A Conceptual Framework for Agri-Food Tourism as an Eco-Innovation Strategy in Small Farms

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Abstract: The proposed conceptual framework explores how small-scale farms can combine agricultural products and tourism into an eco-innovation strategy. This paper presents a case study conducted on a family-run farm within the territory of the Paiwan tribal community of the North Dawu Mountain situated in the Central Mountain Range of Taiwan. The area has become an important coffee-farming region since the Japanese colonial period between 1895 and 1945. For many years, most of the indigenous farmers of the area have cultivated varieties of coffee plants using traditional, non-commercial methods, such as a single-sale channel. The small-scale farmer implements an integrated approach that systematically optimizes supply chain relationships to improve both the upstream and downstream sides of agri-food tourism services. The upstream element of agri-food tourism, for example, can be adjusted to employ organic or “natural” farming methods that allow small-scale farmers to secure an “organic” certification. Based on this approach, a small farm is gradually transformed into a type of educational institution that can demonstrate to customers the methods for farming high-quality organic coffee while also attracting tourists of various backgrounds to experience the downstream components of agri-food tourism in a recreational setting. This case study highlights how a particular small-scale farmer plays an important role in attracting other tribal farmers to engage in sustainable practices that help preserve cultural, social, and environmental systems while also presenting agri-food tourism as a brand identity.

Keywords: agri-food; eco-innovation; supply chain; tourism

1. Introduction

Gastronomy relates the regional diversities among peoples, cultures, and life-styles to the numerous types of food ingredients, equipment, and preparation methods that characterize, define, and differentiate, for example, Chinese, Vietnamese, Korean, and Japanese cuisines, or Western and Oriental cuisines. Gastronomy is becoming an essential ingredient in tourism production and consumption [1]. Gastronomy not only conveys food tastes, but also communicates local cultural experiences. Life experiences and connections among people bring knowledge exchange and economic growth to destinations, thus increasing the utilitarian value of food. However, the elements of gastronomy vary with different agricultural products. Specific aspects of the creation and distribution of agricultural products, such as long agri-food supply chains [2,3], complex logistics and transportation schemes [2,3], demand uncertainties [3], stricter food safety and quality requirements [2,3], diminishing government support and farmer subsidies [3], and the impact of carbon emissions regulations [4,5], have been discussed. An interesting example is the coffee supply chain, into which managed processes [6] are fitted as an integration of key business processes across the whole supply chain, from upstream to downstream. This situation is fragmented and locked into narrow trajectories of development in
The OECD’s guidance not only points out the scope of agricultural supply chains, but also supports and conserves biodiversity, genetic resources, and ecosystem services, thus placing certain areas under environmental protection and promoting the sustainable use of natural resources [10]. This perspective provides important indicators for directing what ecosystem services can or should do for different stakeholders [11]. The different stakeholders consist of on-farm and downstream enterprises along agricultural supply chains. Downstream enterprises represent a traditional agri-food supply chain [12] that is referred to as farm-to-table or farm-to-fork [13]. In particular, supply chain collaboration exists [13] between several different stakeholders, such as wholesalers, traders, transportation companies, manufacturers (food, feed, and beverages), textile and biofuel producers, retailers, and supermarkets. Those stakeholders play critical roles in a traditional agri-food supply chain. Food quality and safety is always a concern in the agri-food supply chain [14]. Food provision has to consider quality and safety throughout the supply chain, which includes farming, processing, handling, and retailing. Food quality and safety has also become highly regulated according to well-known international standards, such as hazard analysis at critical control points (HACCP), good manufacturing practice (GMP), and good hygiene practice (GHP) [15].

![Figure 1. Various stages of agricultural supply chains and enterprises involved.](image)

The performance measures of agri-food supply chains [16] focus on efficiency, flexibility, responsiveness, and food quality. Food quality has been discussed as above; the other three indicators emphasize agri-food production processes that rely on various strategies to maintain profitability in a local or regional market-oriented agricultural economy. Although the concept of sustainability has been considered for inclusion into the traditional agri-food supply chain (such as in developing a sustainable food supply chain) [17], the agri-food supply chain is still mainly focused on improving manufacturing and distribution systems and developing procurement systems based on more sustainable forms of agriculture. In short, a traditional agri-food supply chain is most concerned with the management of operational processes, logistical efficiencies, and production sustainability (“green production”).

Figure 1 shows the various stages of agricultural supply chains and the enterprises involved. The performance measures of agri-food supply chains [16] focus on efficiency, flexibility, responsiveness, and food quality. Food quality has been discussed as above; the other three indicators emphasize agri-food production processes that rely on various strategies to maintain profitability in a local or regional market-oriented agricultural economy. Although the concept of sustainability has been considered for inclusion into the traditional agri-food supply chain (such as in developing a sustainable food supply chain) [17], the agri-food supply chain is still mainly focused on improving manufacturing and distribution systems and developing procurement systems based on more sustainable forms of agriculture. In short, a traditional agri-food supply chain is most concerned with the management of operational processes, logistical efficiencies, and production sustainability (“green production”).
For example, organic agriculture [18] debates how natural farming technologies can minimize damage on local ecologies. However, these considerations are not the key topic of this paper. This paper focuses on the upstream side of the agri-food supply chain: the on-farm enterprise.

On-farm enterprises include small to large family farms, as well as farmers’ organizations, co-operatives, and private enterprises. They play important roles in agricultural production and near-farm basic processing. Farms can become interesting places for rural development projects, such as those for travel, education, leisure, and adventure. A farm or the countryside can also be promoted by place branding as a desirable destination [19] for tourism purposes. According to the previously mentioned reasons, agri-food or the agricultural gastronomy aspect within tourism is connected in the Western world to sustainable development in rural areas, and its significant opportunities have been discussed by the European Economic and Social Committee [9]. However, this concept is less discussed in the Asia-Pacific region, especially when considering local smallholder farmers. Therefore, this paper raises the argument that agri-food tourism can be regarded as the same “wicked problem” in the Asian region. The following questions are debated in the rest of the paper:

• Which “agricultural product” is unique as a studied point in the Asia-Pacific area?
• For a particular “agricultural product”, how can that product be integrated with tourism to come up with agri-food tourism?
• And, finally, given an “agricultural product”, how can it make the rural areas into a destination?

The single case study [20] was used to investigate a real-life context and address a situation in which the boundaries between phenomenon and context are not clearly evident. This evidence in hiding is a contemporary phenomenon [21] in the humanities and social sciences [22]. Although the selected single case is not representative of the whole contextual evolution, a narrative and participant-observation approach is able to discover more implicit knowledge than can a general response. In [23], the authors’ tourism research has supported this perspective. Through the narrative approach and photographs, they collected substantial evidence and then were able to analyze the Beijing Olympic Green as to whether there existed a cross-cultural context. The study’s result has interpreted tourism at Olympic sites as destination focused.

The explored case of a smallholder farmer is a traditional family of a Paiwan indigenous community, which was selected to help explain the diversity of human culture and society. Indigenous culture is another unique reason for research in the social sciences. The connection of local communities to geographical features has been hidden until now. This connection is manifested in their life-style habits, such as their diet, clothing, daily rituals, and work practices. Interest in their history and current trends in tourism have made their place increasingly popular as a tourism destination, where tourists travel to experience indigenous culture. The location has also changed significantly as a result of providing more services for tourists, such as local cuisine preparations, crafts, arts, clothing, and accommodations. These changes have all incorporated traditional agricultural products, especially the high-altitude coffee. Tourism has successfully connected the local people and their ancestral lands to different states, from that of a farm to the brand identity of place, a destination. This narrative-research case study makes us understand the value of agricultural production and also its importance to cultural inheritance and environmental protection.

2. Agri-Food Tourism as Eco-Innovation Strategy

The agri-food tourism as an eco-innovation strategy seeks to fit customers’ needs with the demand side of the tourism industry. Fulfilling local needs involves future global challenges that have been reported by The Global Innovation Index 2016 [24]. The report asserts that demand-side policies affect regional innovation and development. However, the demand-side information is uncertain, fuzzy, and ambiguous. Therefore, the concept of alternative services is created as a business strategy for innovation and creativity [25] to face ambiguous situations as a problem-solving solution. Alternative services are not for mass markets but for specialized markets or customers. The strategy of using
innovation and creativity has pointed out that an alternative service is more suitable for smallholder farmers [26]. The smallholder farmer is defined as a typically rural tourism enterprise that also includes small-scale agricultural producers [27]. These enterprises seek sufficient incomes and innovations outside of traditional agricultural products, which provide only minimal benefits through a long and traditional agri-food supply chain.

This approach is not new, as it has followed a case study in Israel [27] where agricultural enterprises turned to tourism when agricultural activity diminished. This alternative use of the land has been termed rural tourism. In this way, a strong relationship because of the linkage between agriculture and tourism activities [28–30] was formed. In [31], the authors describe this linkage as becoming a new term, agri-tourism, which involves restructuring agriculture and small farms in Michigan. The concept of agri-tourism is based on a practical economic model that describes the transition from a market-oriented production strategy to a service-oriented sustainability strategy. Agri-tourism is also categorized in terms of travels to livestock ranches, country farms, country inns, and rural bed-and-breakfast establishments [31]. The category is also known as a gastro-tourism linked to agri-tourism [32]. Agriculture is thus connected by a relationship between tourism and gastronomy, and these connections are truly representative, turning agricultural food-related tourism into an eco-innovation strategy [26] that includes a destination [19], place branding [8], market(s) [33], culture [30], and rural development [8,27]. Therefore, rural tourism thus includes in its scope both agri-tourism and gastro-tourism. Rural tourism also has various benefits from agriculture and attractions, and creates positive externalities that benefit a single firm [34], the smallholder farmer.

As a summary of the above reviewed literature, the paper thus debates the purpose of the traditional agri-food supply chain as being a farm-to-table approach, which has a long and complex flow and has fewer value-added services. The renewed agri-food supply chain has been attracting customers who travel to rural areas and then become tourists. This renewed agri-food supply chain is reversed through value-added experiences from travel-to-farm; its supply chain and carbon emission paths are shorter compared to that of the farm-to-table model, thus making the environment more oriented toward knowledge, health, and sustainability. Therefore, an eco-innovation strategy that links a renewed agri-food supply chain with a tourism service supply chain is becoming important and necessary. Figure 2 has shown the proposed conceptual framework for agri-food tourism as an eco-innovation strategy.

![Figure 2. A proposed conceptual framework for agri-food tourism as eco-innovation strategy.](image-url)

The proposed conceptual framework is designed for understanding that agri-food tourism can become an eco-innovation strategy in the Asia-Pacific context. Detailed explanations are divided into three parts, including demand side, supply side, and destination.
Demand side is defined according to the Global Innovation Index 2016 [24]. This report explains that the demand-side policies affect regional innovation and development. The demand side is segmented and affected by policies that originate from domestic and international market demands. They usually depend on the needs or non-needs of buyers and tourists.

Supply side is defined according to the OECD guidance for Responsible Agricultural Supply Chains [10] that explains the services involved in producing agricultural products for consumer markets. The supported services include rural tourism [34] or eco-tourism [35], accommodations, agri-food and beverages (made by agricultural products), so-called bed-and-breakfasts (B & Bs), and cultural experiences [10,30,36]. The particular resources involve different services offered by providers or named stakeholders [12].

Destination is represented to place a brand image [23], which has been a comparison in the tourist’s decision-making process for a destination’s image at different stages. It is also represented a rural eco-innovation strategy, which is connected to three levels of key elements.

- The first level is general and common in the environment; namely, society [17], culture, and economy [9].
- The second level is supported by resources from outside of the region or rural area, but they usually play an important role for the improvement of rural development [8,9,27,34]. These include companies, universities, government agencies, and research institutions.
- The third level includes professional knowledge, skill, technology, and other human resources of local smallholder farmers [26]; for example, practicing organic agriculture [18] requires specific domain knowledge in appropriate farming techniques.

“Be global, go local” is not a new idea. The study presented in [25] makes use of this idea and explains how innovation and creativity are able to develop as alternative guiding services in Budapest. Therefore, the proposed framework also focuses on local situations, connects with the Business to Business (B2B) B2B and Business to Customer (B2C) B2C service supply chains, and then is examined by the following session.

3. Case Study: A Smallholder Farmer

3.1. The Uniqueness and Background

Defining a unique agricultural product is difficult because agricultural products are plentiful in the Asia-Pacific region. However, one agricultural product suitable for consideration because of its uniqueness is the high-altitude coffee from Taiwan. The high-altitude coffee is presented as a cultural diversity product, as it was not a native agricultural product; it was brought and farmed during the colonial period between 1895 and 1945 when Taiwan was a colony of Japan. Although this feature is not quite sufficient for explaining the uniqueness, the high-altitude coffee was a specialized agri-food meant for the emperor of Japan at that time. A Japanese shrine can still be seen at Taiwan’s mountains within the high-altitude coffee farming region, even though it is located at (or over) 1000 km above sea level. Until now, although those coffee farms are located at higher elevations than the others, its yield is much lower than that of other similar crops, such as Vietnamese coffee. It is important to explore the reason(s) why the North Dawu Mountain can be regarded as a unique research subject and specifically designated here as a tourist destination.

Based on the abovementioned background of the case study, this study used the Pasikang Leisure Park as a research case of a smallholder farmer who belongs to a traditional family of Paiwan indigenous communities that own high-altitude coffee farms. The Pasikang Leisure Park was built beside the foot of a mountain as a family home, and then provided only one product, black coffee for customers to imbibe at leisure while enjoying the view across the agricultural landscape. After accepting advice following a long-term free consultation, the family has increasingly changed their business model from the end of 2012 to the present. This free consultation is an industry–university
cooperation underpinned by theory and practical integration. The consultants are various teachers from the hospitality management department at Meiho University. Various pieces of evidence were collected from different sources, such as archives, observations, and interviews. The data obtained met the conditions of a data triangulation algorithm [37], which increased the reliability and validity of the same data.

3.2. The Problem Descriptions

The original business model usually did not perform well, as it resulted in low incomes and few benefits. In particular, this situation in the rural area is not a single case. Almost all the tribal families are smallholder farmers. The original situation can also be regarded as a wicked problem [8], an approach which was successfully used to formulate the place branding and rural development projects in the 2014–2020 Rural Development Programs (RDP) of the European Commission. The Pasikang Leisure Park was built under the wicked problem approach, with some common characteristics and circumstances, such as the following:

- The competitors are from the same tribe. Most of the families were farming the same variety of arabica coffee plant and producing the same kinds of coffee types (such as black coffee, organic coffee, or North Dawu coffee) in same area, but there were no clear differences between individual products of the same type. This situation caused price competitions among the same products in the same tribe.
- Coffee gathering was performed by the same collector for all the smallholder farmers. That one collector gathers most of the coffee products from this area. The collector is an important stakeholder who makes decisions on prices with or without negotiations. Only a few smallholder farmers sell their coffee products by themselves. This situation has allowed the collector to affect the prices of the products.
- Difficulties in acquiring financial or technical support. Most of the coffee smallholder farms were small operations and are situated between mountain sides or at the base of the mountain. This situation leads to them experiencing difficulty getting financial or technical support, especially human resources, economic capital, and any effective promotional channel.
- Different cultural and societal norms of the Paiwan indigenous community. As traditional tribal folk, the Paiwan are obligated to observe their ancestors’ edicts. Their beliefs require them to find sustenance and to support themselves by working in the mountains, which includes hunting animals or farming on the mountain soil. Moreover, their society is rigidly hierarchical with tribal members ranked by power and privilege into chieftain, aristocrat, and civilian. Members are taught to respect nature, their territorial grounds, and their ancestors. This situation brings forth cultural and societal diversities between indigenous and regional peoples.

After descriptions of their problems were presented and the mapping of the Pasikang Leisure Park was completed, the tribal families started to make improvements based on the suggestions of the consultants, with the concept of supply chain mapping to operational supply and value enhancement [38].

3.3. Becoming Agri-Food Tourism

In the eco-innovation system is developed by both regional and country decision-makers [39]. The decision-makers are made into different indicators for the measurement of regional development, such as society, culture, and economy. Pasikang Leisure Park is located in the Taiwu Township. This local administration unit executes rural developmental policies, and then establishes local relationships with different stakeholders, including regional companies, universities, the government, and (or) research institutions. Therefore, many small farms follow the policies formulated by decision-makers. Next, the rural developmental policy impacts change in each of the small farms, and the situation of Pasikang Leisure Park is described as follows:
• B2C service supply chain: demand side

The agricultural products are produced for different buyers. Before the implementation of the rural developmental policy, the high-altitude coffee farmers had only one way to sell their products. That is that all of the output of the small farmers’ coffee harvests are collected by one collector. One positive effect is having the same price of coffee products at the market, but this market is a closed passageway. This situation has been explained in the above problem descriptions. However, following the change over time, the same brand name of Taiwu Township Coffee has slowly been changed. For example, Pasikang Leisure Park did not leave the closed passageway for providing coffee to the same collector, but they found different customers by themselves on the Internet, in traditional marketplaces, and through word of mouth. They also created and promoted their brand, Pasikang Coffee. These changes are supported by rural developmental policies because the Taiwu Township also plays an important role in encouraging the smallholder farmers to enhance the quality of their agricultural product, for example, by having completions of coffee take place.

This way makes the channel transform to another stage, such as food purchase and storage [40] from intangible to tangible. Further, they build new relationships with consumers to change them into tourists. Therefore, the demand side does not need to change, but change is needed in the place, the destination, which we call the food source. These changes make this destination more attractive for customers to come and create the requirements for procurments. In summary of the abovementioned developments, the B2C service supply chain, demand side, which contacts customers or tourists directly, for a general company is called marketing management or a strategy; however, this makes a lot of money or consumes a budget. The Pasikang Leisure Park has no more money, but has land with a beautiful landscape and fruitful agricultural products that cannot be sold. Therefore, there is no budget for expensive promotions; there is no money for an impressive package design. All of the commercialized activities for Pasikang Leisure Park are actually impossible. For Pasikang Leisure Park may have a free website or facebook page, but other small farmers may not even have these.

• B2B service supply chain: supply side

Linking tourism and agriculture together is still needed to face some challenges [41], especially in terms of attracting customers to rural areas and regional brands [42] for agri-tourism experiences. To achieve this goal, the Pasikang Leisure Park provides services that include intangible services and physical products.

➤ The first stage: to provide physical products

The first choice is the famous high-altitude coffee. It is suitable as a local souvenir. For the enhancement of more attractions to customers, Pasikang Leisure Park has attended some of the important coffee competitions. According to the good results from the coffee competitions, Pasikang Leisure Park has a successful opening market. Some of the customers come from the north of Taiwan (Pasikang Leisure Park is located in southern Taiwan) to purchase champion coffee. Therefore, the customers have had no more limitations and are becoming tourists already. Moreover, for health reasons, many indigenous agricultural products, such as red quinoa (chenopodium formosanum), have become well-known agricultural products. Other physical products, such as arts, crafts, and cultural decorations, are also accompanied by tourists’ procurments. This creates more commercial transactions between the local areas and outside areas and also helps to improve revenue.

➤ The second stage: to consider intangible services

It is difficult for Pasikang Leisure Park to make changes in this regard; the major reason is not about providing services, but it is concerned about other aspects that will involve more money, such as providing living space, tour guides, food, and cooking. This is reasonable as the intangible services do not only describe abstractions such as natural landscape, comfortable feelings, or hospitality receptions. After discussions with different experts, it is willing take a long-term change rather than a short-term
one. The same situation failed in other small farmers. This is another problem in the rural-area society, and is due to young people going outside for work to make money, so the farm or ground has been difficult to improve by more attention.

➢ The third stage: agri-food tourism

Intangible services have been implemented into Pasikang Leisure Park for around six years (2011–2017). During these years, different services for tourists were provided. The original idea was eco-tourism because of budget reasons, but this was quickly made into free services for tourists. They just dug a place and called it an ecological pool; tourists could bring their family, drink coffee, play in the park during the day, take a walk at night, and then sleep in the camp. All these activities were around the ecological pool. Following this first step, they repaired an old house with two rooms but without air-conditioning. They started new services, such as accommodation, also called B & B. This requires that owners spend time preparing breakfast when tourists are staying in the house. The last step is to increase knowledge and awareness on agri-tourism. Family travel usually involves children; this is a good opportunity for providing natural knowledge, since previously tourists could only look and cannot learn, but eco-tourism is suitable for providing observational learning between day and night.

Agri-food tourism should be more interesting and connect with local agricultural products. High-altitude coffee is cultivated at (or over) 1000 km above sea level. Sometimes, the weather or family is not able to go over. However, Pasikang Leisure Park provides an environment of learning by doing. This is taking an agricultural product and transforming it into knowledge experiences. For example, they teach tourists to use agricultural products to cook Paiwan food. They teach tourists to cultivate agricultural products at Pasikang Leisure Park. These activities are done and experienced by tourists themselves.

Pasikang Leisure Park has become different after taking those steps of change. The marketing strategy to make a difference is one toward a better understanding how tourism and agriculture connect together. This linkage involves gastronomy as an integral part of tourist experiences [43]. This also fits [39] debated thinking that a region can be developed using an eco-innovation strategy.

4. Conclusions

The paper concludes that the examined case of Pasikang Leisure Park has been successfully used to understand the practical mechanisms employed by a smallholder farmer, an individual agricultural business. We utilized the EU eco-innovation concept of a wicked problem in the circumstances of the case study. In comparison with the EU eco-innovation development, our case study shows that we need to focus on the Asia-Pacific context. This increased attention not only provides for financial capital, but also provides more opportunities for regional cooperation. In the EU, eco-innovation development involves systemic implementations and provides useful documents or reports on the web for people who want to learn. In the Asia-Pacific context, this level of support is rarely available. We can obtain such reports from various EU agency websites, but it is difficult to find and obtain similar documents from the Asia-Pacific area. This situation justifies the broad application of the Western theory and its application to a different field. The Asia-Pacific context needs more attention.

Moreover, the proposed conceptual framework for agri-food tourism as an eco-innovation strategy has explained different situations, including the demand side and the supply side of agri-food tourism. The paper also provides answers to three debated questions. The first answer is that the studied “agricultural product”, Taiwanese high-altitude coffee, is unique in the Asia-Pacific area. This is consistent with the local cultural development, life-style, social taxonomy, ground usage, and so on. The second answer is that the “agricultural product” can be successfully integrated into tourism, thus becoming an integral component of agri-food tourism. The Pasikang Leisure Park plays an important and long-term role in promoting the “agricultural product” as food, clothing materials, and living crafts or arts. However, this endeavor still faces many challenges, such as unresponsive
rural development policies that do not provide the smallholder farmers with the resources (such as financial capital and human resources) they need. As for the final answer, the “agricultural product” is able to turn the rural areas as a destination. In the study, we found that Taiwu Township Coffee has successfully delivered the place name, Taiwu Township. This is also part of the rural development policy to make rural areas more financially self-sufficient to prevent the departure of more rural young people. This goal seeks to utilize agri-food tourism as a link for tribal people to work together. For example, someone helps for cooking agricultural food, someone helps for tour interpreting, and someone provides a small room for experiences in indigenous culture, such as making agricultural-product clothing. These are all for the destination to become more oriented to knowledge, health, and sustainability.

In the future, we encourage other researchers to work on this topic and devote more attention to agri-food tourism, as this field is a long and complex flow and without value in an Asia-Pacific context. For example, rice is a very important “agricultural product” in Vietnam or Thailand. On the other hand, one issue is to explore how Vietnam Coffee is able to make agri-food tourism an eco-innovation strategy in a different stage. We also expect more attention toward the concept of supply chain management as a systematic approach to studying and analyzing industrial problems.

**Author Contributions:** Shang-Yu Liu and Kuang-Nan Tsai collected the original data from multiple data sources. Chen-Ying Yen undertook the data analysis. Wei-Shuo Lo wrote the manuscript and reviewed the results of the case study.

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