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Development of Agro-Cultural Tourism Route Based on Spatial Configuration Analysis:

The Case of a Rubber Planting Village, Songkhla Province, Thailand

Tapanee Rattanathavorn [a] **/ Pornchai Jittiwasurat** [b]

[a] Faculty of Architecture and Design,
Rajamangala University of Technology Rattanakosin, Thailand
Corresponding author: tapanee.r@rmutr.ac.th

[b] Faculty of Architecture and Design,
Rajamangala University of Technology Rattanakosin, Thailand

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ABSTRACT

This article proposes an alternative to develop agro-cultural tourism routes based on spatial configuration analysis. A village growing rubber trees in Songkhla Province, Thailand, was taken as the case study. The data analysis involved the theory of urban morphology and the space syntax. Given the characteristics of the area and the planters' socio-cultural characteristics, the results revealed that potential tourist attractions should be charted only on a movement network with high visibility and accessibility whereas those on a movement network with low visibility and accessibility should be left intact. However, some rules and regulations should be imposed to preserve the livelihood of the villagers and the ecosystem of the area.

Keywords: *spatial configuration, space syntax, agro-cultural tourism, rubber planters, Songkhla*

INTRODUCTION AND BACKGROUND

Since natural rubber is a major cash crop in Thailand, rubber trees are cultivated throughout the country. They were first cultivated in the South and, according to data obtained in 2017, most rubber trees are grown in the South, accounting for 59% (14.77 million rai) of the total rubber plantation area (Department of Agricultural Extension, 2017). The latex harvest starts at night until early morning, during the day, the rubber planters, therefore, can spend time growing other crops such as fruit trees, herbs and kitchen vegetables or raising animals. The rubber planters have practiced this livelihood for generations. Such practice is called integrated farming system — Suan Somrom — supports the ecosystem (Buncha Somboonsuke et al., 2010; Aramrat Duangechana, 1999). They also engage in other activities such as handicraft, food preservation, fresh-water fishery, artwork and participation in festive ceremonies. It can be said that their livelihood is simple yet sufficient and adapted to seasonal changes.

With the unique characteristics of the locals, their culture and their diverse products, these locals can offer an agro-tourism program to visitors. The program includes a wide range of activities from planting crops, harvesting and producing plant and animal products. Visitors can acquire not only a relaxing moment but also a hands-on experience during their visit while the locals earn more income (Holinhoij, 1996; Goldberg, 1997; Rampaipan Keawsuriya, 2001; Department of Tourism, 2009). However, agro-tourism related to rubber plantation is not so popular as that of other crops such as orchards, lotus farms, sunflower farms, tea plantations, coffee plantations, vineyards and strawberry farms. Those places are widely recommended because they have been designated as tourist attractions, and the most accessible routes to them have been identified. However, the other sites that are worth visiting along such routes have not been introduced; as a result, unfortunately, the visitors miss those places or even nearby attractions due to not being informed about the road network.

The simple yet sufficient livelihood settlement matches the agricultural society in the rural area. Even though the layout seems complicated and non-structured, the expansion of this society is in line with its topography. This is a cultural characteristic of a traditional village. Hillier and Hanson (1984) observe that culture is a mechanism that is used to manage a complex society so that the members of that society can lead peaceful lives and keep the level of disturbance to natural surroundings at a minimum. Given this concept, the area is divided into 2 parts – dwellings for inhabitants and meeting areas designated outside the dwellings where inhabitants and strangers socialize. The meeting areas are set aside to ensure inhabitants' privacy. However, the travelling routes in the Eastern agricultural society differ from those in the Western World in terms of how they are developed and how the agricultural society is developed into the urban society. In the Eastern World, a settlement takes place on an open space, and the routes are not systematically developed; they are extended when required (Pranom Tansukanun, 2006). The whole area in the society is considered a public area because there is no clear-cut boundary between the dwelling area and the agricultural area (Rawiwan Oranratmanee, 2013). A small open space accommodates routes and shortcuts known only to the community members (Khaisri Paksukcharern, 2008). Rubber planters also use the space between rubber trees as a shortcut and transportation routes accessible by small vehicles. This helps them save the transportation cost for carrying latex to the market. Additionally, nearby plantations can share these routes, and planters can rely on one another in watching over their plantation (Tapanee Rattanathavorn and Pornchai Jittiwasurat, 2013). The routes can take up both public and private areas (Nidhi Eawsriwong, 2011), including restricted and fragile areas, however, the private area is not clearly designated. The community members are aware of this fact. They are familiar with these paths and places that are worth visiting while outsiders or visitors can be easily disoriented during their first visit.

When a community growing rubber trees is developed into a tourist attraction, the essence of agro-tourism, therefore, should lie in the attractions and related activities without disturbing the locals' livelihood. By taking spatial characteristics that shape and form the morphology of the community into consideration, the disturbance can be kept minimal. Hillier and Hanson (1984) provided an insight into spatial structure that outlines the relationship between spatial configuration characteristics, the open space and transportation system and activities taking place in certain areas. The use of an area, whether a popular site or not, is also a factor to be taken into consideration. It is generally accepted that the spatial structure represents the relationship between a site and its activities (Jones and Larkham, 1991), which is in line with the concept "Social Logics of

Space and Spatial Logics of Society" in that a social structure corresponds to spatial characteristics. The social structure is a product of social organization and spatial morphology is influenced by society (Hillier and Hanson, 1984).

In the same vein as the theories or concepts mentioned above, the urban morphology takes open space and the transportation system into consideration because they can determine whether the site can be defined as an urban site or not. If a lot of people can readily access a site or space that can accommodate a variety of activities, such site can be classified as urban (Jacobs, 1961). The effective management of open space and transportation system can facilitate people to move to their destination, and through other spaces, introduce socio-economic activities (Hillier and Hanson, 1984). The theory of natural movement agrees that the level of movement varies according to the connectivity between the open space network and the transportation network. The activities carried out in a quiet area differ from those in a crowded area. The theory of the movement economy process (Hillier, 1996) asserts that an activity that does not require a lot of movement is found in a quiet area or a low potential area; in contrast, an activity that requires a lot of movement is found in a high potential area. Such activity acts as an attractor, creating multiple effects on people, trades and other activities. Eventually, this area becomes a live center as mentioned in the theory of spatial centrality as a process (Hillier, 2000).

This is an important aspect of urban morphology since it interacts with other aspects to form a spatial structure of that area. An insight into spatial characteristics benefits city planning at the global urban and local urban scales, and the planning process can be recycled (Khaisri Paksukcharern, 2005). Such characteristics can also be applied to the development of agro-cultural tourism routes for an agro-cultural community. With accurately identified characteristics, a community can designate potential routes and develop activities corresponding to the routes to ensure a safe visit for visitors. Visibility and accessibility encourage visitors to spend more time and more money in the community. This concept underlies agro-cultural tourism in a rubber growing village.

According to the statistics obtained from the Department of Agricultural Extension (2017), the rubber plantation in Songkhla province covers an area of 2.17 million rai or 15% of the whole area set aside for rubber plantation in the South. The rubber plantation in Songkhla province accounted for the second largest area in the South. The case study for this research was a village bordering Hat Yai District (Figure 1) because it is an important trading village at the provincial and regional level. Covering an area of 3.8 square kilometers, this village is located on

Figure 1:
Location of Khuanjong Village, Songkhla Province, the South of Thailand (ArcGIS Desktop map devised by the author, 2018)

the Songkhla Lake Basin, which favors agro-cultural practices (Figure 2). Seventy percent of the area is still covered with natural vegetation and that grown by planters. Most of the farmers grow rubber trees and other plants as their ancestors did. Regarding socio-cultural aspects, they are closely related and their livelihoods are similar. Most of them are farmers growing rubber and other plants. They strictly adhere to their religious and cultural beliefs and actively participate in religious and cultural activities.

All things considered, Khuanjong has the potential for becoming an exemplary village for agro-cultural tourism. Over the past years, these planters have been adjusting themselves to the adverse economic situations, one of which was the low pricing of rubber sheets, by planting more varieties of plants, processing food and producing other products. As a result, their agro-cultural practices have become more diverse. The government offices have equipped them with knowledge and tools so that their village can be a site for agro-cultural tourism. However, so far, it has not been materialized by the village leaders. The researcher, therefore, would like to take this village as a case study by proposing ways to develop agro-cultural routes specifically for a rubber growing village. With the application of the theory of urban morphology, such routes and related activities or suitable attractions along the routes can be identified. The objectives of this study were to: 1) analyze the relationship between the spatial characteristics and the physical and socio-cultural elements of the village to determine how to develop its agro-cultural tourism routes; and

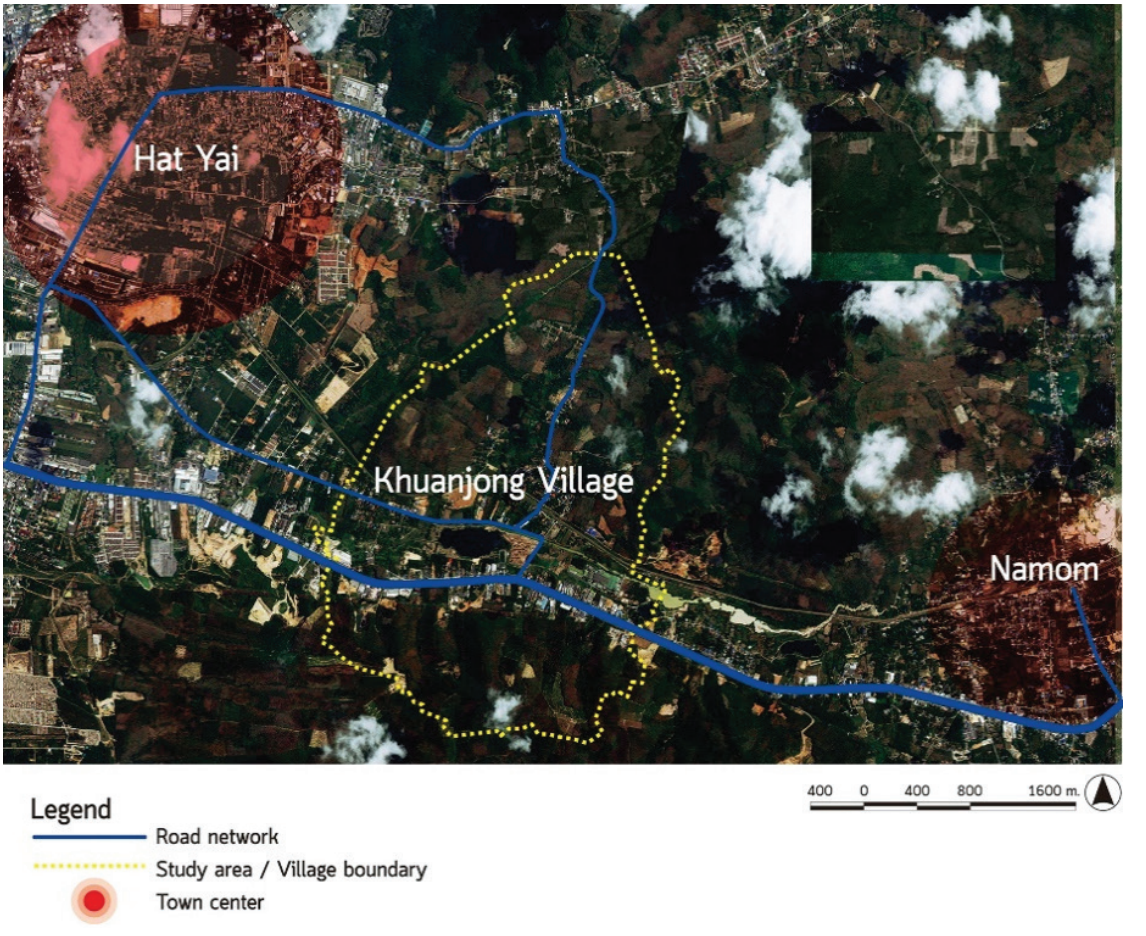


Figure 2:
Boundary of Khuanjong Village and Routes Connecting Neighboring Villages (ArcGIS Desktop map devised by the author, 2018)

2) develop appropriate agro-cultural tourism routes in Khuanjong Village based on urban morphology without disturbing the villagers' livelihood and their natural surroundings.

RESEARCH METHODOLOGY

The research methodology includes the spatial configuration analysis to evaluate the effectiveness of open space and transportation network and the analysis of the physical, socio-cultural components of the village.

Spatial Configuration Analysis

Based on spatial configuration analysis, a spatial configuration model or an axial map representing longest and fewest axial lines was created. These lines are drawn to form a transportation network that is publicly accessible and clearly visualized. Then Space Syntax is used to process the maps (Tuner, 2003) and the results are shown in colors ranging from warm to cool colors. The warm colors represent integration while the cool ones represent segregation. Red, therefore, represents the highest potential route or the highest integration in the urban fabric followed by orange, yellow, green and blue representing the highest segregation in the urban fabric. In general, the results of the axial map should reveal the temperature of all graduated colors and the urban center or node should be represented with warm colors showing that its permeability is so high that it is likely to be a live center (Hillier, 2000).

Physical and Socio-cultural Analysis

The characteristics of physical and socio-cultural components were collected from March to June, 2018. The data collection involved 1) a field survey, 2) in-depth interviews and 3) a workshop. The field survey collected the physical data — locations, land use, buildings and important areas, natural settings and agro-cultural areas — and the socio-cultural data — activities concerning society, traditions, culture, religion, production and agriculture. The in-depth interviews involved 14 key informants who were community leaders, local intellectuals and farmers to obtain physical information about the society, culture, production and agro-cultural practices that could be applied to the tourism. Then data triangulation was conducted (Denzin, 1970). All of the data were classified by color and plotted on the community map referred to as a map representing the physical, socio-cultural components of rubber farmers. Then the community map and the spatial configuration model were analyzed to determine the routes. Two workshops based on the community participatory approach were organized for community leaders, local intellectuals, farmers and interested villagers. For each workshop, the development plans were proposed and the participants had to decide which was the most appropriate.

RESULTS

Spatial Configuration

The spatial configuration model in this study represents the movement in Khuanjong village including roads, alleys, walkways and shortcuts. They existed when the study was conducted. The data obtained from a geographical map and satellite images in 2018 via ArcGIS Desktop program represented land use, roads and public open space. The village covers an area of 3.8 square kilometers. The data obtained from the field survey were also taken into consideration (Figure 3-A).

Global Integration Analysis (Rn) - The analysis revealed all shades of color which indicated that, in this village, there were multiple levels of accessibility. The highest visibility and accessibility or the high integration values were at 0.7305, 0.7295 and 0.7275 as shown in red on Plakthong-Khuanjong Road, Bannairai-Khuanjong Road and Chantaro Uthit Road, respectively. It seems that these roads are important for the community; consequently, they are main roads while the low integration value was 0.2465 as shown in blue-dark blue on local streets and cul-de-sac. Yellow represented average potential areas that are local streets concentrated in the village center (Figure 3-B).

Local Integration Analysis (R3) - The warm colors were found in many areas. The highest visibility and accessibility or the high integration values were 2.4837, 1.9051 and 1.7852 as shown in red on Plakthong-Khuanjong Road, Chantaro Uthit Road and Bannairai-Khuanjong, respectively. It seems that they are the centers of the neighborhood evidenced by the connectivity of many local streets. The low integration value was 0.3333 as shown

in blue on cul-de-sacs. Yellow-green represented average-low potential areas that were found in other areas (Figure 3-C).

Connectivity Integration Analysis - On the map, there was only 1 spot with warm colors (red – orange) on Chantaro Uthit Road with a connectivity value at 5. This means that there are 5 roads connecting to this road translating into more movement than the other roads. In the other areas, the connectivity value was mostly at 1 meaning difficult accessibility (Figure 3-D).

It can be concluded that there are three important open space and transportation networks in Khuanjong village: Chantaro Uthit Road, Plakthong-Khuanjong Road and Bannairai-Khuanjong Road because of the highest global and local integration and the best connectivity integration. In addition, the junction where Plakthong-Khuanjong Road meets Chantaro Uthit Road and Bannairai-Khuanjong Road tends to be the center of this area where a lot of economic activities take place.

Physical and Socio-cultural Characteristics

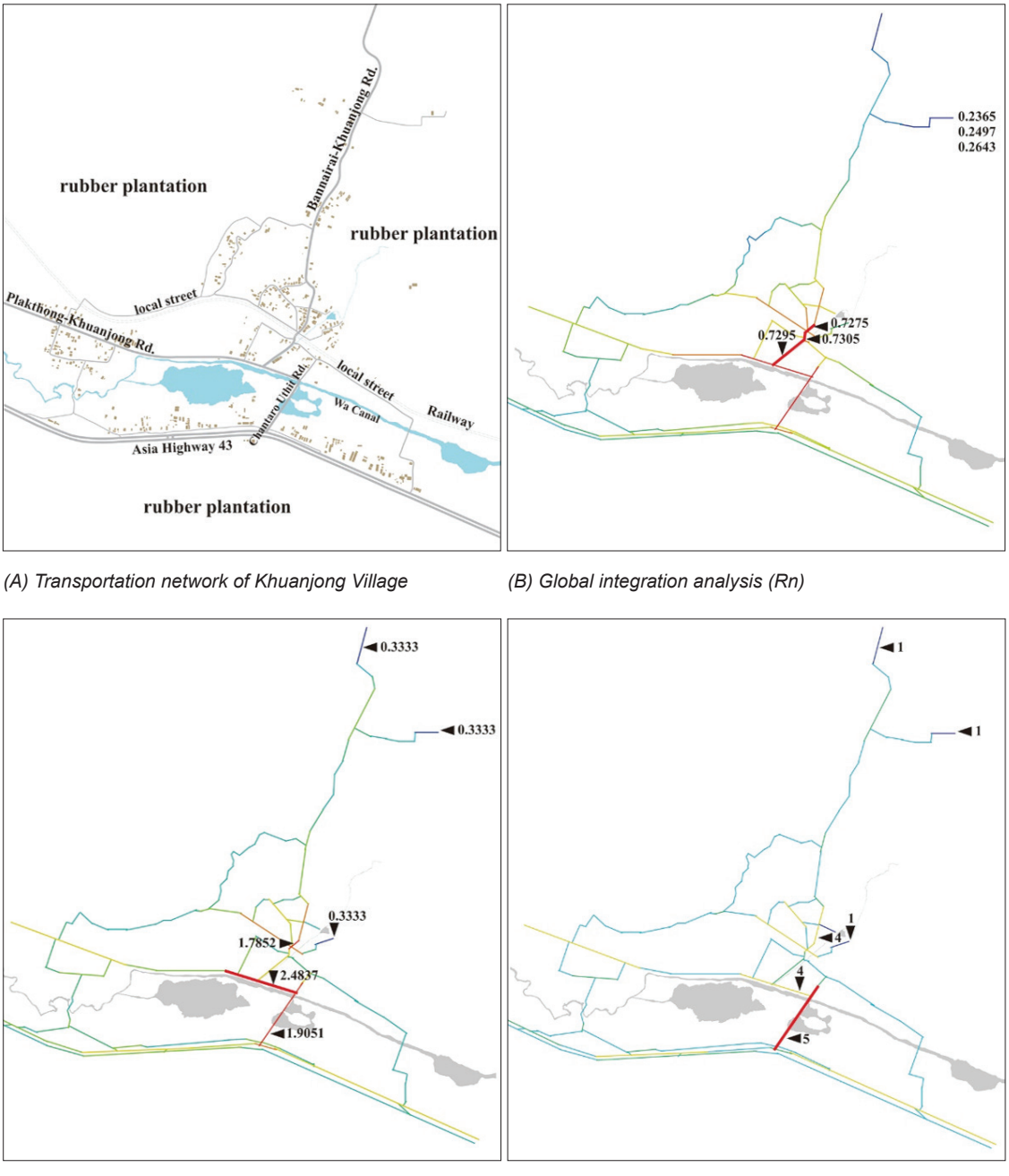
The data about the physical, social and cultural aspects of communities that have potential to be developed into tourist attractions were presented in the 1st Workshop and could be summarized as follows. These characteristics can be classified into 4 aspects: historical, natural, traditional and cultural, and livelihood (Figure 4-A). The aspects then are analyzed to determine the level of their importance and their potential to be a tourist attraction. According to the analysis, the four aspects can be further classified into three levels: a primary attraction, a secondary attraction and an attraction that can accommodate more visitors (Figure 4-B). The four aspects are outlined as follows (Figure 5):

Historical aspect - (1) Built in 1950, Khao Lom Temple is the main temple of the village. Within the compound, there is a forest providing a peaceful atmosphere and beautiful Buddhist structures. (2) Wang Ma Praw monk sleeping quarters, which were built in 1986, boast a beautiful Buddhist architecture. (3) Ban Khuanjong School, built in 1940, is a primary school but sometimes it is used as a venue for major events. (4) Khuanjong Railway Station is a part of the Southern Line. Although the station has not been in use since 1987, the train regularly passes through this station. (5) Only one vernacular southern-styled house has been preserved by the owner. (6) The banyan pavilion is an open space serving as a place for organizing the village activities. It is located near a canal where a large banyan tree is found and which is believed to be a sacred area.

Natural aspect - (1) Langka mountain is a beautiful mountain that can be seen from the distance. (2) Khuanklom mountain is a terraced rubber plantation. (3) Wa Canal is a natural canal with bamboo check dams. (4) Rubber Tunnel is a road lined with rubber trees creating a beautiful scenery that keeps changing due to the changing colors of the rubber leaves. (5) Waterfalls support many thickly growing trees that help provide sources of water to fill these waterfalls all year round. (6) The reservoir, a big and deep water source, is a suitable site for relaxation. (7) Offering a scenic view, the swamp is near the bend of the railway. (8) The community forestry is a place where one can find trees, rare plants and trees and local vegetation.

Traditional and cultural aspect - (1) Ritual performing such as paying respects to a spirit guarding an agro-cultural area. (2) There are many activities related to society, tradition, culture and religion, but most of them are Buddhist activities. The villagers also make merit to pay tribute to their dead relatives and ancestors.

Livelihood aspect - (1) The multipurpose building is for holding a meeting or organizing an activity. (2) The rubber production system indicates equal distance from one rubber tree to another. The latex collection is done between early morning and late morning. (3) The mixed plantation system is done by growing rubber trees and other trees or plants. The planters usually grow fruit trees because the products can be harvested throughout the year. (4) Growing kitchen vegetables and herbs. (5) Growing vegetables in a limited area is done in pots or small areas. These vegetables are grown in soil or without soil. (6) Three centers for fresh latex trading are in the village and it is sold directly to the factory. The planters can sell the latex every day. The centers can reflect the planters' livelihood. (7) Two trading zones where fresh food, fresh produce and cooked food are sold. One trading area is on the waterfront and the other is near the railway. (8) Cooking Southern food, (9) doing handicraft and (10) raising freshwater fish.



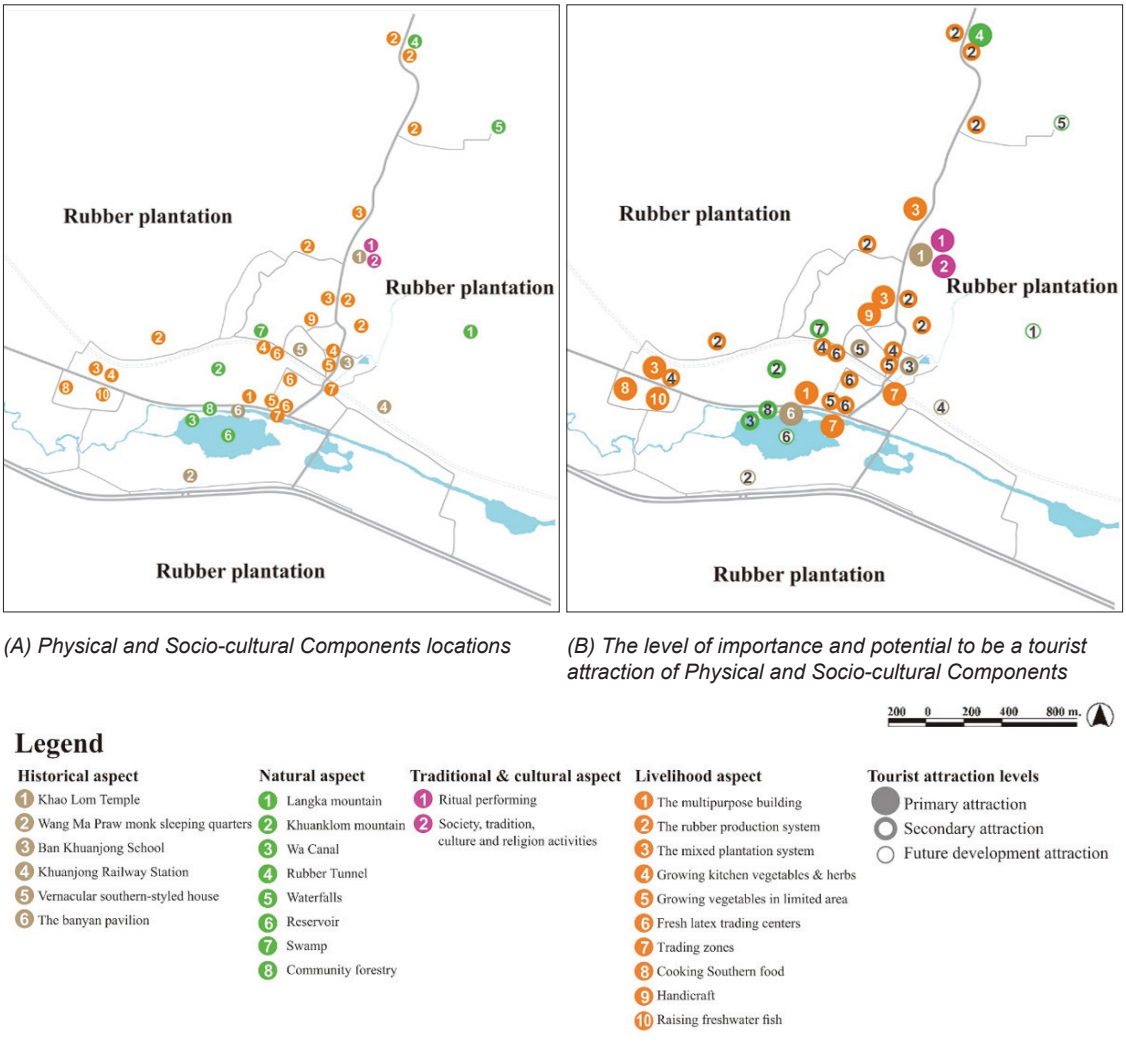
(A) Transportation network of Khuanjong Village

(B) Global integration analysis (Rn)

(C) Local integration analysis (R3)

(D) Connectivity integration analysis

Figure 3:
Transportation Network and the Spatial Configuration Model of Khuanjong Village



(A) Physical and Socio-cultural Components locations

(B) The level of importance and potential to be a tourist attraction of Physical and Socio-cultural Components

Figure 4:
Physical and Socio-cultural Components of Rubber Planters in Khuanjong Village

Relationship between accessibility potential and physical and socio-cultural components

The data obtained from the spatial configuration model and those obtained from the map about physical and socio-cultural components are overlaid to determine the relationship between the open space and transportation system and the locations of the components. The results reveal the 4 aspects mentioned above and they are detailed as follows:

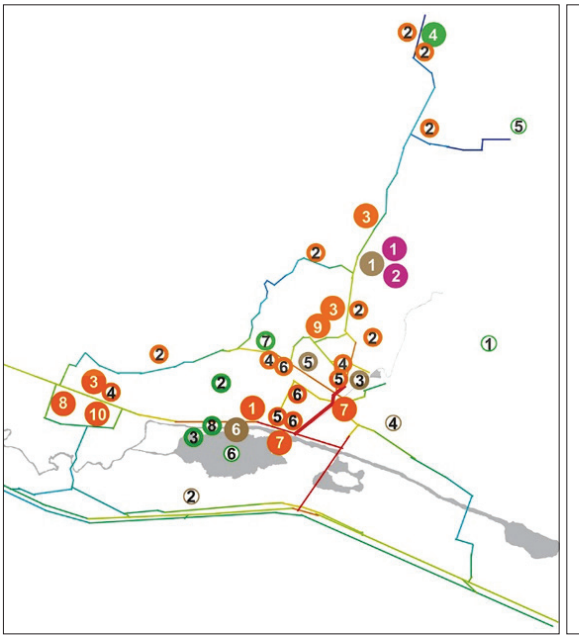
Global integration analysis (Rn) and physical and socio-cultural components - The potential movement networks with highest visibility and accessibility are Plankthong-Khuanjong Road and Bannairai-Khuanjong Road. All physical and socio-cultural components are found on these two networks. The components include a school, banyan pavilion, center for buying fresh latex, and multipurpose building. Such places are characteristics of the main road. The road integration with the highest potential results in a trading zone. Other important elements also spread to other potential movement networks. Centers for fresh latex trading, wetlands, areas for growing kitchen vegetables and herbs, and Southern vernacular houses are located on minor roads branching from Bannairai-Khuanjong Road. Khao Lom Temple, traditional and cultural aspects

Figure 5:
Physical and Socio-cultural Components of Rubber Planters in Khuanjong Village

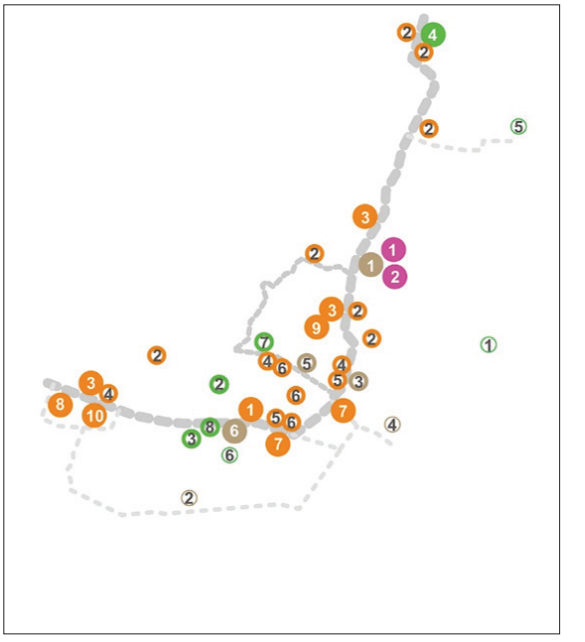
and livelihood aspects are found along some parts of this road whose potentials are average-low while the parts with low potential are the parts where waterfalls, Khao Langka and old railway station are located (Figures 6-A, B).

Local integration analysis (R3) and physical and socio-cultural components - The local integrations with high visibility and accessibility or an area that can serve as a community center are Plakthong-Khuanjong Road and Bannairai-Khuanjong. The components that are areas for holding activities are a school, banyan pavilion, center for fresh latex trading, multipurpose building and community trading area. These findings are in line with those of the global integration analysis. According to local integration analysis, the areas with average integration that are adjacent to the areas with high integration accommodate Khao Lom Temple, natural aspects, traditional and cultural aspects and livelihood aspects (Figures 6-C, D).

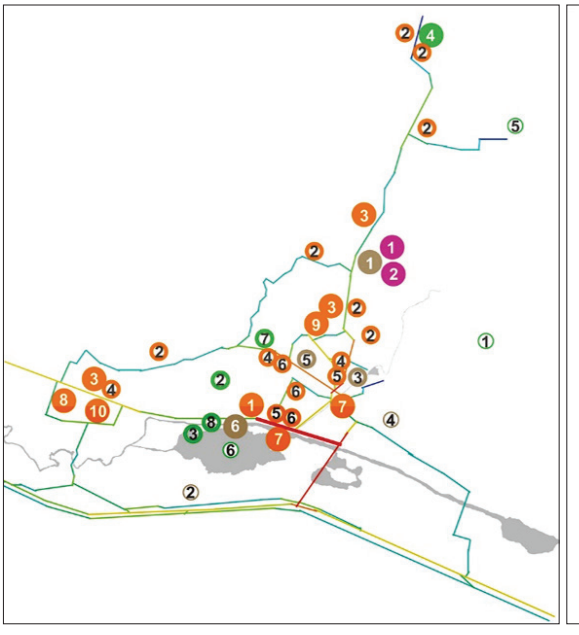
Connectivity integration analysis and physical and socio-cultural components - Chantaro Uthit is the most direct route; as a result, it can be designated as a high connectivity integration area. Plus, it can accommodate the largest number of roads, alleys and shortcuts. This road connects with Asia Highway 43, Plankthong-Khuanjong Road and Bannairai-Khuanjong Road; therefore, Chantaro Uthit has the highest potential to accommodate visitors to designated attractions via Phlakthong-



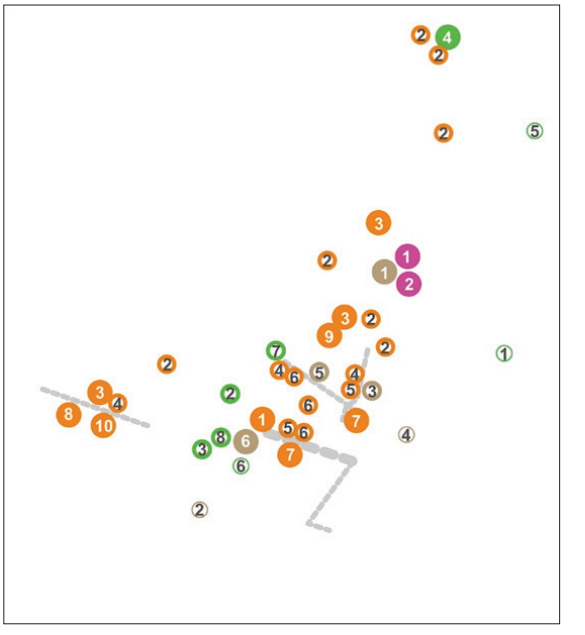
(A) Global integration analysis (Rn) and physical and socio-cultural components



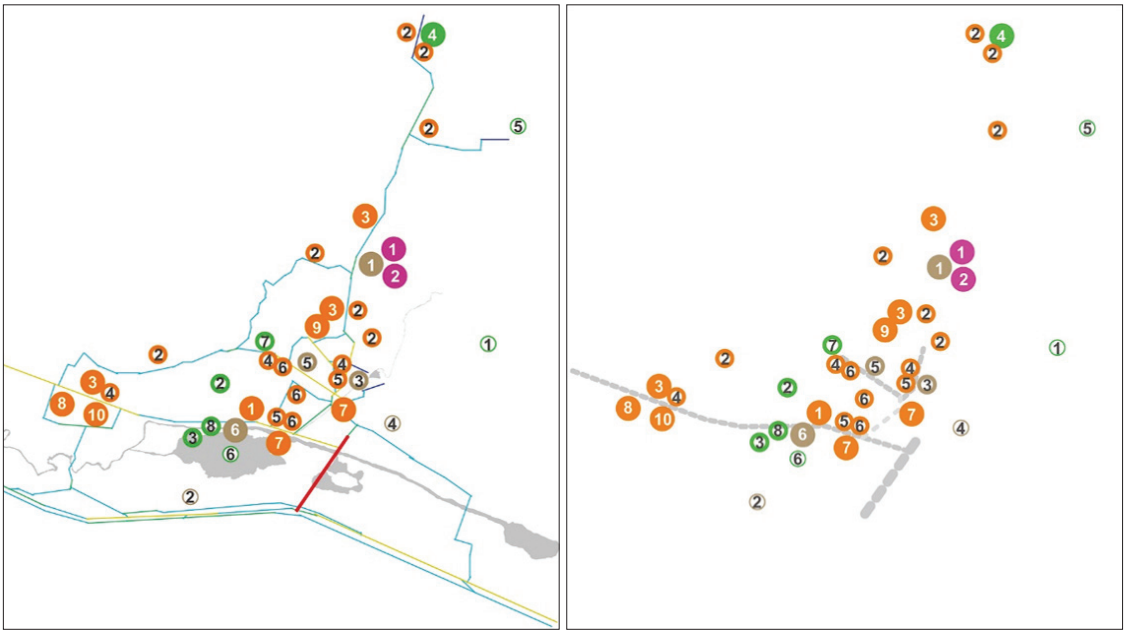
(B) The potential of movement networks and physical and socio-cultural components



(C) Local integration analysis (R3) and physical and socio-cultural components



(D) The potential of movement networks and physical and socio-cultural components



(E) Connectivity integration analysis and physical and socio-cultural components

(F) The potential of movement networks and physical and socio-cultural components

200 0 200 400 800 m.

Legend

Transportation network
Axial line network
Canal, Swamp, Resevior

Integration Value
Low — High

Tourist attraction levels
- Primary attraction
- Secondary attraction
- Future development attraction

Potential of movement networks
- Primary route
- Secondary route
- Future development route

Historical aspect
1. Khao Lom Temple
2. Wang Ma Praw monk sleeping quarters
3. Ban Khuanjong School
4. Khuanjong Railway Station
5. Vernacular southern-styled house
6. The banyan pavilion

Natural aspect
1. Langka mountain
2. Khuanklom mountain
3. Wa Canal
4. Rubber Tunnel
5. Waterfalls
6. Reservoir
7. Swamp
8. Community forestry

Traditional & cultural aspect
1. Ritual performing
2. Society, tradition, culture and religion activities

Livelihood aspect
1. The multipurpose building
2. The rubber production system
3. The mixed plantation system
4. Growing kitchen vegetables & herbs
5. Growing vegetables in limited area
6. Fresh latex trading centers
7. Trading zones
8. Cooking Southern food
9. Handicraft
10. Raising freshwater fish

Figure 6:
Spatial Configuration Model Overlaying Physical, Socio-cultural Components

Khuanjong. It can be said that this village is equipped with both global and local integration. Consequently, the development of tourism routes and attractions depends on the development of the road network, in that, a high accessible area is linked with a high connectivity area so that visitors can reach their destinations easily (Figures 6-E,F).

In conclusion, Plankthong-Khuanjong Road and Bannairai-Khuanjong Road can be developed into main roads for tourism and some sites along these roads can serve as major attractions. The other routes can be developed as alternative tourist attractions and to accommodate more demand in the future depending on the values of the physical and socio-cultural aspects along those routes.

DEVELOPMENT OF ARO-CULTURAL TOURISM ROUTES IN KHUANJONG VILLAGE

The results obtained from the analysis of spatial configuration model and that of the axial map containing the physical and socio-cultural aspects of Khuanjong Village were presented in the 2nd Workshop and could be summarized as follows. According to the results obtained from the spatial configuration model and the map of physical and socio-cultural aspects, there are three guidelines for the development as follows: (1) development of tourist attractions, (2) development of agro-cultural tourism routes, and (3) patterns of accessibility.

Development of Agro-cultural Tourist Attractions

Major tourist attractions and activity types - Whether a tourist attraction can be a major attraction depends on its location, types of activity to be organized there and availability to accommodate visitors. If a tourist attraction is located in an area with high integration, accommodating a wide variety of activities and a large number of tourists, it is considered a major attraction. In Khuanjong Village, there are 6 major tourist attractions: (1) Banyan pavilion, (2) multipurpose building, (3) Khao Lom Temple, (4) Mixed garden, (5) rubber plantation and (6) community market. The pavilion can be used as an information center for visitors and the building can be used for organizing activities for visitors to learn about the livelihood of rubber planters. Visitors can learn about the tradition, culture and religion of the villagers at Khao Lom Temple and learn how to do gardening at the garden and the plantation. They can also shop for souvenirs and food products at the market.

Alternative tourist attractions and activity types - If a tourist attraction is located in an area with high-average-low integration but its ecosystem is fragile so it cannot accommodate a large number of tourists, it is considered an alternative or a support attraction. In Khuanjong Village, there are 10 alternative attractions: (10 wetlands, (2) Rubber Tree Tunnel, (3) community forest, (4) Khuanklom, (5) Wa Canal, (6) Southern vernacular house, (7) kitchen vegetable and herb garden, (8) a place where vegetables are grown in a limited area, (9) a center for fresh latex trading and (10) Khuanjong School. The first five places are for visitors to enjoy natural settings and the sixth is for them to learn about southern architecture and the livelihood of the people living in those days. Models of people and clothing and items used in everyday life are on display along with related information. The map of the village and miniature Southern vernacular houses that were located in the village are also on display at the information center. Visitors can learn about growing vegetables at the gardens and buy fresh vegetables at the community market. They can also learn about fresh latex trading at the center while being informed about the history of the village and the other interesting places in the village.

Tourist attractions and activity types that can accommodate more visitors in the future - Some places can be developed as tourist attractions but are of low integration and with fragile ecosystems. The development, therefore, has to take these concerns into consideration to protect both the ecosystem and visitors. Such places should be developed when the community residents want to embrace the development. Such places are: (1) the old railway station, (2) Khao Langka, (3) waterfalls, (4) ponds and (5) Wang Mapraw monk quarters.

Development of Agro-cultural Tourism Routes

The routes are designed anticlockwise except the U-turn to reduce the number of crosswalks and facilitate parking at the 6 attractions — Banyan pavilion, multipurpose building, rubber plantations, two mixed gardens, Khao Lom Temple, and community market. Visitors will pass all of the 10 alternative attractions. On the village map, visitors can also find the 5 tourist attractions that can accommodate more visitors in the future (Figure 7).

However, visitors can change route and stop by any attraction according to their desire. For example, if they are interested in agriculture, they can visit 4 main attractions (Figure 8): Banyan pavilion, multipurpose building, two mixed gardens and community market and they still pass all the alternative attractions. Or if they are interested in traditions and culture, they can visit 4 main attractions (Figure 9): Banyan pavilion, multipurpose building, one mixed garden, Khao Lom Temple and community market and they pass some alternative attractions.

Patterns of Agro-cultural Tourism Accessibility

Travel with villagers - When visitors come to the information center, they will accompanied by the villagers that will take them to the attractions that the visitors have chosen. Transportation is available so they can go to all of the destinations within the timeframe. They will, furthermore, be informed of additional information about those places. The transportation can a trolley, a bicycle, a sided motorcycle to make this village more unique.

Travel by themselves - Visitors can reach the major attractions by car, motorcycle, or bicycle starting from Banyan pavilion, multipurpose building, Khao Lom Temple, mixed gardens, rubber plantation, community market, wetlands and Rubber Tree Tunnel. Visitors can visit as many places as they want and can spend time at a place as long as they want.

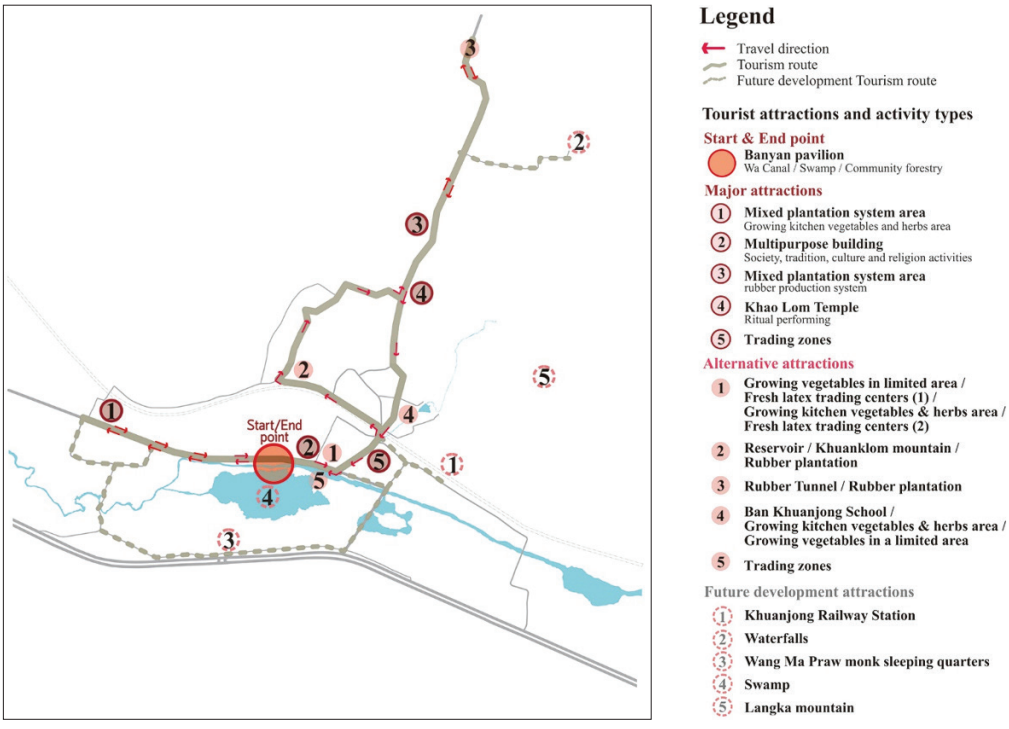


Figure 7:
Agro-cultural Tourism Routes in Khuanjong village

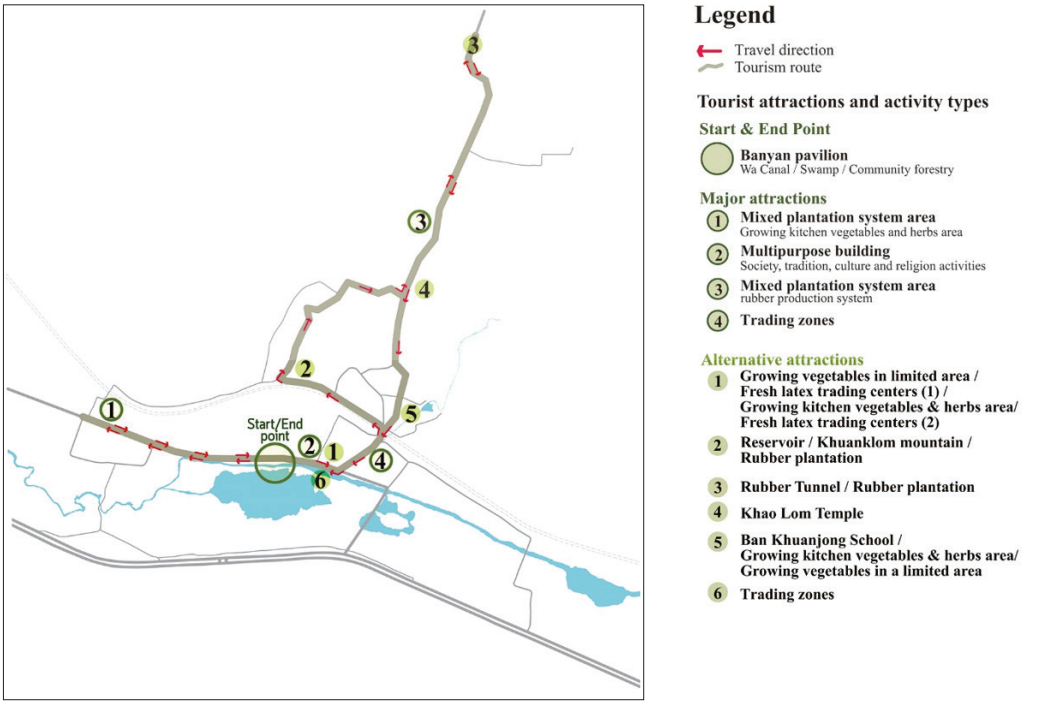


Figure 8:
Agro-cultural Tourism Routes Focusing on Agriculture (Option 1)

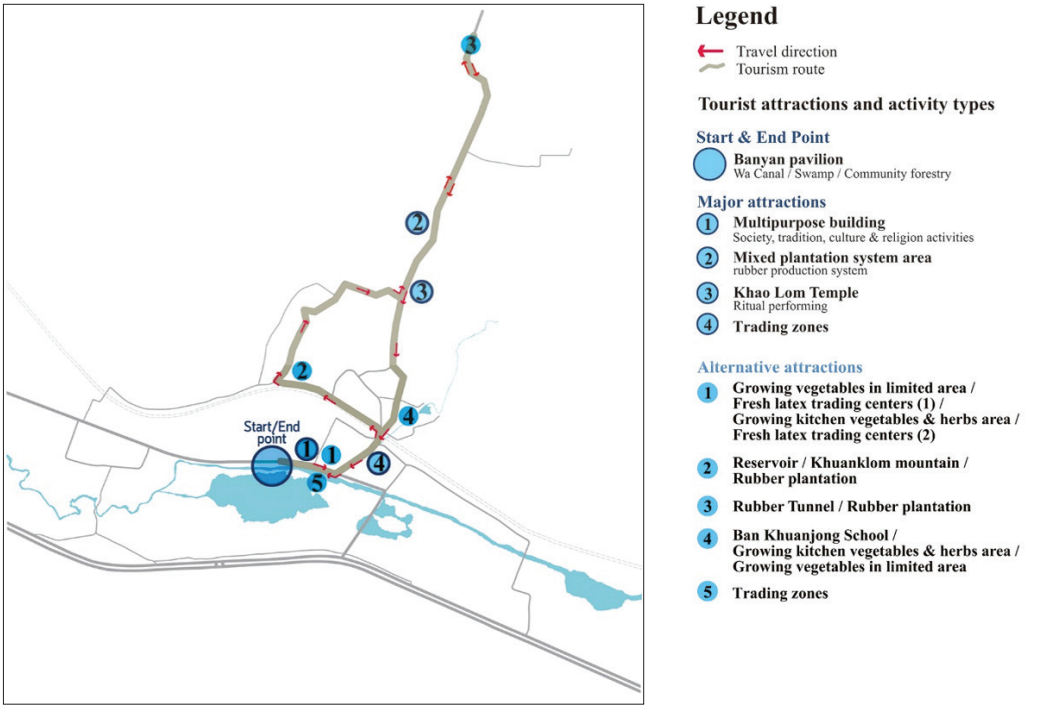


Figure 9:
Agro-cultural Tourism Routes Focusing on Traditions and Culture (Option 2)

CONCLUSIONS AND RECOMMENDATIONS

According to the 3rd Workshop, there are 3 important aspects about the research process. The first is an insight into the effectiveness of the road network system through spatial configuration analysis so that tourist routes can be easily and appropriately determined and in line with the topography. In addition, in the future these routes can be extended systematically. Secondly, designated tourist attractions aiming to provide visitors with knowledge about rubber-growing communities indicate the potential of the sites, activities and persons in the community; as a result, main and supporting attractions as well as sites that are worth developing can be defined. These sites include important places in the village and activities should be offered by farmers who are willing to turn their farm into an attraction. Thirdly, the tourist routes should be accessible to the main, minor and local roads which are connected, creating a network. Such network facilitates the management of facilities, security and maintenance of the routes and attractions. Visitors can also easily understand the network. This will ensure that they will not get lost or miss important attractions.

The findings reveal that a transportation network with high visibility and accessibility can be a main route for entering and leaving a village. All of the physical and socio-cultural components that are shared by rubber planters are found in this network. Such components are the Banyan pavilion, multipurpose building, Khao Lom Temple, center for fresh latex trading. Global and local integration can lead to the establishment of a community market. The livelihood of farmers can be observed in the rubber plantation, the mixed gardening, the kitchen vegetable and herb gardening. These activities are found in residential areas so their accessibility potential is average-quite low in line with the Theory of Natural Movement (Hillier et al., 1993), the Theory of Movement Economy Process (Hillier, 1996) and the Theory of Spatial Centrality as a Process (Hillier, 2000). They point out that an effective movement network can propel socio-economic activities to spread along the network.

However, some activity types do not correspond to the accessibility potential of the area. For example, although the accessibility potential of Chantaro Uthit Road is high, its socio-economic activities are few. The amount of trading at some centers for fresh latex trading is low because they are located in an area whose accessibility potential is low. Therefore, it can be said that some factors such as specific socio-cultural characteristics also play a role in the number of socio-economic activities. Srisak Valipodom (2001: 191–194) said that people in society will design patterns of land use, designating which is for personal use and which for public use. This will lead to a system of the specific society and culture of living in an area, which is in line with the concept, “Social Logics of Space and Spatial Logics of Society” (Hillier and Handson, 1984) stating that social characteristics correspond to and are related to spatial characteristics.

The guidelines for developing agro-cultural tourism routes in Khuanjong Village are based on the analysis of spatial configuration. The guidelines are suitable for the spatial context and the livelihood of rubber planters. The agro-cultural tourism routes in this village comprise 3 main routes. The first includes the routes where the main tourist attractions are located. The main attractions are the Banyan pavilion, multipurpose building, rubber plantation, mixed gardens, Khao Lom Temple and community market. The second includes the routes where alternative attractions are located. They are the wetlands, Rubber Tree Tunnel, community forest, Khuanklom, Wa Canal, Southern vernacular house, kitchen vegetable and herb garden, a place where vegetables are grown in a limited space, center for fresh latex trading and Khuanjong School. Such places are physical, socio-cultural aspects that are valuable in the history, natural settings, traditions, culture and livelihood of rubber planters. Major attractions are designated on the movement network that have high visibility and accessibility to ensure visitors’ safe and comfortable travel within the village. The tourist attractions that are located on routes with average-low accessibility potential are classified as alternative attractions and attractions that can accommodate more visitors in the future, respectively. However, some measures should be imposed in areas that are supposed to be developed as attractions that can accommodate more visitors in the future because they are sensitive to ecological changes and can disrupt the residents’ livelihoods. Visitors can design their own travel plans to suit their interest and lengths of stay. For instance, they can follow an agro-cultural route or traditional and cultural route. Visitors can choose to have a villager as a tour guide or to visit the attractions by themselves.

It is recommended that in order to develop agro-cultural tourism routes, the spatial characteristics of a community, ecosystem of the agro-cultural areas and the natural settings and specific socio-cultural aspects of farmers have to be taken into consideration. This is so because this tourism is a combination of agriculture, traditions and culture of farmers and natural settings. These are important

components that distinguish the agro-cultural community from other communities. Successful agro-cultural tourism can generate more income and preserve the village identity. However, the villagers have to be willing to offer this tourism and to improve their infrastructure. When properly executed, the development of agro-cultural tourism routes based on spatial configuration analysis will be an effective tool for sustainable community development. Lastly, the development of agro-cultural tourism routes in Khuanjong Village can set a precedent, and other rubber plantation villages can adopt this tool to implement and develop their own agro-cultural tourism routes.

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