

Co-evolution of Tourism and Agriculture: A Comparative Case Study

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Abstract:

The relationship between tourism and agriculture is complex and variable. It is not only influenced by the condition of these two industries, but also shaped by the institutional environment and stakeholders. While today many rural areas are looking for a transformation from agriculture to tourism, it is important to find how these industries evolved together. This study introduces the concept of co-evolution from Evolutionary Economic Geography. Two cases, South Holland in the Netherlands and Sansheng region in China are selected to examine what are the co-evolution process of tourism and agriculture in these two regions respectively, and the similarities and differences in the process caused by different institutional context. Study shows weaker and more indirect linkages between tourism and agriculture in the Dutch case which results in less interactions between these two industries in South Holland. This study also discovers that Chinese institutional environment largely shapes the co-evolution process by strong political initiatives.

Keywords:

Co-evolution, Evolutionary Economic Geography, the TALC model, integrated approach, tourism, agriculture

1 Introduction

Today many regions have to deal with a transformation from traditional agriculture to service-oriented production, often with a base in the tourism sector (Cassel & Pashkevich, 2011; Larsson & Lindstrom, 2014). Due to poor agriculture commodity prices, rising production costs, economies of scale, globalization, and industrialization, farm families have to explore the viability of alternative economic strategies (McGehee & Kim, 2004). To enhance income, some farmers choose to work off farm or restructure their businesses by turning to tourism based on their agricultural operation practices (Bowler et al., 1996; Nickerson et al., 2001). According to statistics, employment in agriculture of total employment worldwide has dropped from 43.3% in 1991 to 26.5% in 2017 (The World Bank, 2017). Agriculture is playing a decreasing role in regional employment (Kukorelli, 2011). Meanwhile, tourism has grown to become one of the largest industries globally (Asiedu & Gbedema, 2011). From an already

sizeable 475 billion U.S. dollar revenue globally in 2000, the industry proceeded to generate more than 1.2 trillion dollars in 2016 (Statista, 2018). For some regions, especially rural areas, tourism development has become one of the important development strategies, since it can not only create employment, but also revitalize the region. With the involvement of tourism, the primary industry, i.e. agriculture, can be restructured and the multitude of small farms can adjust to price-cuts and increased competition (OECD, 1994).

However, the impacts of tourism on agriculture are not always considered to be positive, and the relationship between these two industries has been discussed all the time. During the 1960s and 1970s, tourism was considered to be destructive to other sectors, especially agriculture, since it competed with agriculture for land and labor (Latimer, 1985). Subsequently, the assessment on agriculture-tourism relationships ranged across a spectrum from situation of conflict to symbiosis (Telfer & Wall, 2000). Accordingly, to reduce negative impacts of these two industries on each other, scholars aimed for promoting symbiosis by strengthening the linkages between agriculture and tourism (Rogerson, 2012; Hartman & De Roo, 2013). The relationship between tourism and agriculture is complex and variable (Torres & Momsen, 2011). It is changing and largely depends on industry conditions, institutional environment, as well as stakeholders. Therefore, to understand the development and interactions between tourism and agriculture, this study inspects regional agriculture and tourism development from an evolutionary perspective.

This paper aims to explore the dynamics of regional agriculture and tourism development through case study. To better understand the interrelationship between these two industries, two cases are selected, namely South Holland in the Netherlands and Sansheng Region in China. Conducting comparative study is for figuring out what are the similarities and differences of co-evolution process of tourism and agriculture in different locations and institutional environments. Meanwhile, as imperative factors to regional tourism and agriculture development, the perceptions and impacts of stakeholders are also investigated. This study can provide insights into further research regarding tourism planning, rural planning and regional development strategies. The empirical analysis is guided by the following research questions:

1. How does agriculture development and tourism development evolve?
2. What are the linkages and interactions between agriculture industry and tourism industry?
3. What are the similarities and differences of the co-evolution in the different contexts?
4. How do the stakeholders perceive and impact the co-evolution process?

The paper is structured as follows. The next section presents the theoretical background of this research including evolutionary economic geography, tourism area life cycle model, and the concepts co-evolution. The third section briefly introduces the methodology utilized in this study. The following three sections demonstrate the result of this study, including the analysis of the co-evolution in the Dutch and Chinese case respectively in the fourth and fifth section and the comparative study in the sixth section. The final section presents the conclusions about the research questions and provokes some further discussion about this

topic.

2 Theoretical Framework

Linkages between Tourism and Agriculture

The interrelationships of tourism and agriculture have long been discussed by researchers from different perspectives. Researchers' attitudes towards the relationship between tourism and agriculture have varied through time. Although tourism is being used for generating foreign exchange, increasing employment, attracting development capital and promoting economic independence (Britton 1982), it also receives criticism. Especially in 1960s and 1970s, the literature of tourism impact was almost hostile and concentrating on the negative impacts. Bryden (1974) advances that tourism grows in competition with agriculture for particular resources which would serve to change the production functions. Meanwhile, Alleyne (1974) considers that tourism attracted labour from agriculture, which would generate a dying farm sector. Later, positive influences were found regarding tourism expenditures on foods, demand for employment and opportunities tourism create for enterprises. Belisle (1983) finds that food purchases constitute approximately one-third of all tourist expenditure. Rickard and Carmichael (1995) find in Jamaica that inland farmers have established network with enterprises, in which they could supply food for hotels. Tourism is now accepted by more people and regarded as a means for supporting local endogenous economic growth by increasing demand for local products (Larsson & Lindstorm, 2014).

With the popularization of agritourism in rural area, more and more attentions are paid to the impacts of this practice on agriculture sector, tourism sector, relevant firms and families, as well as regional economic development. Through in-person surveys in Israel, Fleischer and Tchetchik (2003) find that working farm have no value for visitors, however, farmers seem to benefit from the existence of a working farm by using its production factors more efficiently. They also find that a concentration of tourist activities in the region helps sell the products at a higher price. Barbieri et al. (2008) discover that farm entrepreneurial diversification can create a more stable, and often higher, income for the producer. In times of a poor harvest or depressed prices, receiving visitors for agritourism activities may provide supplemental income for the farm family (Nickerson et al., 2001; Fisher, 2006). At regional level, introducing tourism into rural areas can alleviate local issues, including labor shortages in tourism and market shortages in agriculture (Torres & Momsen, 2004). Meantime, agritourism can contribute to the local community via sales taxes, local employment and stimulation of local businesses such as restaurants and shops (Saxena et al., 2007).

Despite economic and societal benefits, there are also concerns regarding developing agritourism or other tourism activities in rural area. For example, Britton (1982) points out that tourism has high external leakages and questions have been raised over the level of economic benefits passed on to indigenous economies. Rodenburg (1980) indicates that Large-scale star hotels in developing countries often have few ties to local communities, which results in

lower multiplier values. With such concerns, researchers call for a symbiosis between these two industries (Telfer & Wall, 2000) and stronger economic impacts by strengthening agriculture-tourism linkages (Telfer & Wall, 2000; Berno, 2011; Rogerson, 2012).

Integration on Regional Development

While the boundaries between tourism and other industry become weaker (Poon, 1993), they become one of the major factors limiting local benefits from tourism development (Walpole and Goodwin, 2000). To find solutions, several researchers hence turn for alternative perspective to inspect these problems. They find that using local resources in tourism could be a development of links between the tourism industry and other livelihoods (e.g. Saarine, 2006). Burns (1999) refers to this approach by the term 'development first'. In the development first approach, tourism industry is placed in the context of regional or national development needs. This decentralization of tourism emphasizes on strong integration with regional development goals, economies and communities, and creates a basis for the networks, use and accumulation of social capital at local level (Saarine, 2006). Consequently, tourism could more effectively benefit regional development and its own economic growth purpose.

Several scholars have adopted development-centred approach in their research regarding regional development and tourism planning. They propose an integrated approach to tourism development. For example, Considering the seasonality of tourism in northern Finland, Saarine (2006) suggests that tourism industry and regional tourism planning strategies should aim for integrated strategies and local participation in tourism development and product design. Kauppila et al. (2009) call for a functional collaboration between industries dealing with resources diversification and purchase chains. They think it would provide better opportunities for creating long purchase chains within the area and thus satisfy the need of the indirect demand of the tourism industries. By investigating Whisky tourism in Scotland, Stoffelen and Vanneste (2015) find that due to inadequate regional inclusivity, opportunity for gaining more from whisky tourism may be missed. To increase social and spatial position of tourism in region-building processes of rural destinations, provision of institutional support for local networking agencies such as local community and entrepreneurial organizations would also contribute.

A fair and effective collaborative approach, or integrative approach on regional development by development policies and practices is considered to benefit both tourism and rural communities (Keyim, 2017). In this study, regarding the interrelationship of tourism and agriculture, examining how these two industries are integrated intentionally can help understand the perception of stakeholders e.g. the government, and hence can understand the co-evolution process in a more comprehensive way.

Destination Evolution and the TALC Model

Another perspective to inspect tourism development in rural area is from destination evolution. The emergence of significant studies regarding destination evolution dated back to the 1930s. Gilbert (1939) described the changes, growth and expansion stages of resorts with a spatial development perspective. Later research focused more on the role of tourism demand and spatial change and developed several models of the specific stages of destination development (e.g. Plog, 1974; Stansfield, 1978). Butler (1980) took inspiration from the concept of product life cycle and expanded the Tourism Area Life Cycle (TALC) model to six stages, namely exploration, involvement, development, consolidation, stagnation, and either rejuvenation or decline. In the following decades, a great number of studies have applied this method to analyze the development process of destinations.

Though TALC model has been widely applied and has generated the most relevant destination evolution research stream, it has been criticized either in empirical or theoretical studies. While major doubts are about the limitation of the model concerning its predictability and applicability (Cooper, 1990), there are also conceptual weakness of the TALC model. As Ma and Hassink (2013) summarize, the TALC model fails to specify the differentiation between 'tourism area' and 'tourism product', and to distinct life cycle from evolution and to explain the decline of tourism areas. Therefore, new perspectives are needed to refine the TALC model.

Recently, researchers gain insight from Evolutionary economic geography (EEG) and try to compensate the weaknesses of TALC model (Brouder & Eriksson, 2013). To understand 'how' and 'why' tourism destinations evolves over time, EEG starts to be utilized as to provide theoretical frameworks in tourism research (Ioannides et al., 2015). EEG brings in concepts such as co-evolution and path dependence to analyze regional development trajectory and the interactions between places, products, institutions and sectors (Ma & Hassink, 2013). While the concept of co-evolution is used in the development of technology, organization, institution and industry at different analytical levels (Schamp, 2010), path dependence is applied to explain the decline phenomena (Martin & Sunley, 2006), which strongly compensate the weaknesses of TALC model. The incorporation of EEG into tourism research makes tourism, as an economic subsystem, now studied in a broader social economical context.

Evolutionary Economic Geography

In recent decades, evolutionary economics has emerged as an important part of economic studies (Dosi and Nelson, 1994). While economic geography deals with the uneven distribution of economic activity across space, the evolutionary approach, that is Evolutionary Economic Geography, specifically focuses on the historical process that produce these patterns (Boschma & Frenken, 2011). EEG research pays attention to the long-term processes of change at regional level, with an empirical focus on individuals and firms since it emphasizes novelty and innovation through human creativity as the main drivers of economic

evolution (Brouder et al., 2017).

Boschma and Martin (2010) identify three major theoretical pillars for EEG: path dependence, complexity theory and generalized Darwinism. Path dependence can be interpreted by three historical process, i.e., improbable events have a long-run effect on economic structures, mechanisms of increasing returns or network externalities reinforce situations created by chance (i.e., lock-in), and external shocks can disrupt the persistence of lock-in patterns (see Martin, 2009). It implies that history matters and focuses on how reinforcement mechanisms lead to path dependence. Complexity theory refers to the complex process that local firms and industries are characterized by a variety of technologies, activities, competitors, indicating that the economy of the region is influenced by constant dynamic interactions with surrounding agents. While path dependence focuses on the retention of existing knowledge and complexity theory on the co-existence of heterogeneous paths (Brouder and Eriksson, 2013), generalized Darwinism examines how different entities evolve through interaction among themselves, the landscape, and even populations in other regions (Essletzbichler & Rigby 2010). Regions are regarded as selection environments within and across which evolutionary processes operate instead of units of selection. In recent years, researchers consider that tourism, as a place-based sector, is open to wide variations in its development depending on local factors and it is suited to introduce concepts from EEG in tourism studies (Brouder and Eriksson, 2013). Therefore, EEG perspective has been applied in tourism studies to analyze the interactions and relationships beyond the tourism sector.

In EEG studies, concepts from modern evolutionary biology are introduced to explain the evolutionary process in the region. Regarding tourism studies, several researchers find that those concepts are useful while they are introducing EEG perspective. One of the concepts widely used is co-evolution. Derived from biology, the term 'co-evolution' refers a situation which 'two evolving populations coevolve if and only if they both have a significant causal impact on each other's ability to persist' (Murmah, 2003:210). Many researchers utilize the concept of co-evolution to understand the interdependent relationships among tourism industry, knowledge, technology, organizations, institutions. For example, through the study of the Gold Coast, Ma and Hassink (2013) find that the development trajectory in Gold Coast is non-linear and complex because of various feedbacks and self-reinforcing interactions amongst components. Such path-dependent processes and coevolutionary mechanisms of tourism products, sectors and institutions make it difficult for an individual element to initiate radical change in the region. Garcia-Cabrera and Duran-Herrera (2014) find that Spanish tourism firms smoothly co-evolved with new regulations and participate intentionally in co-evolutionary processes. This ultimately creates a more competitive environment and efficiency gains. Moreover, Brouder and Fullerton (2015) adapted the co-evolutionary theory for analyzing different tourism development paths in Niagara region in Canada, discovering that numerous co-evolving paths of tourism development can be seen at micro-level and meso-level, and lead to intra-regional diversity.

Since this paper aims to explore how tourism and agriculture industries interact and develop within specific institutional environment, the concept of co-evolution fits and hence is utilized

in this study. However, since EEG pays more attention to interpreting development trajectory but less to formulating institutional approaches (Boschma & Martin, 2010), it still needs the supplement of other suitable theories for implementing its outcome into planning and governance strategies.

Conceptual Model

The above four approaches in tourism study in rural area demonstrate different perspectives to inspect tourism-agriculture relationship and regional development. However, two selected cases are embedded in different contexts, i.e. the Netherlands and China. Therefore, the directly application of these approaches in this study is not appropriate, and a conceptual framework need to be developed. So far, most tourism and regional development researches in China study about the development of agritourism or other tourism activities in rural area, and its impacts on rural area, not especially referring to agriculture sector (e.g. Li & Cao, 2004). The TALC model was introduced into China in 1990s and was utilized to analyze the stage of destination in Chinese context (e.g. Lu, 1997). While the introduction of EEG in tourism is quite a recent approach which is mainly applied in Europe, only limited researchers attempt to utilize it in the Chinese context (see Ma & Hassink, 2004). Regarding integrative planning and governance, since the institutional network and policy-making process in the Netherlands and China are different, this approach is more suitable to be utilized to check whether tourism and other industries are integrated in planning approaches and policies.

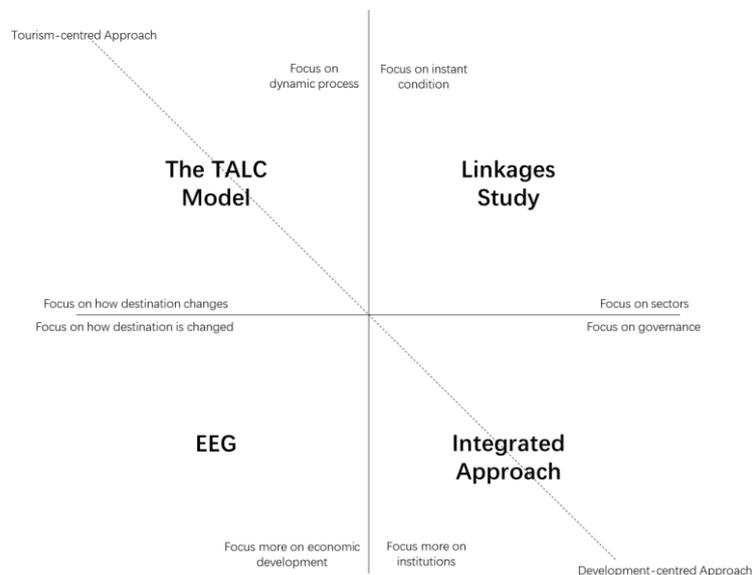


Figure 1 Four approaches introduced in this study

To develop a suitable conceptual model for this study, the strengths and weaknesses of above approaches need to be considered. Regarding destination research, while the TALC model studies the development of destinations, i.e. how destination changes overtime, EEG approach sees a broader context and explores the impacts of other factors in the region and

interactions between tourism and other factors, i.e. how destination is changed. Meanwhile, EEG pays more attention to regional development especially in economic aspect, and integrated approach discusses more about institutional aspects. Furthermore, The TALC model and EEG approaches inspect the development process in a more dynamic way comparing to linkages study and integrated approach. Moreover, these four approaches have different focuses regarding tourism planning and regional development nexus. The TALC model adopts a tourism-centred approach, while integrated approach is development-centred. In terms of linkage study, tourism is accepted as a natural part of the socio-economic fabric juxtaposed with agriculture (Fleicher & Tchetchik, 2003), while in EEG research, though tourism is still the main subject, broader context has been taken into consideration.

Realizing the how these approaches can contribute and suit the study, a conceptual model is developed. The institutional environment sets up the background for tourism and agriculture development. Within such institutional environment, stakeholders of these two industries, participate in relevant actives and then shape the development paths. With the development of tourism, it may have impacts on agriculture, through products, market, etc. On the other way around, the development of agriculture may have impacts on tourism, for example, regarding destination development and tourism activities. During the co-evolution process, the institutional environment and stakeholders interfere. While institutional environment may accelerate or hinder the process, the perceptions of the stakeholders on this process decide how these two industries change within the social, economic and political context. This paper explores the above processes in South Holland and Sansheng Region.

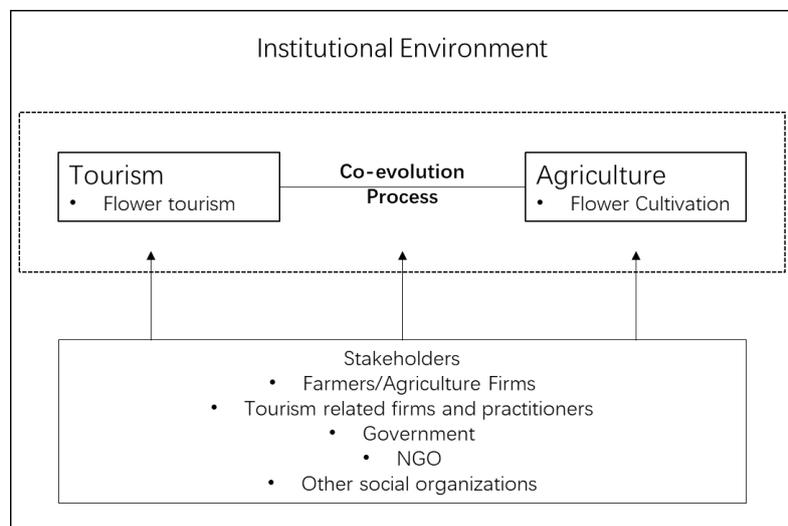


Figure 2 Conceptual Model

3 Research Methods

This paper selects two regions as study areas, namely South Holland in the Netherlands and Sansheng region in China. South Holland is a province of the Netherlands with an area of 3403 km². It is one of the main regions for flower bulb cultivation in the Netherlands. The bulbs cultivated in the Netherlands enjoy a great reputation over the world and the

Netherlands is the largest bulb export country. The main species is tulip, which is regarded as the stereotype of the Netherlands. Other common flowers include Narcissi, Lilies, Gladioli and Hyacinths. The world-famous destination for flower tourism is Keukenhof, which is located in Lisse, South Holland. Keukenhof is one of the world's largest flower gardens, and it welcomes 1.4 million of visitors in 2018 within only 8-9 open weeks (Statista, 2018). Another case, Sansheng region refers to Sansheng County and surrounding rural areas in the district of Jinjiang, the city of Chengdu, China, it is one of the main regions for flower cultivation in Chengdu city. Sansheng region is a 'designated' agricultural production base for cut flower cultivation by Chengdu government. Currently, this region cultivates more than 800 kinds of flowers, and the main species are *Gypsophila paniculate*, Rose, Chinese rose and Carnation. Daily production in Sansheng region occupies about 80% of total amount of cut flowers in Chengdu City. Meanwhile, Sansheng region has been developed into tourist destination which attracted 12 million tourists in 2015 (The People's Government of Sichuan Province, 2016). While having flower cultivation as one of the main agriculture activities and flower tourism as the main tourism activities, these two regions are selected to compare how tourism and agriculture co-evolve in different places and contexts.

To get in-depth knowledge of the co-evolution process in two cases, this study utilizes semi-structured interviews with regional tourism and agriculture stakeholders. Respondents were purposively chosen to include a range of stakeholders in the region. Six formal face-to-face interviews were conducted across South Holland and three telephone interviews were conducted regarding Sansheng region, including representatives of local and regional government agencies, farmers, tourism-related practitioners and NGOs. In the Dutch case, the interviews were arranged beforehand by e-mail, while in the Chinese case, the interviews were arranged by a government official who was contacted through internet. Interviews for the Dutch case were conducted in English and for the Chinese case were conducted in Chinese. All the respondents were informed their rights, the theme of the research topic and general interview content, and all agreed to participate in this research. Two respondents took the interviewer, i.e. the author, on field tour in the region and introduced relevant background knowledge.

Besides interviews, this study adopts document analysis as supplements. Documents include local and regional planning and policies, literature, and reports. Applying document analysis is for having better understanding of background knowledge in both regions and collecting relevant information especially in terms of Chinese case.

4 Co-evolution of Tourism and Agriculture in South Holland

Tulip was introduced to the Netherlands by traders from Turkey in 16th century. Later the knowledge of tulip cultivation was shared, thanks to the Carolus Clusius, and tulip could be grown in the Netherlands. People loved this new species for its bright colors, lines and flames on the petals of the flower, and they also found that the weather and the soil in the Netherlands fits the growth of tulip very well. In the 17th century, tulip was regarded as a kind of currency. It was so popular that the price increased by three times. But at that time, another

kind of flower, Hyacinths, was more popular because of its smell. In the beginning of 20th century, tulip became more popular than Hyacinths because people found a species called Darwin tulip, could grow faster than previous species. Consequently, a large number of companies emerged, and more and more people started to cultivate tulip. The Netherlands had become one of the largest tulip cultivation countries. Nowadays, the Dutch produces billions of flower bulbs, occupying about 77% of flower bulb trade worldwide.

As the largest flower bulb exporter, the number of flower cultivator is declining. According to The statistics by CBS (2017), The number of farms specialised in flower bulb cultivation has decreased by 40 percent since 2000, while total agricultural area used for commercial flower bulb cultivation went up by 16 percent. As Arie Dwarswaard, the editor of Greenity (a magazine for bulb growers and traders), who also works for Royal General Bulb Growers' Association (KAVB) explains:

*The cost of tulip cultivation is stable, and the price of the bulb is also stable ...
But the cost of labour is high. People reduce the cost by using machines
instead of labour.*

Under these circumstances, more fields are utilized for tulip cultivation, implying that agriculture market is developing healthy and cultivators still receive benefits from cultivating tulip. However, due to the lack of land resources in South Holland, most new areas for tulip cultivation are not in this region.

On the other hand, tulip tourism, especially tourism in Keukenhof, has experienced rapid growth in the recent decade. In the last eight years, the number of visitors to Keukenhof has increased from 0.88 million to 1.4 million, and people are optimistic of future increment. Keukenhof, established in 1949 by the then-major of Lisse, was for exhibiting flowers hence promoting flowing export industry. Once open, the garden was soon popular and attracted lots of visitors. Strictly speaking, Keukenhof cannot be regarded as the tourist destination with profit purpose, for it is supported by a foundation and all its revenue is used for its own operating. Different species of tulip as well as other flowers, which are provided by enterprises voluntarily, are exhibited in the garden with a specific theme, and tourists can buy bulbs and souvenirs in the garden.

Besides Keukenhof, some other flower-related tourism activities are developing in the region. One example is agritourism provided by De Tulperij. The owner guides a tour through tulip field, allowing visitors to take pictures. They also educate about tulip and other flowers. Tourists can have tea or coffee, and buy bulbs. Anja Jansze, who is responsible for the tourism part of her family farm, introduces the origin of this business:

*We had the green house in winter time to grow tulip flowers ... But we [have a]
little farm, you need to have very big [farm] to get enough money to manage*

a farm at this time ... we are thinking we have a nice green house, what can we do ... so we [decided to] tell about tulip, how nice it is and how the [growing] process it [has] about five years ago.

The number of tourists to De Tulperij increases rapidly, and now it has become one important part of tulip tourism route in the region. Besides De Tulperij, some other firms start to provide experiential activities on the farm, such as flower picking. However, the number of this kind of farm is not too many. One reason is operating such farm cost too much time and efforts; another reason is that most enterprises and farmers make profit by selling flower bulbs, which is much more than tourism revenue.

The growth of tourism exhilarates stakeholders. However, except De Tulperij, who considers that agritourism help increase their sales, other stakeholders perceive that the development of tourism does not help in agriculture in a direct way, for example increasing the price or sales, but more in an indirect way, for example popularizing knowledge and branding:

Tourism can help people understand how flower grow ... and other knowledge about the flower.

Because of the fact that flower bulb [transaction] is happening in a free market, you only can produce more flower bulbs if the market accepts all these bulbs ... unless you say [that] the growing tourism in the Netherlands has impacts on the popularity of tulip.

On the other hand, regarding the impacts of agriculture development on tourism, several stakeholders think agriculture have not much impacts on tourism. One aspect that agriculture development may benefit tourism is that the innovation in agriculture. While there is a new species with special color, it may attract people's attention and arouse interest.

Regarding Dutch government, agriculture development is monitored by agriculture sector while tourism belongs to economic sector. While in terms of agriculture, the agriculture sector examines the quality of flower for guaranteeing the quality, the economic sector focus on creating more tourism avenue. The function of these two sectors do not have much overlaps.

In South Holland, tourism and agriculture activities are governed through the control of land use. There are strict rules for agritourism, for no road is allowed to be built on farm and farmers need to ask for permission if they want to develop a destination or develop larger areas. Meanwhile, farmers are allowed to conduct small amount of other business for example, providing tea and leisure activities, as long as flower bulb cultivation is the dominant business.

On tourism development, the region is now looking for more alternatives. Helma Matthijssen,

the policy officer in Werkorganisatie HLTsamen introduces their objectives:

We make tourism not only happen in Spring, but whole year round ... we look for museums, castles and other places and ideas.

Six villages and local government collaborate, together making plans and formulating development strategy for regional tourism development. On one hand, they try to create a better environment for leisure tourism by improving facilities such as roads, and bike routes. On the other hand, they are promoting other flower tourism which may attract tourists not in tulip season, but in other days of the year. The government of Lisse, meantime, try to make use of the popularity of Keukenhof to attract more people to the village by creating flower-related events and activities. What's more, they promote regional tourism through organizations such as VVV Lisse to introduce locations, activities and to share tourism information.

Besides government, other non-governmental organizations are also impacting tourism and agriculture development. For example, Tulip Promotion Netherlands (TPN) promotes various activities annually, such as National Tulip Day. Such activities aim to draw the attention of consumers and therefore stimulate the sales of tulip. In agriculture, there are organizations helping farmers sell their products and helping in technical issues. These organizations mainly focus on agriculture issues, and do not impact tourism development or not be impacted by tourism directly. As Esther den Hertog, who works in the organization of flower science says:

Now we focus on a better product... better quality and healthier product...but I don't think tourism come here for the quality of the bulb, they come here for the colors...they [tourists] are happy when they see the colors, but I don't see a connection that they will buy the bulb several months later even though they are now happy.

To sum up, while agriculture in South Holland grows steady, tourism develops rapidly in the recent decade. The most important factor which contributes to the tourism growth is Keukenhof. It's worth mentioning that agritourism now in South Holland is also developing fast. Not only the number of tourists who visit De Tulperij increases every year, but also more farmers attempt to organize tourism-related activities, such as flower picking. Except for De Tulperij, who involves in agritourism, other stakeholders perceive that interaction between tourism and agriculture is more indirectly. Regarding institutional environment, there are quite strict restrictions on agritourism development, however, government tries to promote tourism in some other ways for example, through propaganda, event creation, and improving infrastructure. NGOs and other organizations in either industry help shape the development trajectory but have less influences on the other industry.

5 Co-evolution of Tourism and Agriculture in Sansheng Region

Chengdu city, which Sansheng region is in, has a history of flower cultivation for about 1800 years. The industry declined in Song Dynasty and rejuvenated a little in Qing Dynasty. About 300 years ago, Sansheng region started to produce cut flowers. In the reign of Emperor Qianlong (from 1736 to 1796), Sansheng region was famous for producing jasmine flowers. The flower industry of the whole city stagnated after the founding of China. Later after 1970s, a few farmers began to cultivate flowers. However, due to the limitations of social-economic conditions, their sales were low. While the flower market became better in the late 1990s, the cultivation area in the city increased tremendously.

In the beginning of the 21st century, Sansheng region, which was one of the main flower cultivation areas in Chengdu city, was developed into a tourist destination. In 2003, Hongsha village in Sansheng region was graded as a national AA scenic tourist area. Two years later in 2005, Hongsha village, together with four other villages, was graded as a national AAAA scenic tourist area. These five villages are called the Five Golden Flower Villages and Sansheng region is called Sansheng Flower Village. Nowadays, Sansheng Flower Village is the second tourist destination in Chengdu city.

Sansheng region is a densely populated area compared to other rural regions, with about 467 m² per-capita average available cultivation land. The tense land resource makes it hard to develop traditional agriculture. Local government then looked for alternatives and decided to develop tourism. As a government official says:

Because the average available cultivation land was too less. We did not have advantages if we still stuck on agriculture... at that time [at the beginning of 21st century], the center government was promoting rural tourism, so we thought it might be a good idea to develop tourism.

Meanwhile, some farm families in the region turned to agritourism business. The services provided by agritourism are less land dependent, mainly including having local food, accommodation and some indoor and outdoor activities. Since Sansheng region is not far from the city centre of Chengdu, this newly destination attracts lots of citizens. Later, the benefits of agritourism business attract more house owners to start agritourism services in the region. Nowadays, this region has hundreds of agritourism businesses. Meanwhile, besides sight-seeing agriculture, the destination creates plenty of tourism activities, such as outdoor expeditions, children's park and so forth. It is a place that friends, families and colleagues would like to go together for relaxation.

The agriculture has developed in Sansheng region in recent decades. Before tourism development in the early 2000s, the scattered cultivation fields were owned by villagers. Then land resources had been adjusted for the layout needs of tourism activities and tourist experiences. Some fields have been used for building houses and some cultivated plants in

some area had been changed into the flowers which had better visual effects. In recent years, land resources have gradually been integrated that enterprises contracted for family farms to enjoy the benefits of economic of scale. farmers chose to find work outside the region or develop agritourism in the village. With tourism development in the region, agriculture industry has changed:

In recent years, the price of agriculture project has risen, not because of tourism development in this region... but confirming to the trend that everything has become expensive... [however] tourism activities bring more people here to our flower market... because we mainly sell to citizens in Chengdu, with so many tourists, we sell better...

Due to the weather and soil condition, the quality of flower in this region is less competitive than some other flower cultivation region in China, therefore, agriculture products mainly serve the demand in Chengdu. Tourism development creates new sales channel. Meanwhile, a large flower exhibition market is in region, bringing huge tourism revenue. When people come to Sansheng region for flower trade, they dine in the region, and maybe entertain and accommodate in the region.

The development of Sansheng region is strongly interfered and controlled by government. In the early 2000s, with the support of city government, local government decided to develop tourism, which changed many farmers' lives. Infrastructure was built by city and regional government to ensure the accessibility of this region. Moreover, at the beginning phase of agritourism, subsidy was provided to the farm families who were willing to start tourism business. What's more, government conducts propaganda to popularize Sansheng region and attract more tourists. Besides, since flower is not the most beneficial agriculture product, government encourage flower cultivation by providing subsidy. As a manager in flower cultivation enterprise says:

Now [the government] is in the approach of building beautiful city, they want to combine agriculture with landscape, so they give subsidy to the farmers who grow specific flowers.

To sum, the co-evolution of tourism and agriculture in Sansheng region is strongly driven by government. The agriculture (flower industry) is developed with political purpose and tourism is developed utilizing a lot of governmental resources. Though consuming so many governmental resources, the economic return is considerable. The previous poor region now becomes a famous tourist destination. The linkages between tourism and agriculture seem to be strong, for tourism help agriculture in selling its product, while agriculture attracts tourists to the region.

6 Comparison between two cases

The Dutch case and the Chinese case present two different co-evolution processes within different institutional environments. In the Dutch case, the impacts of each industry on the other seem to be weaker. Firstly, these two industries have involved in global market, which is more stable. Secondly, since in the Netherlands, tourism product (in this paper refers to products used for attracting tourists) is different from agriculture product, implying that each industry needs more efforts to link to the other industry. Therefore, their impacts are perceived more indirectly. In Chinese case, flower is the tourism product that destination wants to exhibit, as well as the agriculture product and farmers want to sell. Therefore, the interactions between tourism and agriculture is more directly. It indicates that tourism and agriculture are easier to have large impacts on each other. The differences in these two cases are due to the inherent characteristics of the industry (flower species) and development strategy. Less interaction between two industries in the Dutch case presents that two industries are in a more stable condition, while direct interaction in the Chinese case indicates that these two industries fluctuate easier, which may lead to rapid growth or rapid decline.

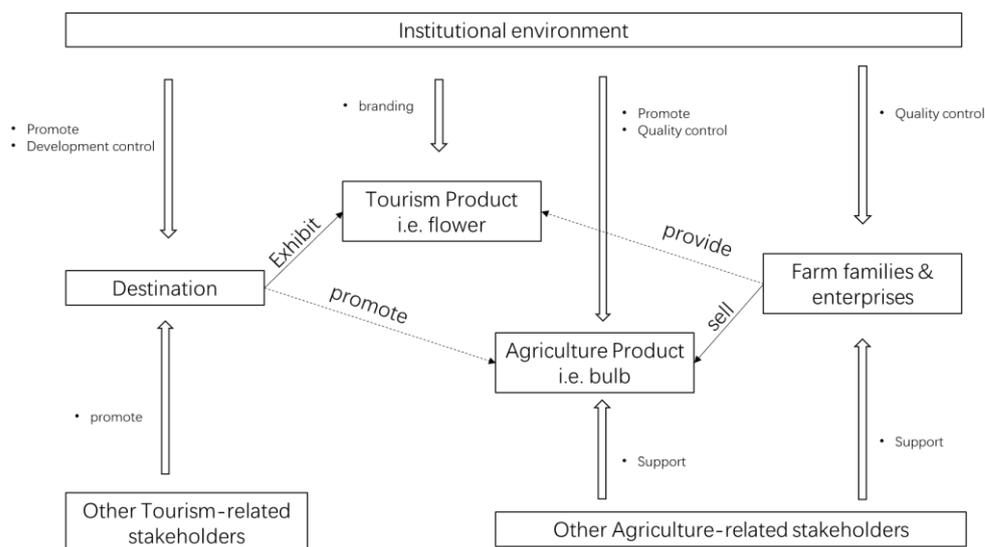


Figure 3 Co-evolution of tourism and agriculture in South Holland

The institutional environments in two cases differ largely. In the Chinese case, top-down policy implemented process leads to the situation that political intentions play important roles in the co-evolution process. Government hold dominate power in making decisions. When other stakeholders for example, farmers make decisions, economic issues and political issues will be considered simultaneously. In most circumstances, integration only occurs at implementation stage (i.e. land resources integration). In the Dutch case, the institutional environment is more like a 'defender', setting the baseline for development. Decisions are made in a more market-oriented way. The integration in the Dutch cases presents in the collaborate governance by local governments in the region. Different institutional environments can shape the development paths in different extent. While Sansheng region demonstrates an example of rapid regional development, there also should have concerns about the risks since the

development may be largely negatively influenced due to unsuitable policies.

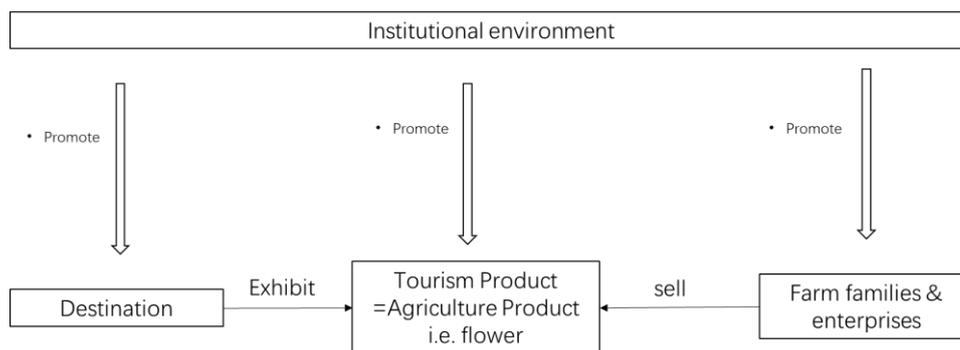


Figure 4 Co-evolution of tourism and agriculture in Sansheng region

7 Conclusion and Discussion

This paper studies the co-evolution process of tourism and agriculture in different context. Study shows that tourism and agriculture interact with each other to a certain extent. When there are more overlaps between tourism products and agriculture products, for example, in Sansheng region, the linkages between these two industries are stronger and more direct, and the development trajectory of one industry may be impacted easier and to a larger extent. Therefore, it throws insight into development strategy. Choosing a more advanced strategy by strengthening the linkages of two industries or selecting a more conservative strategy by weakening the linkages depends on the objectives.

This study also exposes some theoretical limitations. Due to the different institutional structure and governance approaches, integrated approach does not entirely suit for analyzing Sansheng region. Though the conceptual model can be utilized to examine the impacts of institutional environment on co-evolution process, it helps few in providing suggestions from an integrated perspective in Chinese context. Moreover, due to limited schedule, there are missing links between other stakeholders and the co-evolution process in Sansheng region. Future research may include more stakeholders to get a more comprehensive understanding.

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