecotourism activity which represents one element of environmental conservation	40	3
Ecotourism activities are provided for only some special occasions.	30	2
Lack of ecotourism activities	20	1

Indicator 8: recreational land use

Table 3-33 The condition for identifying sustainability values of indicator 8

Numbers of recreational land use plan covering three categories of land use (residential, agricultural, and forest area)	Percentage value	Rating score
More than five recreational land use plans covering three categories of land use	80	7
Five recreational land use plans covering three categories of land use	70	6
Four recreational land use plans covering three categories of land use	60	5
Three recreational land use plans covering three categories of land use	50	4
Two recreational land use plans consisting one of three categories of land use	40	3
At least one recreational land use plan consisting one of three categories of land use	30	2
Lack of recreational land use plans	20	1

Indicator 9: tourism carrying capacity

Table 3-34 The condition for identifying sustainability values of indicator 9

Limiting number of tourists per day	Percentage value	Rating score
There is an implementation of plans for limiting number of tourists, which cover three aspects of tourism carrying capacity: guest in homestay, one-day visitors, and tourists per one activity area.	80	7
There is an implementation of plans for limiting number of tourists, which cover two of three aspects of tourism carrying capacity.	70	6
There is an implementation of plans for limiting number of tourists consisting at least one of three aspects of tourism carrying capacity.	50	4
There is no implementation of plans for limiting number of tourists but there is an implementation of related plans concerning tourism carrying capacity	40	3
There are plans for limiting number of tourists but never used to practice.	30	2
Lack of plans concerning limitation of tourist numbers.	20	1

Indicator 15: green products

Table 3-35 The condition for identifying sustainability values of indicator 15

Numbers of green products toward the environmental impacts	Percentage value	Rating score
All products are made from natural materials with no negative impacts on environment but having positive impacts on environment.	80	7
All products are made from natural materials with no negative impacts on environment but not having positive impacts on environment.	70	6
Some products are made from natural materials with no negative impacts on environment but having positive impacts on environment.	60	5
Some products are made from natural materials with no negative impacts on environment but not having positive impacts on environment.	50	4
Some products are made from natural materials which may cause the negative impacts on environment.	40	3
All products are made from natural materials which may cause the negative impacts on environment.	30	2
All products are made from materials which damage natural and environment.	20	1

IV: Measuring Sustainability of Rural Tourism in the Case Studies

This chapter presents the results of taking 22 developed sustainability indicators to measure three elements of sustainability of rural tourism: community-based tourism, one *tambon* one product, and sufficiency economy agriculture, which is the stage 4 of research methodology. Then, benchmark the comparative results of two cases in a form of AMOEBA diagram.

1. Results of measuring sustainability (Stage 4 Sustainability evaluation)

Measuring the sustainability of rural tourism entails basic features of sustainable development adapted from four dimensions: economic, sociocultural, environmental, and institutional sustainability (Smith, 2002). Consistent with the component of Thailand's rural development model: community-based tourism, one *tambon* one product, and sufficiency economy, four dimensions of sustainability have been analyzed in each element of the model.

1.1. Community-based tourism

The first section measures four sustainability dimensions based on the management of community-based tourism by indicator 1 to 12. Indicator 1 to 3 measures the economic sustainability by considering a number of tourists which influences the fluctuation of income and the distribution of income generating from employment in tourism. Indicator 4 to 6 assesses the sociocultural sustainability through the analysis of the level of local and tourist satisfaction on tourism which focuses on homestay management, an important tourism product of Thailand's community-based tourism. Indicator 7 to 9 evaluates the sustainability of environment via examining the existence of ecotourism activities, planning on recreational land use, and the carrying tourism capacity addressing on limiting number of tourists. Indicator 10 to 12 measures the institutional sustainability, which three factors influencing the strength of community: supported organization, community leaders, and community participation have been used.

Economic sustainability

For analyzing sustainability of economic dimension generating by community-based tourism, three criterions associated with tourists (indicator 1), tourism income (indicator 2) and income distribution (indicator 3) were selected to measure sustainability.

Indicator 1: number of tourists

For determining the economic sustainability related to rural tourism communities, an increase of number of tourists manifests a tendency of successful marketing management by the communities. For Mae Kampong village, a number of international tourists steadily increased during the period 2007-2012. However, the number of domestic tourists fluctuated (Fig 4-1). During the period 2006-2011, the number of international tourists visiting the Bang Nam Phueng floating market slightly fluctuated, while the number of

domestic tourists tended to decline after 2010. The decrease of number of tourists vising the Bang Nam Phuenng floating market is caused by the current political crisis in the Bangkok metropolis.

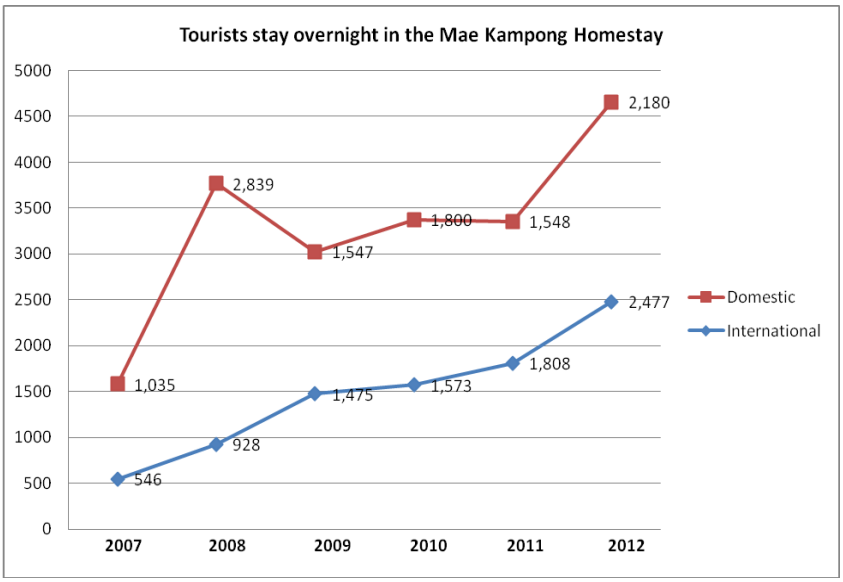

Figure 4-1 Number of tourists visit Mae Kampong village and stay overnight in homestays

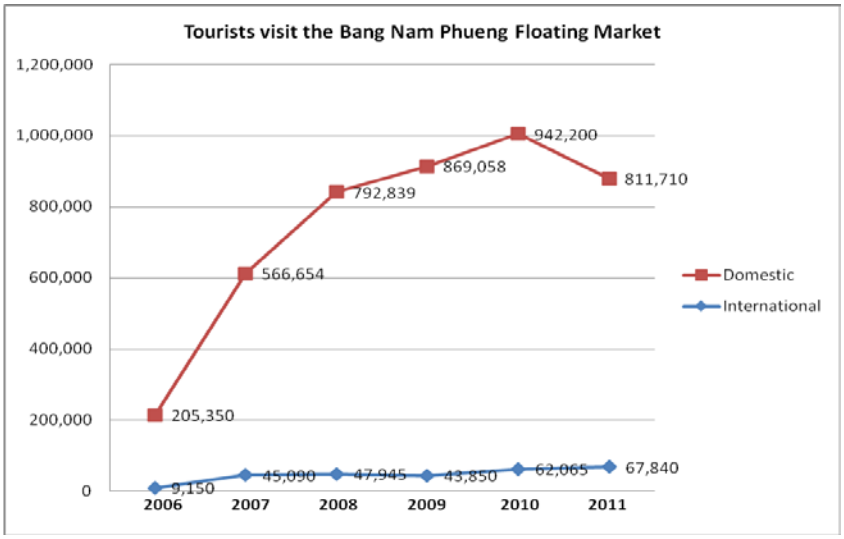

Figure 4-2 Number of tourists visit the Bang Nam Phueng floating market

As considering with the condition for identifying sustainability values of indicator 1 (Table 3-22), the number of domestic tourists of Mae Kampong fluctuated but increase in a current period year of measurement. As a result, the percentage value equals 70 and rating score is 6. The score indicates that the level of performance is “excellent,” and sustainability value is “potentially sustainable.” For Bang Namphueng, the percentage value is 50 and rating score is 4 due to decrease in the number of domestic tourists in the current period year of measurement. The score manifests that the level of performance is “acceptable,” and sustainability value is “intermediate.”

Indicator 2: tourism income

Community-based tourism management is a strength point of Mae Kampong village. The income from tourism goes to a cooperative whose members receive dividends from the benefits. The engaged members come from seven occupational groups: homestay, tea pillow, tea and coffee, tour guide, massage, herbal, and musical and performance. Community-based tourism offers three tour programs, which are operated by community members. Income from tourism comes mainly from the service fees of the three tour programs: the one day, homestay, and study tours provided to several target group of tourists as mentioned in chapter 2 part 3.1.

According to tour programs, the revenues generating from tour programs have been increasing continually as shown in Table 4-1and figure 4-3.

Table 4-1 Tourism income of Mae Kampong village

Year	Tourism income (Baht)		Total tourism income (Baht)
	Domestics	International	
2007	668,097	327,458	995,555
2008	1,092,554	426,406	1,518,960
2009	964,965	771,205	1,736,170
2010	1,107,030	808,715	1,915,745
2011	1,057,135	932,695	1,989,830
2012	1,324,910	1,292,315	2,617,225

Source : Interview, December, 2013.

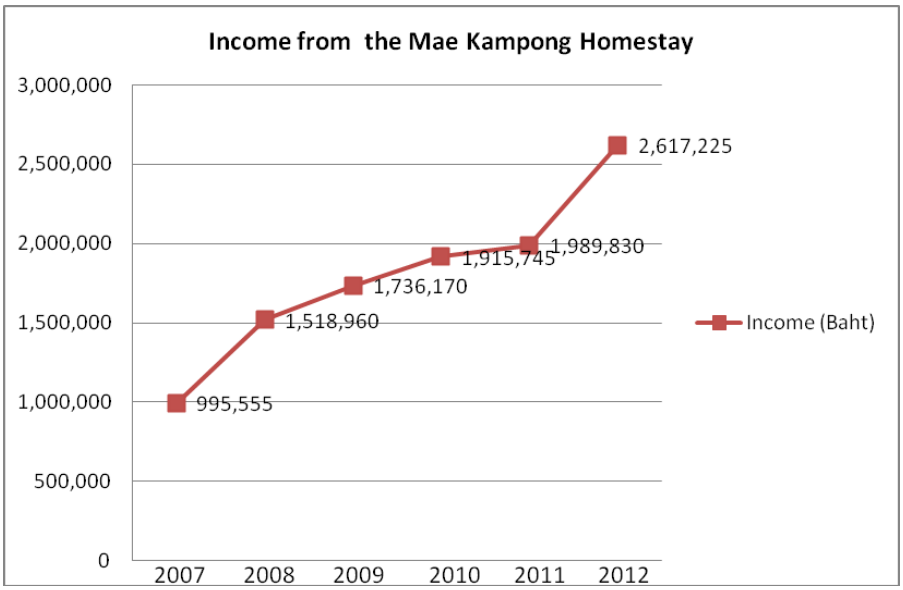

Figure 4-3 Tourism income generated from the Mae Kampong homestay in village's tour programs

Source: Interview, December, 2013.

However, tourism income generating from community-based tourism in Bang Nam Phueng village differs from Mae Kampong village both in aggregate income per anum and sources of income due to the difference of marketing approaches. Mae Kampong builds the financial capital accummulating from offering tour programs but Bang Nam Phueng achives such capital from its own market place, attributes to the restructuring agriculture based on sufficiency economy. Namely, the Bang Name Phueng floating market encourages farmers and villagers produces various local products to tourists who visit the village.

Because of the proximity to Bangkok, each year around 800,000 domestic tourists visit the Bang Nam Phueng floating market (Caichompoo, 2011) and about 50,000 international tourists who come to take cycling tours in the Bang Kachao area stop to shopping here every year. Such good opportunities, revenues gaining from the Bang Nam Phueng floating market are high and trend to increase continually. Data concerning revenues from around 200 stalls in the Bang Nam Phueng floating market shows that the amount of income since 2006 to 2009 has dramatically increased (Fig. 4-4).

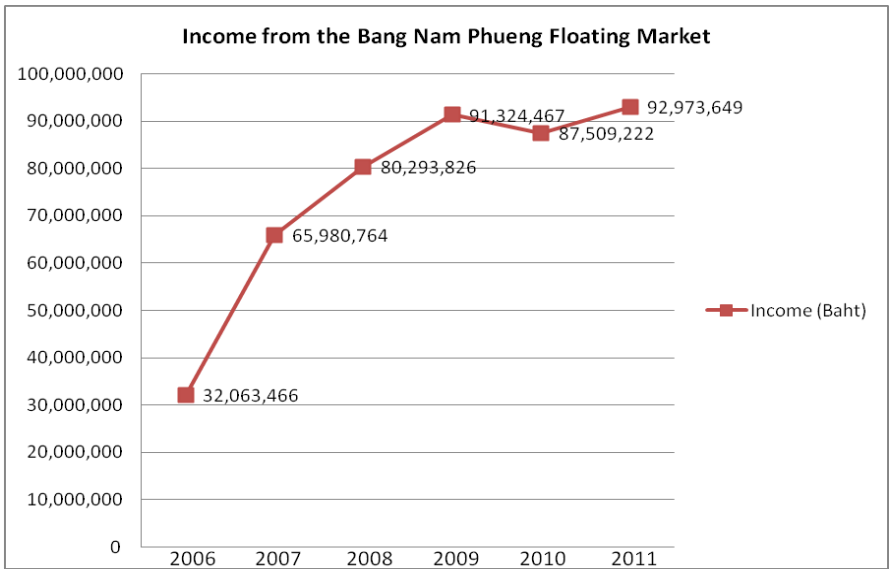

Figure 4-4 Tourism income generating from the Bang Nam Phueng floating market
Source: Bang Nam Phueng Tambon Administrative Organization, 2013

As considering with the condition for identifying sustainability values of indicator 2 (Table 3-23), tourism income of Mae Kampong during 2007-2012 has been increasing throughout the periods of measurement. As a result, the percentage value equals 80 and rating score is 67. The score indicates that tourism performance level is "best practice," and sustainability value is "sustainable." For Bang Namphueng, the percentage value is 70 and rating score is 6 due to fluctuate in the amount of tourism income but increase in the current period year of measurement. The score manifests that tourism performance level is "excellent," and sustainability value is "potentially sustainable."

Indicator 3: tourism income distribution

Consistent with the analysis of indicator 1, tourism income distribution is the one significance of the sustainability development goals relying on the community-based tourism management. Although income from tourism in both village has increased but the distribution of tourism income per household was under a target of evaluation score (> 60%). According to a survey on household income earning from tourism related jobs, Mae Kampong was 56.7% and 57.5% for Bang Namphueng (Table 4-2).

Table 4-2 Frequency and percentage of households gaining income from tourism

Village	Number of households	Employing questionnaires	Gaining tourism income	Not gaining tourism income
Mae Kampong	121	97 (100.0)	55 (56.7)	42 (43.3)
Bang Nam Phueng	70	66 (100.0)	38 (57.5)	28 (42.5)

Source: Questionnaire survey, December, 2013.

According to table 4-2, income from community-based tourism-related services and facilities are generated from different sources. In Mae Kampong village, most of tourism income earns from homestays (26.8%), while tourism income in Bang Nam Phueng village is generated from producing the community products (37.9%) as shown in Table 4-3.

Table 4-3 Frequency and percentage of sources of tourism income generated by community-based tourism

Sources of tourism income	Mae Kampong	Bang Nam Phueng
Homestay owner	26 (26.8)	9 (16.3)
Accommodation owner (e.g., resort hotels, rental houses)	4 (4.1)	0 (0.0)
Shop or restaurant owner	4 (4.1)	4 (4.1)
Massage	19 (19.6)	1 (1.5)
Community product producer	10 (10.3)	25 (37.9)
Tourist guide	15 (15.5)	3 (4.5)
Music and performance	13 (13.4)	1 (1.5)
Business employer (e.g., waiter or waitress in restaurants or coffee shops)	4 (4.1)	2 (3.0)
Transport service owner (e.g., rental car, motorcycle taxi)	7 (7.2)	1 (1.5)
Others (e.g., guest speaker for study visits, supply side tourism resource provider)	9 (9.3)	3 (4.5)

Source: Questionnaire survey, December, 2013.

As considering the percentage of gaining tourism income (Table 4-2), tourism income distribution of Mae Kampong and Bang Namphueng was 56.7 and 57.5. As a result, the rating scores for both Mae Kampong and Bang Namphueng are 4, which indicate that tourism performance levels of two villages are “acceptable,” and sustainability values are “intermediate.”

Socialcultural sustainability

Indicator 4: Local satisfaction

Changes in level of local resident satisfactions can be an early warning indicator of potential incidents or hostility, and a means to obtain information about emerging problems or irritants before they become serious (WTO, 2004). Measuring satisfaction of local residents toward tourism management in Mae Kompong and Bang Namphueng is crucial consideration for decision-making and community development in the cases. According to a questionnaire survey, local satisfaction of each village is quite different. Over two thirds of the local residents in Mae Kompong agree that tourism benefits the community, considering from high level of satisfaction (62.9%) which indicates that tourism is sustainable. For Bang Nam Phueng village, the level of local satisfactions between high and neutral is nearly same portion (Table 4-4), which indicates the tendency of unsustainable tourism development and implies that the existing tourism is not managed by virtue local residents.

Table 4-4 Households satisfying in community-based tourism management

Village	Level of local resident satisfactions (%)				
	Highest	High	Neutral	Low	Lowest
Mae Kampong	16.5	62.9	20.6	0.0	0.0
Bang Nam Phueng	3.0	48.5	45.5	1.5	1.5

Source: Questionnaire survey, December, 2013.

However, when considering the highest percentage of level of local satisfaction, both Mae Kampong and Bang Nam Phueng are high. Based on the condition for identifying sustainability values of indicator 4 (Table 3-31), high level of satisfaction achieves 70 percent or 6 scores. As a result, the tourism performances of both Mae Kampong and Bang Namphueng are excellent which mean that tourism management is potentially sustainable.

Indicator 5: homestays

Homestay is one of the crucial managements in Thailand's rural tourism villages operated by the communities that generated more benefits to local residents. The Ministry of Tourism and Sport identifies the meaning of Thailand's homestay as *"the lodging for a touch of rural culture, refers to a form of tourism where tourists have to stay with the homeowner in the same roof and have a chance to study Thai's nature, lifestyle or culture with the services and facilities as appropriate by homestay"*.

Prerequisite Requirements for homestay are regulated by the Department of tourism, which comprise of 6 items: 1) homestay is just an extra income apart from regular income of the family, 2) there exists a

room or living space that can be converted for tourists with a maximum of 4 units or a maximum of 20 tourists per house, 3) tourists must stay overnight in the same house with the homeowner,
4) family members need to be willingly to accept incoming tourists to stay overnight in the same house and to propagate the local culture to tourists, 5) homeowners and family members must be collaborate with the community in the management of homestay as well, and 6) homeowners must be a member of the club or cooperative organization of the community to operate homestay management.

Homestay must be registered and certified the standard by the Department of Tourism, which will be assessed every two years. The criteria for assessment consists of 10 criteria: house (good and safe condition, clean and comfortable), food and nutrition (traditional ingredients and clean), security, (preliminary aid and a system of security) hospitality (friendliness and learning activities), tour program (information services and tour coordination), resources and environment (maintenance, plan, activities to reduce tourism impact on environment), cultural (maintenance of local culture and lifestyle), value added of products (providing local products to show community uniqueness), management (committees, rules, distributing benefits, detail of fees and services), and promotion (publication and plan). In order to measure the quality and performance of the homestay, the Homestay Standard Thailand uses the average score of 10 main criteria. Any score above 3.50 points (from 5.00 points) or above 70% (from 100%) would be categorized as the Homestay Standard Thailand. Certification will be provided and last long for 3 years.

Homestays of Mae Kampong and Bang Nam Phueng have been always assessed the standard and quality. Mae Kampong homestays were certified by the Homestay Standard Thailand in 2004, 2006, 2008, 2011, and 2013. Bang Namphueng homestays were certified in 2006, 2008, 2011, and 2013. All of homestays in Mae Kampong and Bang Nam Phueng passed the criteria of assessment. (Table 4-5) Furthermore, those homestays have been promoted in the international level by the Ministry of Tourism and Sports through the Internet as shown in figure 4-5 and 4-6.

Table 4-5 Number of standard homestays

Village	Number of homestays (%)	Certified standard homestay by Ministry of Tourism and Sports (%)
Mae Kampong	22 (100.0)	22 (100.0)
Bang Nam Phueng	14 (100.0)	14 (100.0)

Plate 4-1 A Certification of Homestay Standard Thailand

Figure 4-5 The promotion of homestays in Mae Kampong and Bang Nam Phueng on the Internet by the Ministry of Tourism and Sport.

Source: The Ministry of Tourism and Sport, http://www.homestaythai.net

Figure 4-6 The promotion of homestays in Mae Kampong and Bang Nam Phueng on the Internet by the Ministry of Tourism and Sport.

Source: The Ministry of Tourism and Sport, http://www.homestaythai.net

As considering numbers of standard homestays shown in Table 4-5 and the condition for identifying sustainability values of indicator 5 (Table 3-24), the percentage of numbers of standard homestays in both Mae Kampong and Bang Nam Phueng are 100. As a result, the percentage values are 80 and rating scores are 7. The tourism performance levels are “best practice,” and the sustainability values are “sustainable.”

Indicator 6: tourist satisfaction

Satisfaction is the product of a number of factors: meeting tourists’ expectations; providing a sense of good value for money; ensuring a clean, safe and secure environment, hospitality, quality of sites, events, attractions and services related to them; expectations and interests (WTO,2004). The evaluation of tourist satisfactions in Mae Kampong and Bang Nam Phueng consists of similar themes on homestays and related services. Thitichamroenporn et al (2011) surveys the satisfaction of 54 tourists (domestic 55.6% and international tourists 44.4%) who stay overnight in Mae Kampong homestays. The level of satisfaction focusing on 9 items was highest at average mean score of 6.06 (Table 4-6).

Table 4-6 Tourist satisfaction on the Mae Kampong homstays

Tourist satisfaction	Mean
1. Community Physical and surrounding	6.29
2. Accommodation, mattress	5.76
3. Bathroom, toilet	5.60
4. The hospitality of villagers	6.65
5. Local community tour guide	6.13
6. Tourism activities	5.61
7. Authentic food services	6.17
8. Hygiene of water usage	6.13
9. The feeling towards safety and security	6.20

Note: An average mean score is 6.06, rating from 0-7.
Source: Thitichamroenporn et al, 2011

Singsaikawin (2013) surveys the satisfaction of 251 domestic tourists who stay overnight in Bang Nam Phueng homestays with 9 themes. The satisfactions of theme 1-4 are high and other themes are highest (Table 4-7) Furthermore, most of them satisfied homestays in overall aspects (99.2%) and expected to stay for their return visits (98.8%).

Table 4-7 Tourist satisfaction on the BangNam Phueng homstays

Tourist satisfaction	Level of tourist satisfaction (%)				
	Highest	High	Neutral	Low	Lowest
1. Accommodation (cleanliness of bedroom)	27.5	40.7	15.3	1.4	0.0
2. Bathroom and toilet	23.1	40.7	20.0	0.7	0.3
3. Safety and security	26.4	38.3	16.6	2.4	1.0
4. Facilities	23.7	40.3	18.3	2.0	0.0
5. Hospitality	51.2	29.5	4.1	0.0	0.0
6. Service mind	44.1	34.2	6.4	0.0	0.0
7. Culture and traditional knowledge interpretation	45.1	34.2	5.1	0.3	0.0
8. Healthy and safety food services	38.3	35.9	10.2	0.3	0.0
9. Variety of tourism activities (e.g., cooking, cycling, community product making, and shopping)	40.7	35.9	7.1	1.0	0.3

Source : Singsaikawin, 2013

However, when considering the average mean score of level of tourist satisfaction, both Mae Kampong and Bang Nam Phueng are highest. Based on the condition for identifying sustainability values of indicator 6 (Table 3-31), highest level of satisfaction achieves 80 percent or 7 scores. As a result, the tourism performances of both Mae Kampong and Bang Nam Phueng are “best practice,” and the sustainability values are “sustainable.”

Environmental sustainability

Indicator 7: Ecotourism activity

Ecotourism has the potential to foster conservation of natural resources by increasing the awareness of people in the importance of the natural resources (Swanson, 1992 cited in Wearing and Neil, 2009). For this reason the notion of conservation must be included in measuring sustainability of rural tourism managing by the communities. Natural conservation concerning ecotourism activities based on this indicator is analyzed with five aspects: the conservation of forest, wildlife, soil, water, and the reduction of global warming. Table 4-8 shows the activities of ecotourism in Mae Kampong and Bang Nam Phueng.

Table 4-8 Natural conservation based on ecotourism activities

Village	Community-based ecotourism activities				
	Forest conservation	Wildlife conservation	Soil conservation	Water conservation	Global warming reduction
Mae Kampong	Tree planting	Bird watching	Organic coffee cultivation	Organic coffee cultivation	Zipline canopy walks
Bang Nam Phueng	Tree planting	Firefly watching	Compost making	Pouring EM to canals	Cycling

Source: Interview, December, 2013

Forest and wildlife conservation

Tree planting activity is one of the natural conservation programs providing for study visitors especially students (Plate 4-2). The area for tree planting in Mae Kampong is zoned in the indigenous forest and ecotourism campsite near Mon Lan mountain. Therefore, the number of trees in the forest has been increased since this program started in 2001. As a result, the quantity of water generated from the Mae Kampong waterfall has also increased due to the high precipitation (Interview of a former village headman). Tree growing in Bang Namphueng village is planted in the government land such as the community forest and abandoned orchards. The activity of forest conservation enhances the existence of fauna and promotes wildlife conservative projects. For example, bird watching in Mae Kampong forest and firefly watching along the Chao Praya river in Bang Nam Phueng village.

Plate 4-2 Forest growing activity by a group of student in the Bang Kachao area
Taken by the author, November 2012

Soil and water conservation

Soil and water conservative activities in Mae Kampong and Bang Nam Phueng concern the sustainable agriculture, which is mainly always practiced by local farmers. On the slope of the mountain, farmers of Mae Kampong village cultivate coffees with organic substances such as manure and compost to avoid the degradation of soil and destroying the quality of water in the stream. Organic coffee growing can attract tourists to participate and encourage the awareness of natural conservation in the perception of tourists. Similarly, the agricultural practices in Bang Nam Phueng village are focused on compost and effective microorganism (EM) making for soil nutrition and reducing volumes of sewage sludge, which offer the natural conservative activities for tourists. Tourist can learn how to make the compost and EM from the household's food scraps. For water treatment, tourists will be offered to participate the canal conservative activity by pouring EM into the Bang Nam Phueng canal, which normally held every months (Plate 4-3).

Plate 4-3 EM pouring activity in the Bang Nam Phueng canal
Taken by the author, September 2013

Global warming reduction

One of ecotourism activities that aims to eliminate the crisis of global warming is addressed on sport and adventure activity. A zipline canopy walk (i.e., “flying” from tree to tree by hanging in a sling that is attached to a rope strung between the tree in the jungle) in an abandoned forest tea plantation that belongs to a foreign company, Flight of the Gibbon, encourage tourists (which are mostly foreigners) to aware of the importance of forest conservation toward the reduction of global warming (Plate 4-4). A cycling activity in Bang Nam Phueng village and around the Bang Kachao island, which is very popular for international tourists helps directly to mitigate air pollution from the Bangkok Metropolis (Plate 4-5). However, the negative impact from the zipline canopy walk is a tendency to increase air pollution in Mae Kampong village due to the crowd of vans of Fight of the Gibbon to the village per day. Furthermore, burning the garbage from households and homestays in the evening damages the fresh air and village’s atmosphere. These problems indicate the unsustainable management of natural resource and environment in Mae Kam Pong village.

Plate 4-4 Zipline canopy in Mae Kampong’s abandoned forest tea orchards

Source: http://www.treetopasia.com/mae-kampong

Plate 4-5 Cycling in the Bang Kachao area

Taken by the author, November 2012

As considering the condition for identifying sustainability values of indicator 7 (Table 3-32), ecotourism activities in both Mae Kampong and Bang Nam Phueng cover five elements of environmental conservation. As a result, the tourism performances of both Mae Kampong and Bang Nam Phueng are "best practice," and the sustainability values are "sustainable."

Indicator 8: Recreational land use

Land use plans and development controls are important to clearly identify the implications for tourism activities (WTO, 2004). The indicator relative to this issue has settled for a simple yes/no indicator of whether a land use plan exists for the destination, with some also identifying whether it has explicit application to tourism. Land use pattern in Mae Kampong and Bang Nam Phueng is divided into three zones: residential, agricultural, and forest area. Table 4-9 shows the existent land use plans.

Table 4-9 Existence of plans for managing rural tourism in three categories of land uses

Land use	Existence of plans	Mae Kampong		Bang Nam Phueng	
		Yes	No	Yes	No
Residential area	Construction of buildings (e.g., resort hotels, restaurants)	✓			✓
	Waste management	✓		✓	
Agricultural area	Promotion of sustainable agriculture for rural tourism	✓		✓	
	Zoning for agritourism activities		✓		✓
Forest area	Nature walk trail management	✓			✓
	Zoning for ecotourism activities	✓			✓

Source: Interview, December, 2013.

Mae Kampong village has established five land use plans for managing rural tourism: the regulations for controlling the construction of buildings, waste management system, promotion of sustainable agriculture for rural tourism, nature walk trial management, and zoning for ecotourism activities.

Residential area. In the residential area, buildings must be constructed under the regulation and permission of the committee members. For example, they are strictly limited within the residential area, which are not closed to the stream more than 2 meters in order to protect the soil erosion along the stream line and the exploitation of water caused by sewage and garbage. The investment of business on accommodations such as resort hotels is reserved for only local residents.

Besides controlling the construction of building relative to tourism service, waste management is one of the crucial management in the residential area. Both solid and liquid wastes are generated in Mae Kampong village by tourism and non-tourism activities. The total amount of waste generated in the village is estimated at about 2 tons per total households per day. For solid waste management, the village provides 5 incinerators for public use. However, they are insufficient in numbers and the system is insufficient to get rid of all

volumes of waste generated per day. Some households and resort hotels, therefore, have to burn at their vacant places, which smoke affect local people health and damage the village atmosphere. This problem is considered for a project of garbage separation to reduce the waste volume before burning but the project is not successful. Regard with garbage generated from tourists, the garbage cans are provided only in major attractions such as the Mae Kampong waterfall. The insufficient of public garbage can affects the increase of volume of rubbish along the roads and walkways. For liquid waste and sewage management, the septic tanks for reduction of bacteria before absorbing to the ground and stream are used in households. However, a recently study conducted by Thitichamroenporn et al (2011) revealed that despite the quality of the water in the stream is still acceptable, the amount of bacteria is high.

Agricultural area. In this area, the village promotes the cultivation of forest tea and organic coffee for sustainable agriculture strategy to attract tourists. The agritourism activities are offered in three tour programs by focusing on participating forest tea or coffee been picking with farmers. The area for promoting this kind of activities is not identified. However, farms adjacent to the residential area are frequency used for support the promotion. Over use of area may affect the degradation of agricultural area, including the loss of vegetation and soil erosion caused by trampling and vehicles.

Forest area. According to the tour programs, nature walk trails are provided for ecotourism activities such as trekking and bird watching. The nature walk trails in the forest area is divided into 3 routes, linking major tourist attractions (Fig 2-10) in both residential and agricultural area. For zoning the nature trails, the herbal garden, which is located in the area of community forest is prohibited.

Bang Nam Phueng village has established two land use plans for managing rural tourism: the system of waste management in residential area and the promotion of sustainable agriculture for rural tourism. In the residential area, the system of waste management is operated by the municipality, Bang Namphueng Tambon Adimistrative Organization. The municipality provides the garbage can in front of each household and in the floating market. The total amount of waste generated in the village and the floating market is estimated at least 30 tons per week. Those tons of waste are collected and transferred to an open dumping site of the municipality. In the floating market, a project of waste separation has been promoted but failed for practicing due to lack of cooperation in both local residents and tourists.

In agricultural area, even hybrid mango, locally called Nam Dok Mai, is the famous agricultural product, the agritourism activities concerning the promotion of this kinds of fruit has not well promoted due to the limitation of agricultural area and full-time farmers. However, the promotion of compost and EM making is used to support the community-based tourism activities instead. According to the questionnaire survey, it revealed that more than half of households (54.5%) produce the compost for avoiding chemical substances in agriculture and nearly all of them (92.4%) utilize the EM which made by themselves for water treatment in households and soil nutrition in farms.

For forest area, the nature walk trails has not been set due to lack of the large area of indigenous forest. However, the community forests adjacent to the village, which are restructured from the abandoned orchard have been set aside as nature walk trails with good interpretation sign boards and board walks to facilitate learning of ecosystem in the surrounding area. Consistent with the utilizing of forest areas, the small size of the community forest inside the village has been zoned and reserved for local residents for growing bamboo, which help to recovery the abundant of ecosystem and benefit as a source of community food production.

As considering the condition for identifying sustainability values of indicator 8 (Table 3-33), the recreational land use plans which cover three categories of land use in Mae Kampong are five and Bang Nam Phueng are only two. As a result, the percentage value for Mae Kampong is 70 or 6 scores while Bang Nam Phueng gets 40 or 3 scores. This indicates that tourism performance level of Mae Kampong is "excellent," and sustainability value is "potentially sustainable." The tourism performance level of Bang Nam Phueng is "marginal," and sustainability value is "potentially unsustainable."

Indicator 9: tourism carrying capacity (TCC)

TCC in both Mae Kampong and Bang Nam Phueng is now in a progress of research cooperating between the researcher teams from universities and local residents which are supported by CBT-I. Limiting number of tourists is one of the perspectives in TCC and a key piece of data to address potential stress on a destination. In some cases help predict stress on ecological and cultural assets, infrastructure, level of management and mitigation needed, and several aspects of long term sustainability (WTO, 2004). In Mae Kampong and Bang Nam Phueng village, limiting number of tourists has been considered as one aspect of the tourism carrying capacity project. Table 4-10 to 4-11 shows the level of acceptance of visitors for overnight stay per day which addresses on homestay and community spaces.

The accepted number of guests in the Mae Kampong homestays is limited under 100 per day. The maximum of one-day visitors which include guest of the Flight of the Gibbon who do the adventure zipline canopy activity are 250 people per day (Table 4-10). For Bang Nam Phueng village, the accepted number of guests in homestays maximizes 80 per day. The cooking class at the herbal joss stick home is fixed at 40 per day. However, the area of the floating market is not limited of tourist capacity due to demand in product distribution by local merchants (Table 4-11).

Table 4-10 Limiting numbers of tourists per day of Mae Kampong village

Tourism carrying capacity		Level of Acceptance	Level of impact		
			High	Medium	Low
Guests in Homestays	Number of homestays	22			
	Number of guests per homestay	4	> 4	2-3	< 2
	Number of overnight-stay visitors in homestays	100	>100	50-99	1-49
Visitors in the village	Number of one-day visitors	100	>100	50-99	1-49
	Number of visitors playing a zipline canopy walk per day	150	>150	100-149	1-99

Source: Thitichamroenporn et al, 2011

Table 4-11 Limiting number of tourists per day of Bang Nam Phueng village

Tourism carrying capacity		Level of Acceptance	Level of impact		
			High	Medium	Low
Guests in Homestays per day (weekends)	Number of homestays	14			
	Number of guests per homestay	5	> 5	3-4	< 2
	Number of overnight-stay visitors in homesatys	80	>60	30-59	1-29
Visitors in the village per day (weekends)	Number of one-day visitors	100	>100	50-99	1-49
	Number of visitors shopping at the Bang Nam Phueng floating market	No limit	-	-	-
	Number of visitors cooking at the Herbal Joss Sticks Home	40	>40	20-39	1-19

Source: Interview, December, 2013.

As considering the condition for identifying sustainability values of indicator 9 (Table 3-34), the percentage value of tourism carrying capacity in Mae Kampong is 80 or 7 scores due to limiting number of tourists covering three aspects of tourism carrying capacity: guest in homestay, one-day visitors, and tourists per one activity area. The percentage value of tourism carrying capacity in Bang Nam Phueng is 70 or 6 scores due to limiting number of tourists covering two aspects of tourism carrying capacity. As a result, the tourism performance of Mae Kampong is “best practice,” and sustainability value is “sustainable.” Meanwhile the tourism performance of Bang Nam Phueng is “excellent,” and the sustainability value is “potentially sustainable.”

Institutional sustainability

Indicator 10: Training

Tourism supported organizations play the significant roles for developing rural tourism management, which is one of the crucial factors to achieve the sustainability. In Mae Kam Pong village, the tourism development initialed by the support of Thailand Research Fund and Tourism Authority of Thailand, which provided tourists from one of the tour company. Later, Thailand's Community-Based Tourism Institution has supported in terms of knowledge on tourism management as well as educational institutions such as governmental and private universities. Meanwhile, the Royal Projects supported in terms of agricultural careers such as coffee growing. For Bang Nam Phueng village, the rural tourism started with the support of local government organization, Bang Nam Phueng Tambon Administrative Organization by the project of the community farm restructuring and constructing the floating market. At that time, the Pra Pradeang Community Development Office and Agricultural Extension budgeted for agricultural practice and production. Later, two private companies publicized tourism activities through the media and their projects. Namely, the PTT Public Company Limited advocated the sufficiency economy application and Bang Chak Petroleum Public Company Limited facilitated equipments and financial supports for environmental conservation projects such as the Firefly conservation. Furthermore, the Thailand's Community-Based Tourism Institution and many educated institutions have supported knowledge and skills on tourism management. Meanwhile many tour companies deliver international tourists to the village (Table 4-12).

Table 4-12 Tourism supported organizations in Mae Kampong and Bang Nam Phueng village

Types of organizations	Tourism supported organizations	Mae Kampong		Bang Nam Phueng	
		Yes	No	Yes	No
Governmental organization	1.Tourism Authority of Thailand (TAT), Ministry of Tourism and Sports	✓		✓	
	2.Department of Tourism Development, Ministry of Tourism and Sports	✓		✓	
	2. Department of Community Development, Ministry of Interior	✓		✓	
	3. Agricultural Extension office, Ministry of Agriculture and Cooperative	✓		✓	
	4.Thailand Research Fund	✓		✓	
	5. The Royal Project	✓			✓
	6. Governmental universities / schools	✓		✓	
	7. The Tambon Administrative Organization (TAO)	✓		✓	
Private organization	1.PTT Public Company Limited (The Petroleum Authority of Thailand)		✓	✓	
	2. Bang Chak Petroleum Public Company Limited		✓	✓	
	3. Private universities / schools	✓		✓	
	4. Tour companies	✓		✓	
NGOs	1.The Thailand's Community-Based Tourism Institution (CBT-i)	✓		✓	

Source: Interview, December 2013

According to those tourism supported organizations, one of the importance factors for human capital accumulation is a promotion of knowledge or skills in tourism. This indicator, therefore, is used to examine a level of participation in training programs by employing questionnaires. The result revealed that Mae Kampong's households participated (73.2.%) in training programs more than Bang Nam Phueng's households (45.5%) (Table 4-13).

Table 4-13 Frequency and percentage of households participating training programs organized by tourism supported organizations

Village	Number of households	employing questionnaires	Get training	Never get training
Mae Kampong	121	97 (100.0)	71 (73.2)	26 (26.8)
Bang Nam Phueng	70	66 (100.0)	30 (45.5)	36 (54.5)

Source: Questionnaire survey, December 2013

Consistent with this survey, the most participated training programs of Mae Kampong village's households are career extension (38%), agriculture (35%), and household accounting (34%) respectively. For Bang Nam Phueng's households, the most participated training programs are environmental conservation (33%), household accounting (30%), and agriculture (23%) respectively (Fig. 4-7). However, it is noticed that the lowest percentages of local participation of both Mae Kampong and Bang Nam Phueng is the community enterprise (around 7%).

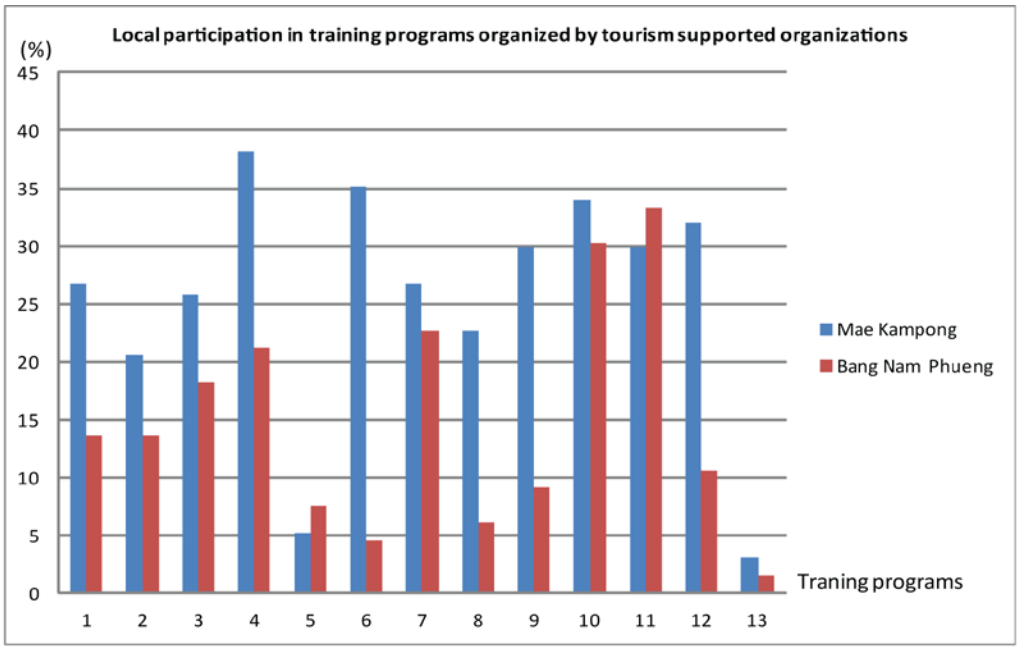

Figure 4-7 Local participation in tourism training of the cases

As considering the percentage of local participation in tourism training (Table 4-13) with the barometer of sustainability (Fig. 3-3), the tourism performance level of Mae Kampong is “excellent”, and the sustainability value is “potentially sustainable.” The tourism performance level of Bang Nam Phueng is “marginal,” and the sustainability value is “potentially unsustainable.”

Indicator 11: community leaders

One of the factors indicating the sustainability of rural tourism management by communities is the local leadership (Byrd, 2014). According to questionnaire surveys on the acceptance of community leaders by sampling houses conducing in Mae Kamopong and Bang Nam Phueng village found that, most of respondents (97.9% in Mae Kampong and 95.5% in Bang Nam Phueng) accepted the ability of their community leaders toward tourism development (Table 4-14).

Table 4-14 Frequency and percentage of acceptance of residents toward the potential of community leaders

Village	Number of households	employing questionnaires	accepted	did not accept
Mae Kampong	121	97 (100.0)	95 (97.9)	2 (2.1)
Bang Nam Phueng	70	66 (100.0)	63 (95.5)	3 (4.5)

Source: Questionnaire survey, December, 2013.

According to the high percentage of community leaders’ acceptance, it can be assumed that tourism management in both Mae Kampong and Bang Nam Phueng are progressive due to the strong leaders, the important driving force for rural tourism development.

As considering the percentage of community leaders’ acceptance (Table 4-14) with the barometer of sustainability (Fig.3-3), the tourism performance levels of both Mae Kampong and Bang Nam Phueng are “excellent,” and the sustainability values are “potentially sustainable.”

Indicator 12: community participation

In process of planning, executing the action plans and events concerning community-based tourism, analysis of the questionnaire survey results revealed that the participation of local people in meetings organized for action planning or decision-making was strong, particularly in Mae Kampong village. Table 4-15 shows that nearly 96 % of households in Mae Kampong and 76 % in Bang Nam Phueng participate in community-based tourism management.

Table 4-15 Frequency and percentage of households participating community meeting, planning, and events

Village	Number of households	Employing questionnaires	Participating community events	Not participating community events
Mae Kampong	121	97	93 (95.9)	4 (4.1)
Bang Nam Phueng	70	66	50 (75.8)	16 (24.2)

Source: Questionnaire survey, December, 2013.

As considering the percentage of community participation (Table 4-15) with the barometer of sustainability (Fig.3-3), the tourism performance level of Mae Kampong is "best practice," and the sustainability value is "sustainable." For Bang Nam Phueng, the tourism performance level is "excellent," and the sustainability value is "potentially sustainable."

1.2 One *Tambon* One Product (OTOP)

The sustainability analysis of OTOP management employs 4 indicators. Indicator 13 measures the economic sustainability using the data of net profit. Indicator 14 measures the sociocultural sustainability considering from the product development which remains reflecting local identity and uniqueness of products. Indicator 15 measures the green products manifesting the environmental sustainability, and indicator 16 measures the institutional sustainability by employing the criterion of number of occupational groups or community enterprises.

Economic sustainability

Indicator 13: net benefits of products

To help determine if it makes economic sense to invest in tourism service, considering a net benefit of OTOP products is crucial. However, the data of net benefits in both Mae Kampong and Bang Nampuueng is limited due to lack of collection and confidentiality of those members. Accordingly, the data of revenues generated from OTOP products is analyzed instead. Mae Kampong's OTOP product is the forest tea pillow, which produces by one of the occupational groups promoting rural tourism in the village. According to the existing data during 2011 to 2013, income from selling the forest tea pillows fluctuated and tended to decrease (Fig.4-8). For Bang Nam Phueng village, the OTOP product is a production of herbal joss sticks, which the data of revenues is not available. This analysis, therefore, addresses on a production of herbal compress, which is produced by the different groups. The product of herbal compress is registered as a community enterprise and intends to participate the OTOP champion contest for receiving the OTOP certification in the future. However, income generated from this kind of product tended to decrease since 2011 (Fig. 4-9).

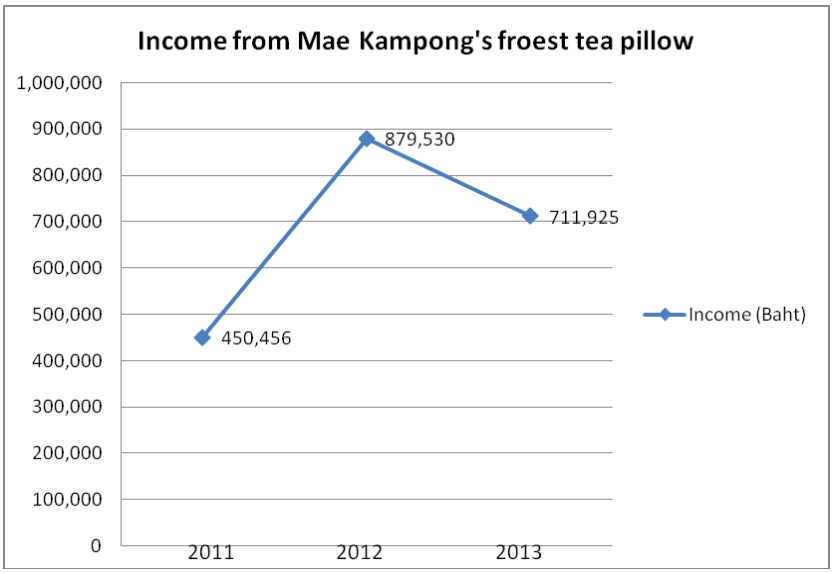

Figure 4-8 Revenues generated from the distribution of forest tea pillows

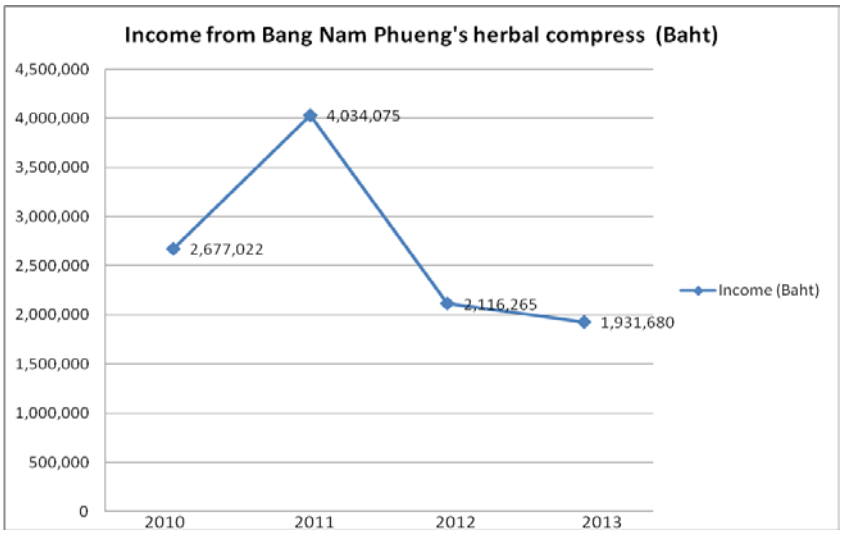

Figure 4-9 Revenues generated from the distribution of herbal compress

As considering the condition for identifying sustainability values of indicator 13 (Table 3-25), the percentage value of net benefits of OTOP in both Mae Kampong and Bang Nam Phueng are 50 or 4 scores because the amount of net benefits has fluctuated and decreased in the current period year of measurement. As a result, the tourism performances of both Mae Kampong and Bang Nam Phueng are “acceptable,” and sustainability values are “intermediate.”

Social sustainability

Indicator 14: product development

The development of OTOP product is analyzed by considering four elements of marketing mix, which is associated with the four P's: price, product, promotion, and place. OTOP product of Mae Kampong village comprises two kinds of agricultural product: forest tea pillow and Arabica coffee. The OTOP products of Bang Nam Phueng village concern herbal transformation: herbal joss stick and herbal grains compress. The overview of those products based on the four P's is shown in Table 4-16.

OTOP products of Mae Kampong village, forest tea pillow and Arabica coffee are certified as the 2 star OTOP, which could be developed their standards to be the 3 to 5 star OTOP. The strength of OTOP products of Mae Kampong is the unique agricultural products, which the cultivation of forest tea and coffee manifest the village's identity. However, lack of OTOP's logo on label and attractiveness of package is the weakness of products.

For Bang Nam Phueng village, the herbal joss stick is certified the 5 star OTOP, which indicates the high potential to export. Due to using outside materials, the uniqueness of product that reflects the authentic orchard community is not outstanding. The authenticity may affect the expectation of visitors who come to learn the production at the destination in which the village is promoted as OTOP tourism community. Besides, the quality of package and label seems under international standard due to lack of an excellent creative design for global market. Despite the image of package illustrating in the website is quite more attractive (Fig. 4-10), the current real product differs from the showcase both in the standard of package and product design. Furthermore, the promotion and place for this product is limited in terms of the variety of distribution channel, which should be more developed and supported to keep the standard of the 5 star OTOP and achieve the capacity of a prospective export production.

Table 4-16 The Marketing mix of OTOP products in Mae Kampong and Ban Nam Phueng

Village	The Marketing Mix			
	Product	Price	Promotion	Place
Mae Kampong	**Forest tea pillow** - certified standard: OTOP 2 stars in 2009 - materials: forest tea leaves in the village - qualification: freshening air, reliefs tension - package: plastic wrap - label: color sticker with information in Thai and few information in English, no OTOP's logo with rating stars	20,35,60,90, 120, and 180 baht/ piece	- word of mouth - website www.thaitambon.com www.maekampong.com - order - trade fair - brochure	- the village's shops - the village's homestays
	Arabica coffee - certified standard: OTOP 2 stars in 2003 - materials: coffee bean cultivating in the village - qualification: drinks - package: plastic bag - label: color sticker with information in Thai and few information in English, no OTOP's logo with rating stars	50,100,150, 200 baht/bag	- word of mouth - website www.thaitambon.com - order - trade fair - brochure	- the village's shops -the village's coffee shops and restaurant - the village's homestays
Bang Nam Phueng	**Herbal joss stick** - certified standard: OTOP 5 stars in 2006 , the Standard Community Product in 2004 - materials: kaffir lime, lemongrass, neem plant etc. from other communities - qualification: anti mosquito, light a fire for aroma fragrance - package: plastic wrap - label: printed in black and white with information in Thai and few information in English, having OTOP's logo with five stars	6,10, and 20 baht/pack	- word of mouth - website www.thaitambon.com - order - trade fair - brochure	- the herbal joss stick home - the Bang Nam Phueng floating market
	Herbal grains compress - certified standard: community enterprises in 2005 (Prospective OTOP) - materials: bean, sticky rice, job's tears, camphor etc. from other communities - qualification: neck and abdomen massage, aroma fragrance for spa - package: plastic wrap - label: color printed with information in Thai and few information in English	350 baht / piece	- word of mouth - facebook www.facebook.com/herbcompress - order - trade fair - brochure	- own shop in the village - the Bang Nam Phueng floating market

Source: Interview, December, 2013.

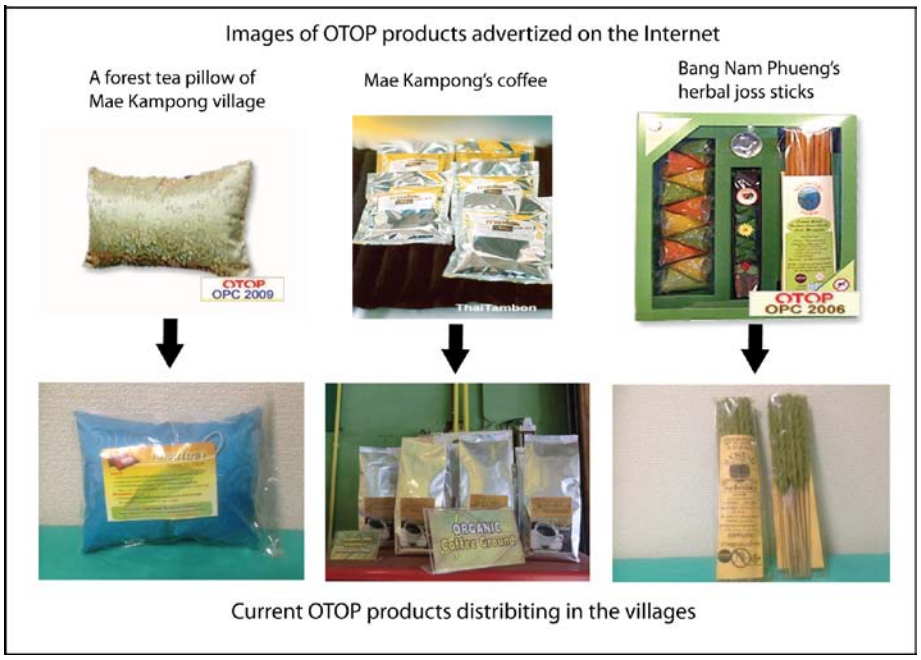

Figure 4-10 Changes in OTOP products development

Source: www.thaitambon.com and taken by the author, December, 2013.

The information in Table 4-16 has been used to evaluate the progress of product development by the criteria for scoring the marketing mix (Table 3-27). The scores have been detailed in Table 4-17. Total scores of both Mae Kampong and Bang Nam Phueng are 58.

Table 4-17 Scoring OTOP product development in Mae Kampong village

4P's	Consideration items	Item scores (10)		Total scores (58/100)
		Forest tea pillow (5)	Arabica coffee (5)	
Product	Quality standard of product certified by 4-5 stars OTOP	0	0	13
	Up grading product to obtain 4 or 5 stars OTOP or keeping standard of 5 stars OTOP	0	0	
	Local identity (reflection of village culture and uniqueness)	5	5	
	Attractiveness of packages (label, information, brand, OTOP's logo)	1	2	
Price	Variety of prices subjects to size and design of products	5	5	20
	Reasonable prices with the same standard for Thai customers and foreigner customers distributing at the local markets.	5	5	
Promotion	Creative marketing through various forms of advertisement (e.g., media, the Internet)	4	4	12
	Promotion sales and customer services	2	2	
Place	Attractiveness of place for selling products	3	3	13
	Variety of distribution channel	3	4	

Table 4-18 Scoring OTOP product development in Bang Nam Phueng village

4P's	Consideration items	Item scores (10)		Total scores (58/100)
		Herbal joss sticks (5)	Herbal grains compress (5)	
Product	Quality standard of product certified by 4-5 stars OTOP	5	0	8
	Up grading product to obtain 4 or 5 stars OTOP or keeping standard of 5 stars OTOP	0	0	
	Local identity (reflection of village culture and uniqueness)	0	0	
	Attractiveness of packages (label, information, brand, OTOP's logo)	1	2	
Price	Variety of prices subjects to size and design of products	5	5	20
	Reasonable prices with the same standard for Thai customers and foreigner customers distributing at the local markets.	5	5	
Promotion	Creative marketing through various forms of advertisement (e.g., media, the Internet)	4	5	15
	Promotion sales and customer services	2	4	
Place	Attractiveness of place for selling products	4	4	15
	Variety of distribution channel	3	4	

As considering the condition for identifying sustainability values of indicator 14 (Table 3-26), the percentage value of the total scores of marketing mix in both Mae Kampong and Bang Nam Phueng are 50 or 4 scores because the total scores are 58, which are in the range score of 50-59. As a consequence, the tourism performances of both Mae Kampong and Bang Nam Phueng are "acceptable," and sustainability values are "intermediate."

Environmental sustainability

Indicator 15: green products

This indicator determines the existence of environmentally friendly products, which local organic natural materials should be considered to make a value-added of product. Consistent with two OTOP products of Mae Kampong village, they entail the extension of utilizing local natural resources. Forest tea leaves and coffee plants cultivating together in the same area with the indigenous forest are assumed as green local material due to avoiding chemical substance use. Regard with this notion, OTOP products of Bang Nam Phueng village also corroborates the concept of green product through the value-adding of Thai herbs, which directly help to conserve the environment and maintain health of consumers. For example, smoke from lighting a herbal joss stick protect mosquitoes and release tension, it also reduces air pollution caused by chemical burn. Accordingly, OTOP products of two villages could lead to achieve the sustainability of environment as shown in Table 4-19.

Table 4-19 Environmental impacts from material uses for producing OTOP products

Village	Products	Main material uses	Environmental impacts
Mae Kampong	1. Forest tea pillow	Organic forest tea leaves	Negative: no Positive : soil and water conservation
	2. Arabica coffee	Organic Arabica coffee beans	Negative: no Positive : soil and water conservation
Bang Nam Phueng	1. Herbal joss sticks	Herbs (e.g., lemongrass, kaffir lime, and neem plant)	Negative: no Positive : reduction of air pollution
	2. Herbal grains compress	Grains (e.g., bean, sticky rice, and job's tear	Negative: no Positive : reduction of plastic garbage

Source: Interview, December, 2013.

As considering the condition for identifying sustainability values of indicator 15 (Table 3-35), the percentage values of green products in both Mae Kampong and Bang Nam Phueng are 80 or 7 scores because all products are made from organic materials with no negative impacts on environment and conserving nature and environment. As a consequence, the tourism performances of both Mae Kampong and Bang Nam Phueng are "best practice," and sustainability values are "sustainable."

Institutional sustainability

Indicator 16: community enterprises' members

OTOP products of Mae Kampong and Bang Nam Phueng village are managed by members of community enterprises, which play the significant roles toward the sustainability of those productions. The community enterprises, which mean the local institution for promoting the sustainable rural tourism, therefore, are based on the existence of groups' members. Changes in numbers of labors as an important human capital in the process of manufacturing trend to forecast the future of OTOP product as well. Table 4-20 shows the changes in numbers of human capital of each community enterprise.

Table 4-20 Member of community enterprises producing OTOP products

Village	Community enterprises	Number of members			
		no. of initial members/ year	no. of current members	% of changes	Trend
Mae Kampong	Forest tea pillow	30/ 2002	26	-13.3	Decrease
	Arabica coffee	50/2003	70	+40.0	Increase
Bang Nam Phueng	Herbal joss stick	60/2000	11	-81.7	Decrease
	Herbal compress	20/2005	20	0	Stable

Source: Interview, December, 2013.

According to Table 4-20, Forest tea pillow of Mae Kampong village and herbal joss stick of Bang Nam Phueng have a tendency of unsustainable management due to decrease of groups' members. Regarding with this consideration, information interview of some group's leaders support this weakness. The decrease of number of forest tea pillow community enterprise's members is caused by the conflict of members on

different opinions related to benefit shares and income management. Four dissatisfying members separated and established a new group to produce the different design of product. For Bang Nam Phueng village's OTOP, the community enterprise of producing herbal joss stick encounters problems of high cost of some material ordering from outside village and the decrease of volume of orders due to an increase of producers. These problems also directly cause the decrease of income and members. As considering, these current situations of producing forest tea pillow and herbal joss stick are on risks underpinning the unsustainable institutions.

Analyzing the sustainability with the condition for identifying sustainability values of indicator 16 (Table 3-28), the percentage value of the number of community enterprise's members in Mae Kampong is 60 or 5 scores because the number of community enterprise's members has fluctuated but stabled in the current period year of measurement. As a result, the performance level of community enterprises in Mae Kampong is "good," and sustainability value is "potentially sustainable." For Bang Nam Phueng, the percentage value of the number of community enterprise's members is 50 or 4 scores because the number of community enterprise's members has fluctuated and decreased in the current period year of measurement. As a consequence, the performance level of community enterprises in Bang Nam Phueng is "acceptable," and sustainability value is "intermediate."

1.3 Sufficiency Economy Agriculture (SEA)

The sustainability analysis of rural community development based on the philosophy of sufficiency economy employs indicator 17 to indicator 22. Indicator 17 and 18 measure the economic sustainability using the data of financial capital accumulation in the community financial institution and the reduction of cost living by considering the percentage of household's kitchen garden doing. Indicator 19 and 20 measure the socio-cultural sustainability considering from the percentage of household receiving community welfare and health problems. Indicator 21 measures the organic substance use in agriculture which indicates the environmental sustainability. Indicator 22 measures the institutional sustainability by considering changes in a number of cooperative or financial institution's members.

Economic sustainability

Indicator 17: deposits or capital accumulation

Economic sustainability determination by considering an increase of financial capital accumulation indicates the success or failure of development based on the principles of sufficiency economy that aims to build the self-reliance community. In Mae Kampong village, the Mae Kampong Mini-Hydro Cooperative was established to manage financial capital of the village in 1986. The cooperative operates the benefits generated from the commoditization of village's natural resources, which concerns revenues of the hydro electricity

manufacture, drinking water production, agricultural commodities, and rural tourism underpinning the management of community-based tourism. The aggregate financial capital has continually increased during 2005 to 2012 as shown in figure 4-11.

The Bang Nam Phueng Financial Management Institution acts as a local bank of Bang Nam Phueng sub-district and nearby communities. The institution was established after the Asian economic crisis in 1997 when the new community agriculture project based on sufficiency economy application had been successful in distributions of agricultural products at the Bang Nam Phueng Floating market. The total amount of deposits in the Bang Nam Phueng Financial Management Institution has increased every year. Figure 4-12 shows the increase of deposits during 2008 to 2013.

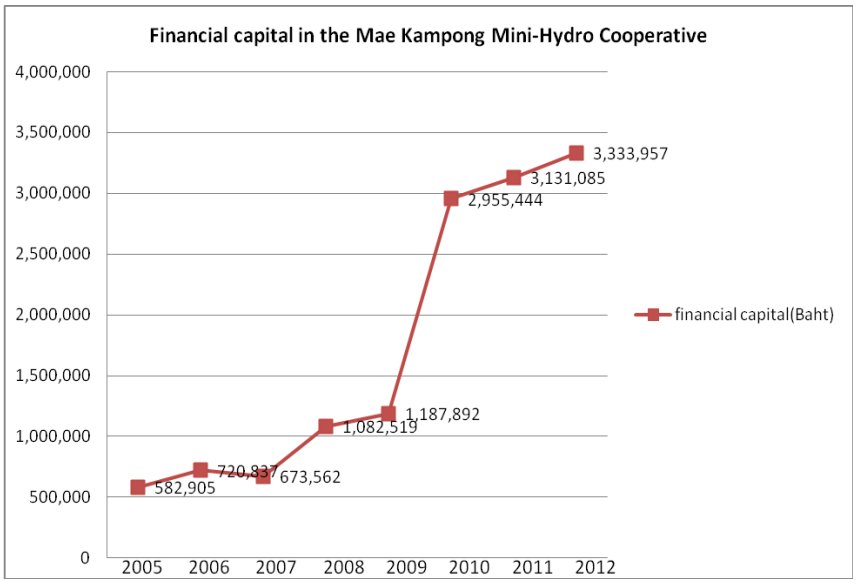

Figure 4-11 Amount of financial capital in the Mae Kampong Mini-hydro Cooperative

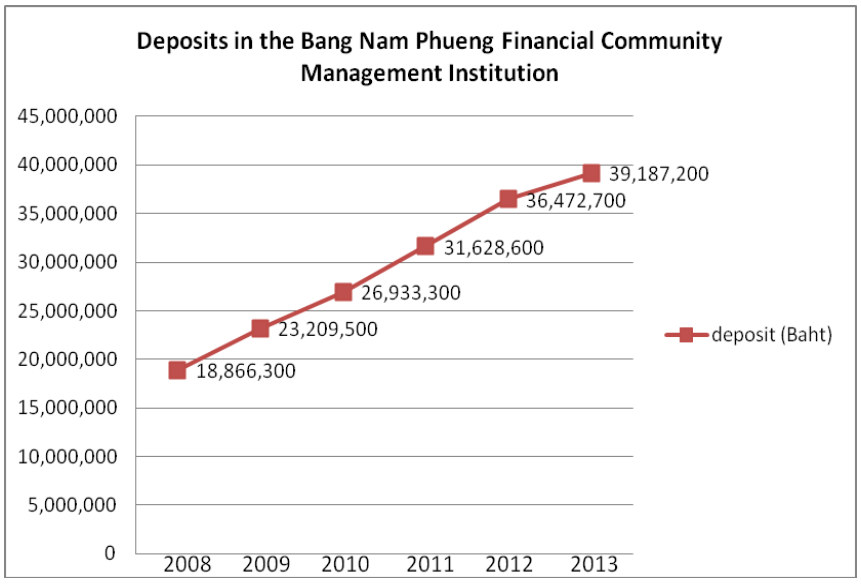

Figure 4-12 Amount of deposits in the Bang Nam Phueng Financial Management Institution

As considering of the increase of financial capital accumulation, such evidence indicates that the financial management system in Mae Kampong and Bang Nam Phueng village intend to be robust and effective due to stability of community finance. This implies that the villagers have self-immunity to against chock from the economic risk, which is assumed as such a management system could be lead to the economic sustainability attributes to the bottom-up thinking and implementation of sufficiency economy.

Analyzing the sustainability with the condition for identifying sustainability values of indicator 17 (Table 3-29), the percentage values of deposits or capital accumulation in both Mae Kampong and Bang Nam Phueng are 70 or 46 scores because the amount of deposits or financial capital in the community financial institution has fluctuated but increased in the current period year of measurement. As a result, the performance levels of deposits or capital accumulation in both Mae Kampong and Bang Nam Phueng are "excellent," and sustainability values are "potentially sustainable."

Indicator 18: kitchen garden

Considering the percentage of practicing household's kitchen garden indicates the local economic sustainability based on the principles of sufficiency economy. According to questionnaire surveys (Table 4-21), practicing household's kitchen garden in Mae Kampong is nearly 62% and in Bang Nam Phueng is nearly 76%. The percentage of household's kitchen garden is rather high when compares with all households. This finding indicates the success of an applying sufficiency economy for cost reduction in the family level of community development, which sustains local economy.

Table 4-21 Percentage of households doing the kitchen garden

Village	Number of households	employing questionnaires	doing kitchen garden	not doing kitchen garden
Mae Kampong	121	97	60 (61.9)	37 (38.1)
Bang Nam Phueng	70	66	50 (75.8)	16 (24.2)

Source: Questionnaire survey, December, 2013.

As considering the percentage of households doing the kitchen garden (Table 4-21) with the barometer of sustainability (Fig.3-3), the performance level of kitchen garden in Mae Kampong is "good," and sustainability value is "potentially sustainable." Meanwhile the performance level of kitchen garden in Bang Nam Phueng is "excellent," and the sustainability value is "potentially sustainable."

Social sustainability

Indicator 19: community welfare

For the dimension of social sustainability, sufficiency economy focuses on receiving community welfares. The result from questionnaire survey revealed that more than 80% of family households in Mae Kam Pong village obtain the community welfare, which attribute to the benefits from community-based tourism. In contrast, the percentage of family households receiving the community welfare generated by benefit shares from the operation of the Bang Nam Phueng floating market is only 47%, which is under the target for this assessment of social sustainability (Table 4-22).

Table 4-22 Percentage of households receiving community welfare

Village	Number of households	employing questionnaires	receiving community welfare	not receiving community welfare
Mae Kampong	121	97 (100.0)	81 (83.5)	16 (16.5)
Bang Nam Phueng	70	66 (100.0)	31 (47.0)	35 (53.0)

Source: Questionnaire survey, December, 2013.

As considering the percentage of households receiving community welfare (Table 4-22) with the barometer of sustainability (Fig.3-3), the performance level of community welfare in Mae Kampong is "best practice," and sustainability value is "sustainable." Meanwhile the performance level of community welfare in Bang Nam Phueng is "marginal," and the sustainability value is "potentially unsustainable."

Indicator 20: health

Target on people's health for this assessment is the percentage of villagers having health problems, which is less than 40. Table 4-23 shows the result from questionnaire surveys on family household having health problems. People health problems in Mae Kampong are higher than Bang Nam Phueng.

Table 4-23 Percentage of households toward health problems

Village	Number of households	employing questionnaires	having health problems	not having health problems
Mae Kampong	121	97 (100.0)	45 (46.4)	52 (53.6)
Bang Nam Phueng	70	66 (100.0)	25 (37.9)	41 (62.1)

Source: Questionnaire survey, December, 2013.

As considering the percentage of households toward health problems (Table 4-23) with the barometer of sustainability (Fig.3-3), the analytical performance for indicating sustainability is not having health problems. As the percentage of households without health problems, the level of performance in Mae Kampong is "acceptable," and sustainability value is "intermediate." Meanwhile the performance level in Bang Nam Phueng is "good," and the sustainability value is "potentially sustainable."

Environmental sustainability

Indicator 21: organic substance use in agriculture

One of the purposes of applying sufficiency economy in agriculture is avoiding chemical substance use. For examining this application, this indicator was set the criterion with high percentage of target achievement at least 60%. A survey on organic crop cultivation was employed with the farmer households. It was found that both Mae Kampong and Bang Nam Phueng are over the target. More than 70% of farmer households of two villages using organic substances in their agricultural practices (Table 4-24). This is assumed as the successful advocacy of sufficiency economy in terms of sustaining environment.

Table 4-24 Percentage of households using organic substances to profit productivity

Village	Number of households	employing questionnaires	using organic substances	not using organic substances
Mae Kampong	121	89 (100.0)	68 (76.4)	21 (23.6)
Bang Nam Phueng	70	38 (100.0)	30 (78.9)	8 (21.1)

Source: Questionnaire survey, December, 2013.

As considering the percentage of households using organic substances to profit agricultural productivity (Table 4-24) with the barometer of sustainability (Fig.3-3), the performance levels of using organic substances in both Mae Kampong and Bang Nam Phueng are "excellent," and sustainability values are "potentially sustainable."

Institutional sustainability

Indicator 22: cooperatives or financial institutions

A number of cooperatives or financial institutions' members are the significant factor that determines if the initiatives are strong. Changes in membership of financial institutions are predictable toward the institutional sustainability. From the data of Mae Kampong village (Fig. 4-13), the members' numbers of the Mae Kampong Mini-Hydro Cooperative has increased consistently during 2005 to 2012. Similarly, the members' numbers of Bang Nam Phueng Financial Community Management Institution has increased during 2008 to 2012. However, it tends to decrease in 2013 (Fig. 4-14). This indicates that the system management should be monitored to consider the cause of problems that is happening.

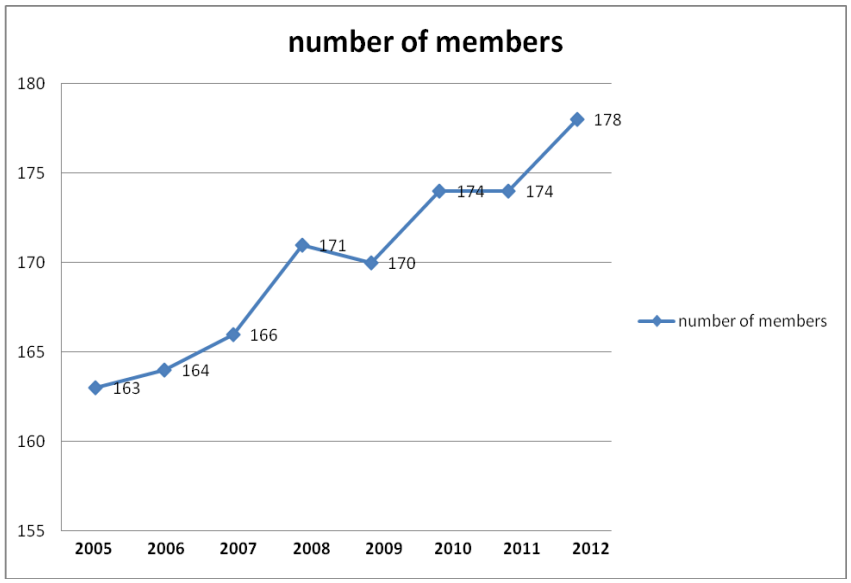

Figure 4-13 Number of members of the Mae Kampong Mini-hydro Cooperative

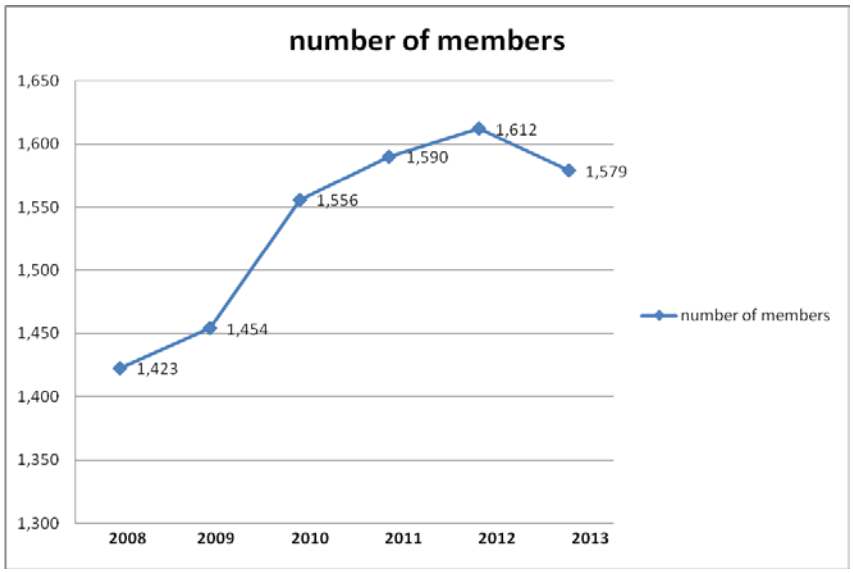

Figure 4-14 Number of members of the Bang Nam Phueng Financial Community Management Institution

Analyzing the sustainability with the condition for identifying sustainability values of indicator 22 (Table 3-30), the percentage value of the number of cooperative's members in Mae Kampong is 70 or 6 scores because the number of cooperative's members has fluctuated but increased in the current period year of measurement. As a result, the performance level of cooperative in Mae Kampong is "excellent," and sustainability value is "potentially sustainable." For Bang Nam Phueng, the percentage value of the number of financial institution's members is 50 or 4 scores because the number of financial institution's members has fluctuated and decreased in the current period year of measurement. As a consequence, the performance level of financial institution in Mae Kampong is "acceptable," and sustainability value is "intermediate."

2. **Benchmarking sustainability of rural tourism in the case studies**

According to the data analysis based on 22 indicators, the percentage of each indicator has been rated by the range of scores from 1-7 in order to indicate a level of its performance, which interprets a tendency of sustainability. As can be seen in Table 4-25, Overall management of rural tourism in Mae Kampong village is potentially sustainable ($\overline{X} = 5.95$).

Table 4-25 Results of measuring sustainability of rural tourism in Mae Kampong village

Model's component	Indicators	Percentage	Rating scores	Level of performance	Interpretation of sustainability value
Community-based tourism (CBT)	1.Tourists	70	6	Excellent	Potentially sustainable
	2.Tourism income	80	7	Best practice	Sustainable
	3. Tourism income distribution	56.7	4	Acceptable	Intermediate
	4. Local satisfaction	70	6	Excellent	Potentially sustainable
	5. Homestay	80	7	Best practice	Sustainable
	6. Tourist satisfaction	80	7	Best practice	Sustainable
	7. Ecotourism activitiy	80	7	Best practice	Sustainable
	8. Recreational land use	70	6	Excellent	Potentially sustainable
	9.Tourism carrying capacity	80	7	Best practice	Sustainable
	10.Trainning	73.2	6	Excellent	Potentially sustainable
	11.Community leaders	97.9	7	Best practice	Sustainable
	12. Communiy participation	95.9	7	Best practice	Sustainable
CBT's mean			6.42	Excellent	Potentially sustainable
One *tambon* one product (OTOP)	13. Net benefits	50	4	Acceptable	Intermediate
	14. Product development	50	4	Acceptable	Intermediate
	15. Green products	80	7	Best practice	Sustainable
	16. Community enterprises	60	5	Good	Potentially sustainable
OTOP's mean			5.00	Good	Potentially sustainable
Sufficiency economy	17. Deposit or capital accumulation	70	6	Excellent	Potentially sustainable
	18. Kitchen garden	61.9	5	Good	Potentially sustainable
	19. Community welfare	83.5	7	Best practice	Sustainable
	20. Health	53.6	4	Acceptable	Intermediate
	21. Organic substance use in agriculture	76.4	6	Excellent	Potentially sustainable
	22. Cooperatives or financial institutions	70	6	Excellent	Potentially sustainable
SEA's mean			5.67	Good	Potentially sustainable
Aggregate mean			**5.95**	**Good**	**Potentially sustainable**

Note: The underlined intepretation is a risk performance toward unsustainable development

However, when consider some accepted performances (score 4) which is under the ideal baseline, unsustainable management may occur. For the community-based tourism management, the distribution of tourism income is intermediate. Addressing on OTOP management, although green product could lead to environmental sustainability and the community enterprises are potentially sustainable in terms of institutional sustainability, benefits generated from the products tend to be risk between unsustainable and sustainable economic because of decrease in current income. Besides, the development of product is also risk to achieve unsustainable business because the package is not more attractive. Furthermore, a health problem of local residents is one of crucial considering aspects.

Table 4-26 Results of measuring sustainability of rural tourism in Bang Nam Phueng village

Model's component	Indicators	Percentage	Rating scores	Level of performance	Interpretation of sustainability value
Community-based tourism	1.Tourists	50	4	Acceptable	Intermediate
	2.Tourism income	70	6	Excellent	Potentially sustainable
	3. Tourism income distribution	57.5	4	Acceptable	Intermediate
	4. Local satisfaction	70	6	Excellent	Potentially sustainable
	5. Homestay	80	7	Best practice	Sustainable
	6. Tourist satisfaction	80	7	Best practice	Sustainable
	7. Ecotourism activitiy	80	7	Best practice	Sustainable
	8. Recreational land use	40	3	Marginal	Potentially unsustainable
	9.Tourism carrying capacity	70	6	Excellent	Potentially sustainable
	10. Training	45.5	3	Marginal	Potentially unsustainable
	11.Community leaders	95.9	7	Best practice	Sustainable
	12. Communiy participation	75.8	6	Excellent	Potentially sustainable
CBT's mean			5.50	Good	Potentially sustainable
One *tambon* one product (OTOP)	13. Net benefits	50	4	Acceptable	Intermediate
	14. Product development	50	4	Acceptable	Intermediate
	15. Green products	80	7	Best practice	Sustainable
	16.Community enterprises	50	4	Acceptable	Intermediate
OTOP's mean			4.75	Acceptable	Potentially unsustainable
Sufficiency economy agriculture (SEA)	17. Deposit or capital accumulation	70	6	Excellent	Potentially sustainable
	18. Kitchen garden	75.8	6	Excellent	Potentially sustainable
	19. Community welfare	47.0	3	Marginal	Potentially unsustainable
	20. Health	62.1	5	Good	Potentially sustainable
	21. Organic substance use in agriculture	78.9	6	Excellent	Potentially sustainable
	22.Cooperatives or financial institutions	50	4	Acceptable	Intermediate
SEA's mean			5.00	Good	Potentially sustainable
Aggregate mean			**5.22**	**Good**	**Potentially sustainable**

Note: The underlined intepretation is a risk performance toward unsustainable development

A case of Bang Nam Phueng village, overall management of rural tourism is potentially sustainable ($\bar{X}$ = 5.22) (Table 4-26). However, when consider the performances that are below the ideal baseline, those performances may become problems due to risk. The risk of management on CBT consists of four performances: a decrease number of domestic tourists, tourism income distribution, recreational land use plans, and local participation in tourism training organized by supported organizations. For OTOP management, the potentially unsustainable management addresses on net benefits, product development, and community enterprises. Besides, community welfare and financial institution's members are emerged to be one of the deliberated problems.

As aforementioned, the scores of performance are presented by an AMOEBA diagram to benchmark the sustainability of rural tourism based on each aspect between Mae Kampong and Bang Namphueng village. Although the rural tourism management of both villages is potentially sustainable as seen in the mean scores, many deliberating aspects have been emerged from the benchmark (Fig.4-15).

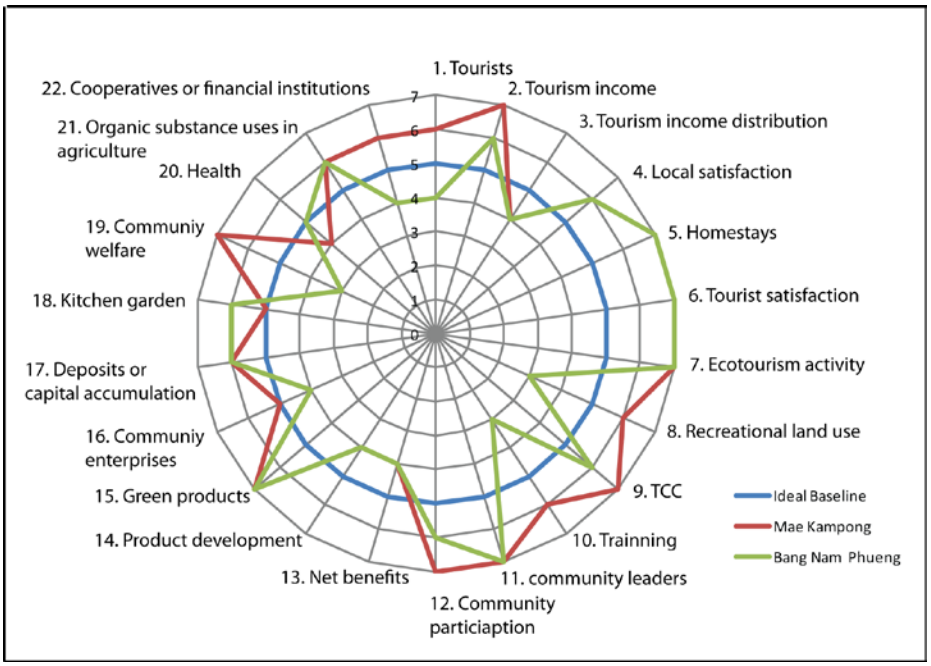

Figure 4-15 Benchmarking rural tourism in Mae Kampong and Bang Nam Phueng village

V: Sustainable Rural Tourism in Thailand: Discussion

This chapter discusses factors influence the sustainability of rural tourism in the case studies by three components: community-based tourism, one *tambon* one product, and sufficiency economy agriculture. Then, the conceptual framework addressing on the accumulation of five community capitals mentioned in chapter 1, has been discussed. After discussion, suggestions and guidelines have been proposed to the case studies.

1. Sustainability of rural tourism: Analysis with elements of the model

Community-based Tourism

As considering CBT's mean of the case studies, community-based tourism management in both Mae Kampong ($\bar{X}$ = 6.42) and Bang Nam Phueng ($\bar{X}$ = 5.50) are potentially sustainable. Factors that corroborate the achievement of sustainable community-based tourism in Mae Kampong comprising increased numbers of tourist and tourism income from tour programs, high level of local and tourist satisfaction, standardized homestay management, varieties of ecotourism activities, planning land use for recreation and tourism carrying capacity, knowledge and skills concerning tourism management, accepted community leaders, and high level of community participation of locals. However, one of the factors that may result in achieving unsustainable development is uneven tourism income distribution.

Factors influencing the sustainability of CBT management in Bang Nam Phueng are associated with an increased tourism income from the floating market, high level of local and tourist satisfaction, standardized homestay management, varieties of ecotourism activities, planning tourism carrying capacity, strong community leaders and community participation of locals. However, there have been four factors considering as a risk management to achieve unsustainable development. Those include fluctuated numbers of tourist, uneven tourism income distribution, lack of recreational land use plans, and few trained persons in tourism support.

Uneven tourism income distribution is a risk factor found in both Mae Kampong and Bang Nam Phueng village. This finding supports the notion that actual benefits from CBT to the community can be difficult to achieve (Becker and Bradbury, 1994; Briassoulis, 2002; Johnson, 2010; Suriya, 2010, Senyana and Moren, 2011). One of the reasons results in this constraint caused by the default of top-down approaches from outside developers that affect the degree of local control (Blackstock, 2005; Johnson, 2010; Robinson, 2012). For example, a private developer may purchase land in a community to built a tourism business, such as a restaurant or resort hotel, and then seek cursory community input on the scale, design, and nature of the structure (Johnson, 2010). In this way, the community is subjected to the *outcome* of a development, rather than being an equal partner in the process of developing rural tourism based on a management by realistic community-based tourism (Bahaire and Elliott-White, 1999).

Such a reason mentioned, it was a problem existed in Mae Kampong village influenced by a resort hotel whose former owner was not local people, and intend not to participate CBT (Interview the former village headman). This problem experiences the village to deal with this conflict by establishment some regulations for controlling an increase of tourism business run by outsider investors. For instance, those who own the tourism business have to participate in CBT by sharing benefits to the community funds, those who are against the regulations will not be supported any facilities such as hydro-electricity and water generated by the community. Although a bottom-up approach seems to be an appropriate way in CBT management, an inequality of tourism benefit shares may occur by a local domination of some entrepreneur groups or community leaders. For example, members of community enterprises are limited in family or relatives, some community leaders not offering tourism supported jobs to unemployed people but their satisfied persons are prerequisite to have the opportunity.

This notion is relevant to a local participation in training organized by tourism supported institutions, which can indicate the solidarity of community. Addressing on this aspect, Bang Nam Phueng village can reflect this problem as well. As Okazaki's community-based model which illustrates level of local participation in community development, local participation in tourism training can be implied. Local participation in Bang Nam Phueng is equivalent to level 3, which means the locals are informed but not participated as expected (Okazaki, 2008). This position is quite different from Mae Kampong's local participation in training which is at the step of "partnership" determining degrees of local power (Fig.5-1). Locals who are not employed in tourism related jobs may deny any training programs due to lack of opportunity to get benefit from CBT. For the case of Mae Kampong, although tourism income distribution is still uneven, local participation in tourism training is high due to a good policy. Namely, the villagers who do not participate CBT can get welfare generated from tourism income such financial supports for health care and education. This policy encourages awareness of locals in tourism development participation.

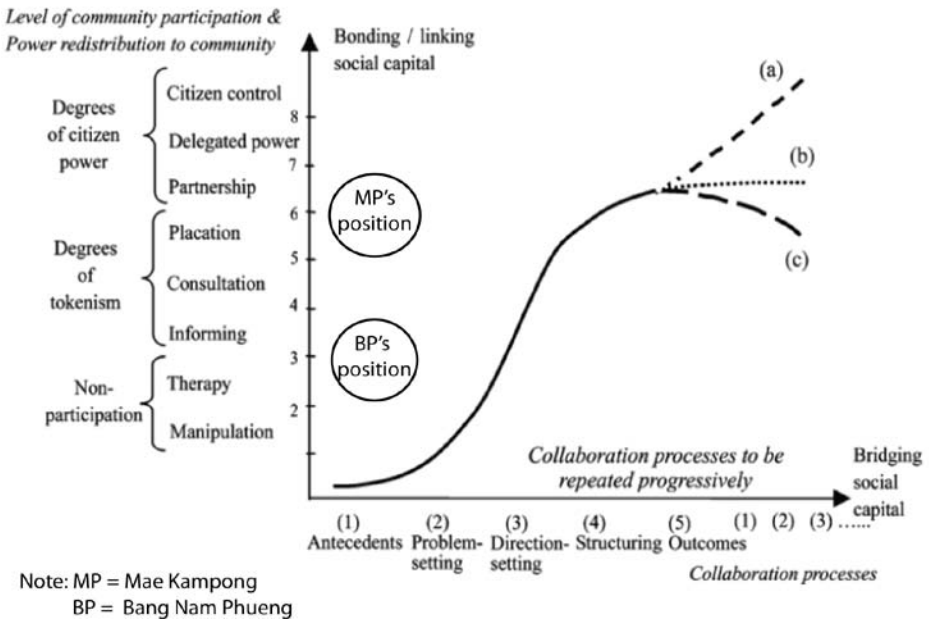

Figure 5-1 The positions of local participation in training of Mae Kampong and Bang Nam Phueng

One *tambon* One Product

As considering OTOP's mean of the case studies, OTOP management in Mae Kampong ($\bar{X}$ = 5.00) is potentially sustainable but Bang Nam Phueng ($\bar{X}$ = 4.75) is potentially unsustainable. Although the mean score of Mae Kampong indicates a good performance of product management, it differs not much from Bang Nam Phueng's performance. In this considering discussion, therefore, addresses on problems, weakness and constraint of OTOP development in two villages.

Factors affecting unsustainable management of OTOP in Mae Kampong and Bang Nam Phueng are focused on net benefits and product development, basically based on a force driven on supply and demand which is the main driver of development process (George et al., 2009). These factors are relevant each other in terms of generating income depending on quality and attractiveness of products. Low quality and unattractive packages may result in decreasing demand of products, which directly involve a decrease of net income. Based on OTOP products of Mae Kampong village which are certified as a 2 star standard product (forest tea pillow and organic Arabica coffee), should be more developed to obtain higher standard in order to attract international tourists. Likewise, Bang Nam Phueng's herbal joss sticks community enterprise should emphasize on keeping standard of a 5 star product and promote itself to global market. However, this may be difficult for rural communities due to lack of skills and capacity to create a successful business (Kanthachai, 2013; Claymone, 2014).

As this notion, participating in knowledge or skill-based training supported by the community or tourism involved organizations could lead to achievement of successful rural enterprises. According to the

results from a household survey on tourism training (indicator 10) as mentioned in chapter 4, the participation in community enterprise's training of each village was in the lowest percentage (around 7%). This finding implies that the development of community product, including OTOP in both Mae Kampong and Bang Nam Phueng village is less awareness. Specially discuss on Mae Kampong, this circumstance is controversial to agree with the result assessment conducted by Sangkakorn (2008) that the village has most successful developed a high quality CBT product.

Sufficiency Economy Agriculture (SEA)

Implementing sufficiency economy agriculture could be considered as an important catalyst to rural tourism development in the two case studies. Based on a problem-based approach, reconstructing agriculture and traditional floating market is a motivating factor to local economic revitalization in Bang Nam Phueng village during the period of Asian economic crisis in 1997 which influenced unemployment from urban jobs. Similarly, sufficiency economy agriculture has been used as a motivating factor in an opportunity-based approach to recreate value of agricultural products with the concept of health tourism trend by promoting an organic food serving in homestays.

As considering SEA's mean of the case studies, the application of sufficiency economy philosophy in agriculture in both Mae Kampong ($\bar{X}$ = 5.67) and Bang Nam Phueng ($\bar{X}$ = 5.00) are potentially sustainable. The strength of sufficiency economy agriculture in both villages appears to stem from three main catalysts: stability of deposit or capital in the community's financial institutions, reducing cost of living by self-growing vegetables from households' kitchen gardens, and organic substance uses in agricultural practices. Regarding with the three staged process of sufficiency economy, cultivating organic crops for securing adequate food and distribute to local market is the economic activity underpinning the concept of reasonableness and moderation at the first and second stage of its development process. While accumulating stocks of community capitals, particularly financial capital generated from outcome of agricultural commodities at the third stage involves the concept of self-immunity to against shock from the economic crisis.

However, the nexus of SEA that should be discussed is health and community welfare. In evaluating the gross village happiness (GVH) in Thailand's sufficiency economy role model by the Ministry of Interior, health and community welfare is one of the crucial indicators determining the sustainable rural development. Resulting from this measurement by indicator 20, the people's health in Mae Kampong village tends to be potentially unsustainable toward rural tourism development because of the consumption of non-organic food purchased outside their community to provide for tourists (Puangmala, 2006). As a result, the community takes the advantage opportunity of the community-based health tourism project supported by a networking group of health tourism in upper northern region. In recently, therefore, the villagers have been promoted to growing organic vegetables for self-consumption and distribution for homestays (Plate 5-1). This is an

attempt to mitigate diseases from external food consumption which could benefit not only people's health, but also revitalize local economy in terms of self-sufficiency.

Another interesting consideration emerged by the implementation underpinning sufficiency economy is community welfare. Inequality receiving community welfare generating from tourism benefits is a critical issue of Bang Nam Phueng village. As a result reveals in the household survey, approximately half of Bang Nam Phueng's households (47%) obtained the community welfare such as a birthday present complemented by the Bang Nam Phueng Tambon Administrative Organization. This is because of those persons are directory involved in tourism development, especially a volunteer group of households participating the sufficiency economy agriculture project to promote rural tourism in the area. Comparing with the community welfare managed by the Mae Kampong's cooperatives which people more than 80% receive welfares, the distribution of such benefits from tourism in Bang Nam Phueng should be extremely considered toward this circumstance, which might lead to a failure development due to a domination by the local government.

Plate 5-1 Community-based health tourism promoting sufficiency economy agriculture

2. Sustainability of rural tourism: Analysis with the community capitals

Addressing sustainable rural development in terms of capital stocks, the maintenance and increase of all five kinds of capital are essential for the sustainability (Goodwin, 2003; George et al., 2006). Rural tourism in the case studies, which emerged from three catalysts: community based-tourism, one *tambom* one product, and sufficiency economy agriculture, could lead to accumulate five community capital stocks as a success key for sustainable rural development, when resources are used to create new resources (George et al., 2006). As considering the measuring sustainability of rural tourism in four criteria of sustainable development: economic, socio-cultural, environmental, and institutional sustainability, the performance which its mean is lower than the ideal baseline can result in a tendency of unsustainable development. The actual performances of tourism development determined by 4 criteria and 22 sustainability indicators have been illustrated in the AMOEBA diagram dividing into four quadrants (Fig. 5-2). Sustainability values of each quadrant has been explained and discussed as follow:

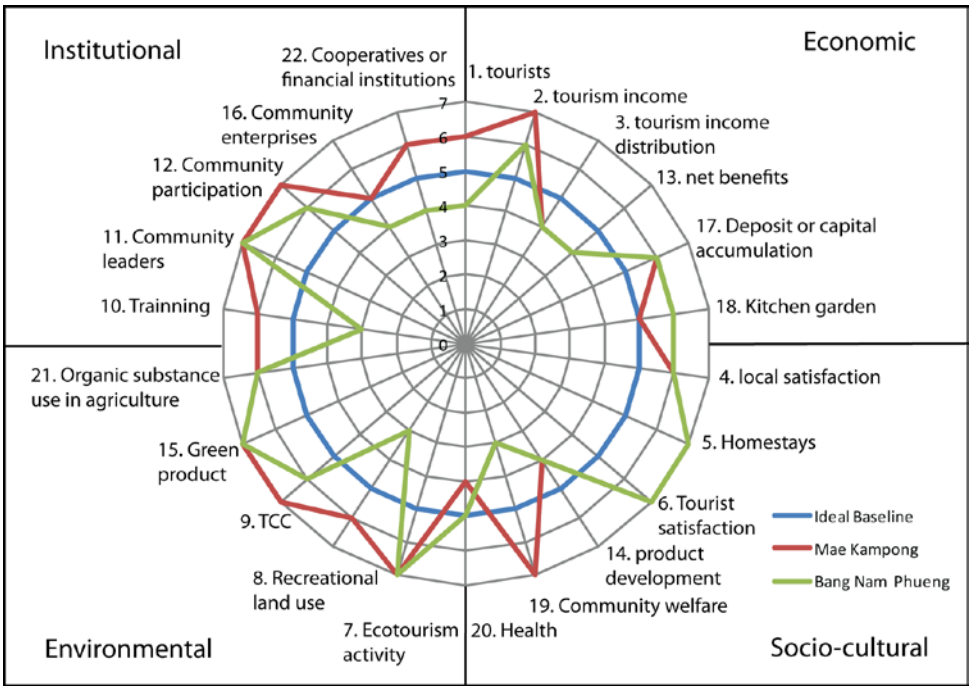

Figure 5-2 Sustainability values presented in the AMOEBA diagram with four elements of sustainable development

Economic sustainability

If considering the sustainability of economy which is mainly generated by financial or built capital, Mae Kampong village is potentially sustainable ($\bar{X}$ = 5.33), while Bang Nam Phueng village is potentially unsustainable ($\bar{X}$ = 4.83). This is because the financial capital stock derived from OTOP's income has a tendency to continually decrease due to lack of supply (i.e., a strong community enterprise membership and an affordability of local materials) and demand-driven forces (i.e., a volume of order, a variety group of customers, and desire of global market). As the community is labeled as an OTOP tourism village because of a 5 star product of herbal joss stick, Bang Nam Phueng should be extremely considered this weakness and threat by taking into account the tourism strategy or community development plan.

Although tourism income distribution in both Mae Kampong and Bang Nam Phueng has not achieved the economic sustainability goal as aforementioned, it cannot judge that the local economic development of the cases failed. According to Suriya's argument (2010) which states that CBT in Thailand fails due to inequality of income distribution, this discussion rather disagree because the economic sustainability cannot be determined only "income" but "well-being" from non-declining capital stock overtime is necessary to focus on sustainable development (Solow, 1986; Repetto, 1986; and Saunders et al., 2010). There are many external factors should be considered for uneven tourism income distribution. One of such factors is "urbanization" that influences many local residents work in urban and are disable to participate in rural

tourism development in their communities, especially the citizens in the urban fringe communities. Thus, unemployment or lack of opportunity to receive income from tourism is quite difficult to determine whether the rural tourism development success. However, the crucial consideration for sustaining local economy should emphasize on the balance of five community capitals, which can yield the benefits to center the local economic viability and well-being of local people.

Socio-cultural sustainability

Scio-cultural sustainability which is emerged from the accumulation stock of social and cultural capital is potentially sustainable in both Mae Kampong ($\bar{X}$ = 5.83) and Bang Nam Phueng ($\bar{X}$ = 5.33). In the field of tourism studies, social capital is a relative new concept which plays a crucial role in economic growth (Okazaki, 2008). This concept appears in tourism satisfaction of both locals and tourists. For example, high level of tourist satisfaction in homestay services can achieve an increase numbers of return visitors which directory sustain the growth of revenues retrieving from networking of host and tourists as a bridging social capital. Similarly, cultural capital generating by local culture becomes a main asset for economic viability in rural tourism communities (George, 2009). This can be seen in the process of commodification of culture and rurality which are exemplified by rural resources that are bought and sold through tourism activities; real estate investments by outsiders; and buying, selling, and promoting rural products by publicizing a rural landscape image (Tabayashi, 2010). In the case of Mae Kampong, the traditional forest tea cultivation and consumption of “miang” which is a unique Lanna culture is commoditized for agritourism and culture-based tourism, meanwhile, the floating market which is the traditional market in central Thailand has been reconstructed to be a place for selling community’s agricultural products in Bang Nam Phueng. Such this implementation takes cultural capital to produce tourism products to sustain local economic viability. In short, it can be assumed that the sustainability of social and culture supports the economic sustainability. However, this notion may exploit the real identity or authenticity of the rurality and lead to a tendency of unsustainable development.

Environmental sustainability

Environmental sustainability which consists of the built and natural environment (Saunders, et al, 2010) is potentially sustainable in both Mae Kampong ($\bar{X}$ = 6.60) and Bang Nam Phueng ($\bar{X}$ = 5.80). Realizing the economic benefits from ecotourism, local people have undertaken initiatives to conserve and manage environmental and natural resources (Jitpakdee and Thapa, 2012). The economic and socio-cultural sustainability of rural tourism, as discussed above, largely depend on ecological sustainability which attributes to well management of ecotourism activities. Ecotourism activity management in the village case studies contributes to maintenance and increase of natural capital in five catalysts: forest, wildlife, soil, water, and climate. Tree planting activity intensifies the quantity of water generated from the Mae Kampong waterfall due to the high precipitation in the forest area. Tree growing in Bang Nam Phueng helps recover the

abandoned orchard to be the community forest and enhances the existence of flora and fauna. Organic forest tea and coffee picking activities in Mae Kampong highland indirectly encourage tourists to participate in soil and water conservation. Likewise in Bang Nam Phueng, making compost and effective microorganism (EM) enhance tourists to maintain agricultural land and canals. Furthermore, the zipline canopy walk in Mae Kampong and cycling in Bang Nam Phueng help to eliminate the crisis of global warming.

Consistent with ecotourism activity, the existence of land use plans for zoning and limiting number of tourists for controlling the overuse of area for recreation plays the significant role to achieve the environmental sustainability. In this study, land use is categorized as residential, agricultural, and forest area. Three types of land use in Mae Kampong village have been managed within five land use plans: the regulation for controlling the construction alongside the stream, waste management system, promotion of sustainable agriculture, nature walk trials, and zoning for ecotourism. For Bang Nam Phueng, there have been two land use plans: waste management system, and promotion of sustainable agriculture. However, if consider the existing implementation, some environmental problems have been found. In Mae Kampong, smoke from garbage burning disturbs the atmosphere and may cause the increase of illness of locals. For a case of Bang Namphueng, a project of waste separation failed due to lack of cooperation in both local residents and tourists. These problems not only effect to the local health's people and environment but also destroy the image of rural tourism as the strategy for economic revitalization in the areas. As a result, both of the case studies should emphasize more consciousness to solve such a weakness circumstance on development.

Institutional sustainability

The institutional sustainability from the case studies employed the indicators that involve social and human capital concept to determine the strong and weakness of tourism institution of the cases. The term of institution as mentioned in chapter 3, includes financial institutions, community groups, norms, customs, moral, and tradition which some are difficult to monitor. However, if focus on human capital which is associated with leaderships and obedience is rather easy to determine. In this measurement, the analysis of institutional sustainability, therefore, addresses on community leaders and local participation, tourism training, community enterprises, and financial institutions.

The accumulation of human capital which plays the significant factor results in achieving sustainability of institutions. In Mae Kampong village, the management of human capital manifests the potentially sustainable trend ($\bar{X}$ = 6.20) which differs from Bang Nam Phueng that seems to be potentially unsustainable ($\bar{X}$ = 4.80). Human capital includes knowledge, skills, competences and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being (Saunders et al., 2010). As this mentioned, accumulation of human capital by considering local participations in training related to tourism is one of important internal factors for discussion on institutional sustainability. As previous

discussion in CBT's sustainability, Bang Nam Phueng's performance on training participation is under the ideal baseline (45.5% or 3 scores in equivalent). This is because the proximity to the cities, around 60% of local residents in the village is employed in both government and private sector in the Bangkok metropolitan and Samut prakan industrial city (Phra Pradeang Community Development Office, 2013). As a result, participating in tourism training is less than Mae Kampong which most villagers are farmers and work in their community. Such a constraint of urban fringe challenges to rural tourism development, especially Bang Nam Phueng in which located between the central business district (or CBD) of Bangkok and industrial zone of Samut Prakan. Rural tourism that aims to sustain and commoditize the "rurality" encounters many threats on sustainable development.

According to the notion of "rurality" mentioned in Chapter 2, the success or failure of rural tourism development influenced by rurality that its development should help sustain the special rural character of an area, and the sense of utilizing resources (George et al., 2009). For a case of an urban fringe community, such development in terms of rurality is disadvantageous than a community in remote area.

3. Consideration concerning an integrated rural tourism model in relation to strategic planning for rural development in the case studies

As this discussion has shown, however, the framework of rural tourism sustainability cannot be powered without capital. Capital, as De Sato (2000) states, cannot be created by money but by people who think about how they can get the assets they accumulate to deploy additional production. Thus, integrating sustainability into strategic planning is the most significant implementation that can provide long-range protection of resources, the basic elements of capital (Gunn and Var 2002). Effective strategic planning by local people should make it a priority to start with a SWOT (strengths, weaknesses, opportunities, threats) analysis, which consists of a consideration of the factors that are likely to make the implementation a success or a failure and should look at both internal and external organization (Briggs 2001). In the case of Mae Kampong, the SWOT analysis can be discussed with the integrated rural tourism model as follows:

- Strengths – The cultural identity of forest tea and organic coffee cultivation and local participation in tourism management to improve the economic status, which highlight its rural land use as a featured community-based ecotourism village. Best practice in management of homestay, ecotourism, recreational land use, and tourism carrying capacity. Efficient cooperative with good management of community welfare.
- Weaknesses – OTOP products are less developed to achieve the high quality standard both in forest tea pillows and organic coffee. Lack of a robust waste management system.
- Opportunities – the reputation of the village can attract more visitors and support from organizations. Health tourism which is promoted by supported organizations can extend to

recreate as value added agricultural products within the concept of organic food which help to solve the health problem of local people.

- Threats – The potential to develop amenities in the residential areas is limited in scale (e.g., accommodation, health centers, and parking). People health is risk for human development.

Accordingly, any strategic planning should emphasize the tactics that can generate community capital for supporting the sustainability of rural development by taking the strengths, weaknesses, and opportunities to identify the action plan or establish the projects, and addressing threats in order to monitor the problems. The action plans or new projects based on an integrated rural tourism model should focus on promoting health tourism, which is still implemented within the concept of community-based tourism. It should consider the commodification of forest tea and other local vegetation which can be produced as various health tourism products: examples might include the transformation of organic food products from forest tea, coffee or other local vegetables; the development of herbal products used for hot springs or spas; a tour program on meditation and sports activities, such as cycling and mountain climbing; linking a health tour program with other attractions around the village, such as the San Kampheang or Chea Sorn Hot Springs, adventure walking in the Muang On cave.

In the case of Bang Nam Phueng, SWOT can be discussed as follow:

- Strengths – The floating market can attract more tourists and generate high revenues. Using organic substances in agriculture and environmental conservation. Best Practice in homestay and ecotourism management.
- Weaknesses – The development of OTOP product is dropped in standard.
- Opportunities – The proximity to the cities can attract more urban dwellers and international tourists to visit the village due to the ease of access. The uniqueness of traditional agricultural landscape of orchard can be used to promote sufficiency economy agritourism.
- Threats – Urbanization is an obstacle for rural tourism development because local residents are tied with the urban jobs. This results in low level of local participation in tourism training programs.

As SWOT consideration, the floating market revitalizes local economies by attracting both domestic and international tourists. Although the floating market has been well-developed to facilitate shopping activity, sufficiency economy agriculture has not been facilitated in terms of agritourism. The traditional orchard is the special characteristic of agricultural landscape in Bang Nam Phueng, which can attract agritourists. Thus, those orchards should be linked along a community-based agritourism route by cycling. The community-based agritourism route may help to distribute diversified agricultural products, which is one of the characteristics of agricultural practice to agritourists on weekdays via farm shops or agritourist restaurant directly. Furthermore, agritourism should promote the interaction between local people and urban dwellers (mostly tourists) through exchange activities. For instance, working vacations on farms known as Willing

Workers on Organic Farms (WWOF) make a shift in the engagement with local communities around the world (Lipman and Murphy, 2012).

Limitations and suggestions for future research

Although this study compares the rural tourism development in the different case study, it does not intend to judge one case study as better or worse than another, in contrast, rather to help local people and policy makers of both case studies perceive and understand the current circumstances, especially problems of their development. The development of sustainability indicator for measuring the tourism performances of this study, therefore, can not respond all needs of local people to measure the specific themes of each case. As such, the management of the floating market which does not exist in Mae Kampong village cannot be considered for this study, the management of producing hydro-electricity in Mae Kampong village cannot be measured in Bang Nam Phueng village. Accordingly, the developed sustainability indicators of this study were limited into the same management that both of the case existed.

Further study concerning about measuring sustainability of rural tourism development, therefore, should be focused on a specific site, narrow in scope of tourism destination where different aspects of management is crucial point of measurement. Furthermore, deriving of potential indicators should stem from the participation of local residents through a focus group or brainstorming which has not been undertaken in this study due to limitation of time and capability. In addition, this suggestion goes to the community, which measuring sustainability is desirable and necessary for policy making, the system of recording data should be provided because such evidences will be used to compare measuring every time. For example, a problem found in the case studies was lack of data on net profits of OTOP product distribution.

VI: Sustainability of Rural Tourism Development in the Case Studies: Conclusion

For rural community restructured as tourism economies, the notions of sustainable rural tourism and sustainable rural community become synonymous (George et al, 2009). True sustainable rural development, therefore, should include tourism as but one component of the policy mix which government and the private sector formulate with respect to rural development (Butler and Hall, 1998). In the case studies of Mae Kampong and Bang Nam Phueng village, rural tourism has been a crucial strategy for economic revitalization. Although the approaches are different, the implement which underpins the same tourism model could lead to achieve the sustainability of rural tourism development.

As taking the integrated rural tourism model which is associated with community-based tourism (CBT), one *tambon* one product (OTOP), and sufficiency economy agriculture (SEA), the performance outcome from such model is subject to its approach and factors influenced it. Mae Kampong village takes rural tourism as an opportunity-based motivation factor to promote its rurality and recreate new resources based on the cultivation of forest tea and coffee managed by the community. While, Bang Nam Phueng village employs rural tourism as a problem-based motivation factor to reconstruct agriculture by promoting the floating market organized by the local government.

Mae Kampong's approach which the development policy and decision making is derived from local people enhances the solidarity in community participation. The local participation is one of the most significant factors for rural tourism development (Okazaki,2008) which results in the best practice in many aspects of rural tourism management such as homestay, ecotourism, environmental conservation, financial management, and community welfare. The strengths of rural tourism development in Mae Kampong village leading to achieve the sustainability emerge from 18 indicators. They comprise 11 indicators of CBT (indicator 1 increased numbers of tourist, indicator 2 tourism income, indicator 4 high level of local satisfaction, indicator 5 standardized homestay management, indicator 6 high level of tourist satisfaction, indicator 7 varieties of ecotourism activities, indicator 8 planning land use for recreation, indicator 9 tourism carrying capacity, indicator 10 tourism supported training, indicator 11 accepted community leaders, and indicator 12 high level of community participation of locals), 2 indicators of OTOP (indicator 15 green product, and indicator 16 strong community enterprises), and 5 indicators of SEA (indicator 17 the stability of financial capital in the community's cooperative, indicator 18 reducing cost of living by self-growing vegetables from households' kitchen gardens, indicator 19 community welfare, indicator 21 organic substance uses in agricultural practices, and indicator 22 strong cooperative).

However, factors that may result in achieving unsustainable development are considered on 4 indicators: indicator 3 uneven tourism income distribution from CBT, indicator 13 lower net benefits of OTOP, indicator 14 lack of product development, and indicator 20 people health from non-organic food consumption.

Likewise, Bang Nam Phueng's approach which the development is tied with the urbanization challenges the local government (Tambon Adiministrative Office) to evoke local people reconstruct agricultural practices by the strategy based on sufficiency economy agriculture. The cooperation between local government and residents entails the extension of sustainable rural development through the reconstruction of the traditional floating market, which contributes to recreate local resources serving for tourism such as homestay and various community products. The strengths of rural tourism development in Bang Nam Phueng village which lead to achieve the sustainability emerge from 13 indicators. They comprise 8 indicators of CBT (indicator 2 tourism income, indicator 4 high level of local satisfaction, indicator 5 standardized homestay management, indicator 6 high level of tourist satisfaction, indicator 7 varieties of ecotourism activities, indicator 9 tourism carrying capacity, indicator 11 accepted community leaders, and indicator 12 high level of community participation of locals), 1 indicator of OTOP (indicator 15 green product), and 4 indicators of SEA (indicator 17 the stability of deposits in the community financial institution, indicator 18 reducing cost of living by self-growing vegetables from households' kitchen gardens, indicator 20 good health people, and indicator 21 organic substance uses in agricultural practices). However, factors that may result in achieving unsustainable development are considered on 9 indicators: indicator 1 fluctuated numbers of tourist, indicator 3 uneven tourism income distribution from CBT, indicator 8 lack of recreational land use plans, indicator 10 lower tourism supported training, indicator 13 lower net benefits of OTOP, indicator 14 lack of product development, indicator 16 weak community enterprises, indicator 19 uneven community welfare distribution, and indicator 22 decreased members of community financial institution.

Figure 6-1 shows the comparison of different approach of rural tourism development in the case studies; opportunity-based and problem based approach. Mae Kampong village takes the opportunity-based approach to promote tourism by utilizing the forest tea and coffee for creating tourism activities and products related to CBT, SEA and OTOP, centering CBT activity into homestay as one of the package tour, and using the Mae Kampong Mini-Hydro cooperative to strengthen the advocacy of SEA. These strategies contribute to obtain 18 strong tourism performances (illustrated by a white plate with an arrow). On the other hand, Bang Nam Phueng takes the problem-based approach to revitalize local economic by reconstructing agriculture in the community. With this strategy, the floating market is centered to strengthen CBT,OTOP, and SEA, and could lead to achieve a tendency of sustainability development considering by 13 strong tourism performances. However, unless consideration in some weak performances (illustrated by a transparency plate with a dash line), tourism management may risk to achieve unsustainable development, particularly the quality of OTOP products and tourism income distribution, which are the same problems occurring in both communities.

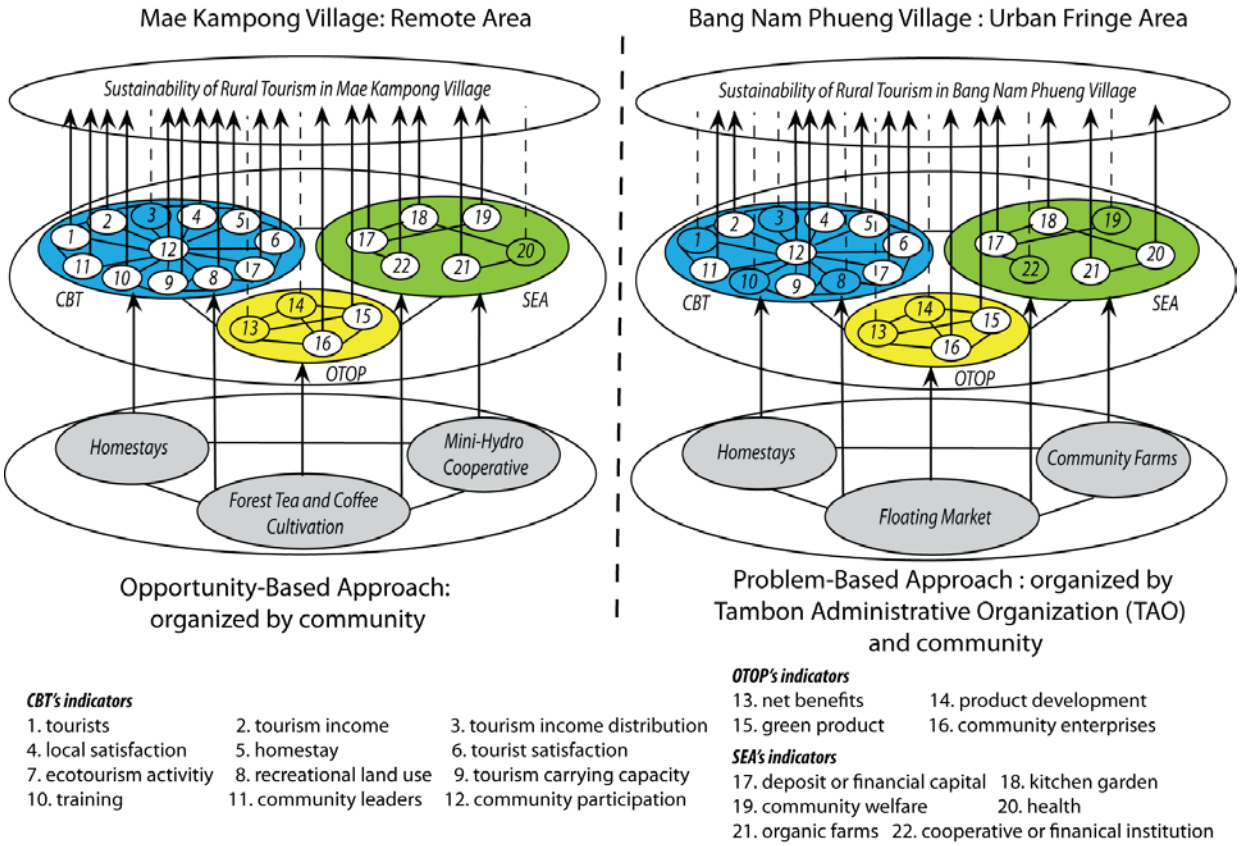

Figure 6-1 Sustainability of rural tourism in the case studies influencing by the same and different factors examined by 22 sustainability indicator

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(T) : written in Thai

(TE): written in Thai with English abstract

APPENDIX

First round selection questionnaire of sustainability indicators for rural tourism

(English translation from Thai original use)

Please rate your opinions towards these following candidate indicators.

5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly disagree

1. Sustainability indicators for economic dimension

Model components	Economic Sustainability Indicator (financial/built capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1.Tourism income	Number of tourism income					
	2. Expenditures	Number of expenditures per households					
	3.Tourism income distribution	% of households gaining income from tourism					
	4. Employment	% of households employed in tourism segment					
	5. Income from tour companies	Number of income from tour companies					
	6. Income from outsider investors	Number of income from outsider investors					
	7. Income from entrance fee	Number of income from entrance fee					
	8. Income from donation	Number of income from donation					
	9. Income from homestays	Number of income from homestays					
	10. Average length of stay	Average length of stay in community					
	11. Homestays	Number of homestays					
	12. Tourist expenditures	Amount of tourist expenditures per day					
	13. Rural industries and services	Number of rural industries and services (e.g., restaurants, stores, resort hotels)					
	14. Investment from villagers and outsider investors	Number of investment from both villagers and outsider investors					
	15. Value of property	Cost of property					
	16. Tour programs	Existence of tour programs with local guides					
	Other…… ……	…… …….……..					

OTOP	17. Net profits from OTOP products	% of net profits from OTOP products					
	18. Unit cost	% of unit cost reduction					
	19. Distribution channel of OTOP products	Variety of Distribution channel of OTOP products					
	20. Category of OTOP products	Variety of category of OTOP products					
	21. Sale promotion activity	Existence of sale promotion activity plan for tourists					
	Other…… ……	…… ……...					
Sufficiency economy	22. Household accountant doing	% of Household accountant doing					
	23. Deposits or capital accumulation	Amount of deposits or capital in community financial institution					
	24. Loan in community financial institution	Amount of loan in community financial institution					
	25. Cost reduction in agricultural practice	% of Cost reduction in agriculture practice such as compost making, EM using					
	26. Agricultural revenue	Number of agricultural revenue					
	27. Average income	Number of average income per household					
	28. Kitchen garden	% of household doing kitchen garden					
	Other…… ……	…… ……...					

2. Sustainability indicators Socio-cultural dimension

Model components	Socio-cultural Sustainability Indicator (social and cultural capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1.Community participation of local people	% of households participating in community meeting, planning, and events					
	2. Youth participation in tourism management	% of youth participation in tourism management					
	3. Local satisfaction	Level of satisfaction in community-based tourism management					

Community-based tourism	4. Community plan	Existence of community plan, which includes tourism development projects					
	5. Community plan review	Existence of community plan review					
	6. Monitoring	Existence of monitoring program for planning implementation					
	7. Educational tourism activities	Existence of educational tourism activities					
	8. Accommodations	Number of accommodations					
	9. Restaurants and stores	Number of restaurants and stores					
	10. Public toilets	Number of public toilets					
	11. Facilities for handicap tourists	Number of facility services providing for handicap tourists					
	12. Safety	Number of securities					
	13. Interpretation	Number of signs, information and knowledge boards in Thai and English in community.					
	14. Parking	Existence of parking areas with capability for supporting number of vehicles					
	15. Smoking area	Existence of smoking areas					
	16. Transportation services	Existence of transportation services available provided by the community					
	17. Reservation system	Existence of advanced reservation system					
	18. Telecommunication services	Existence of telecommunication services (e.g. public telephone, the Internet)					
	19. Homestays	Number of standard homestays certified by the Ministry of Tourism and Sport					
	20. Learning activities in homestays	Existence of learning activities in homestays reflecting culture and identity of the community					

	21. Local cuisine in homestays	% of local cuisine serving in homestays					
	22. Tourist satisfaction on homestay services	% of level of satisfaction in tourism activities and services in homestays					
	Other…… ……..	…… ……					
OTOP	23. OTOP product champions	Ratio of OTOP product champions to community products (rating a star for indicating quality of OTOP)					
	24. Safety food products	Ratio of a registered safety food products labeled by the Food and Drug Administration					
	25**.** Customer satisfaction on OTOP products or community products	Volume order of products					
	26. Local identity and uniqueness of OTOP products or community products	Existence of local identity and uniqueness of OTOP products or community products					
	Other …….. ……	…… ……					
Sufficiency economy	27. Community welfare generating from tourism	% of residents receiving community welfare					
	28. Educational funds	% of youth obtaining educational funds					
	29. Health welfare	% of residents receiving health welfare					
	30. Loan for careers	% of residents receiving loan for careers					
	31. Health	% of villagers having health problems					
	32. Standard food services	Existence of standard food services in homestays (e.g., standard tastes and nutrition)					
	33. Healthy food services	% of healthy food serving (e.g., organic food) in homestays and community restaurants					

	34. Physical check	% of villagers having physical check					
	35. Households free alcoholics and drug addicts	% of households with non-alcoholics and drug addicts					
	36. Households free vices	% of households with non-vices					
	37. Crime	% of criminals commit the crime in community					
	Other…….. ……	…… ……					

3. Sustainability indicators for environmental dimension

Model components	Environmental Sustainability Indicator (natural capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1. Controlling tourists	Limiting number of tourists per day					
	2. Sewage management	% of using EM per household					
	3. Household waste management	Existence of household waste management systems					
	4. Waste from tourists	Number of public litter bins					
	5. Waste quantity	Quantity of waste per day					
	6. Parking management	Parking capacities and use levels					
	7. Ecotourism projects	Numbers of ecotourism projects					
	8. Ecotourism activities	Existing management of environmentally friendly activities					
	9. Nature walk trails	Management of nature walk trails with interpreters or interpretation					
	10. Regulations on Environmental conservation	Existence of regulations on community's environmental conservation					
	11. Environmental policy implementation	% of implementing environmental policy in accommodations (e.g., resort hotels, homestays)					
	12. Forest area	Increasing number of planted trees in indigenous forest or community forest					
	13. Flora and fauna	Existence of indigenous flora and fauna					

	14. Community forest	% of utilizing the community forest per household					
	15. Recreational land use	Existence of zoning for tourism activity					
	16. Land tenure	% of land tenure by outside investors					
	Other …….. ……	…….. ……..					
OTOP	17. Natural products	Number of OTOP products or community products producing from natural materials					
	18. Recycle products	Number of OTOP products or community products producing from recycle materials					
	19. Local products	Number of OTOP products or community products producing from local resources					
	20. Packaging	% of packaging made from recycle materials					
	21. Environmentally friendly products	% of OTOP products or community products producing from rare flora and fauna					
	22. Product satisfaction	% of satisfaction on Environmentally friendly products OTOP products or community products					
	Other…… …….	..... …….					
Sufficiency economy	23. Organic substance use in agriculture	% of farmer households using organic substances to profit productivity					
	24. Organic farms	% of organic farms					
	25. Manure or compost making	% of farmer households making manure or compost					
	26. New Theory Farming System	% of farmer households applying the New Theory Farming System into agricultural practice					
	27. Natural resource use	% of households using natural resource economically					
	Other…… …….	..... …….					

4. Sustainability indicators for the institutional dimension

Model components	Institutional Sustainability Indicator (human capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1. Supported organizations	Number of supported organizations					
	2. Volunteers	Number of volunteers supporting rural tourism promotion					
	3. Community outside researchers	Number of community outside researchers					
	4. Local researchers	Number of local researchers					
	5. Tourists or study visitors	Number of tourists or study visitors per year					
	6. Repeated visitors	% of repeated visitors					
	7. Supported budgets from NPOs	Number of supported budgets from NPOs					
	8. Tour companies cooperating with community	Number of tour companies is of benefit to community					
	9. Community outside investors	Number of community outside investors					
	10. Local investors	Number of local investors					
	11. Local guides	Number of local guides					
	12. Local traditional performers	Number of local traditional performers (e.g., musicians, dancers)					
	Others……. …….	…….. ……..					
OTOP	13. Career extension	Number of organizations promoting the community career extension					
	14. Career extension budgets	Number of career extension budgets					
	15. Registered community enterprises	Number of registered community enterprises					
	16. Community career development	Number of community career development projects					
	17. Special interest in producing community products	Number of tourists who are interested in producing community products					

	18. Product learning activities	Number of product learning activities for tourists					
	19. Occupational groups or community enterprises	Number of members of occupational groups or community enterprises					
	20. Human development	Number of villagers attending the process of producing the OTOP or community products					
	Others……. ……	…….. ……..					
Sufficiency economy	21. Knowledge and technical exchange and transformation	% of households participating training projects or knowledge discourses organized by supported institutions					
	22. Cooperatives or financial institutions	Number of members of a cooperative or other community financial institutions					
	23 .Networks of Cooperatives or financial institutions	Number of networks of cooperatives or other community financial institutions					
	24. Registered farmers	% of registered famers					
	25. Agricultural extension organizations	Number of agricultural extension organizations					
	26. Farmer groups	Number of farmer groups					
	27. Agricultural extension funds	Number of agricultural extension funds each year					
	28. Agricultural networks	Number of agricultural networks					
	29. Community leaders	Acceptance of residents toward the potential of community leaders					
	30. Network of sufficiency economy role models	Existence of sufficiency economy role models networking					
	31. Linkage of rural tourism in sufficiency economy role models	Existence of rural tourism linkage between sufficiency economy role models					
	Others…….. …….	…….. ……..					

Second round selection questionnaire of sustainability indicators for rural tourism
(English translation from Thai original use)

Please rate your opinions towards these following candidate indicators.

5 = Strongly agree 4 = Agree 3 = Neutral 2 = Disagree 1= Strongly disagree

1. Sustainability indicators for economic dimension

Model components	Economic Sustainability Indicator (financial/built capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1.Tourism income	Number of tourism income					
	2.Tourism income distribution	% of households gaining income from tourism					
	3. Value of property	Cost of property					
	4. Tour programs	Existence of tour programs with local guides					
OTOP	5. Net profits from OTOP products	% of net profits from OTOP products					
	6. Distribution channel of OTOP products	Variety of distribution channel of OTOP products					
	7. Category of OTOP products	Variety of category of OTOP products					
Sufficiency economy	8. Deposits or capital accumulation	Amount of deposits or capital in community financial institution					
	9. Cost reduction in agricultural practice	% of Cost reduction in agriculture practice such as compost making, EM using					
	10. Kitchen garden	% of kitchen garden doing					

2. Sustainability indicators for the socio-cultural dimension

Model components	Socio-cultural Sustainability Indicator (social and cultural capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1.Community participation of local people	% of households participating in community meeting, planning, and events					
	2. Youth participation in tourism management	% of youth participation in tourism management					
	3. Local satisfaction	% of households satisfying in community-based tourism management					
	4. Community plan	Existence of community plan, which includes tourism development projects					
	5. Community plan review	Existence of community plan review					
	6. Educational tourism activities	Existence of educational tourism activities					
	7. Homestays	% of standard homestays certified by the Ministry of Tourism and Sport					
	8. Local cuisine in homestays	% of local cuisine serving in homestays					
	9. Tourist satisfaction on homestay services	% of level of satisfaction in tourism activities and services in homestays					

OTOP	10. Customer satisfaction on OTOP products or community products	Volume order of products					
	11. Product development	Changes in product developmet					
Sufficiency economy agriculture	12. Community welfare	% of residents receiving community welfare					
	13. Health	% of villagers not having health problems					
	14. Physical check	% of villagers having physical check					
	15. Healthy food services	% of healthy food services in homestays and community restaurants					
	16. Households free alcoholics and drug addicts	% of households with non-alcoholics and drug addicts					
	17. Households free vices	% of households with non-vices					

3. Sustainability indicators for the environmental dimension

Model components	Environmental Sustainability Indicator (natural capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1. Sewage and solid waste management	Existence of sewage and solid waste treatment systems					
	2. Ecotourism activities	Existing management of environmentally friendly activities					
	3. Nature walk trails	Management of nature walk trails with interpreters or interpretation					
	4. Forest area	Increasing number of planted trees in indigenous forest or community forest					
	5. Flora and fauna	Existence of indigenous flora and fauna					
	6. Recreational land use	Existence of zoning for tourism activity					
OTOP	7. Natural products	Number of OTOP products or community products producing from natural materials					
	8. Local products	Number of OTOP products or community products producing from local resources					
	9. Product satisfaction	% of satisfaction on OTOP products or community products					
Sufficiency economy	10. Organic substance use in agriculture	% of farmer households using organic substances to profit productivity					
	11. Natural resource use	% of households using natural resource economically					

4. Sustainability indicators for the institutional dimension

Model components	Institutional Sustainability Indicator (human capital)	Criterion	Level of opinions				
			5	4	3	2	1
Community-based tourism	1.Supported organizations	Number of supported organizations					
	2. Outsider researchers	Number of researchers					
	3. Training	% of households participating training projects or knowledge discourses organized by supported institutions					
	4. Special interest in producing community products	Number of tourists who are interested in producing community products					
	5. Community leaders	% of households accepting the potential of community leaders in community-based tourism management					
	6. Tourists or study visitors	Number of tourists or study visitors per year					
	7. Tourism carrying capacity	Limiting number of tourists per day					
	8. Regulations on environmental conservation	Existence of regulations on community's environmental conservation					
OTOP	9. Occupational groups or community enterprises	Number of members of occupational groups or community enterprises					
	10. Human development	Number of villagers attending the process of producing the OTOP or community products					
Sufficiency economy	11. Cooperatives or financial institutions	Number of members of a cooperative or other community financial institutions					
	12. Networks of Cooperatives or financial institutions	Number of networks of cooperatives or other community financial institutions					

Households Questionnaire Survey

(English translation from Thai original use)

This questionnaire aims to collect household data for analysis the sustainability of rural tourism in the village case studies: Mae Kampong in Chiang Mai and Bang Nam Phueng in Samut Prakan province. The survey is in partial of fulfillment of the doctoral dissertation of Tokyo Metropolitan University, Japan.

Introduction: Please tick the relevant box (es) and write your additional information.

Economic information

1. Does your household receive income generating from the village's tourism job?

☐ Yes ☐ No

In case you have income from tourism, please specify your sources of income.

☐ Homestay ☐ Accommodation (e.g., resort hotel, rental house)

☐ Shop or Restaurant ☐ Traditional massage ☐ Community production distribution

☐ Local guide/ docent ☐ Music/ performance ☐ Transport services (e.g, rental car)

☐ Employee in tourism related jobs (e.g, housekeeper, tour staff, waiter or waitress)

☐ Others ……

2. Does your household practice the kitchen garden to reduce cost of living?

☐ Yes ☐ No

Social information

3. What level does your household satisfy the management of village's tourism?

☐ Highest ☐ High ☐ Neutral ☐ Low ☐ Lowest

4. Does your household receive the community welfare from tourism?

☐ Yes ☐ No

5. Do your family members have the health problem?

☐ Yes ☐ No

Environmental information

6. Does your household use the organic substances in agriculture or environmental conservation?

☐ Yes ☐ No

Institutional information

7. Has your household ever participated any training programs relating to tourism which organized by tourism support institutions?

☐ Yes ☐ No

In case of having experience, please specify the related topics of your participation.

☐ CBT management ☐ Services ☐ Homestay standards

☐ Careers ☐ Community enterprises ☐ Agriculture

☐ English for tourism ☐ Local guide ☐ Healthy food

☐ Accounting ☐ Environmental conservation ☐ Traditional massage

☐ Others ……

8. Does your household participate in village's tourism development (e.g., meeting, planning, decision making, community events)?

☐ Yes ☐ No

9. Does your household accept the capability of community leaders in tourism management?

☐ Yes ☐ No

Thank you very much for your cooperation

Amnaj Khaokhrueamuang

Panelists of selecting sustainability indicators by Delphi technique

1. Top-down approach panelists

No.	Name	Affiliation	Organization/Institution
1.	Ms. Pongpun	Community development technical officer	Mae On District Community Development Office, Chiang Mai province
2.	Miss Kaewjanya Kongnoon	Community development technical officer	Phra Pradeang District Community Development Office, Samut Prakan province
3.	Miss Tanyarat Tareesub	Community development technical officer	Phra Pradeang District Community Development Office, Samut Prakan province
4.	Dr. Manisa Pewchan	Tourism Lecturer	Tourism Department, Chiang Mai University
5	Dr. Narong Sikhiram	Tourism Lecturer	Tourism Department, Chiang Mai University
6.	Assoc. Prof Sreenath Caichompoo	Associate Professor of community development	Community Development Department, Rajabhat Phranakhon University
7.	Assoc. Prof Boonkiet Caichompoo	Associate Professor in product design	Industrial Design Department, Rajabhat Phranakhon University
8.	Mr. Pinate Pornworathamrong	Head of Central Region	Community Relations Division, PTT Public Company Limited
9.	Ms. Paweena Phuengpang	Community relations staff	Environment and Community Relations Division, Bangchak Petroleum Public Company Limited
10.	Ms. Jarinporn Watkeaw	Activity and public relation staff	Public Relation Division, Thai Farmer Bank
11.	Ms. Walapa	Tourism Development Researcher	Thailand's Community-Based Tourism Institution

2. Bottom-up approach panelists

No.	Name	Position	Organization/Institution
1.	Mr. Prommin Puangmala	Former village headman	Mae Kampong village
2.	Mr. Prathiep Nongya	Current village headman	Mae Kampong village
3.	Mr. Somjit Boonlert	Community committee	Mae Kampong village
4.	Mr. Wan Unreun	Community committee	Mae Kampong village
5.	Ms. Aporn Panthong	Former village headman	Bang Nam Phueng village
6.	Mr. Piyapong Poonsawad	Current village headman	Bang Nam Phueng village
7.	Mr. Suwat Nualsa-ard	Community committee	Bang Nam Phueng village
8.	Mr. Athiwat	Community committee	Bang Nam Phueng village
9.	Mr. Setapat Pienpraptuk	Tourism promotion assistant officer	Huey Kaew Tambon Admistrative Organization
10.	Mrs. Suthasini Chaikheunkan	Bang Nam Phueng Floating Market Manager	Bang Nam Phueng Tambon Admistrative Organization
11.	Miss Pronthip Puangthong	Planning and policy analysis assistant officer	Bang Nam Phueng Tambon Admistrative Organization