A New Framework of Distributed Economies
Study on the tourism evolution of Jiuzhai Valley, China

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Thesis for the fulfilment of the
Master of Science in Environmental Sciences, Policy & Management
Lund, Sweden, June 2011

MESPOM Programme:
Lund University – University of Manchester - University of the Aegean – Central European University
This thesis is submitted in fulfilment of the Master of Science degree awarded as a result of successful completion of the Erasmus Mundus Masters course in Environmental Sciences, Policy and Management (MESPOM) jointly operated by the University of the Aegean (Greece), Central European University (Hungary), Lund University (Sweden) and the University of Manchester (United Kingdom).
Acknowledgements

I would like to first express my heartfelt thanks to my supervisor, Prof. Thomas Lindhqvist, for his great guidance and support. It was in his and Mikael’s course of Strategic Environmental Development that I was well introduced to the topic of distributed economies. We had very good discussion in and after class, and we carried on such discussion during the thesis period. Thomas is my highly admired teacher and researcher, from whom I have learned a great deal. Tack så mycket!

I would then thank Prof. Lars Hansson, who first introduced the MESPOM program to me and has always been helping and encouraging me ever since we first met at Shandong University, China in the spring of 2008. He is not only a teacher, but more like a very close friend and a family member to me. Words cannot express my gratitude to him.

I also would like to thank Prof. Ding Yanqiang at School of Economics, Shandong University, who was my teacher and thesis supervisor during my undergraduate study. Three years ago, I wouldn’t have thought about spending two years in four countries in Europe and joining a master program on environmental studies. It was Ding’s connection and friendship with IIIEE, Lund that changed my life track in some way.

I also owe a lot to all the other teachers in the MESPOM program, and my dear friends and classmates, who have accompanied me in the past two years. There’s a Chinese word, “Yuan” (“缘”), which is explained in Wikipedia as “a Buddhist-related Chinese concept that means the predetermined principle that dictates a person’s relationships and encounters, usually positive, such as the affinity among friends or lovers.” Two years ago, we didn’t know each other; during these two years, we met and started to know each other and became friends; now, two years later, we are about to depart. The good thing is I’m the kind of person who always treasures the “Yuan” to my maximum. I sincerely hope my “Yuan” with all the MESPOM participants will persist and grow in the future, and I wish everybody the best of luck!

Now, it is the time to thank my parents. I always feel words are so weak and incapable in describing my parents’ generous and deep love and in expressing my gratitude to them. All the best to my family!

Finally, I would like to thank myself. In the pronaos of the Temple of Apollo at Delphi, an Ancient Greek aphorism was inscribed: “Know thyself” (Greek: γνῶθι σεαυτόν). The same idea is also in the very heart of traditional Chinese philosophy. I’m very happy that after these two years, I know myself more and better. In addition to that, I know others, and the world more and better. This is the priceless gift I have gained in these two years.

Xiao Li

Lund, May 2011
Abstract
The thesis puts forward a new framework of Distributed Economies (DE) based on summarizing the deficiencies in existing studies. This new framework is utilized to study the tourism evolution of Jiuzhai Valley, China. It is analyzed that tourism development in Jiuzhai Valley has the evolutionary sequence changing from small-scale service units run by the local residents to large-scale, centralized units. Factors, such as institutional arrangement, technology and knowledge limitations, can be seen as explanations for the misbehaviors of small-scale businesses at the starting period of tourism. Government played a influential role in bringing about the evolution by direct regulatory policies. It is also concluded that the new framework of DE can deal with a wider range of real-world cases, e.g. tourism in China. In this sense, this new framework shed lights on the improvement of the theoretical framework of DE and the expansion of its study scope.

Keywords: distributed economies, tourism, China, Jiuzhai Valley
Executive Summary

Distributed economies (DE) coined by Johansson et al. (2005) is an emerging and evolving concept, which provides a framework on the innovative solutions to sustainable regional development by developing small-scale, decentralized and flexible units that are synergistically connected with each other, make use of local resources, and in return directly contribute to the welfare improvement of the locals.

As a topic still under development, DE has two main categories of substantial knowledge gap: deficiencies in theoretical framework and narrow scope in case studies.

It can be found based on the existing studies that there are considerable difficulties in carrying forward the academic studies and promote the strategy in reality. The concept of DE is generally descriptive by highlighting some key principles, such as small-scale, flexible and local production units, connections between different units, quality-oriented products, good environmental performance, value addition to local resources, innovation, and so on (Johansson et al., 2005; Mirata et al., 2005).

What is more, the context in which DE is discussed will also influence the validity of its current theoretical framework. It can be observed that in developed countries it is generally easier to find examples aligned with DE principles than in developing countries. The small-scale business in developing countries may possess different characteristics due to the economic, social and institutional reasons of the country. It would be interesting to examine the existing DE framework in the context of a developing country. In this way, the critical review of the current framework can be done and the specific context may bring insights in the review process.

Among the vast range of developing countries, China is perceived to be an interesting example to focus the study on.

The research objectives of the thesis are:

(1) To improve the validity of the theoretical framework of DE;

(2) To extend the scope of DE case studies to developing countries, such as China.

Since the topic of the thesis is relatively new, there is rarely existing analytical framework, which can be directly utilized. The author develops his own analytical framework in order to study the problem and reach the research objectives. The development of the framework itself is also part of the innovative contribution of the thesis.

With the in-depth study on literature and practice, it is discovered by the author that the concept mixes the set of key characteristics together. It is worth noticing in certain conditions or context the characteristics can even be conflicting. Compared with generally good impression of small-scale, local business in developed countries in the sense that the products and services provided can satisfy consumer’s special quality requirement, many such businesses in China have the problems of lack of consumers’ trust in quality and safety, which generally undermine their attractiveness for consumers.

It is proposed by the author to divide the set of key characteristics of DE in two categories: “physical characteristics” and “functional characteristics” (expected benefits). As shown in the Figure below, in practice, economies with the physical characteristics (left oval) of small-scale
and local-owned do not necessarily have the benefits of the functional characteristics (right oval). Examples are shown in tourism in China.

The new framework of DE embodies the dynamic relationship between the “physical characteristics” and “functions characteristics”. It is important to figure out the success factors to help achieve those functional characteristics. As shown in the Figure 4, these factors include but not limited to consumers’ preferences (demand-side), institutional issues, technology, awareness and capacity. This new framework provides a framework to study issues in China from a DE perspective.

The research question of thesis is:

*In the evolutionary sequence of a typical tourism area in China, what is the dynamics between the “physical characteristics” and “functional characteristics”?*

This research question is to some extent utilizing the new framework of DE to study the evolutionary sequence of a typical tourism area in China.

Jiuzhai Valley is a natural park located in Sichuan Province in Southwestern China. It is a famous tourists’ destination.

The evolution of the characteristics in different stages of tourism development can be summarized based on the above literature (Zhang et al., 2010). When Jiuzhai Valley started to be open to the public in the 1980’s, residents in the area began to participate in providing small-scale family hotels and other tourism services. With the increase of visitors in the 1990’s, there were intensive family hotels and emerged. The administration bureau started to hire resident to let them join the administrative work, and in this way the income and lifestyle of local residents were improved to some extent. However, with the deteriorating conflicts among increasing number of visitor, worsen environmental burden and the voice of local residents, the governmental administrators carried out strong actions to meet the challenges and lead the transformation of tourism development. The scheme of “sightseeing inside the valley; accommodation outside the valley” was initiated and implemented in 1998, and all the hotels inside the valley were shut down and demolished. In the next year, environmentally-
friendly sightseeing buses consuming liquefied petroleum gas were introduced with an investment of RMB 160 million. All the other motor vehicles were forbidden to enter the sightseeing area, and the problem of air pollution was mitigated. In addition to these actions, tourists’ center providing environmental education was established, and the policy of returning land for farming to forestry and grass was carried out. However, the scheme of “sightseeing inside the valley; accommodation outside the valley” violated the interest of local residents running business inside the valley. In order to solve the conflict, every year RMB 8.36 million from the ticket income was distributed to the local residents inside the valley by the administration bureau. Moreover, Jiuzhai Valley Cooperative Business Company was established. The local residents invested in company and thus held their own shares. The company provides food service in the Nuorilang service center, which is the only restaurant in the sightseeing area. The 195 shopping counters for tourism goods were all leased to the locals. The local residents also played a major role in administrative services.

In the context of China, tourism development in Jiuzhai Valley has the evolutionary sequence changing from small-scale service units run by the local residents to large-scale, centralized units. Factors, such as institutional arrangement, technology and knowledge limitations, can be seen as explanations for the misbehaviors of small-scale businesses at the starting period of tourism. The evolution has helped solve the problem of vicious competition among local businesses, and improve the quality of products and services. However, the problems with the large-scale, centralized service units emerged in terms of price manipulation and inertia disincentive to innovate and further improvement. Government played a vital but controversial role in bringing about the evolution by direct regulatory policies. It would be interesting to follow the future evolution and development trend. The change of influential factors, such as institutions, technology and awareness, are believed to foster further transformation. At the same time, the role of government will also be an important factor.

The case study done by the thesis also provides the first example in terms of utilizing the new framework of DE in analysis. By doing so, the new framework of DE initiated by the author got tested, and it shows that it can deal with a wider range of real-world cases, e.g. tourism in China, with higher operability and veracity. In this sense, this new framework of DE shed lights on the improvement of its theoretical framework and the expansion of its study scope.
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Abbreviations
DE  Distributed Economies
1 Introduction

1.1 Background
Distributed Economies (DE) coined by Johansson et al. (2005) is an emerging and evolving concept, which provides a framework on the innovative solutions to sustainable regional development by developing small-scale, decentralized and flexible units that are synergistically connected with each other, make use of local resources, and in return directly contribute to the welfare improvement of the locals. Although DE is by no mean a panacea, compared with the more traditional pattern of production and consumption systems, it has the potential to shed important insights on a new strategy to achieve regional sustainability.

1.2 Literature Review

1.2.1 The Scope of existing studies
As a relatively new topic, there exist a limited number of studies on DE. Johansson et al. (2005) initiated the concept and Mirata et al. (2005) provided more detailed examples to elaborate it. Besides these two published journal articles, the remaining studies are mainly relevant reports done by IIIEE researchers and master students at Lund University. It can be found that the major areas touched upon by the existing studies are the sectors of energy, food and tourism.

Different economic sectors differ significantly regarding the suitability for DE. Some sectors are more advantageous in this strategy, while some others can be inherently more appropriate for an alternative model. For example, it is likely to make much less sense to build a system of small-scale and decentralized production units in the industries of steelmaking and the mining of some nonferrous metals. In contrast, there can be positive visions to develop tourism with a system of local and small-scale facilities. It is irrational to blindly apply the idea of DE in all sectors without considering the specific conditions of each and every sector. In order to foster the development of DE, it is reasonable to indentify certain pilot areas which are more suitable and have a higher chance of success for the new development strategy. Based on the existing studies, the sectors of energy, food and tourism can be identified as such pilot areas.

1.2.1.1 Energy
The idea of DE was derived from the practice in energy-related projects. Energy is a field where the strategy has been most studied and applied. Success stories and experiences have been summarized and discussed. The idea has also been implemented in many places in the world. It can be regarded as the most mature field to carry out the practice of DE. Mirata et al. (2005) provides five in-depth case studies, and all of them are examples in the domain of energy. They share some common characteristics in the sense of producing energy from local, renewable energy sources. Instances include the biomass based district heating and electricity production in Nordic countries, co-combustion of gasified biomass and source separated waste in Lahti, Finland, biomass based energy system with Salix plantations in Enköping and the community owned windmill parks in Nova Scotia, Canada.
1.2.1.2 Food
Cases, such as small-scale organic farming, sustainable alternative to coffee production, and milk co-operatives and small-scale diaries, were studied by a group of IIIEE master students in 2009 to explore the food sector aligned with the principles of DE (IIIEE, 2009).

Since the green revolution starting from the 1940’s, the modernized, industrialized agriculture has made great contribution in solving the famine problem on the earth (Hazell, 2009). However, the traditional connection between farmers and food consumers has the risk of getting undermined, with the large-scale agricultural products distributors and food processors, in the middle of the business chain, getting more power in controlling the quality of food. The quality of food lies not only in the product itself but also in producing methods (Sonnino and Marsden, 2006). In this way, customers’ need is less easy to get satisfied for the food with special quality produced in local, small-scale traditional farms and food mills. In addition to the pursuit of quality, with the influence of green consumerism, there has also been advocacy for buying and eating local food in order to reduce the environmental footprint from long distance transportation and other activities. Slogans, such as "Eat Local, Buy Local, Be Local", can be an indicator showing the advocacy in the public to favor local food.

In view of the preference for local and cooperative way to reorganize the food economies, the positive business opportunity needs to be sought to realize the characteristics of DE. There has been the so-called local food movement to develop collaboratively a local, self-reliant food production and consumption system. The procedures of food production, processing, distribution and consumption are aimed to be organized and integrated in order to improve the sustainability of a certain place (Feenstra, 2002). For example, in Europe and North America, there are cooperative networks of local farmers and food producers, who have started direct business connections with consumers through the way of online market and transaction (Sonnino and Marsden, 2006). This not only helps create new market channels but also increases economic gains because of shared, low overheads of website costs.

1.2.1.3 Tourism
Mass tourism, which exploits ecosystem resources in tourist destination in an unsustainable manner, can cause heavy, negative environmental impact. Also, the large-scale, highly commercialized and standardized facilities and entertainment activities have been becoming less attractive to tourists.

In contrast, there has been advocacy and practice of new ideas for tourism development, such as ecotourism and sustainable tourism. Taken ecotourism as an example, its concept has started to be formulated since 1990. It was defined by the International Ecotourism Society (TIES, n.d.) as “responsible travel to natural areas that conserves the environment and improves the well-being of local people”. Ecotourism has been a fast growing niche market within the tourism industry during the past two decades, and its framework has been under discussion and development as well (Wood, 2002). Although there remains criticism on the looseness of its concept, there has been some consensus on the basic principles or criteria for ecotourism. For example, TIES emphasizes the principles as such (TIES, n.d.):

• Minimize impact;
• Build awareness and respect for the environment and culture;
• Provide positive experiences for both visitors and hosts;
• Provide direct financial benefits for conservation;
• Provide financial benefits and empowerment for local people; and
• Raise sensitivity to host countries’ political, environmental, and social climate.

Some more principles can be added by other studies, e.g. “delivered primarily to small groups by small-scale business” and “rely on infrastructure that has been developed in harmony with the environment” (Wood, 2002).

It can be found from the above illustration that the ideas of DE and ecotourism share the same principles in terms of low environmental impact, small-scale business, empowering the locals, creating economic benefits and welfare improvement for the locals and so on.

The sector of tourism started to be intensively explored by a group of IIIEE master students in 2010 (IIIEE, 2010). Although the selected cases were widely across the world, their studies on sustainable development of islands from the perspective of DE to some extent converged at the focus of tourism sector. In particular, Bai and Li (2010) attempted to construct the overall framework for developing tourism aligned with the principles of DE (Figure 1) in their study of ecotourism development in Green Island, Taiwan. The core competitiveness of ecotourism roots in the local eco resources and culture. The local people have the incentives to get activated and engaged in the development of tourism in order to get financial benefits and sustain their own culture and lifestyle. The supporting sectors and facilities, such as food production, accommodation, catering, transportation and energy system should be built adapted to local conditions, in use of local resources and with local uniqueness. These can provide local and diversified experience for tourists and add new elements of attractiveness. In return, the profits from tourism can be better retained in the region compared with the condition where big, monopolistic tourism enterprises take the majority share of the gains.
1.2.2 Knowledge gap

As a topic still under development, there remains substantial knowledge gap for studying DE. Two main categories of knowledge gap are indentified and illustrated below.

1.2.2.1 Deficiencies in theoretical framework

The theoretical foundation of the framework requires further consolidation in light of the fact that most existing studies focus on case study rather than theoretical exploration. Fundamental questions which constitute the cornerstones of the theoretical framework of DE remain to be answered. First and foremost, there is a lack of a rigid framework and a set of criteria for the concept. The existing studies have identified a few key characteristics of the concept, such as small-scale, local, flexible, decentralized, “connected with each other” (Johansson et al., 2005). Based on these key characteristics, it can be judged whether a case has elements aligned with the concept. However, the understanding of the concept can differ among different researchers and practitioners. This is an obstacle for carrying out further research and academic communication on the topic. It also brings about the difficulty in communicating and practicing it in real world. Secondly, the idea of DE has not been theoretically justified. It is more like a summary of experiences in practice. That is why there remains debate among technologists, economists and other relevant specialists. There is also doubt about whether the idea of DE can get justified under the current framework. Besides
the above two deficiencies in existing studies, a couple of further questions to be answered can be identified, such as the methods to measure the success of DE and to judge whether certain sectors and areas are suitable for the application of the strategy. A list of such questions is shown in Table 1 below.

**Table 1  List of questions relevant to the discussion of DE**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the alternatives to DE? Enumerate them instead of only having obscure impressions</td>
<td>Prerequisite for comparative study between different options</td>
</tr>
<tr>
<td>Is it possible to theoretically testify DE, like the theoretical reasoning for economies of scale? A leap from practice and summarizing experiences further up to general theory</td>
<td></td>
</tr>
<tr>
<td>What are the criteria to judge whether it (real world practice) fits in DE?</td>
<td>Mirata et al. (2005) raised this question and gave some answers.</td>
</tr>
<tr>
<td>What are the important success factors for DE? Mirata et al. (2005) raised and highlighted this question and gave some answers.</td>
<td></td>
</tr>
<tr>
<td>Why some places/situations are suitable for the development DE and some are not?</td>
<td></td>
</tr>
<tr>
<td>How to determine which places/situations are suitable for the development DE and which are not?</td>
<td></td>
</tr>
<tr>
<td>What are the factors that hinder the evolution of DE? What are the barriers?</td>
<td></td>
</tr>
<tr>
<td>How to foster a development towards DE? Some elements, methods, policies?</td>
<td>Mirata et al. (2005) raised and highlighted this question as a topic for further exploration.</td>
</tr>
<tr>
<td>Is government a helping hand or a distorted hand in fostering DE?</td>
<td></td>
</tr>
<tr>
<td>What are the pilots areas/sectors to start the development of DE?</td>
<td></td>
</tr>
<tr>
<td>How to balance between small and large scale? Balance in what scope?</td>
<td>There seem to be some explicit explanations within technological field.</td>
</tr>
<tr>
<td>How to develop some ways to measure the success of DE?</td>
<td></td>
</tr>
<tr>
<td>DE as an instrument or engine to create innovation? Why? What are the reason and evidence?</td>
<td></td>
</tr>
</tbody>
</table>

1.2.2.2  Narrow scope of case studies
The scope of existing case studies is relatively narrow. As illustrated in Section 1.2.1, the economic sectors which have been studied with the perspective of DE are limited. Energy-related projects take up a majority share of the examples (Mirata et al., 2005). Further, it is also noticeable that the geographic boundary of the studies needs to be expanded. So far the stories have mainly been limited to the context of some European developed countries. However, the discussion of DE can be largely context-specific.

1.3 Research Problem
It can be found based on the above discussions that there are considerable difficulties in carrying forward the academic studies of DE and promoting the strategy in reality. The
concept of DE is generally descriptive in terms of highlighting some key principles, such as small-scale, flexible and local production units, connections between different units, quality-oriented products, good environmental performance, value addition to local resources, innovation, and so on (Johansson et al., 2005; Mirata et al., 2005). The misconceptions about DE can easily be found. Confusions can easily come up when DE is read about and discussed. These questions can be: does DE violate the Law of Economies of Scale (See APPENDIX); how to precisely identify a DE case in the real world; DE is such a loose concept and big umbrella that it is not feasible to apply it in practice. These problems and challenges root in the deficiencies of its existing theoretical framework.

What is more, the context in which DE is discussed will also influence the validity of its current theoretical framework. It can be observed that in developed countries it is generally easier to find examples aligned with DE principles than in developing countries. The small-scale business in developing countries may possess different characteristics due to the economic, social and institutional reasons of the country. It would be interesting to examine the existing DE framework in the context of a developing country. In this way, the critical review of the current framework can be done and the specific context may bring insights in the review process.

Among the vast range of developing countries, China is perceived to be an interesting example on which the study can be focused.

1.3.1 Why is DE in China an interesting topic
The framework of DE has not been introduced to study related issues in China before. Given the large diversity in China, there must be cases which have characteristics aligned with DE principles. By analyzing some basic questions, this section brings a starting point for exploring the topic in a Chinese context.

1.3.1.1 The need for DE
With the name as “world factory”, the fast economy growth of China has long depended on investment and export. Besides, the country is also working hard on promoting domestic demand in term of boosting consumption at home. All these are connected with an economy development model which has overreliance on the expansion of production and consumption. The evolution of an economic structure feature by a huge share of large-scale, highly centralized and standardized production is also noticeable. Theoretical analysis and facts have shown the problems with the current pattern of economy growth, including severe pollution, heavy energy and natural resources pressure, imbalance of development among different regions (e.g. East China and West China), slow welfare improvement (unparalleled with the GDP growth) of the people, the aggravated income gap and inadequate competitiveness in the innovation capacity of the economy. With consideration of such alarming problems, the country is now determined to transform the mode of economic development and seek new supporting points for economic growth.

The concept of DE provides a new paradigm to achieve regional sustainability, which can potentially remedy the drawbacks of traditional economy systems. Thus it is supposed to be rewarding to take the initiative to explore China’s transformation of economy growth mode in pursuit of sustainability with this new perspective and framework.
1.3.1.2 Negative conditions

With the demographic feature of the largest population and a very high population density, the potential domestic market demand is adequately huge. At the same time, there has been a steady, large demand for Chinese goods from overseas as well. This huge demand leads to a favorable precondition for the growth of large-scale and centralized production system. Secondly, with the weakness in the clear framework of property rights and some governmental intervenes in the prices of energy and natural resources, there is difficulty in internalizing external costs. This can make external costs a less significant factor in favoring small-scale production. Thirdly, there remains a big share of industries, especially those labor-intensive and resource-intensive ones, which reply on traditional technologies, equipments and traditional way to organize production. They are supposed to benefit less from the introduction of “ICT” and to less fit the innovation in the organization of production, compared with some knowledge-based and emerging industries. So they are prone to remain the traditional scale of production.

Although China has made remarkable progress in the transition towards a market economy with the “invisible hand” playing a fundamental role in allocating resources, the tradition of a centralized, planned economy has its remaining influence as well. For example, there are state-owned, huge enterprises in the market which should have sufficient competition. Government still plays a key role in promoting economic growth. Thus in order to get political promotion, there is incentive for governmental officials to carry out irrational policies and measures based on a short-term vision. Further, there is less flexibility for the ownership forms especially when it comes to the property rights of land, owing to some ideological taboo. So this can also constrain the evolution of flexible ownership structures and the bubbling of local initiatives.

1.3.1.3 Positive aspects

*China’s Agenda 21* was published in 1994, systematically elaborating the national strategy of sustainable development for the first time (Bradbury and Kirkby, 1996). Since then, sustainable development has been continuously preceded. The issues of population, resource and environment have been drawing more and more attention in policy-making.

Some elements in China’s policies can be identified which share some similarities or connections with DE principles. For instance, there have been policies encouraging the development of small and medium-sized enterprises, with the *Law on Promotion of Small and Medium-sized Enterprises* carried out in 2003 (Chen, 2006). Although the major intention of the law lies in economic reasons, such as increasing employment rate, rather than environmental concerns, it is not appropriate to neglect its protection for the growth of small-scale business. A similar example is the promotion of the development of township and village enterprises (Liang, 2006).

1.3.1.4 Comparison with circular economy

A more direct connection with DE can be demonstrated in the new development strategies of the China, such as the development of green economy and circular economy.

Promoting circular economy was approved as a long-term development task by the government in 2004 (Ren, 2007). The *Law on Promotion of Circular Economy* was carried out in the start of 2009. It has been a strategy with important position.
Circular economy takes the 3Rs of “reduce, reuse, and recycle” as the principle and aims to achieve high eco efficiency with a close loop of material flow covering the whole lifecycle in the big system of natural resources, technologies and human beings. The idea of circular economy is applied at three levels, individual enterprise, industrial park and regional level (Ren, 2007).

The concepts of DE and circular economy have similarities in the characteristics of 3Rs and high eco efficiency. They also share similar approaches in the self-sufficient development in rural areas. In this field, there is good tradition and practice in China. However, they are operated with different forms of networks in industries (Figure 2). The network in circular economy is mainly reflected at its so-called industrial park level. In fact it takes the approach of industrial symbiosis at the industrial cluster level (Ren, 2007). Based on the practice in China, large-scale, centralized enterprises usually cluster in industrial parks. The resources are circulating around the actors in the park to achieve high eco efficiency. In contrast, DE develops small-scale, decentralized production units which are synergistically connected with each other. Another big difference is that the strategy of circular economy has less focus and influence on social aspects, such as the participation of communities, the retaining of economic gains at the local level and the improvement of welfare of locals.

![Figure 2](comparison_networks.png)

**Figure 2** Comparison between the networks of circular economy (left picture) and DE (right picture)

The two strategies have different scopes of application with their own advantages. Although, circular economy is being intensively and widely promoted in China, there remains space which is more appropriate to develop in a distributed way.

### 1.4 Research Objectives

The research objectives of the thesis are:

1. *To improve the validity of the theoretical framework of DE;*

2. *To extend the scope of DE case studies to developing countries, such as China.*
2 Analytical Framework

Since the topic of the thesis is relatively new, there is rarely existing analytical framework, which can be directly utilized. The author develops his own analytical framework in order to study the problem and reach the research objectives. The development of the framework itself is also part of the innovative contribution of the thesis.

2.1 A New Framework of DE

With the in-depth study on literature and practice, it is discovered by the author that the concept mixes the set of key characteristics together. It is worth noticing in certain conditions or context the characteristics can even be conflicting. Compared with generally good impression of small-scale, local business in developed countries in the sense that the products and services provided can satisfy consumer’s special quality requirement, many such businesses in China have the problems of lack of consumers’ trust in quality and safety, which generally undermine their attractiveness for consumers.

It is proposed by the author to divide the set of key characteristics of DE in two categories: “physical characteristics” and “functional characteristics” (expected benefits). As shown in the Figure 3, in practice, economies with the physical characteristics of small-scale and local-owned do not necessarily have the benefits of the functional characteristics. Examples are shown in tourism in China.

Figure 3  Physical characteristics (left oval) and Functional characteristics (right oval) of DE

The new framework of DE embodies the dynamic relationship between the “physical characteristics” and “functions characteristics”. It is important to figure out the success factors to help achieve those functional characteristics. As shown in the Figure 4, these factors include but not limited to consumers’ preferences (demand-side), institutional issues, technology, awareness and capacity.
This new framework provides a framework to study issues in China from a DE perspective. It emphasizes the influence of different factors which may vary from country to country, and in this way, raise the applicability, operability and veracity of DE-related research. For instance, more real-world cases can be examined under this framework.
3 Research Method

3.1 Case study
The author aims to do a case study to explore the tourism development with the perspective of DE in China, with particular interest in the evolution of the tourism characteristics in a time series. The story of tourism in the Jiuzhai Valley is chosen, as an interesting and enlightening case. As a famous tourism area in China, Jiuzhai Valley shares a lot of common traits with other typical, big tourism spots in terms of its evolutionary sequence, the role of government in its development and so on. These make the Jiuzhai Valley a good example to study tourism in China.

3.2 Data collection
An on-site fieldwork was initially proposed. It was planned that in addition to studying the literature, information would be collected by administering questionnaires and making interview with stakeholders. With limited time, connections and financial resources, the plan was not realized.

However, there is abundant literature and online information which are also good data sources for the study. The large majority of literature on tourism development of Jiuzhai Valley is in Chinese. Basically three categories of data are needed: the background information of Jiuzhai Valley, the sectoral information in tourism and the transition story of its tourism. The information sources include the government published statistical materials, existing research articles and the websites of travel agencies in Jiuzhai Valley. The author paid particular attention to the selection of reliable Chinese articles and journals. The same category of data indicated in different sources was compared to help identify the credible information sources.

By studying the literature published during the past 30 years, the trace of tourism evolution of Jiuzhai Valley can be investigated. In particular, those articles focusing on summarizing the evolution process can give more direct information.

3.3 Limitation
The justification and reliability of utilizing data from literature may be under questioning. For example, citing the ecological footprint data from a previous research has the risk in terms of not fitting the new context.

The most updated, first-hand data cannot be obtained without on-site fieldwork. Also because of this, the latest progress and trend of tourism development in Jiuzhai cannot be fully explored. For example, it was originally proposed in the fieldwork to investigate the expectations for tourism development of stakeholders, like tourists, experts, administrative officials. In this way, more interesting observations and insights may be obtained about the evolution of the tourism characteristics in a time series. This is supposed to be a shortcoming of the adopted method, especially given the fast-speed development and change in China.
4 Research Question

It is known from literature that the evolution of tourism in Jiuzhai Valley shows the characteristics from small-scale service units run by the locals to large-scale, centralized units. Considering the relationship between the physical characteristics and functional characteristics in the analytical framework, the research question of the thesis is:

*In the evolutionary sequence of a typical tourism area in China, what is the dynamics between the “physical characteristics” and “functional characteristics”?

This research question is to some extent utilizing the new framework of DE to study the evolutionary sequence of a typical tourism area in China.
5 Case Study

5.1 Background of Jiuzhai Valley

Jiuzhai Valley is a natural park located in Sichuan Province in Southwestern China with the longitude and latitude ranging from 103° 46' E to 104° 4' E and from 32° 51' N to 33° 19' N (Figure 5). It is on the southeastern edge of the Tibetan Himalayan Plateau with an altitude between 1 990 m and 4 764 m. The Jiuzhai Valley protected area covers a total area of 720 km², and the sightseeing area is 62 km². The registered population of the county of Jiuzhai Valley is 65 590, and the population of minorities is 24 660, including Tibetan, Qiang and Hui peoples. The resident population is 80 626 (Jiuzhai Valley Administrative Bureau, n.d.; Jiuzhai Valley County Government, n.d.).

Figure 5 Location of Jiuzhai Valley in China

Source: Google Earth Image

Its Chinese name Jiuzhaigou means Nine Village Valley. It is best known for its spectacular sceneries, unique wildlife and the Tibetan culture (Figure 6). The beautiful natural sceneries include fabled blue and green lakes, colorful forest, waterfalls, jokuls and karst land forms,
and more than 220 bird species and many endangered plant and animal species live in the area (Jiuzhai Valley Administrative Bureau, n.d.).

Figure 6 The sceneries and culture of Jiuzhai Valley

Source: (Jiuzhai Valley Administrative Bureau, n.d.)

Jiuzhai Valley started to be open to tourists in 1984. In 1992 it was declared a UNESCO World Heritage Site. It joined the Man and Biosphere Conservation Network in 1997, and was approved as the top level (5A level) tourism area in China in 2007. Besides, it has obtained IUCN and ISO 14 001 accreditations (Jiuzhai Valley Administrative Bureau, n.d.).

5.2 Overview of Tourism in Jiuzhai Valley

When Jiuzhai Valley was first open to tourists in 1984, there were only 27 529 tourists in that year. In 2010 the annual tourists’ number in Jiuzhai Valley has reached 232 million. It can be observed from Figure 7, tourism has substantially recovered from low point due to Sichuan
earthquake in 2008. The peak season is from April to October, and the remaining months are off peak (Jiuzhai Valley County Government, n.d.; Yan, 2006).

![Figure 7: The annual number of tourists in Jiuzhai Valley](image)

Source: (Jiuzhai Valley County Government, n.d.; Yan, 2006)

The total income from tourism has mounted to RMB 2.75 billion in 2010, increased by 59.6% compared with that of 2009. The income in foreign currency is USD 19.49 million in 2010. The total tourism income was only 280,000 in 1984 (Jiuzhai Valley County Government, n.d.).

Jiuzhai Valley has adopted the “sightseeing inside the valley; accommodation outside the valley” policy, which means the accommodation can only be found outside sightseeing area (Jiuzhai Valley County Government, n.d.).

The ecological footprint per capita in 2004 was calculated by researchers. Their results (Figure 8) show that waste produced in tourism, transportation, food and accommodation had more ecological impact than other activities, like shopping and entertainment, did (Zhang, 2008).
Figure 8 The structure of ecological footprint per capita in 2004

Source: (Zhang, 2008)

5.3 Evolution of Tourism in Jiuzhai Valley

The change of annual tourists’ number has been described in Figure 7, which demonstrates that the boom of tourism is a general trend in the past 30 years. Table 2 highlights the big events for the tourism development of Jiuzhai Valley.

Table 2  The big events for the tourism development of Jiuzhai Valley

<table>
<thead>
<tr>
<th>Year</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>The establishment of Jiuzhai Valley Nature Reserve</td>
</tr>
<tr>
<td>1979</td>
<td>The establishment of the Administration Station for Jiuzhai Valley Nature Reserve (ASJVNR); lumbering in the area was ended.</td>
</tr>
<tr>
<td>1983</td>
<td>ASJVNR upgraded to Administration Office for Jiuzhai Valley Nature Reserve (AOJVNR)</td>
</tr>
<tr>
<td>1984</td>
<td>Approved as national place of interest; Establishment of Administration Bureau for Jiuzhai Valley tourism area</td>
</tr>
<tr>
<td>1989</td>
<td>The establishment of Jiuzhai Township</td>
</tr>
<tr>
<td>1991</td>
<td>Started application for UNESCO World Heritage Site</td>
</tr>
<tr>
<td>1992</td>
<td>Approved as a UNESCO World Heritage Site</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1994</td>
<td>Approved as National Nature Reserve; AOJVNR upgraded to Administration Office for Jiuzhai Valley National Nature Reserve (AOJVNNR)</td>
</tr>
<tr>
<td>1998</td>
<td>Approved as Biosphere Reserve of the world by UNESCO</td>
</tr>
<tr>
<td>2000</td>
<td>AOJVNNR upgraded to Administration Bureau for Jiuzhai Valley National Nature Reserve</td>
</tr>
<tr>
<td>2003</td>
<td>Buildings in the sightseeing area were demolished.</td>
</tr>
</tbody>
</table>

Source: (Jiuzhai Valley Administrative Bureau, n.d.)


The evolution of the characteristics in different stages of tourism development can be summarized based on the above literature (Zhang et al., 2010). When Jiuzhai Valley started to be open to the public in the 1980’s, residents in the area began to participate in providing small-scale family hotels and other tourism services. With the increase of visitors in the 1990’s, there were intensive family hotels and emerged. The administration bureau started to hire residents to let them join the administrative work, and in this way the income and lifestyle of local residents were improved to some extent. However, with the deteriorating conflicts among increasing number of visitor, worsen environmental burden and the voice of local residents, the governmental administrators carried out strong actions to meet the challenges and lead the transformation of tourism development. The scheme of “sightseeing inside the valley; accommodation outside the valley” was initiated and implemented in 1998, and all the hotels inside the valley were shut down and demolished. In the next year, environmentally-friendly sightseeing buses consuming liquefied petroleum gas were introduced with an investment of RMB 160 million. All the other motor vehicles were forbidden to enter the sightseeing area, and the problem of air pollution was mitigated. In addition to these actions, tourists’ center providing environmental education was established, and the policy of returning land for farming to forestry and grass was carried out. However, the scheme of “sightseeing inside the valley; accommodation outside the valley” violated the interest of local residents running business inside the valley. In order to solve the conflict, every year RMB 8.36 million from the ticket income was distributed to the local residents inside the valley by the administration bureau. Moreover, Jiuzhai Valley Cooperative Business Company was established. The local residents invested in company and thus held their own shares. The company provides food service in the Nuorilang service center, which is the only restaurant in the sightseeing area. The 195 shopping counters for tourism goods were all leased to the locals. The local residents also played a major role in administrative services.
6 Analysis
At the starting period of tourism in Jiuzhai Valley, the small-scale family hotels run by the locals were dominant. However, the vicious competition among them and the misbehaviors of the business failed to provide tourists with good quality service and achieve lasting prosperity. The governmental regulation in terms of the policy, “sightseeing inside the valley; accommodation outside the valley”, curbed the spontaneous development of small-scale family hotels. Instead, large-scale hotels with investment from outside took over. It should be noted that while the change from small-scale accommodation to large-scale units was partly due to the governmental regulation, it was also connected with the demand-side transformation. The number of tourists rose significantly, and they started to require good quality service. The welfare of local

Similarly, small-scale food services provided by the locals in the sightseeing area were also ended, and relatively large-scale restaurant in the Nuorilang service center became monopoly in the sightseeing area (Zhang et al., 2010). However, by becoming the shareholder of the cooperative company operating the service center, the local residents retained benefits in a different way. There are also questions about whether the locals voluntarily invested in the company and whether the monopolistic food provider would manipulate prices and have less incentive to innovate, provide diversified products and further improve the service. There were complaints about the high ticket price of the monopolistic environmentally-friendly sightseeing bus service. These problems raised the issue that the large-scale, centralized units might have too big market power, and threaten the benefits of consumers, and might do harm to its own growth in a long run.

At the starting stage of tourism in the 1980’s, the effective institutions had not been established to regulate the misbehaviors of small-scale local businesses. They had the incentive to provide product and services with low quality to tourists, who had limited information and would not return for another visit frequently. If tourists possess more sufficient information and there were a feedback system for them to share their knowledge with others, the misbehaviors of small-scale business would possibly be avoided considerably. For example, nowadays, many tourists like to look up information on online tourism service website for travel planning, and also like to share their experience and knowledge though the internet after travelling. This indicates the influence of technology, information and network on the dynamics between “physical characteristics” and “functional characteristics” for small-scale businesses.

When it comes to the evidence for the influence from the demand side, a survey, carried out in 2008, on tourists' food preference shows that tourists favored local-flavor buffet dinner most (Chen et al., 2008). The province sponsored research on the design of local-flavor buffet dinner, and the new menu emphasized local produced food materials together with local flavor (Chen at al., 2009). This in some way shows how the demand side shapes the utilization of local resources.

It can be easily observed that government has played a vital role in bringing about the transformation of tourism in Jiuzhai Valley. It made direct intervene by using regulatory measures rather than other measures, such as economic and informative policies. The regulatory approach can be controversial in this context. It is suggested that the administration bureau should establish and improve institutions to make sure that the market
participants, such as the small-scale family hotels, take full responsibility of their misbehaviors.
7 Conclusion

In the context of China, tourism development in Jiuzhai Valley has the evolutionary sequence changing from small-scale service units run by the local residents to large-scale, centralized units. Factors, such as institutional arrangement, technology and knowledge limitations, can be seen as explanations for the misbehaviors of small-scale businesses at the starting period of tourism. The evolution has helped solve the problem of vicious competition among local businesses, and improve the quality of products and services. However, the problems with the large-scale, centralized service units emerged in terms of price manipulation and inertia disincentive to innovate and further improvement. Government played a vital but controversial role in bringing about the evolution by direct regulatory policies. It would be interesting to follow the future evolution and development trend. The change of influential factors, such as institutions, technology and awareness, are believed to foster further transformation. At the same time, the role of government will also be an important factor.

The case study done by the thesis also provides the first example in terms of utilizing the new framework of DE in analysis. By doing so, the new framework of DE initiated by the author got tested, and it shows that it can deal with a wider range of real-world cases, e.g. tourism in China, with higher operability and veracity. In this sense, this new framework of DE shed lights on the improvement of its theoretical framework and the expansion of its study scope.
Bibliography


Appendix

DE and Economies of Scale

There is misconception that the idea of DE violates the law of economies of scale in neoclassical economics. To make it simple (See Figure 9), the law of economies of scale testifies that there always exists a quantity in production (a scale) where the average cost of goods reaches the lowest point, and thus efficiency is realized (Pepall et al., 2005). The existence of the efficient scale does not necessarily mean that it is a large scale or a small scale. So, in certain situations, the small scale production in DE can be the efficient scale, when a further expansion of scale can only result in an increase in average cost (loss of efficiency). This is basically how the concept of DE is compatible with rather than against neoclassical economics theories.

Following this logic, the idea of DE, hereon small-scale production, can get testified based on reasoning in neoclassical economics. A key question is what factors determine the efficient scale. Some factor or a combination of certain factors can make a small scale instead of a large scale the efficient scale. The existence of such factors in real world justifies the rationality of small-scale production, a key characteristics of DE. Some of the factors are identified and analyzed below.

First, the realization of economies of scale depends on a pre-condition of sufficient market demand to absorb the expanded production. It is in the market that products realize their value. Without the guarantee of enough market demand, the expansion of production scale to reach the hypothetical efficient scale would be irrational. In regions where there is limited accessible market, e.g. some relatively isolated islands, smaller scale of production will accordingly be favored.

Further, the extra costs, those in addition to production cost itself, will influence the efficient scale of production for products groups whose extra costs are comparable to, or even bigger than, the production cost. For example, the per-unit transportation cost of products, like milk, or bricks, building stones and cement, can be higher than their production cost. Under neo-classical economics, the increase of output requires exploitation of further markets, and thus will raise the average transportation cost. In this way, the average cost of production will also rise, and as a result the minimum efficient scale of production will decrease. The significant environmental cost of production, which is not always internalized, can play a
similar role as the transportation cost in determining the scale of production. So smaller-scale production is favored with the consideration of environmental cost. In addition, DE will also be favorable, if other environmental costs of producing goods on a large scale are factored in, including the embedded green house gas emissions involved in transportation of goods across the globe, or other social costs such as labor safety and health.

Last but not the least, the manner of production has changed enormously with the application of Information and Communication Technologies (“ICT”) in industry during the past few decades. The price of equipment with advanced ICT has been decreased significantly, while their functions are continuously improved. This requires a redefinition of the concept of scale in industry compared with the traditional understanding in neo-classical economics. There is possibility for the concept of small scale to get more and more decoupled from physical features. The new technologies promote small-size equipments, such as personal computers, which can hold big functions and make major contribution to production and management procedures. This allows new ways of production and new business models featured by smaller size, more flexibility and more distributed way of production.