

# The Characteristics of Tourist Orchard Practices in Trat Province towards Their Multifunctionality and Values

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รูปแบบการจัดการสวนผลไม้เพื่อการท่องเที่ยวที่ส่งผลถึงพหุภารกิจและคุณค่าทางสิ่งแวดล้อม

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## Abstract

The aims of this research are to explore characteristics of tourist orchards in Trat province, and study perceived multifunctionality and values of orchards. The primary data from interviews of 9 local farmers/owners were gathered. Secondary data from the literature were obtained. The study investigated tourist orchards in the study area may be categorized as traditional mixed and organic orchards. Most of the tourist orchards use a combination of chemical substances and organic matter as fertilizers. Two of the orchards have received a government seal certifying that the exported fruits from their orchards are organically grown. All orchards depend on rainwater for irrigation; however, six orchards temporarily impound water in man-made ponds while the others use pumped water from natural resources. Permanent and temporary labor is crucial for maintaining orchards throughout the whole-year farming cycle. Moreover, the multifunctionality of the tourist orchards in Trat Province includes four fundamental functions namely, 'white', 'green', 'blue' and 'yellow'. The tourist orchards also have cultural, social, economic, and environmental value, which directly and indirectly benefit the nation and the local community, including the visitors/tourists. It is obvious that orchard tourism does not only provide agricultural products, it also provides other functions that create a multitude of tangible and intangible benefits to the environment, community, and economy.

**Keywords :** orchard tourism, tourist orchards, multifunctionality, cultural and natural value

## บทคัดย่อ

งานวิจัยเรื่องรูปแบบการจัดการสวนผลไม้เพื่อการท่องเที่ยวที่ส่งผลถึงพหุภารกิจและคุณค่าทางสิ่งแวดล้อม มีวัตถุประสงค์เพื่อศึกษาระบบการจัดการภายในสวนผลไม้เพื่อการท่องเที่ยวในจังหวัดตราด และวิเคราะห์พหุภารกิจและคุณค่าทางสิ่งแวดล้อมของสวนผลไม้เพื่อการท่องเที่ยวที่มีต่อสังคมโดยรวม ข้อมูลที่ใช้ในการศึกษาครั้งนี้ มาจากการลงสำรวจพื้นที่และสัมภาษณ์เจ้าของสวนผลไม้เพื่อการท่องเที่ยวจำนวน 9 สวนในจังหวัดตราด ประกอบด้วยสวนผลไม้เพื่อการท่องเที่ยวในเขตอำเภอเขาสมิงจำนวน 6 สวน และในเขตอำเภอเกาะช้างจำนวน 3 สวน และการทบทวนวรรณกรรมที่เกี่ยวกับการเกษตรเชิงพหุภารกิจ คุณค่าทางมรดกวัฒนธรรมและคุณค่าทางทรัพยากรธรรมชาติ จากการศึกษาสามารถสรุปผลการวิจัยได้ดังนี้ สวนผลไม้เพื่อการท่องเที่ยวจำนวน 7 สวนปลูกพืชแบบผสมผสานและใช้ทั้งอินทรีย์วัตถุและอนินทรีย์วัตถุ ในการดูแลสวนผลไม้ ส่วนสวนผลไม้ 2 แห่งที่เปิดบริการให้นักท่องเที่ยวได้เยี่ยมชมนั้นได้รับการรับรองมาตรฐานเกษตรอินทรีย์จากกระทรวงเกษตรและสหกรณ์ สวนผลไม้ส่วนใหญ่ยังคงใช้น้ำฝนและน้ำจากสระที่ขุดขึ้นมาเอง ในขณะที่สวนผลไม้บางแห่งสูบน้ำจากแหล่งน้ำธรรมชาติมาใช้ภายในสวน เช่น น้ำจากแม่น้ำเขาสมิง น้ำจากน้ำตกในเกาะช้าง เนื่องจากสวนผลไม้จำเป็นต้องได้รับการดูแลอย่างดีตลอดทั้งปี แรงงานในสวนผลไม้จึงมีความสำคัญมาก ส่วนใหญ่คนงานในสวนผลไม้จะถูกจ้างให้อยู่ประจำเพื่อดูแลสวนตลอดทั้งปี ขณะที่คนงานชั่วคราวจะถูกจ้างเพิ่มเติมเฉพาะฤดูกาลเก็บเกี่ยวผลไม้เท่านั้น รูปแบบการจัดการสวนผลไม้ที่กล่าวมาข้างต้นนั้นแสดงให้เห็นถึงพหุภารกิจของสวนผลไม้เพื่อการท่องเที่ยวที่มีต่อสังคมในด้านต่างๆ เช่น การจัดการพื้นที่และการดูแลสวนผลไม้ บทบาทของสวนผลไม้ที่มีต่อสังคม วัฒนธรรมและการท่องเที่ยว ความยั่งยืนและความปลอดภัยของผลไม้ ซึ่งบทบาทหน้าที่เหล่านี้ล้วนสอดคล้องกับการประเมินคุณค่าของสวนผลไม้เพื่อการท่องเที่ยวที่มีต่อวัฒนธรรมและทรัพยากรธรรมชาติ ดังนั้นจึงกล่าวได้ว่าสวนผลไม้เพื่อการท่องเที่ยวในจังหวัดตราดไม่เพียงทำหน้าที่ผลิตอาหารเท่านั้น แต่ยังคงก่อให้เกิดประโยชน์ต่อสังคมทั้งทางตรงและทางอ้อม

**คำสำคัญ :** การท่องเที่ยวสวนผลไม้ สวนผลไม้เพื่อการท่องเที่ยว พหุภารกิจ คุณค่าทางวัฒนธรรมและทรัพยากรธรรมชาติ

## Introduction

Even though agriculture is the main source of revenue in developing countries, such as in Thailand, farmers continue to face problems associated with overproduction, limited harvesting period and climate change. They have been suffering from price fluctuation, low market value, poor market access, and high production costs of machinery and chemicals, and increasing intensity of competition in the global market (Srikatanyoo & Campiranon, 2008; Na Songkhla & Somboonsuke, 2013). Although many farmers have attempted to shift to other agricultural products, they have been unsuccessful because of the various changes and uncertainties in the agricultural structure, globalization, industrialization, and government policies (Srisomyong, 2010). As a result, farm management

has become challenging and unsustainable, especially so because many farmers are not up-to-date with the necessary skills and knowledge (Khamung, 2015a). Subsequently, some fruit farmers in particular have lost income from low profits and the diminishing economic role of agriculture. Some of the orchards in eastern Thailand, for example, have been converted to more economically profitable farms planting to rubber trees and oil palms. However, this form of monoculture farming has not totally solved the prevailing agricultural problems.

Despite the decline in the Thai agricultural sector and rapid urbanization, many farmers have found new ways to survive by shifting from fruit production to orchard tourism (Aruninta, 2011). In Trat Province, many orchard owners have been promoting their orchards as new tourist attractions. Monoculture farming cannot adequately fulfill the fundamental domestic needs of farmers, orchard tourism has been embraced as a new source of employment and a supplementary component in existing orchard-focused businesses (Srisomyong, 2010). Minimally, orchard tourism can generate local income through direct provisions of tourism goods and services as well as job opportunities for the local community and local farmers (Zhou & Chen, 2008; Albu & David, 2012; Hamzah et al., 2012).

Orchard tourism is an emerging alternative form of tourism in many rural areas, such as in Trat Province, which is blessed with the sea, sand, and sun attractions. With an abundant supply of natural resource and agricultural products, orchard tourism meeting the increasing demands of many urban dwellers who want to experience an authentic rural environment. Moreover, tourist orchards offer opportunities to learn about agriculture practices in a farm setting.

Zhou and Chen (2008, p.4) define orchard tourism as one which combines tourism and orchard culture. This concept integrates sightseeing, recreation, ecology, general science, and economics. Orchard tourism, as a form of agritourism, links the agricultural production of fruits and several tourism services (Albu & David, 2012, p.137). Moreover, orchard tourism is primarily comprised of gardens and gardening activities. It is an agribusiness where local farmers offer tours of orchards, providing visitors opportunities to learn about fruit growing, harvesting, post-harvest handling, and fruit storage. Orchard tourism also provides a pollution-free environment as well as exposure to cultural elements and traditions, including the daily lifestyle of rural people not normally experienced by many urban dwellers (Awasthi et al., 2015).

The three basic activities offered in orchard tourism are the experience related to culture, nature, and orchard farming; participation in some agricultural activities to augment fun and enjoyment; and buying or consuming farm products as well as other rural crafts (Awasthi et al., 2015). These basic activities are not just economic activities producing commodity outputs (private goods), but they also offer a range of non-market outputs or public goods, such as sustaining the local cultural heritage, providing opportunities for agro-tourism and securing a number of ecological services, and agro-biodiversity conservation (Sangkapitux, 2015, p.4) which highlights the main concept of multifunctionality.

Van Huylenbroeck et al. (2007, p.7) explains that multifunctional agriculture provides four sets of functions or services, coined as 'green', 'blue', 'yellow' and 'white' functions. The set of green functions consists of landscape management and the upkeep of landscape amenities, wildlife management, the creation of wildlife habitat and animal welfare, the maintenance of biodiversity, improvement of nutrient recycling and limitation of carbon sinks. The set of blue function consists of water management, the improvement of water quality flood control, water harvesting and creation of (wind-) energy. The set of yellow functions refers to the role of farming for rural cohesion and vitality, ambiance and development, exploiting cultural and historical heritages, creating a regional identity and offering hunting, agritourism, and agri-entertainment. Finally, the set of white functions produces food security and safety.

Moreover, tourist orchards contain plenty of both cultural and natural values. According to the Burra Charter (2013, p.2), "cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places, and related objects. Different individuals or groups put a range of values to places. Cultural significance includes aesthetic, historic, scientific, social or spiritual values for past, present or future generations (Australia ICOMOS, 2013).

Natural heritage is a component of the cultural landscape and should be conserved and appreciated because of their significant values to humanity. Bond & Worthing (2016) argue that the environmental value of a landscape does not necessarily have ecological value, such as manicured city parks that have been heavily altered by humans for limited use or function. The basic values of nature have both tangible (e.g. utilitarian, dominionistic) and non-tangible (e.g., naturalistic, aesthetic, symbolic) values.

## **Objectives**

This study aims to explore the characteristics of tourist orchard practices in Trat province and to evaluate their multifunctionality and significant values.

## Benefit of Research

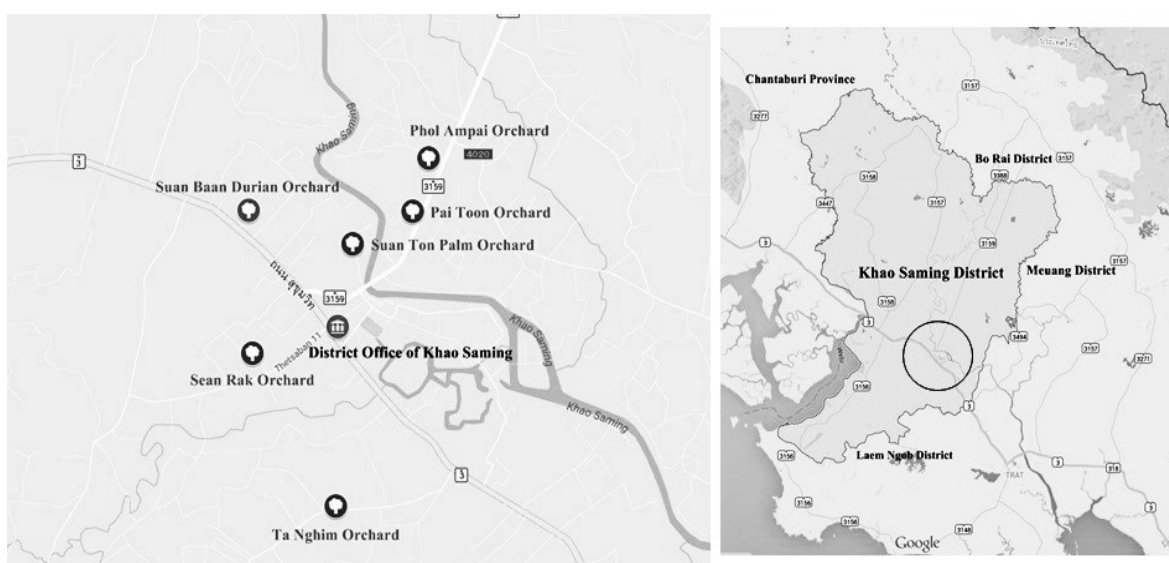
The multifunctionality, and cultural and natural resources should be utilized to promote orchard tourism in the study area and provoke local communities to be aware of the positive outputs of sustainable tourist orchard practices.

## Research Methodology

The research was conducted from November 2014 to June 2017. It used a combination of qualitative and quantitative methods. Both primary and secondary data were collected. The primary data gathered and documented by using photographs, site observation, interviews, and a questionnaire. The secondary data were collected from articles, journals, websites, books, research, magazines, and poems, etc., focusing among others, on relevant topics such as the notion of cultural landscape, agritourism, sustainable tourism, multifunctional model, history and significant values of tourist orchards in Trat Province. Photos were taken to document significant events, issues and places.

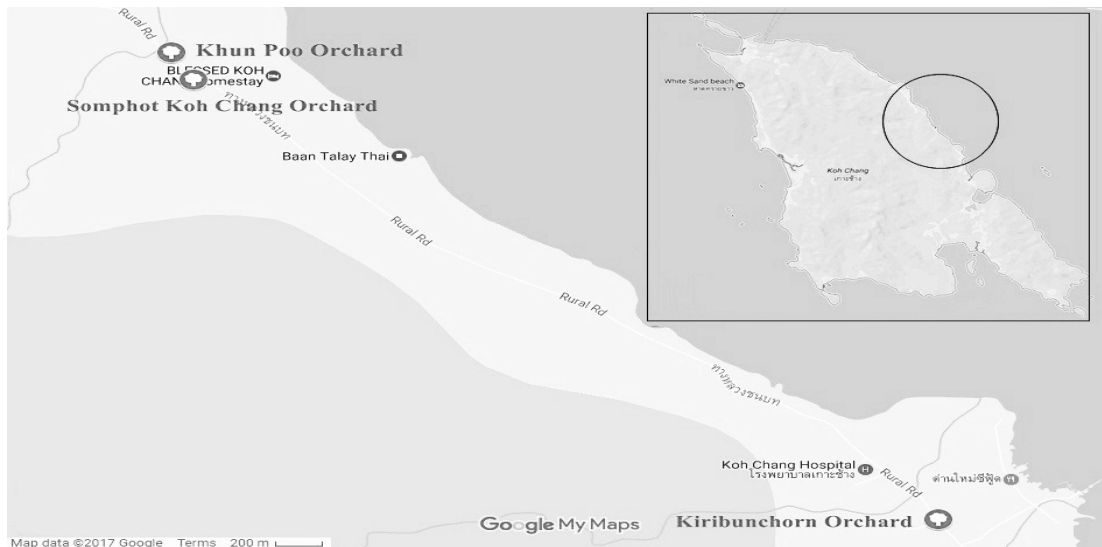
### Population and Samples

This study focused on the characteristics, multifunctionality, and values of tourist orchards in Trat Province. Hence, tourist orchards which participated and were promoted by the Tourism Authority of Thailand under the theme “Travel Every Orchard and Test it” constitute population of this study. Six farmers/owners in Khao Saming District and three farmers /owners in Koh Chang District, Trat Province were interviewed as samples (Figure 1 and 2).



**Figure 1** Map showing the location of the sampled tourist orchards in Khao Saming district

**Source:** Adapted from Google Map, 2017



**Figure 2** Map showing the location of the sampled tourist orchards in Koh Chang district  
**Source :** Adapted from Google Map, 2017

### Instruments

Field study and ocular observation were undertaken to have first-hand insights into the situation of the study area. Actual field observation and survey of tourist orchards on mainland Khao Saming District and Koh Chang Island in Koh Chang District were done several times (April 2015–June 2017). A questionnaire survey form was used to gather information from farmers about the past and current characteristics of the orchards, the linkage between traditional orchards and tourist orchards, and their views on how to develop sustainable orchard tourism. Moreover, the characteristics and features of each orchard that were collected include the size of the farm, land ownership, horticultural practices, types of fruits and crops planted, machinery and fertilizer used, income of gardeners, financial assistance and other logistical support, facilities for visitors, accessibility of orchards, and orchard tourism potential and practices. In addition to interviews of the nine farmers/orchardists, primary data obtained through site observation with the assistance of a community representative– Mr. Nakorn Wasikarm, the Ex-Mayor of Khao Saming district.

### Data Analysis

The primary and secondary data on the cultural, social, economic and environmental values or benefits of tourist orchards and multifunctionality in the study area were also collected. The multifunctionality of the tourist orchards in Trat Province was discussed according to Van Huylenbroeck et al. (2007) theory. The cultural values were described based on the perspective of the respondents while the natural values in the study area were classified following Kellert’s study (1996 cited in Catibog–Sinha & Heaney, 2006, p.305).

## Conclusions

### The Characteristics of Tourist Orchards in the Study Area.

The results of the ocular investigation and interviews with the orchard farmers indicate that seven of the nine sampled orchards are traditional mixed orchards (77.77%) and two are organic orchards (22.23%).

The orchards are enriched using a combination of chemical and organic fertilizers. Seven orchards (77.77%) use both chemical and organic fertilizers, while two orchards (22.23%) use only organic matter. None of the orchards use 100% chemical substances.

In addition to rainwater, six orchards (Phol Ampai Orchard, Ta Nghim Orchard, Sean Rak Orchard, Suan Ton Palm Orchard, Somphot Koh Chang Orchard, and Kiribunchorn Orchard) temporarily impound water in man-made ponds while the other orchards (Pai Toon Orchard, Suan Bann Durian Orchard, Khun Poo Orchard, and Somphot Koh Chang Orchard) pump water from natural resources (i.e. creeks, rivers or waterfalls) for irrigation purposes.

The orchards are planted with a variety of fruit trees and have a multifunctional role. They require whole-year maintenance and management from planting seedlings to the maintenance of growing trees (e.g. fertilization, irrigation, control of pests and weeds, pruning) and harvesting. Some farmers and/or landowners incorporate certain tourism activities in the farming timetable, which are usually held during the harvest season.

Permanent and temporary labor is crucial. Thai laborers are hired for routine work, such as applying fertilizers, watering, pollinating, harvesting, and pruning while temporary laborers are hired during harvesting season. Only one orchard does not require extra labor as all family members are involved in farming.

**Table 1** summarizes the main features and characteristics of the orchards sampled in this study

Name and Location of Orchards	Code of orchards	Agricultural Systems		Fertilizer and insecticide used in orchards		Irrigation Management		Labor force	
		Traditional mixed orchard	Organic orchard	Organic	Both chemical and organic	Source of freshwater	Man-made pond	Permanent labor	Temporary labor
Phol Ampai Orchard	PAO		√	√			√	√	√
Pai Toon Orchard	PTO	√			√	√		√	√
Ta Nghim Orchard	NGO	√			√		√	√	√

**Table 1** summarizes the main features and characteristics of the orchards sampled in this study (continued)

Name and Location of Orchards	Code of orchards	Agricultural Systems		Fertilizer and insecticide used in orchards		Irrigation Management		Labor force	
		Traditional mixed orchard	Organic orchard	Organic	Both chemical and organic	Source of freshwater	Man-made pond	Permanent labor	Temporary labor
Sean Rak Orchard	SRO	√			√		√	√	√
Suan Baan Duri Orchard or Lang Suan Orchard	BDO	√			√	√		√	√
Suan Ton Palm Orchard	TPO		√	√			√	√	√
Khun Poo Orchard	KPO	√			√	√		√	√
Somphot Koh Chang Orchard	SKO	√			√	√	√	√	√
Kiribunchorn Orchard	KBO	√			√		√	√	√

### Multifunctionality of Orchard Tourism in Trat Province

Multifunctionality is a new paradigm for agriculture. Its concept is not focused only on food and fiber production; it also provides a wide range of tangible and intangible values through multiple functions. The multifunctionality of tourist orchards aims to produce goods (e.g. food, fiber, wood) while at the same time provide ecological services (e.g., biodiversity, water conservation, aesthetic beauty, clean air, recreation). Furthermore, it promotes rural development through the establishment of new enterprises, such as tourism, hence increasing livelihood opportunities and domestic and rural income.

The multifunctionality of the tourist orchards in Trat Province may be described based on the study of Van Huylenbroeck et al. (2007). Accordingly, multifunctionality includes four fundamental functions, namely, ‘white’, ‘green’, ‘blue’ and ‘yellow’.

The ‘white’ function of the orchards in the study area primarily focused on the production of food in line with the notion of food security and safety. All the orchards produce and sell fresh fruits, and some even process certain agricultural products for domestic and international markets. These agricultural products, although not considered staple foods, are essential in achieving a balanced diet and better quality of life for consumers. Cotes et al. (2007) mention the contribution of orchards in achieving food security during times of scarcity.



The ‘blue’ function of orchards is related to the conservation of groundwater. The ‘blue’ functions of orchards in the study area comprised water management and harnessing water from the soil’s water table, surface wetlands (e.g. waterfalls, man-made ponds), and rainfall. Irrigation water is considered the most necessary input in all farms and, thus, the orchard owners ensure that their water supply is properly managed and available especially during the dry season and early stages of planting (Phol Ampai Orchard, Ta Nghim Orchard, Sean Rak Orchard, Suan Ton Palm Orchard, Somphot Koh Chang Orchard, and Kiribunchorn Orchard). According to Khamung (2015b), farm ponds and irrigation canals also create interesting and aesthetically pleasing geographic features.

The ‘yellow’ functions of orchards in the study area pertain to the role of orchards in maintaining rural vitality and cohesion of the local community by ensuring integrity the cultural and historical heritage of the locality is maintained through orchard tourism. As such, regional identity and pride for rural culture and heritage are achieved and sustained. Besides trading the fruits for domestic and international markets, the orchardists in the study area welcome visitors and share information with them about local farming culture and practices. Tourist orchards create authentic and natural experiences for visitors. The orchards are well managed, and tourist facilities such as the open-roofed shelters, bungalows, toilets, and agricultural shops are provided for the enjoyment of visitors. Kumbhar (2009) states that agritourism, including orchard tourism, offers activities that encourage experience, education and cultural exchange.

The ‘green’ functions of tourist orchards consist of the management and upkeep of the green landscape including wildlife and their habitats, biodiversity conservation, and nutrient recycling. Catibog-Sinha and Heaney (2006) underscore the importance of maintaining biodiversity not only in protected areas but also in rural and agricultural areas. For example, Phol Ampai Orchard grows a dipterocarp species (*Hopea odorata*) alongside the fruit trees; it shows that orchards can contribute to the conservation of a globally threatened species such as this species (IUCN, 2017). Some of the tourist orchards in the study area practicing recycling of organic waste materials through composting and the use of organic matter for fertilizers (Phol Ampai Orchard, Suan Ton Palm Orchard, and Somphot Koh Chang Orchard). With minimum or no introduction of chemical substances (i.e., in the form of chemical fertilizers and pesticides) to the farms, the farms can provide a safe habitat for several wildlife species (e.g. bats and birds), hence helping in conserving the diversity of life forms. The green canopy of the fruit trees serve as ‘carbon sink’ by absorbing excess pollution (carbon dioxide in the air) that contributes to global warming. Fruit trees just like

all other trees act as an air cleaner or filter by absorbing carbon dioxide and releasing oxygen into the atmosphere (Catibog–Sinha & Heaney, 2006).

Orchard tourism is a good example of a multifunctional agricultural system which can be consistent with sustainable development and heritage conservation. It also provides additional recreational and cultural activities cultural which give visitors an opportunity to experience rural agricultural attractions (Kumbhar, 2009). Tourism orchards interact with many other functions and activities such as food production, environmental protection, rural development, community cohesion, conservation of biodiversity and cultural heritage, and livelihood opportunities. These functions and activities affect directly and indirectly the way of life of farmers, agricultural practices, community health, and economics. However, the role of the government in terms of policy development and implementation, financial support, and technological assistance is essential for completing the interactive processes that enhance the multifunctionality of orchard tourism in Trat Province.

#### **The Significant Values of Tourist Orchards in the Study Area**

The tourist orchards in Trat Province are valuable and beneficials to the nation and local community as well as to the visitors/tourists.

– **Cultural value:** The tourist orchards are part of the geographical and cultural landscape of Trat Province. They reflect the relationships between humans and the environment over time. Over several generations, the local orchard farmers in Trat province have developed ways of how to nurturing and managing farms, which in many cases are handed down to them from their ancestors. The wisdom involved in different stages of farming—from planting to harvesting to selling the fruits—has been nurtured by experience and cultural influences. Sustainably managed tourist orchards reflect this harmonious human–nature relationship through traditional wisdom and best farming practices.

– **Social value:** The social values associated with orchard tourism reflect the empowerment of local farmers. Fruit trees help people become connected to the growing process of the plants while also providing a nutritious food source and food security. The farmers have developed their skills and learned new techniques about sustainable agricultural practices. The local farmers have developed personal pride in their accomplishments and have endeavored to preserve best farming practices as part of their local culture and wisdom. The face-to-face interactions between farmers and tourists, although limited because of orchard tourism is relatively at its infancy stage,

have enhanced the social value of orchard tourism as well as the visitors' experience and satisfaction. This also helps strengthen social skills of farmers.

– **Economic value:** The economic value of orchard tourism is derived from fruit trade and tourism. As part of the tourism attraction, visitors are allowed to harvest and enjoy an unlimited amount of fresh fruits for only 100 Baht per visit per person (Tourism Authority of Thailand, 2011). Fresh fruits sold at the orchards are generally cheaper than those sold at public markets. Local laborers, such as those in Khun Poo Orchard, earn about 7,000 Baht per month with free accommodation and rice supply, while those in Somphot Koh Chang Orchard earning around 13,000 Baht with complimentary dinner. These economic benefits are essential in boosting the local economy in rural areas and in reviving rural communities through social and economic advancement (Sznajder et al., 2009).

– **Environmental value:** The environmental value of tourist orchards include both natural (e.g., landscape, soil quality, biodiversity) and physical (e.g. good climate/weather, fresh air, clean water) benefits. These values are prominent in tourist orchards that implement environment-friendly practices, such as organic farming. According to the Kellert's theory on the values of nature (1996), the natural values that are applied to tourist orchards, include utilitarian, naturalistic, ecologicistic, aesthetic, dominionistic, and negativistic values.

## Recommendations

The management recommendations are presented corresponding to the perceived issues/problems identified by the relevant stakeholders.

### 1. Local community (orchard owners, workers, local residents)

Having an agricultural center or an information center in the study area should be a major initiative in order to provoke local communities to be aware of the multifunctionality and significant value of tourist orchards and promote orchard tourism in the study area. Moreover, local farmers have to be closely involved in all aspects of orchard tourism planning and implementation in order to support sustainable development of the province. Professional tourism training and ability to serve and inform tourists is also needed.

### 2. Visitors

The availability of good quality information when visitors arrive and during their stay can be a very valuable tool for making tourism more sustainable (UNEP and WTO, 2005). Although the owners of the orchards welcome tourists and serve as their personal guides, directional and tourist information signage and guidebook/brochures are essential in the long-term operation of orchard tourism.

### 3. Tourism industry and relevant government bodies

Relevant government agencies such as TAT should continue to support the local orchard tourism industry, in particular, the concerns brought forward by the farmers and the local community. Orchard tourism is an emerging niche market that can enhance local, regional and national economies as well as the cultural pride of farmers that produce the world-class tropical fruits. Good planning on long term sustainable strategies, revenue sharing, and continuing education and conservation efforts is crucial for supporting farmers and the local community. Policy guidelines including rules and regulations on tourism management are also needed.

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