Resort Morphology:
Chinese Applications

by

Jia Liu

A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Doctor of Philosophy
in
Geography

Waterloo, Ontario, Canada, 2008

AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

This paper adopts a geographical perspective to understand the conceptual and theoretical issues of resort morphology. Resort morphology refers to "the forms and associated functions of a destination area and their development". Resort towns are differentiated from other urban areas in terms of morphology because of their functional emphasis on tourism. The literature reflects the significant interest of European geographers in the morphological study of coastal resort towns. However, limited attention has been given to resort morphology in developing countries. It is argued that the complex of contextual factors that influence the morphological character of resorts needs to be considered and, furthermore, there is a great need to develop a systematic approach for investigating resort morphology.

Based on a review of literature, this paper first introduces the contributions and implications of related research to the understanding of resort morphology: study of resort evolution, the Recreational Business District, urban morphology, and Geographic Information System (GIS) applications. Then, the situation of China is addressed because there is a striking contrast between the rate of change and increasing complexity of Chinese resorts and the very limited amount of studies from either western or Chinese scholars. A quantitative-qualitative mixed research approach is introduced to understand transitional resort morphology in China. It involves classifying land uses, building a descriptive and explanatory framework, creating form-function maps, and the analysis of morphological characteristics.

Two study areas are selected for detailed examination: a coastal resort town, Sanya and a lake-based resort town, Wuxi. Morphological changes associated with key contextual factors influencing tourism and recreational development are analyzed in these places. A comparative discussion of Sanya and Wuxi indicates similarities between their development patterns of resort morphology and their present morphological features but significant differences in terms of history, evolutionary process, tourism resources, location and level of economic development. It is less helpful simply to define models applicable to distinct Chinese water-based resort towns than to identify similarities among them. Rules for resort study in the Chinese context are recommended and the characteristics of morphological transformation in a typical water-based resort town are summarized in view of resort development patterns.

It is indicated that the morphology of a typical water-based resort cluster can be in large part a function of its recreational hinterlands (urban areas), and whether it is well-planned or more naturally developed. Finally, the relationships between contextual factors, tourism development, and resort evolution and resort morphology are interpreted in the context of Chinese water-based resort towns.

The significance of morphological research on current as well as past resort structure for future planning and conservation activities is indicated. A systematic approach, which combines the morphological method, the functional method and the evolutionary method, is suggested to study resort morphology. By using resort evolution theory, it is indicated that resort morphology can be clearly identified and explored within a conceptual framework. This study also shows that GIS techniques are highly applicable in the study of resort morphology. This study indicates that water-based resort morphology in China is presently characterized by intensive land use and dense development, fast settlement expansion associated with growing vacation property development, and a generally clustered pattern of accommodation. Tourism planning in China has developed procedures and strategies with little consideration for the historical process. Therefore, this study has implications for making reasonable development strategies and efficiently implemented policies and plans. Academically, resort morphology is clarified in both Chinese and Western contexts. Also, common characteristics of Chinese water-based resort towns are summarized and phenomena generated from western studies are tested in the Chinese cases.

Key Words: resort morphology, Chinese water-based resort towns, Sanya, Wuxi, GIS application

Acknowledgements

The journey of a doctoral study brings one into contact with many travelling companions. It becomes so clear in retrospect how many people have given me a hand in such a journey. I owe thanks to those who provided directions, who helped with the load, and those who shared the path.

First and foremost, I sincerely appreciate my advisor, Dr. Geoffrey Wall, who gave me wide latitude to pursue questions in the study of resort morphology. His perspective and knowledge helped me to focus on my goals and overcome the challenges throughout this journey. Another advisor of mine, Professor Peter Deadman, has my utmost thanks for his great suggestions and comments on GIS applications in this research. Each of my committee members provided constructive critiques in the dissertation research process. Thanks to Professor Douglas Dudycha, Professor Bryan Smale and Professor Robert Feick for their kindness, direct help and thoughtful comments. Especially, I owe thanks to my advisors, Professor Dudycha and Professor Smale, who gave me great comments on my comprehensive examination and provided their support since the very beginning of this journey.

The University of Waterloo was supportive financially throughout this journey and I appreciate the research assistantships, teaching assistantships and scholarships that kept me afloat financially. I own gratitude to my Master's advisor, Professor Zhang Jie in Nanjing University, who gave me comments and support throughout this journey and helped me greatly in my field survey in China. I want to especially thank Wang Yang, who helped me very much with the field survey in Hainan Province. I express my deep gratitude to people and organizations in Jiangsu and Hainan, China. I was helped at various points with the field survey by Liu Tanghua, Zhong Jing, Sun Mingfang, You Jiong, Feng Songpan, Cai Junshan in Wuxi and Hao Shuwen, Huang Yan, Wen He, Li Bo, Zheng Gang and Cai Shidong in Sanya. I want to express my sincere appreciation to friends in Waterloo, particularly Dianne Pawlowski and Gloria Ichim who contributed a great deal in the proofreading of my research papers.

Finally, I want to especially thank my family, who gave me uncountable love. To my dearest mum and dad, only with their enduring understanding and endless support could I follow the twisting path through study and work.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

The morphological characteristics of resorts reflect their whole history of development and this has been appreciated for decades (Lavery, 1974). Theoretical and methodological improvements have been made by resort morphologists with a significant topical interest on coastal areas. Common phenomena were observed in western coastal resorts, such as seafront, parallel land-use pattern, split between the Recreational Business District (RBD) and the Central Business District (CBD), and density and price hierarchy. Moreover, some kind of similarities between lake-based resorts and seaside ones have been observed in terms of recreational land use pattern. Therefore, it is water-based resorts which provide the focus of this paper. On the other hand, more efforts could be pursued associated in resort evolution studies, RBD studies, urban morphology studies and using GIS techniques. Given that little attention has been paid to developing countries like China, the primary goal of this research is to transfer knowledge of resort morphology to China so as to enrich current theories and concepts mostly established upon western cases, and to suggest implications for development planning. In details, this paper offers a comprehensive, interrelated explanation for the evolution of resort morphology in two Chinese water-based resort towns. It describes their current morphological patterns, and investigates their morphological transition from one evolutionary stage to another. The aim is to analyze and model resort morphology and investigate the spatial features within resort towns and relationships between neighbouring resort clusters. To begin with, the concept of “resort morphology” will be clarified.

Resort morphology is a combination of two concepts: resort and morphology. The former refers to the unit of study; the latter indicates the object of study. Therefore it is necessary to understand

these two concepts in order to define resort morphology and develop a base for theoretical discussions and case studies.

1.1 Resort: a concept in dispute

It is not easy to provide an adequate definition of a resort, sometimes called tourist resort or resort town, which is widely applicable. Few clear definitions have been given by researchers because resorts vary widely in their character and size (Lavery, 1974; Robinson, 1976; Walton, 2000). Markovic (cited in Robinson, 1976, 155) suggested that resorts are "places, which attract large numbers of tourists and which tourism endows with special characteristics so that direct and indirect revenue produced by tourism plays a very important and even decisive role in their existence and development". This definition considerably influenced the understanding of resorts in Europe (Robinson, 1976; Walton, 2000).

In Europe, a resort is commonly understood to be a resort town and the word is used to refer to a destination area or a place attracting large numbers of tourists (Wall, 2001). It may be a town comprised of a large number of tourism businesses so that the revenue produced by tourism plays an important role in its existence (Cooper et al., 1998; Wall, 2001). In contrast, the concept of a resort is narrower in North America, where it is often viewed as being a substantial tourism facility providing recreation opportunities, accommodations, food and beverages, and other services, usually under one management or ownership (Cooper et al., 1998; Powers and Barrows, 1999; Wall, 2001). In the European case, the tourism functions of the town have often evolved over a considerable period of time whereas, in the North American cases, the resort has often developed following the design in a coordinated plan (Haffadine, 2000).

In terms of resort morphology, the European concept is widely adopted in other regions such as Asia. Though different perspectives on size exist, a resort town is usually at a level between a city and

a village. Locales of resort towns often include beaches, mountains, lakes, forests and tropical settings, and tourism plays a dominant or one of the leading roles in the local culture and economy. The provision of tourism facilities is its essential function. It may have other functions but it is specialized in meeting the needs of tourists in addition to the needs of local residents. Its entire form and function are obviously shaped or influenced by tourism and recreation. Such a definition can help in the establishment of an appropriate unit and clear boundary unit for analyzing resort morphology.

1.2 A historical review of morphology

The concept of morphology can be dated back to the ancient Greek and Hellenistic age. Two aspects of thinking were developed and constitute the basis of the Western morphological tradition - the concept of component and wholeness, and the idea of evolution (Gu, 2002). From the very beginning, space and time have been recognized as two crucial attributes of morphology. It responded to the idea of "chain of being" from the mid-18th century and historical approach was adopted with a focus upon the entire sequence of forms in time, past, present and future (Bowen, 1981, 192). The term morphology originated from biology for defining organic forms and their structure i.e. it referred to the architecture of organisms. Subsequently morphological concepts were adopted by the social sciences, especially in explaining historical phenomena (Sauer, 1925).

With respect to geography, morphological studies were rapidly focused on the surface form of the land. Initially, the term morphology was adopted in the field of social geography as a synonym for structure (Halbwachs, 1970; Johnston et al., 2000). In the field of human geography, its classic use is generally accepted as being Sauer's (1925) statement in "*The morphology of landscape*" where it is concerned with a particular form of synthesis and an inductive procedure for identifying the similar structural elements in the landscape and arranging them into a developmental sequence. Sauer (1925) emphasized the interconnections between general geography, regional geography, historical

geography and commercial geography. However, in German-speaking countries, morphological research can be traced to Schlüter's (1899, cited in Whitehand, 1981, 2) early work on "*Kulturlandschaft*" (cultural landscape*)*. Schlüter (1899, cited in Whitehand, 1981, 2) was not content merely with descriptive morphography, but envisaged an explanatory morphology. He was aware of the interdependence in geography of form, function and development with a particular focus on "urban landscape". From then on, a marked morphological emphasis was imparted to human geography generally and urban geography particularly (Whitehand, 1981, 2-3).

In sum, in geography, morphology is mainly concerned with the forms and functions of places, the relationships between them, and how they change over time. First, morphology is not to be understood simply as form (Daniel and Hopkinson, 1979; Cospodini, 2001; Gu, 2001) but refers to the "the science of form" (Johnston et al., 2000, 526; Larkham, 2002). Secondly, a space-time perspective has existed in all definitions or interpretations of morphology from the early decades to the present. Therefore, a longitudinal or historical approach was strongly promoted (Conzen, 2004).

1.3 A geographical context for resort morphology

1.3.1 The resort morphology concept

Resort morphology can be defined as "the study of the forms (environment as land uses and built forms: shape, appearance and configuration) and associated functions (activities) of a destination area (resort town) and their development". First, it addresses those forms and functions neither at one point of time nor separately; but is concerned about them dynamically and interactively. Secondly, it is focused on a destination area, where an emphasis on recreational land uses differentiate it from other urban areas. In other words, resort morphology may be regarded as a representation of resort evolution. Finally, tourism should be regarded as an integral part of resort town planning rather than a mere adjunct (Smith, 2004). For these reasons, resort morphology merits study on its own rather than

as a branch of urban morphology. Morphological studies are not new in the fields of tourism and recreation but the term form and function were used instead of morphology in the early literature.

1.3.2 A geographical context for resort morphology

A resort town can be studied in a geographical context as an individual geographical unit. A resort town is a small distinct region: as one unit of the geosphere, it is an open space-time system with four dimensions (Figure 1.1). This means it shows changes both in space and in time. As a region, it has distinct spatial form, function and an historical evolution process under varying interacting endogenous and exogenous forces. As a specialized town, it is greatly influenced by tourism and recreation. Consequently a resort town has a distinct morphology formed from the interaction of the socio-cultural environment, the political-economic structure and the ecological environment (Conzen, 2004).

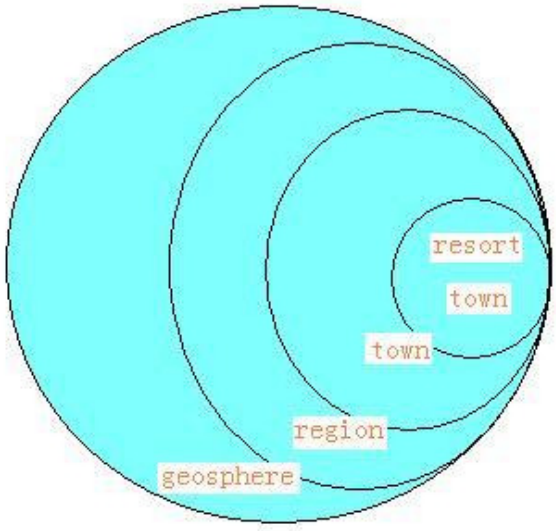


Figure 1.1 The geographical context of resort town

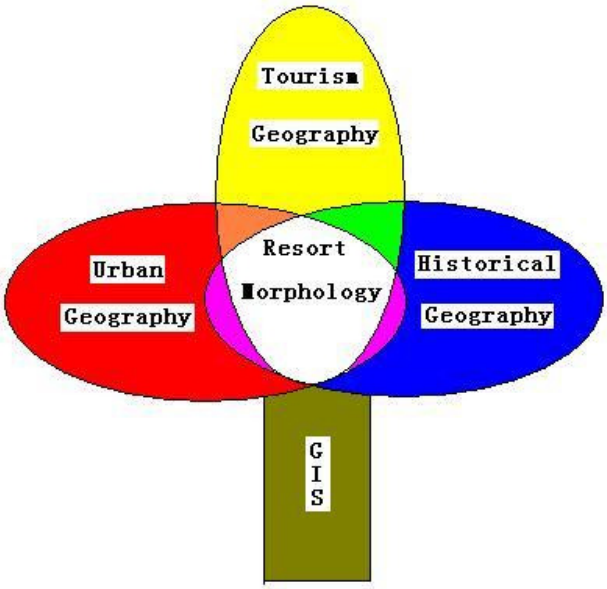


Figure 1.2 Theoretical framework of resort morphological study

Given such a context, research into resort morphology belongs to tourism geography, historical geography and urban geography (Figure 1.2). Tourism, as the primary focus, differentiates it from general urban morphology (Whitehand, 1987; Whitehand and Larkham, 1992a). Geographic Information System (GIS) accompanied by Remote Sensing (RS) and a Global Positioning System (GPS) are powerful techniques used to explore many geographical subjects such as natural and cultural resource management, transportation and urban planning (Miller, 1999; Geng, 2000; Masser, 2001; Zhu, 2001). These techniques have been recently applied to morphological issues: (1) to map and classify natural and cultural landscapes (Bryant and LeDrew, 1989; Johnson and Howarth, 1989; Martin, 1989; Lilley et al., 2005); (2) to analyze spatial patterns and the interaction of elements (Tarrant and Cordell, 1999); (3) to evaluate relationships between the spatio-temporal change of element(s) and related causal factors using both RS and socio-economic data (Kalivas et al., 2003; Li and Yeh, 2004; Xiao et al., 2006); (4) to trace and predict landscapes changes (Fresco et al., 2000; Pijanowski et al., 2002; Koster, 2003; Dai et al., 2005); and (5) to apply GIS-based systems to aid in

resource management and planning (Williams, 1996; Feick and Hall, 2000; Tremblay, 2005). To date they have, however, not been widely used in investigations of resort morphology. The capabilities of GIS in spatial analysis, in handling (collecting, classifying and management) multi-format data, and in abstracting complex phenomena into spatial connections between data objects are useful in morphological studies (Guo, 2001; DeMers, 2005; Tremblay, 2005).

1.4 Summary

This chapter discussed the concept of resort morphology. It focused on a long dispute on the concept of resort between Europe and North America and indicated the European concept is widely adopted in terms of resort morphology and can help in the establishment of an appropriate unit and clear boundary unit for analyzing resort morphology. On the other hand, with a historical review of morphology concepts, it concluded that morphology in geography mainly concerned with the forms and functions of places, the relationships between them, and how they changed over time. This chapter then discussed resort morphology in the geographical context and provided a definition, which is, "the study of the forms (environment as land uses and built forms: shape, appearance and configuration) and associated functions (activities) of a destination area (resort town) and their development". Finally, it suggested that research into resort morphology belongs to tourism geography, historical geography and urban geography. GIS accompanied by RS and GPS are powerful techniques used to explore morphological characteristics. The next chapter will review the previous resort morphological studies and contributions of related study fields.

Chapter 2

A Review of Studies of Resort Morphology

Based upon the understanding of the concept of resort morphology, key works in this field will be reviewed within a space-time framework (Table 2.1). Then this chapter will discuss research on the topical focus and methodological development of resort morphology. These efforts will enable the identification of strengths and weaknesses in existing works and set the context for the following study.

Table 2.1 Key works on resort morphology with a space-time frame

Study site(s)	Europe	North America	Other regions
-1969 exploration	Gilbert (1939,1949): England Barrett (1958): England and Wales	Stansfield (1969): United States	
1970-1979 first blossom	Lavery (1974) *:Western Europe Wall (1975): Britain Ferras (1975): Spain Robinson (1976) *: Europe Garcia (1976): Spain Pearce (1978): France Baptistide (1979): Caribbean	Stansfield (1978): United States Demars (1979): United States	Pigram (1977): Australia
1980-1989 static period	Priestley (1986): Spain	Wall (1982a, 1982b) *: Canada	
1990-1999 second blossom	Jeans (1990): England and Australia Clary (1993) *: France	Meyer-Arendt (1990): The Gulf coast of Mexico Brent (1997): United States	Jeans (1990): Australia and England Wong (1990): Malaysia Smith (1991;1992a,1992b): Southeast Asia and Australia Kermath and Thomas(1992): Dominica
2000- renovation	Andriotis (2003, 2006): Greece		Wall (2001): China OuYang (2000): China

Note: * No specific interest on coastal resort.

2.1 Studies of resort morphology

2.1.1 A history of research on resort morphology

2.1.1.1 Exploration (-1969): A British origin

Albeit not clearly defined, resort morphology was first acknowledged in the 1930s (Gilbert, 1939, 1949) and some common phenomena in seaside resorts were recognized by a few geographers in the next decades (Barrett, 1958, cited in Brent, 1997; Stansfield, 1969).

Gilbert is often viewed as the originator of research on resort morphology. Considering tourism and morphological elements together, Gilbert (1949) found tourism was transforming the settlement patterns on the British coast and distinguished the small resort towns from others. With a follow-up longitudinal study on Brighton and with a focus on its morphological changes, he drew attention to the importance of resorts in the urban system, and indicated that some factors spur the growth of seaside towns, including the medical profession, royal patronage and the arrival of the railway (Gilbert, 1949). His works contribute to research on both resort evolution and morphological research, reflecting the close relationship between them.

The first thorough study of resort morphology was undertaken by Barrett (1958, cited in Brent, 1997) who investigated over eighty coastal resorts in England and Wales. Barrett (1958, cited in Brent, 1997) recognised a strip of land along the coast comprised of amenities and hotels, not using the term “seafront” though. Its fundamental morphological characteristics were described with a schematic map: the resort core consisting of the major shops and businesses often ran from the pier towards the railway station and the intensity and price of accommodation services decreased as the distance from the core increased. Stansfield (1969) transferred this idea to North America and opened up the first growth period in resort morphology research on both sides of the Atlantic Ocean.

2.1.1.2 First blossom (1970-1979): A major transformation from Europe to North America

The first period of growth in research on resort morphology began in the 1970s with attention to European coastal resorts (Lavery, 1974: Wall, 1975; Ferras, 1975, cited in Pearce, 1995; Robinson, 1976; Garcia, 1976; Pearce, 1978; Baptistide, 1979, cited in Pearce, 1995) and the morphological method was transferred from Europe to North America (Stansfield, 1978; Demars, 1979) and Australia (Pigram, 1977) at the end of this decade.

From the mid-1970s, morphology has been commonly used to describe the peculiar form and function of resort towns that depend upon the provision of recreational opportunities (Wall, 1975; Pigram, 1977). Many studies in this period described the forms and functions of coastal resorts and explored the factors that influenced them. Impressive homogeneity was observed among different resorts, though study units were sometimes different in North America from in Europe. A seafront pattern ("*front de mer"*, Pearce, 1978, 144) or linear concentration along the coast, a parallel structure around the attractive core (mostly the beach), a T-shape based on the railway station and its connection to the coast, and pedestrianization were prevalent in the literature. Secondly, the interconnection between resort morphology and changing contextual factors such as social, technological and geographical features began to be recognized. The response of the morphology of coastal resorts to the arrival of railway was commonly observed. Stansfield (1978) implied that other resorts with physical proximity or market similarity could have a significant influence on a resort's morphological changes as well as its evolution. Garcia (1976) and Pearce (1978) argued that the traditional parallel structure could bring about both social and environmental problems.

Following trends in the study of the urban landscape or urban morphology in the late 1960s and early 1970s, the investigation of resort morphology has been less susceptible than many branches of

geography to the "quantitative revolution" and was largely morphographic (Whitehand and Larkham, 1992a). A few works showed the value of using a longitudinal method. One of them is Pigram's (1977) examination of the changing morphology of a pair of towns on the Queensland Gold Coast: using urban land-use models in the context of resort towns, he indicated that the pre-resort form and function could affect the current morphological features.

2.1.1.3 New exploration (1980-1989): in both sides of the Atlantic Ocean

The 1980s was a period of relative stagnation in research on resort morphology. It was a when decision needed to be made concerning the desirability of continuing with the traditional descriptive or explanatory study on European or North American coastal resorts, or to look for other new approaches and study areas. Two promising initiatives were taken by Priestley (1986) and Wall (1982a, 1982b).

In contrast to traditional sources as census data, vacation brochures and field maps that dominated the early research, new techniques such as the interpretation of aerial photography involving time-series data, which emerged in the late-1970s, were applied in this field. This improvement in data collection techniques brought about a new era to longitudinal studies. Using this technique with a complement of statistics on population, dwellings, accommodation and employment, Priestley (1986) documented the changes which had occurred in the built environment of *Lloret de Mar* on Spain's *Costa Brava* from 1956 to 1981. He found that the urban centre trebled in size in large part due to hotel construction.

In the other direction, extending the research into new areas, Wall (1982a, 1982b) found an impressively similar parallel pattern between lake-based resorts and coastal resorts based upon a recreational land use investigation of lakes and cottages in Canada. Not satisfied with this descriptive

result, Wall (1982b) linked morphological change with socio-economic explanations by suggesting early owners often had a strong influence upon the location decision of their relatives and friends.

2.1.1.4 Second blossom (1990-1999): A beginning in Asia

A growth period in research into resort morphology broader view that extended research from traditional European (Jeans, 1990; Clary, 1993; Priestley, 1995) or North American resorts (Meyer-Arendt, 1990; Brent, 1997) to other continents (Jeans, 1990; Wong, 1990; Smith, 1991, 1992a, 1992b; Kermath, and Thomas, 1992). There was a new interest in Southeast Asia, albeit with the usual focus upon coastal areas (Wong, 1990; Smith, 1991, 1992a, 1992b). Refinements in related theories and concepts, such as resort evolution theory, land use morphology, the CBD and the RBD helped researchers to get a more thorough understanding of resort morphology (Stansfield, 1970; Smith, 1989).

First, there was a trend to model morphological change within an evolutionary cycle. Secondly, the interest in exploring factors affecting morphology continued with attention being devoted to tourist behaviour, the physical base, transport opportunities and policy issues. Thirdly, different from former comparative studies illustrating differences between the evolutionary stages of a single resort, a horizontally comparative approach was applied (Meyer-Arendt, 1990; Brent, 1997). Brent (1997) compared the morphology of three American resort towns at the onset of the mature stage called "heyday" by means of element-to-element comparisons, achieved as a result of reconciling real time with evolutionary time. It was, however, evident that the research focus was still on coastal resort towns.

2.1.1.5 Renovation (2000-present): Calling for new developments

In this new century, traditional concepts, theories and methods are in need of being strengthened, tested or modified. Wall (2001) and Ouyang (2000) were aware of a vacuum of similar research in

China. With a comparative case study in four tourist sites in Sanya, Hainan, they indicated that when the forms of tourism are varied, the resulting morphological and economic implications are similarly varied (Ouyang, 2000; Wall, 2001). Moreover, a resort should be thought of as a dynamic complex when its morphology discussed. For example, Andriotis (2006) suggested a connection between hosts, guests, politics and resort morphology. Furthermore, studies of resort morphology appeared to offer greater prospects of being of practical utility as inputs into the decision-making processes for a spatial plan.

2.1.2 A topical emphasis on coastal resort towns

It is evident that research into resort morphology has exhibited an emphasis on coastal (seaside) resorts. Why have coastal resorts been so attractive to researchers to the neglect of other types of resort? Three considerations help to answer this question. First, the coastline is a very special morphological feature so that coastal areas were essentially linear rather than spreading in a bi-dimensional space (Fabbri, 1990). Secondly, the coast was an early geographical focus for mass participation in tourism and may have been more diverse than another attractive landscape, mountain areas, in terms of activities and population (Lewis, 1964; Holden, 2006). A map of resort distribution and landscape features in Western Europe showed that over 90 percent of the resorts had a coastal location (Lavery, 1974). Drawing upon accounts of the history of tourism, one can conclude that the medical profession, urbanization and economic trends, transportation evolution, social psychology, spatial and historical contexts, and entrepreneurial activity, all spurred the growth of seaside towns (Gilbert, 1949; Fabrri, 1990; Brendon, 1991; Soane, 1993; Towner, 1996; Holden, 2006). Therefore, it should not be surprising that studies of resort morphology, which were initiated in the first half of the 20th century, a “golden” period for seaside vacations, were concentrated upon coastal towns as opposed to other areas (Walton, 2000, 27).

Finally, there has been growing interest in the specific effects of morphology for housing development, coastal access, environmental degradation and changes in cultural and economic frames (Fabrri, 1990; Mongeau, 2003; Smith, 2004; Agarwal and Brunt, 2006). More attention should be given to these and other similar factors for the sake of promoting harmonious development in the future.

Since the early 1980s, there has been a decline in interest in resort morphology revealed in the number of papers published. This may be related to a decline in the popularity and economies of many older resorts from the last quarter of the 20th century because of transportation advancements and changes in fashion (Walton, 2000). However, interest has revived with an increasing focus on rejuvenation or regeneration of conventional coastal resort towns, with an expectation that studies of resort morphology may make a contribution to the achievement of such goals (Agarwal, 2001; Smith, 2004; Andriotis, 2006).

2.1.3 Modeling resort morphology

Since the 1930s, three major approaches have been applied to resort morphological research: the descriptive method, the explanatory method and modeling. Based upon Brent's (1997) division, resort morphological models may be divided into three categories: static models, historical models and integrated models. Most existing models can be classified into the former two categories.

2.1.3.1 Static models (spatial axis emphasized)

The static model is represented in schematic diagrams that depict the land use pattern of a resort with neither historical nor socio-economic considerations. In other words, it is merely a morphological abstract or generalization of a study area. Barrett's (1958) classic model illustrated the most basic morphology of a coastal resort town as shown in Figure 2.1, with a compact business core perpendicular to a frontal recreational strip which is parallel to the beach (Figure 2.1). It also

suggested an inverse relationship between the intensity of the recreational function and the distance to the frontal strip. More sophisticated models were drawn later, addressing phenomena such as the split between the RBD and the CBD, or the distinction between cultural and natural areas (Lavery, 1974; Jeans, 1990).

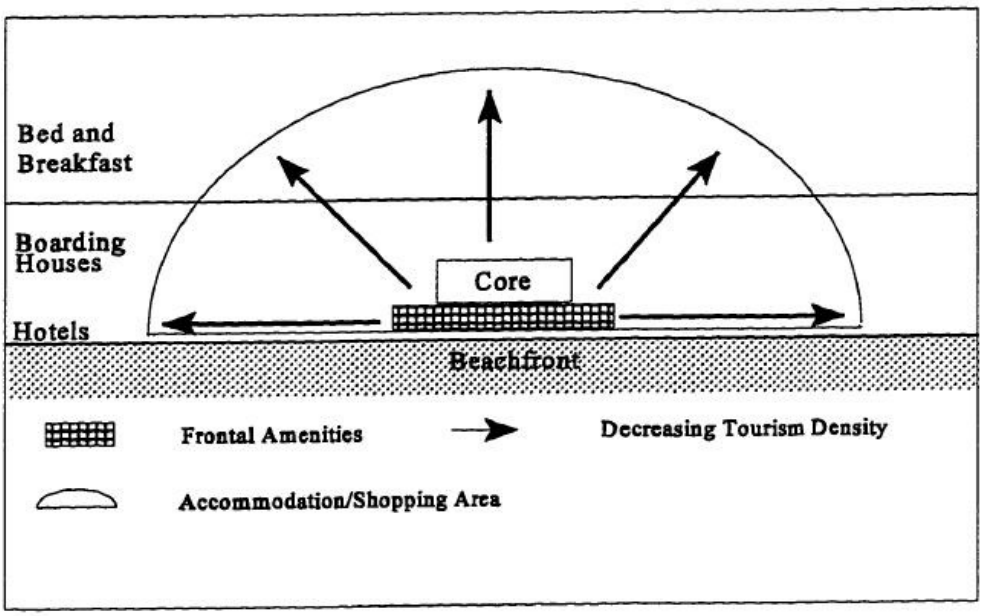


Figure 2.1 Barrett's model of a coastal resort

Source: Brent (1997) pp.30

2.1.3.2 Historical model (temporal axis emphasized)

The historical model is a combined product of morphological research and evolutionary study. Generally speaking, it includes several schematic diagrams representing different development stages of the observed resort(s). The historical model provides much more information about resort morphology than the static model, not only helping to build a more comprehensive theoretical context but also providing some practical implications for resort planning and development (Meyer-Arendt, 1990; Smith, 1991, 1992a, 1992b; Andriotis, 2006). Often linked to Butler's (1980) model of resort

evolution, these models presented a predictable sequence of coastal resort morphology typically in western coastal resorts, as shown in Figure 2.2 and 2.3, generally from pre-tourism to low-density, low-diversification development, then from high-density, highly-diversified development to an urbanized town. Also, these two typical models indicated the features associated with overall morphological transformation that have most concerned western researchers in morphological studies, such as tourist accommodation, second homes, residential areas, transportation infrastructure, and the RBD. These features will be specifically examined in the Chinese case studies which follow.

Elements	Exploration	Involvement	Development	Consolidation	Stagnation
Beach Width	→	Maximum	→	Decreasing	Minimum
Residential Areas	→	Few	→	Increasing	Peak
Farming Land	→	Peak	→	Decreasing	Few
Road Network	→	Minimum	→	Expanding	Maximum
Tourism Businesses	→	Few	→	Increasing	Many
Lodgings and Infrastructural Facilities	→	None	→	Increasing	Peak
Second Homes	→	Few (if any)	→	Increasing	Peak
Ribbon Development	→	None	→	Increasing	Maximum
Architecture	→	Traditional	→	Traditional / Modern	Modern
Overall Morphological Transformation	→	None	→	Increasing	High

Figure 2.2 Characteristics of morphological transformation in a typical coastal resort

Source: Andriotis (2006) pp.1091

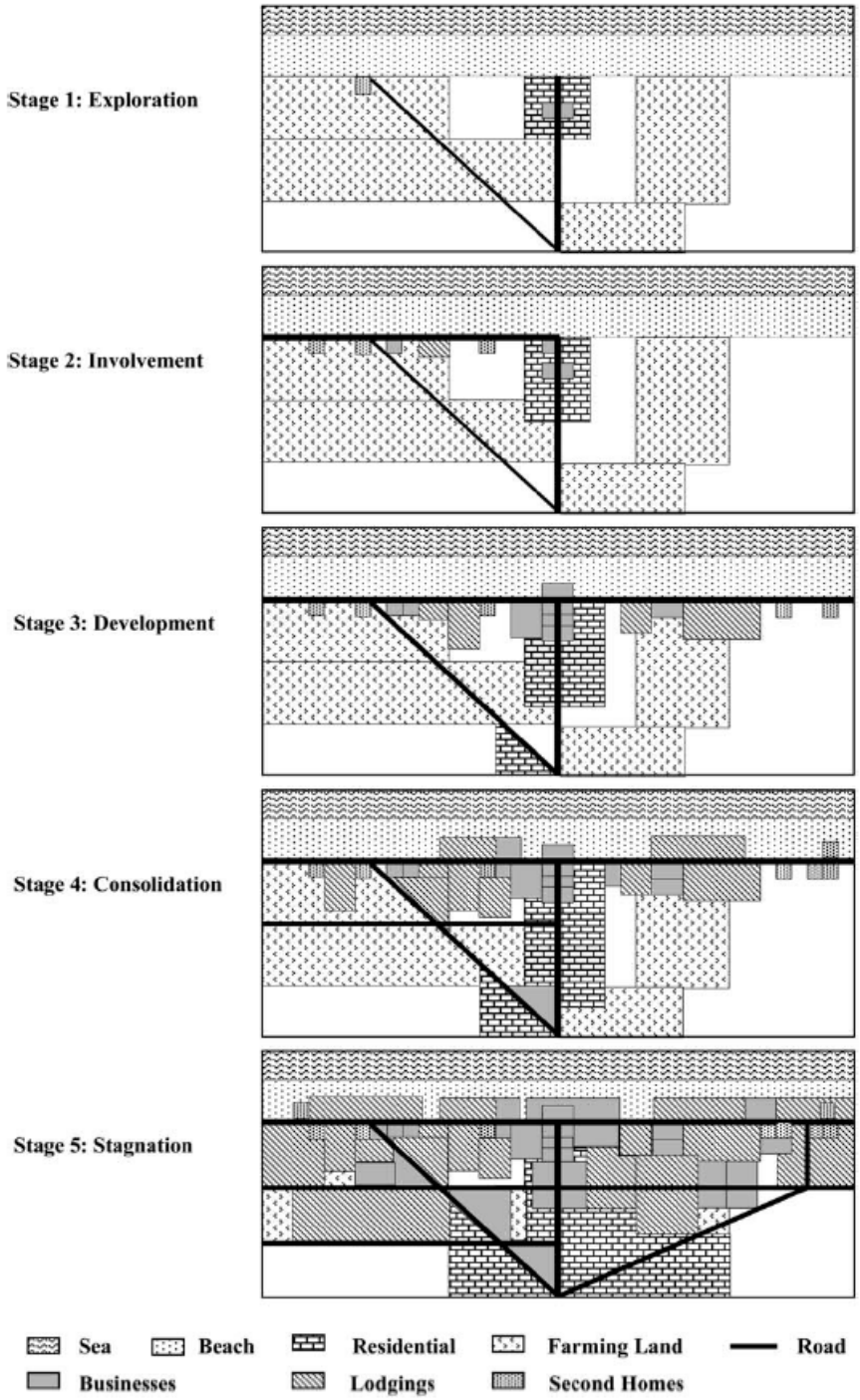


Figure 2.3 Morphological transformation of a typical coastal resort

Source: Andriotis (2006) pp.1092

2.1.3.3 Integrated model

As he considered the evolutionary process, contextual factors and implications for planning, Smith's (1991, 1992a, 1992b) works may be regarded as a breakthrough in the use of this method. A general model has not been built, though striking similarities exist between the models drawn from different resort towns. Many factors have been addressed that influence resort morphology but few works have been concerned with the interactions between morphological changes and those factors. Resort morphology does not strictly respect the borders between academic disciplines, therefore, an integrated model is expected in future study to show the following characteristics: an historical or longitudinal view, a comprehensive context (social, cultural, economic and political factors considered), and general applicability.

2.1.4 Strengths, weaknesses and implications of existing works

The morphological characteristics of resorts reflect their whole history of development and this has been appreciated for decades (Lavery, 1974). As noted above, the existing morphological works on resorts almost all examine coastal areas. In terms of the objects studied, the physical forms which contribute to the distinctiveness of resorts have received most attention (Stansfield, 1969; Wong, 1990; Andriotis, 2006). Some works discussed factors affecting the observed morphological characteristics and their transition (Stansfield, 1978; Clary, 1993; Kermath and Thomas, 1992). In terms of approaches used, the descriptive method is essential base that may be enhanced by inductively drawing the morphological features of a single or a few cases (Barrett, 1958, cited in Brent, 1997; Lavery, 1974; Jeans, 1990; Smith, 1991, 1992a, 1992b). The explanatory, historical and comparative approaches were applied later (Pigram, 1977; Wall, 1982a, 1982b; Meyer-Arendt, 1990; Smith, 1991, 1992a, 1992b; Brent, 1997; Andriotis, 2006). Furthermore, the implications of a resort's morphology for development planning have been identified (Smith, 1992a).

Unlike the greater diversity in urban morphology research, resort morphologists prefer to interpret forms and associated functions within a contextual environment. Generally speaking, their works were undertaken at a macro-level. They focused upon generalized land uses rather than the details of built forms or plots which garnered the interest of many urban morphologists with a background in architecture (Gauthier and Gilliland, 2006; Chapman, 2006). In other words, most of resort morphologists are externalist or cognitive (Gauthier and Gilliand, 2006). One reason is in the inherent character of resort towns. Neither the current morphological representation nor the process of morphological change of a resort town can be understood without appreciation of the contextual factors, for tourism is "a product of changing economic and social factors" (Holden, 2006, 37). Another is the backgrounds of most resort morphologists, most of whom are geographers who consider phenomena as open, dynamic and spatially interconnected (Hartshorne, 1946; Bowen, 1981).

Although considerable progress has been made, resort morphological research has limitations that remain to be addressed. First, more attention needs to be given to developing countries as well as to different resort types. Differences between traditional western resorts and those in developing countries have been observed but few studies have examined this topic (Pearce, 1995). It is recommended that further comparative work be pursued among different water-based resorts, because morphological similarities between lake-based resorts and coastal resorts have been observed (Wall, 1982a, 1982b).

Secondly, the complex of social, cultural, economic and political factors that affect the morphological character of resorts directly or indirectly needs to be addressed in a more systematic way. Their linkages with resort morphology need further investigation and interpretation. Causal relationships between these factors, tourism development and resort morphology are worthy of examination both qualitatively and quantitatively. Even though they often have theoretical considerations in mind, resort morphologists usually focus upon a small number of factors to help to

explain morphological characteristics or changes. This approach is reasonable at an initial stage of investigation but, unless the factors under consideration are increased, studies become too dependent on a researcher's academic knowledge, personal preference and understanding of the study site. It is difficult to decide which factors are important and which are not and their relevance may change with time. Consequently readers of such studies should not accept information and interpretations passively but should examine explanations critically.

Thirdly, there is a great need to develop a comprehensive approach for the investigation of resort morphology, given its complicated nature and the increasing choices of research tools that might be employed. Such an approach might combine a morphological approach (the traditional descriptive method), a functional approach (an explanatory method), an evolutionary approach (longitudinal or cross-sectional study) using GIS techniques (especially spatial analysis functions).

Finally, studies of resort morphology should be more directly address resort planning and development needs. Urban morphologists have undertaken some promising work in which morphology was shown or suggested to inform development planning from micro to macro scales (Hall, 2000; Chapman, 2006). Regretfully, few resort morphologists have asked "What should be?" question, and, thus, there is a large gap between morphological research and resort development planning needs. Researchers should make normative contributions, not only describing what the morphology has been and is and provide explanations but also suggesting what should be planned and built in the short- or long-term future (Gauthier and Gilliland, 2006). Morphological research itself could be an innovative development planning tool for two reasons. On the one hand, it builds upon a thorough appreciation of existing resort forms and functions and this is a base on which to create new relationships in forms and functions. On the other hand, it helps to avoid the development of plans that are not rooted in a thorough understanding of existing conditions and what has led up to them (Rouse, 2004).

2.2 Resort evolution and resort morphological studies

The initial suggestion that resorts undergo a consistent process of change with recognizable phases or stages dates back almost a century (Butler, 2006). With respect to resort evolution, the most popular theoretical model was founded by Butler (1980) and is known as the Tourism Area Life Cycle (TALC). Based upon the product life cycle, models of wildlife populations and Plog's (1973) tourist topology, a six-stage hypothetical evolutionary sequence was described, consisting of exploration, involvement, development, consolidation, stagnation and rejuvenation or decline (Butler, 1980; Plog, 2002; Holden, 2006). TALC has prompted widespread discussion of what leads to destination change and how destination changes (Hovinen, 1982, 2002; Haywood, 1986, 2006; Choy, 1992; Getz, 1992; Hall, 2006).

A continuing concern is the determination of appropriate measurements to trace the changes in a tourism area and to implicate the varying factors affecting resort evolution. Measurements that have been commonly employed have usually concentrated on quantitative indicators of performance, specifically on visitation and expenditure data (Butler, 1980; Haywood, 1986, 2006; Strapp, 1988). Transportation systems and tourism information technology have been added to incorporate a resort or region's exogenous supply (Papatheodorou, 2004, Sheldon, 1997}.

Given the complicated context in which resorts evolve, qualitative methods were also used to permit the employment of non-traditional, less well defined and emerging data (Haywood, 2006). Johnston (2001, 2006) presented two useful analytical methods called "pathway analysis" and "mechanism analysis", following a "boundary analysis" two questions were addressed - what is the region and what type of region is it? - to track evolutionary stages (Johnston, 2006; Marois and Hinch, 2006). In the pathway analysis, a discussion of the scale of development and the status of a destination is required and users (tourists) are discussed in terms of their spatial behaviours. The

chronological stage sequence of development that has occurred is analyzed in terms of the mechanisms that were interpreted to have caused stage and phase changes, and in terms of the pathway features that were most pertinent during each. The mechanisms are specified as "critical events", "critical junctures" or "blurry transitions" (Johnston, 2006, 198). Ultimately the sequence of change can be divided into stages and phases.

Given observed connections between different landscape representations and the various evolutionary stages, such an approach offers a reasonable framework for either longitudinal or cross-sectional morphological research (Meyer-Arendt, 1990; Smith, 1991, 1992a, 1992b; Kermath and Thomas, 1992; Priestley, 1995; Papatheodorou, 2004; Andriotis, 2006). The morphological change of a resort is essentially a product of tourism-induced development so this is useful in interpreting stage and phase change (Lundgren, 2006, 94; Johnston, 2006; Andriotis, 2006).

The concepts of resort evolution and resort morphology were combined in historical models in two ways: the deductive one begins with an investigation of a resort's evolutionary process leading to descriptions of its morphological representatives (Meyer-Arendt, 1990); the inductive one, in contrast, describes the transition of morphological representatives to arrive at conclusions about evolutionary stages (Smith, 1991, 1992a, 1992b; Johnston, 2006). Both essentially rely on cause-result assumptions about relationships between processes and forms in terms of resort evolution and resort morphology i.e. resort morphology can be regarded as a visual representation of resort evolution.

2.3 The RBD in resort morphology

The RBD is a concept that parallels the CBD. First proposed by Stansfield and Rickert (1970), the RBD is generally viewed as being a tourism-oriented retail district found in towns and cities that attract significant numbers of tourists. It is typified by a distinctive array and a high concentration of amenities and shops within close pedestrian access (Pearce, 1978; Smith, 1990). In terms of

determinants, a CBD's location is generally dependent on the interplay of centrality, land costs, accessibility and economic rents, whereas the location of an RBD tends to be determined by attractions such as a beach, a lake, a theme park, or a historic district (Smith, 1990)

The RBD has received much attention from researchers of resort morphology as a morphological region separated spatially and functionally from others. As early as the 1970s, Lavery (1974) suggested the location of an RBD could reflect the linear concentration of visitor activity on the seafront and in adjacent areas. A locational separation between the RBD and the CBD was observed along with the resort evolutionary process in European, North American, and Southeast Asian resorts (Pigram, 1977; Smith, 1992a, 1992b).

2.4 The contributions of urban morphologists

2.4.1 Townscape: an historical-geographical phenomenon

A townscape (or urban landscape) is a striking type of cultural landscape. It is the morphological expression of urban life in its local uniqueness and historical unfolding (Conzen, 2004; Johnston, 2000). Therefore, it is likely to be a core object in research on resort morphology. M.R.G. Conzen (2004), in his pioneering research, indicated that townscapes present three systematic aspects to morphological study expressed by the distinct form categories of town plan, building fabric and land utilization. Those aspects of townscape are linked together in space by a hierarchical principle and the links change from time to time (Conzen, 1966; Baker and Slater, 1992). Generally speaking, formative or transformation processes of the townscape and persistence of forms represent the two major aspects of morphological transition (Conzen, 2004). Conzen's ideas gave birth to several important lines of research on geographical morphology. Hitherto, geographers have been concerned with the nature and amount of landscape change, the stakeholders involved in the process of change and the management or planning of that change (Whitehand and Larkham, 1992a, 1992b).

2.4.2 Space morphology studies

The concept of space morphology was founded by Martin and March (1972) and it has been used in built form and land use studies since the 1950s. This concept is concerned with describing the existence of spatial elements as urban components at a variety of scales, the need to quantify and explain these elements, and analyzing their geometric relationships (Gu, 2002). So far the best known concept may be that of "space syntax" which has been defined as "a set of techniques for the representation, quantification and interpretation of spatial configuration of buildings and settlements" (Hilllier, 1983, 363, 1987). This concept is not only defined spatially but also sociologically because of its concern with the affect of spatial representations on social relationships (Gu, 2002; Gauthiez, 2004).

2.4.3 Summary: what can be learned by resort morphologists?

Urban morphologists were pursuing ways to achieve synergies between "depth of morphological analysis", "qualitative exploration" and "development planning" (Chapman, 2006, 24). Resort morphologists share this interest. Urban morphologists contributed to resort morphology research through the ways in which they both described morphological characteristics and explained the historical process. First, the utility of town plan study garners the interest of resort morphologists, especially when dealing with an historical town. Secondly, in terms of data collection and handling, the elements in topographical maps and town plans were discussed in a hierarchical way. Finally, the approaches that were suggested for replacing the elements of urban forms by abstract or generalized concepts such as density and land use mix are also applicable in studies of resort morphology.

2.5 GIS applications in studying resort morphology

Dating back to 1960s, RS can provide spatially consistent data sets that cover large areas with both high resolution and high temporal frequency so that it can be useful in a dynamic morphological study such as the study of urban growth and land use change (Bryant and LeDrew, 1989; Johnson and Howarth, 1989; Martin, 1989). GPS can be used in a field survey with a high degree of spatial accuracy to locate road construction, boundaries and buildings. GIS can be used in morphological research due to the form-function consideration (Harris et al., 1995; DeMers, 1997; Pijanowski et al., 2002; Xiao et al., 2006). As a joint practice, GPS point data and RS data were processed using a GIS to facilitate a three-dimensional analysis of an historical town's morphological features and characteristics (Lilley et al., 2005).

GIS techniques may be useful as both diagnostic and prescriptive tools as a means of compiling spatial and non-spatial data, generalizing morphological elements and classifying functional parcels, analyzing morphological elements and relationships between them, as well as tracing and predicting morphological changes. A number of applications of GIS related to tourism and morphology can be found that combine (ecological) landscape knowledge, tourist preferences with expert (resource managers) knowledge to determine suitable tourist habitats (Williams, 1996; Tremblay, 2005) with a practical purpose rather than an exploratory one. The application of GIS in resort morphology has, however, been minimal to date and limited to data collection (Priestley, 1986).

Three applications of GIS for further resort morphological study can be suggested. Resort morphology is influenced by many interconnected factors. Both morphological features and impact factors can be displayed using GIS tools. Some GIS tools have ability to do multivariate statistical analysis such as classification and regression analysis. Some are able to input data into spreadsheets or other statistical tools for further analysis. Regression analysis was, for example, popularly used to

examine both the relationships between land use changes and their driving factors, and the relationships between spatial variables such as distances and land use changes (Li and Yeh, 2004; Xiao et al., 2006). The combination of GIS tools and statistical functions is preferable to analyze the relationships between both spatial (such as access to tourism resources or recreation opportunities, primary roads, land availability) and non-spatial factors (such as socio-economic and tourism statistics) and morphological transitions (such as price, ownership and function of land or building, the growth rate of land for accommodation or other tourism activities).

Secondly, GIS provides numerous functions to evaluate and analyze morphological characteristics such as the accessibilities of tourism facilities to attractions or transport notes, the spatial cluster or dispersion of activities in a resort, and so on. A series of indices have been developed to examine spatial patterns and spatial conversions can be calculated using GIS tools such as Moran's Global I and Local I. By evaluating the concentration or dispersion of phenomena may be useful to describe the spatial pattern within a resort.

Thirdly, RS and GIS techniques are suitable for tracing and forecasting morphological transition (Martin, 1989). Differences can be traced by overlapping multiple layers and enhanced by filter functions. An advanced technology called a land transformation model (LTM) couples GIS with artificial neutral networks (ANN is used to learn the development patterns in a region and test the predictive capacity of the model) to forecast land use changes and to explore how site and situation factors and demographic factors can influence urbanization patterns (Pijanowski et al., 2002). In fact, the forecasting of new urban growth has been concentrated in tourist towns near inland lakes or along the lakeshore (Jeffery, Kang and Thomas, 1999; Pijanowski et al., 2002). These techniques could also be attempted in resort morphological research to suggest implications to land use policymakers and planners.

2.6 Summary

This chapter reviewed the history of research on resort morphology within a space-time frame, and two aspects were discussed: one is the topical emphasis on coastal resort towns; the other is the development of modeling methods. Though achievements have been obtained in both theoretical and methodological aspects, attention needs to be extended to developing countries as well as different resort types; the complex of social, cultural, economic and political factors that affect the morphological characteristics of resorts directly or indirectly needs to be addressed systematically; and also, there is a need to develop a comprehensive approach for the investigation of resort morphology.

This chapter further introduced the contributions of related research fields to resort morphology research. First of all is the research of resort evolution. The concepts of resort evolution and resort morphology were combined in historical models relying on cause-result assumptions about relationships between processes and forms in terms of resort evolution and resort morphology. Furthermore, the RBD study has received much attention from researchers of resort morphology as a morphological region separated spatially and functionally from others. Urban morphologists contributed to resort morphology research through the ways in which they both described morphological characteristics and explained the historical process. Finally, the application of GIS in resort morphology is promising, although minimal to date. The combination of GIS tools and statistical functions is preferred to analyze the relationships between both spatial and non-spatial factors and morphological transitions, RS and GIS techniques are suitable for tracing and forecasting morphological transition and GIS provides numerous functions to evaluate and analyze morphological characteristics. The GIS applications that are employed in this study will be further addressed in the following chapters.

With the understanding of existing works relevant to resort morphology, this paper will extend a regional interest to China to fulfill current theories and concepts of resort morphology mostly established upon western cases. The next chapter will discuss the significances and challenges of doing resort morphological research in the Chinese context before reaching the research questions and objectives.

Chapter 3

Resort Morphology in China

Research on resort morphology appears to be promising and necessary within the Chinese context for several reasons, including the astounding development of tourism industries from 1978 onwards, a long history of urbanism and its peculiarity in political history for thousands of years. Regretfully, there is a striking contrast between the increasing change and complexity of Chinese resort morphology and the historical-cultural abundance of resorts on the one hand, and the very limited amount of studies from either western or Chinese scholars on the other. One exception is Wall (2001) and his group's (Ouyang, 2000) work on four coastal sites in Hainan Province. With a review of western concept accompanied with Chinese case studies, they indicated the inapplicability of western models and further pointed out that resort morphology should be linked with a variety of resort attributes such as land use, economy and environment (Ouyang, 2000; Wall, 2001).

Though evaluation is justified (and perhaps required) on whether or not similarity exists between morphological characteristics of western coastal resorts and those of China, Wall's (2001) work highlighted a research need and opportunity. With few precedents, a major challenge of resort morphological research in the Chinese context is to seek concepts, methods, explanations and solutions applicable specifically to China. This involves the development of an appropriate strategy that addressing four different aspects of such research. First, specified criteria need to be clarified for distinguishing study units. Secondly, a conceptual framework should be established for undertaking research in resort morphology in the Chinese context. Thirdly, the related political issues regarding planning, development and land utilization need to be taken into account. Finally, problems of data collection should be recognized.

3.1 Resort town in the Chinese context

Even though the development process may differ, the European concept of resort (resort town) is applicable in the Chinese context. However the complex hierarchy of political units makes the study unit difficult to determine. In addition, the concept of "tourism resort" should be differentiated from "resort town". On October 4, 1992, the State Council of the People's Republic of China approved the establishment of state tourism resorts defined as "the extensive resort complex with a comprehensive product and service mix intended to satisfy the needs of diverse leisure and tourist markets" (Xiao, 2003, 268). Therefore a tourism resort that provides a wide range of private leisure products and services may compose the tourism and recreational core of a resort town (Bao, Chu, and Peng, 1993, 53; Wu, 2001; Xiao, 2003).

According to the population hierarchy, resort towns in the Chinese context lie in the categories of secondary urban settlements. According to the administrative hierarchy, those districts found in the second level (city level) or lower (county and township level) may potentially be referred to as resort towns (Ho and Kueh, 2000). Such resort towns were usually rural areas that changed into urban areas with increasing tourism as revealed in the changing mix of land uses. Most of resort towns contain one or more actual tourism resorts or have one or more nearby. The establishment, expansion, or decline of a tourism resort or resorts has changed and will continue to change the resort town.

3.2 Resort evolution study in China

So far this paper has argued that resort evolution theory is useful as a conceptual framework and a descriptive tool to understand resort morphology. Since first introduced by Bao (1994) in 1993, two aspects have differentiated Chinese studies from others on resort evolution.

First, a political economy perspective has been emphasized in tourism studies in an international-historical context (Britton, 1982; Hall, 1994; Wall, 1997; Holden, 2006). Political and economic changes have influenced the tourism development in terms of accommodation, transportation, tourist attractions and many other related functions (Mak, 2003; Qian, 2003; Yu, 2003; Zhang, 2003; Holden, 2006). When compared to the longitudinal research undertaken on western coastal areas, it is reasonable to set 1978, the date of the start of economic reform and the open door policy, as a suitable point from which to benchmark the evolution stage for resort change research in China (Bao and Zhang, 2006). Although the phenomena of travel and sightseeing have taken place for more than 1000 years, modern tourism is a new phenomenon and it has been accompanied by a shifting purpose from being a primarily political to becoming an economic tool (Zhang, 2003; Bao and Zhang, 2006).

Secondly, individual scenic spots have received attention due to their possible financial profitability. This requires the establishment of an admission price and a clear boundary (Bao and Zhang, 2006). In most cases, the data used to analyze the evolution of such a tourism area are the number of admission tickets sold. An inherent shortcoming of this method, however, is obvious as tourism areas are becoming more and more complex and diverse.

3.3 Political issues in planning and development

Questions like “What should be built?” and “Where it could be built?” are to be answered by a complex of official plans such as the land use plan, the urban master plan, the site plan and the tourism plan. Current forms and functions of a resort town, to some extent, are influenced, even determined, by a complex of past planning works.

The discord that exists between land use planning and tourism planning is worthy of attention. The overlap of planning areas exists as a result of the common understanding that all land in a

tourism area is likely to be perceived as being used for tourism or recreational land uses (Li et al, 2005, 330-331). The land use plan is considered to be dominant, leading to the lack of conformity between it and the other development plans (Land Administration Law of the People's Republic of China, 1998) because their different principles lead to different results. Land use planning is aimed at protecting cultivated land and controlling its transformation to construction land whereas tourism planning is aimed at directing the development of a tourism area and making tourism industries coordinated and sustainable (Li et al, 2005, 331). Other problems arise from their parallel organization arrangement, including lack of communication between their creators, and their different time scales (Li et al, 2005, 331).

The lack of a clear definition of recreational or tourism land use has exacerbated the above problems and brought about turmoil in tourism development and other economic activities (National Land Classification, *Quan Guo Tu Di Fen Lei*). In contrast to the difficulty of defining the function(s) of a land parcel in urban areas, where tourism is seldom a dominant industry when compared to commercial, administrative, industrial, and residential functions, it is easier to classify land use for tourism in a resort town, where tourism plays a dominant role or, at least, one of the leading roles. Therefore a clarification of "recreational land use" should be considered in the research approach.

3.4 Problems in data collection

One significant challenge of resort morphology study in China is data collection. Few materials could be obtained on geodetic cartographies. RS data sometimes is able to trace changes occurred in the past two or three decades. Local gazetteers (*Difang Zhi* or *Xian Zhi*) can be used as official historical materials in which the social, cultural, economic and political issues were recorded before modern statistical materials became available (Whitehand and Gu, 2006). Sometimes historical town plans can be found in these materials.

Planning documents are held by the local government and cannot be fully accessed by the public. Furthermore, tourism planning's history is much shorter and plans are commonly not implemented in a clear development processes. The first of these challenges is being alleviated by the rapid development of technology. Many planning materials can be found in governmental websites. Nevertheless, good social networks are beneficial to gain access to information. The second challenge implies that planning materials should be used with extreme caution because of the complex relationships between different plans, and the lack of stability in development policies, strategies and intentions.

3.5 The study of resort morphology in the Chinese context

Based upon the above review of existing works on resort morphology and an understanding of the specific Chinese context, this study aims (1) to suggest a logical method to describe and explain the morphological transition using resort evolution theory, TALC in particular, as a conceptual framework; (2) to extend the regional interest to China and address aspects of resort morphology in China; (3) to examine the applicability of existing concepts in new study areas; and (4) to use GIS techniques to collect and compile and analyze data. The ultimate goal is to transfer knowledge of resort morphology to a developing country like China so as to enrich current theories and concepts mostly established upon western cases, and to suggest implications for development planning.

Based on the goal and objects, a series of questions have been formulated.

(1) How and why have resort morphology changed from time to time?

(2) Can similar morphological characteristics be found between Chinese resort towns and western cases?

(3) What implications can be expected for development planning from understanding the morphological transition?

Following from the research goal and the above questions, several research objectives or anticipated outputs are expected with both theoretical and practical implications. These can be summarized as: description, explanation, modeling, and practical implications.

Objective 1: To offer a comprehensive explanation for the evolution of resort morphology. This requires an understanding of the factors that have impinged upon the transition in resort morphology. The relationships between recreational land-use and agricultural land-use will be considered and government policy issues will be scrutinized.

Objective 2: To describe the current morphological pattern of case resort towns, and investigate their overall morphological transition from one evolutionary stage to another.

Objective 3: To analyze and model resort morphology and investigate the spatial features within resort towns and relationships between neighbouring resort clusters. Whether or not a model of Chinese water-based resort towns can be generated will be discussed upon the results of the separate analyses.

Objective 4: To explore implications of morphological research for a resort's development by addressing practical planning and management issues.

3.6 Summary

Being aware of the necessary of doing resort morphological research in China, this Chapter discussed the concept of resort town in the Chinese context, the achievements and weakness of resort evolution studies in Chinese academic field, the political issues in planning and development and why they are important in this resort morphological study, and the concerns about collecting data.

Following these discussions, this chapter provided the aims of this study as well as three research questions. Finally, four research objectives were presented in terms of description, explanation, modeling, and practical implications. The next chapter will specifically address research methods.

Chapter 4

Research Methods

This chapter the methodological issues follow from the research objects and questions. First of all, it is necessary to establish comprehensive methodological foundations by identifying theories, methods and concepts that underpin the study. Secondly, with respect to data collection, a mixed quantitative-qualitative approach is suggested, including data collection, data compilation, data analysis and explanation, and morphological modeling. Finally, the study sites will be described and justified and the data resources that were used for each site will be illustrated.

4.1 Methodological foundations

Given the nature of resort morphology and the tentative study sites that were initially selected, mixed methods involving collecting and analyzing both qualitative and quantitative forms of data are preferred instead of confining attention to only a single method. Recognizing that all methods, whether qualitative or quantitative, have limitations, mixed methods enable triangulation to be adopted so that biases inherent in any single method can be neutralized by the strengths of other methods (Creswell, 2003). The methods to be used here are mostly drawn from traditional ones that are used in geography but they are combined with novel initiatives. In this resort morphological study, a strategy combing three complementary methods: the morphological method, the functional method, and evolutionary method, is needed (adapted from Conzen's morphological, functional, and historical-geographical approaches (Conzen, 2004)). In terms of three core disciplines or subjects, these approaches are linked to urban geography, tourism geography, and historical geography respectively, but they are combined here to create a broad geographical context.

4.1.1 Morphological method

According to Sauer (1925, 30), the morphological method rests upon "the form of synthesis". It was an essential approach in the study of resort morphology. Based upon the problem-oriented principle, it aims to distinguish elements of forms within resort towns and investigate their internal spatial relationships.

The complexity of topographical development of resort towns requires resort morphology to be investigated at an appropriate level. Former classification schemes were often too simplistic to understand the morphological process holistically or to reflect the complexity of resort townscape. It is better to consider the level between interest of land-use planners and that of urban designers; that is to say between land-use parcels and plots (McGlynn, 2000; Moudon, 2002). However a plot-level field survey may be undertaken for selected plots (Conzen, 1962, 2004). In details, key elements to be examined in morphological analysis of a resort town include tourism related elements, as well as other urban functions in order to address four descriptive and explanatory questions. These questions are: first of all, how the resort has developed in size and depth behind the waterfront?; second, how the tourism development has interacted with development of the urbanized area(s)?; third, how the CBDs and RBDs have been distributed within the resort town if there are any?; and, finally, if possible, what was not there and why?

4.1.2 Functional method

Conzen (2004) suggested that the functional method considers the local community as a whole socio-geographical group, and examines the economic and social functions of the town as expressed in its spatial patterns, investigating the energy transfer within it. Use of the functional method is essential to link the form or pattern with functional characteristics. An historical approach also needs to be applied in this method, because the transformation, addition, or lapse of function(s) could

happen to individual buildings, plots or larger regions from time to time. Recreational function should be regarded as an essential land-use category. In order to understand the functional pattern, it is not enough to apply this method within an individual resort town, but to apply it within a larger regional system.

4.1.3 Evolutionary method

The evolutionary method requires the creation of historical narratives in terms of observation, comparison and classification (Mayr, 2000; Kropf, 2001). There are some challenges when considering this method's applicability to resort morphology. The first issue concerns data: inadequate data sources, low accuracy and a confused writing format are the three major problems. Insufficient historical data can be complemented by spatial alternatives with an assumption that similar relation between evolution stages and morphological characteristics among resort towns with geographical proximity. The second question is concerned with how to describe the geographical changes distinctly while maintaining the perspective of continuous change. Integrating morphological description with discussions of the mechanisms of change is warranted in this case. Finally, causality between the morphological representations and the contextual factors is often not fully understood (Norton, 1982). Resort morphology is commonly regarded as a response to social, cultural, economic and political factors in the literature; however, reasonable explanation can be derived by means of qualitative as well as quantitative analyses.

4.2 To a qualitative, quantitative mixed approach

Based upon the three methods mentioned above, a mixed approach will be applied, in which form, function, and process will be integrated and analyzed as a whole. Three key concepts that are regularly used in the morphological analysis are the site, the context, and the objectives (Toth, 1988). The site is a given parcel of land containing tourism and recreational activities having distinct

geographical or measured boundaries. It is usually a political district. The context of the site means the background or contextual environment relevant to something that has happened or is happening in the tourism development. Finally, the objectives relate to how and why the study is organized.

Table 4.1 Land classification for resort morphological research

<table>
<tr><td colspan="4">Agriculture land</td></tr>
<tr><td rowspan="11">Construction land</td><td colspan="3">Space for public facility</td></tr>
<tr><td colspan="3">Public utility area</td></tr>
<tr><td colspan="3">Special green land, production green land and protection green land</td></tr>
<tr><td colspan="3">Residential area</td></tr>
<tr><td colspan="3">Industrial area</td></tr>
<tr><td rowspan="4">Recreational area</td><td>Attractions: urban public green land included</td><td>Category, rate</td></tr>
<tr><td>Accommodation</td><td>Category, rate</td></tr>
<tr><td colspan="2">Tourism related shops as souvenir shops</td></tr>
<tr><td colspan="2">Tourism related services (either private or public): entertainment sector as theatres, restaurants, nightclubs, bars, etc.; travel agencies; travel information centres</td></tr>
<tr><td colspan="2">Vacation property</td></tr>
<tr><td colspan="3">Storage and warehouse</td></tr>
<tr><td rowspan="2">Land for transportation</td><td colspan="2">Space for road and square</td></tr>
<tr><td colspan="2">Space for transportation</td></tr>
<tr><td colspan="4">Unused land</td></tr>
</table>

Note: adapted from National Land Classification (2002 standard) by the Ministry of Land and Resources of China and land classification in municipal statistics.

4.2.1 Classifying land uses

The first step is to clarify the classification of land uses. Recreational land use should be separated from other uses and divided into more detailed categories such as accommodation, attraction, and so on (Table 4.1). This suggested hierarchical classification is used as a guideline for data collection and data handling.

4.2.2 Build up a descriptive and explanatory framework

Stages and phases of resort evolution are to be identified so that changes in form and function can be traced in a systematic way. A combination of Butler's (1980) TALC and Johnston's (2001, 2006) reassessment of TALC is used as a conceptual framework. Each study site is to be investigated individually. First of all, each resort town is described in terms of its tourism products, contextual environment and destination status. Two steps that complement each other are undertaken at the same time. First, a chronological analysis is desirable based upon Johnston's (2001, 2006) "mechanism analysis". A time frame will be established to show what the study site has gone through as a resort town. Changes contributing to the switches of stages or phases of will be presented sequentially, with five elements for each change: when or during which time period did the change happen; in which scale was the change most influential; what is the nature of the change; mechanisms of change (Johnston, 2006, 202); and to which sector does it belong. Referring to Johnston's (2006) definitions, mechanisms of change may be critical events or blurry transitions. The former affect tourism development in a profound way; the latter are more subtle and are defined as the occurrence of a series of events subliminal to the scale of analysis (Johnston, 2006, 198). Moreover, all events, critical or blurry, may be considered as cessations, alternatives, or additions (Johnston, 2006, 198). On the other side, stages and phases will be measured through quantitatively examining tourism statistics. Both qualitative and quantitative data are necessary. The former helps to construct an

approximation of resort evolution patterns in terms of boundaries, chronological progression and the mechanisms of change. The latter provides a systematic view of these changes. By scrutinizing the sequences of mechanisms and broad external factors that either constrain or enable the resort development (Johnston, 2006), and changes of morphological characteristics, this method facilitates further discussions of the causality between the contextual factors and morphological transition.

4.2.3 Build up the form-function maps

The analysis that will follow is based upon a form-function database, which is generally represented as "three-dimensional" maps. The first two dimensions consist of the network formed by linear and point elements such as the transport system and spatial objects falling outside of or adjacent to the linear network such as plots and individual buildings (shape, size, location, etc.). The third dimension is an attribute data set associated with the spatial data, addressing relevant information, such as the height, the density, the volume, the value and the function of these. All these elements can be used to identify levels of variety at different spatial scales. Then various components need to be abstracted and isolated to address the objectives on one hand and to reflect the complex relationships of the real environment on the other (McGlynn and Samuel, 2000; Chapman, 2006). The results of this process will be employed to give an elemental analysis of the main morphological characteristics and regions (Whitehand, 2001; Chapman, 2006). In brief, the series of maps can be organized as a matrix with two axes: space and time. These maps are especially useful to analysis morphological features within an area of interest, such as changes in the distribution of accommodation and transportation infrastructure.

4.2.4 Analysis of morphological characteristics

By means of demonstrating the spatial interactions of the site's functional parts in an overall context and exploring the changing process of selected components, this approach aims (1) to

discover which contextual factors are essential to understanding the causality of morphological transition; and (2) to demonstrate how these basic and contextual factors define the form and function characteristics of the resort. To access these objects, GIS techniques are to be used as a mapping and analysis tool. Importantly, the unit of analysis is at the same or a lower scale than the extent of the study area (resort town), but cannot be lower than the spatial unit of data collection (plot or functional zone) (Moudon, 2002). In addition to this program of analysis, a modeling procedure is designed based upon the comprehensive generalization and analysis of the maps and statistics, i.e. the overall transitional morphology, morphological analysis of accommodation, the examination of vacation property development, the exploration of the RBD, and the analysis of land use transition. Based upon the knowledge of individual resort towns, whether or not an integrated model (theoretical model as a functional explanation of the geographical complexities: Newcomb, 1969) for Chinese water-based resorts can be suggested will be discussed.

4.3 Selection of study sites

4.3.1 Background of study sites—an introduction of tourism in China

Travel agencies dealing with both inbound tourism to China and Chinese going abroad were set up in the 1920s and concentrated in Shanghai; however stopped by wars in the 1930s and 1940s (Yang and Jiang, 1983; Wen and Tisdell, 2001:16). Almost neither international tourism nor domestic tourism had been developed in China before the implementation of the "open door policy" in 1978 (Wen and Tisdell, 2001:16).

The Third Plenary Session of the Chinese Communist Party's 11th Congress in 1978 paved the way for China's economic reconstruction and reform, tourism was therefore considered both a part of foreign fairs and an economic activity during the early stages of reform from 1978 to mid-1980s (Wen and Tisdell, 2001: 16-17; Zhang, 2003: 24). International tourists were only free to visit

designated places open for foreigners in China in the late 1970s and early 1980s because of entry control (Wen and Tisdell, 2001).

In 1986, the national government declared tourism to be a comprehensive economic activity, and tourism was included in the national plan for social and economic development for the first time (Zhang, 2003). The scale of the tourist industry in China had expanded considerably by the end of 1998. Domestic tourism in particular, increased dramatically after 1992, when the Central Committee of the Chinese Communist Party and the State Council made the important decision to increase the relative size of tertiary industry in the Chinese economy (Wen and Tisdell, 2001). Restrictions have gradually decreased with the progress of China's opening up: 122 areas mainly on the east coast were opened to foreign tourists in 1982, but more than 500 by 1990 and 1060 by 1994. Entry ports to China have also been increased from less than 50 in the early 1980s to more than 200 in 1995. In brief, considered as a new growth point of the national economy, most provinces and regions have made tourism one of the leading industries or pillar industries in their local economic development planning (Zhang, 2003).

The administrative organization appears an top-down structure. The Bureau of Travel and Tourism (BTT) was established as part of the Foreign Affairs Ministry as a policy-making authority in 1964; it was replaced by the National Tourism Administration of China (CNTA) under the State Council in 1981 and CNTA has served as the highest administrative body for tourism in China until now (Wen and Tisdell, 2001). CNTA supervises the Tourist Association, Hotel Association, Domestic Tourist Association, and it has ten functional departments: general administration, policy and law, planning and statistics, resource development, travel service and hotel management, general coordinate affairs, marketing and promotion, finance and foreign currency control, personnel, labour and education, and international liaison. CNTA exercises macro-administration of the tourism industry in China and implements national tourism policies though its branches in provinces, cities,

and counties (Wen and Tisdell, 2001). However, power decentralization occurred from the late 1980s and appears to diminish further; provincial even local (city's or county's) governments have obtained more decision-making power in tourism projects such as tourism planning (Wen and Tisdell, 2001:18).

Though the rapid growth of tourism in China, problems still exist. Concentration of tourism on the coastal areas has especially resulted in congestion and deterioration in some popular (Wen and Tisdell, 1996).

4.3.2 Select study sites

The rationale for selecting study sites is multi-fold. Given that most existing works have been undertaken in coastal areas or lake-based areas, similar kinds of resorts are preferred to make future comparison possible.

The regional disparities of both tourism and economic development in China should be taken into account in site selection. There is a significant concentration of tourism and economic development in China's coastal provinces (Wen and Tisdell, 1996; Fung et al., 2005; Li and Hou, 2005).Twelve tourism resorts for which preferential policies were approved by the state in 1993 are mostly located in water-based areas (Xiao, 2003). Water-based resort towns in China have become or are growing into major tourism destinations and major choices for the establishment of vacation properties. Legislative regulation of resort planning and recreational land use is inadequate and the rapid development of these areas may have result in both opportunities and challenges. Therefore, a thorough knowledge on the form, function, and changes in resort towns, could probably shed light on their likely future.

Finally, in the Chinese context, those water-based resort cores which are adjacent to urban areas are preferred in order to show typical patterns of land use conversions because most urban

development is expected to occur adjacent to particularly present built-up areas, in those fast growing parts of China (World Bank, 1993). Considering the above criteria, Sanya, Hainan Province and Wuxi, Jiangsu Province are chosen for this research. Sanya is a growing seaside destination and Wuxi is a traditional lake-based resort area; both lead China in terms of water-based tourism activities. Tourism development in both cities is associated with rapid urban expansion, growing demand of vacation properties, dynamic contextual factors and changing destination concept. Therefore, we are expecting that this morphological study of two typical water-based resort towns of China can make reasonable interpretation for Chinese water-based resort morphology and also make implications to other destinations in the similar type.

4.4 Data collection methods and data resources

4.4.1 Land use survey

A land use survey (the investigation and cartographic representation of land use), which was initiated in Britain by Stamp in the 1930s, can now use RS as well as field surveys for data collection (Rhind and Hudson, 1980). Field surveys (GPS used) are used for large-scale mapping and serve as an aid to the interpretation of RS images. Sampling can be used in plot-level field survey because it is not practicable to undertake a detailed investigation of all plots. The obviously changed plots can be chosen based upon comparing time-series data sets such as city maps, aerial photographs and/or RS data. In this study, digital land use data and field survey data were used to describe the current morphological pattern of study sites, to investigate spatial pattern of specific morphological features i.e. accommodation, and to analyze land use transformations.

Digital 1:500 land use data of three key areas, Dadong Sea (including Luhui Tou and the south urban district), Sanya Bay, and Yalong Bay was obtained from the local land administration bureau. The information consists of both spatial data and attribute data; and spatial data are connected to

attribute 1996 and 2006 datasets through individual feature codes. This data was prepared for examining land use transition of key areas of Sanya and will be described in detail in Chapter 5. A field survey of selected accommodation services was undertaken in Sanya in June 2007 (in Yalong Bay, Sanya Bay and Dadong Sea). The information was collected to complement the official statistics and prepared for morphological analysis of accommodation; it includes name, type, location; opening date, investor, number of employees and where they live, occupancy rate, room rate and related seasonality, and geographical distribution of guests (for family inns, data only include name and location).

Selected plot-level field surveys were undertaken in Binhu District of Wuxi in May 2007 so as to help interpret the current morphology of the lakeside area of Wuxi and to compensate information in official maps, when on-site photos were taken of streets and buildings, coordinates were recorded for important sites (accommodation facilities, restaurants, resettlement housings, housing to-be-demolished or in the process of being demolished, newly-built housings and housings in the process of being built, transportation intersections, etc.). A municipal-level tourism resource survey completed by Nanjing University was prepared for understanding the situation of tourism resource of Wuxi, including name, location (coordinates included), category, general description and photos.

4.4.2 Questionnaire survey

Interviews were undertaken at fields in order to gain additional information from key persons of tourism industries and related governmental agents. Using interviews and the personal perspectives of individuals in these areas can better inform the understanding of the resort evolution stages and phases as well as key transformations of resort morphology. They were in common asked to draw the CBD(s) and the RBD(s) roughly in the city map (2007); describe the situation of tourism industry in the entire local economy and indicate within a 5-point scale; to describe the growth or changes of

tourism in Sanya/Wuxi and impacts on the city's visible changes; and describe their expectations of tourism development in Sanya or Wuxi in the future. Planners, who were expected to have professional knowledge about morphology, were asked additional questions: indicate the present stages of tourism in Sanya or Wuxi; indicate time points of issues that are regarded as important to show the morphological changes of Sanya or Wuxi; describe problems, if applicable, on stability and efficiency of plan's operation process and why these problems exist. Before entering the fields, an application for ethics approval of the research involving human participants was approved by the Office of Research Ethics, University of Waterloo. When communicating with a possible participant, an information letter was presented first and an interview was not undertaken until approval had been given and the consent form had been signed by the possible participant.

Participants were expected to have abundant knowledge and professional perspectives relevant to tourism development of Sanya or Wuxi. First, two lists of interested government agents were prepared (tourism, construction, urban planning, land resource administration, real estate management and environment). Directors in these departments were preferred, especially those having long experience in their professional areas as well as in the study site. Directors of tourism enterprise with a business focus on Wuxi or Sanya, and other professionals were also considered to be suitable for interview.

Ten interviews were undertaken in the Sanya case. First the author interviewed two acquainted urban planners currently in the Provincial Department of Construction but also with long-time work experience in Sanya Municipal Bureau of Urban Planning. The author was then introduced to Sanya Municipal Bureau of Land Resource Administration. A director of this bureau was interviewed and an official introduction letter was obtained, which helped the author to contact further possible participants. Finally, the author obtained consent from four officials (two officials in the Department of Real Estate Management, one retired director of the Municipal Bureau of Tourism, and one urban

planner in The Municipal Bureau of Urban Planning). Two directors from large-sized tourism enterprises with a long business focus on Sanya tourism development and one key person from the local hotel association were also interviewed.

Totally ten interviews were undertaken for the Wuxi case study. First, the author interviewed an acquainted professor of tourism geography from Nanjing University, who had directed several tourism planning and research projects in Wuxi. The author was then introduced by this professor to Wuxi Municipal Bureau of Tourism and obtained an official introduction letter from the bureau. According to a list of relevant departments, the author contacted suitable participants and obtained consent from seven of them (two officials in the Municipal Bureau of Tourism, one in the Municipal Bureau of Land Resource Administration, one urban planner in the Municipal Urban Planning Institute, and two in Binhu District Bureau of Tourism, and one in Binhu District Bureau of Land Resource Administration). The author attended a meeting of an association of retired professionals of Wuxi, where she successfully interviewed a retired director of the local tourism bureau and an author of several books about Wuxi culture, history and tourism development.

4.4.3 Census and administrative data collection

Several kinds of maps were collected and prepared to be used in analyzing morphological characteristics. City maps (planning maps, land use maps and city maps are collected from the municipal bureau of urban planning, municipal urban planning and design institution, municipal bureau of tourism, municipal bureau of land resources, academic institution, and the Internet) were collected to show the arrangement of the interior parcels of the resort town and regional maps were used to show the site and situation of the resort. Historical city maps and planning maps collected can help understanding how the morphologies of these resort areas have evolved. Land use maps of Sanya

were used to update the digital land use data; city maps and planning maps were usually processed or digitalized and used as base map for illustrating morphological features.

Official statistics were widely collected at municipal scale, involving economic, demographic, social, and tourism sectors. Data from the official statistical yearbooks were collected and compiled. When using official statistics or other official data, it is important to check the purposes for which they have been collected and by what means (Muijs, 2004). Information on policies in tourism, land use and economy were also collected. Tourism management policies are mostly enacted at the state and provincial level. Investment and development policies occur at widely different levels from the central government to the local government. Other official documents include enterprise lists, real estate reports, local gazetteers, as well as municipal plans such as tourism plans, land use plans, urban plans and, transport plans. Other kinds of data sources were also consulted, including brochures, travel writings, tourism websites. These resources can help to explore the resort evolutionary stages and phases, to fulfill the database of morphological features as accommodation and vacation property, and also to understand the contextual factors of resort morphology.

A premise for managing all secondary information to be found in any sources was compiling them into a time-space frame (Appendix 4.1).

4.5 Summary

This chapter focused on methodology issues. First of all, it established comprehensive methodological foundations and identify how those theories, methods and concepts can help this study. Secondly, it identified a quantitative-qualitative mixed approach, based upon the morphological method, the functional method and the evolutionary method, in which form, function, and process will be integrated and analyzed as a whole. This approach needs to classify land uses, build up a descriptive and explanatory framework, build up the form-function maps, and analyze and

modeling morphological characteristics. Finally, this chapter identified the study sites and describe data resources. Based upon multifold rationales, Sanya, Hainan Province and Wuxi, Jiangsu Province are chosen for this study, the former is a coastal resort and the later is a lake-based resort. Land use survey and questionnaire survey were used in data collection; census and administrative data were collected. All secondary data were brought into a time-space frame for managing and further analysis. Based upon the theoretical and methodological framework (Figure 4.1) specifically suggested for resort morphological study, the following two chapters will be focused on the case study of Sanya and Wuxi.

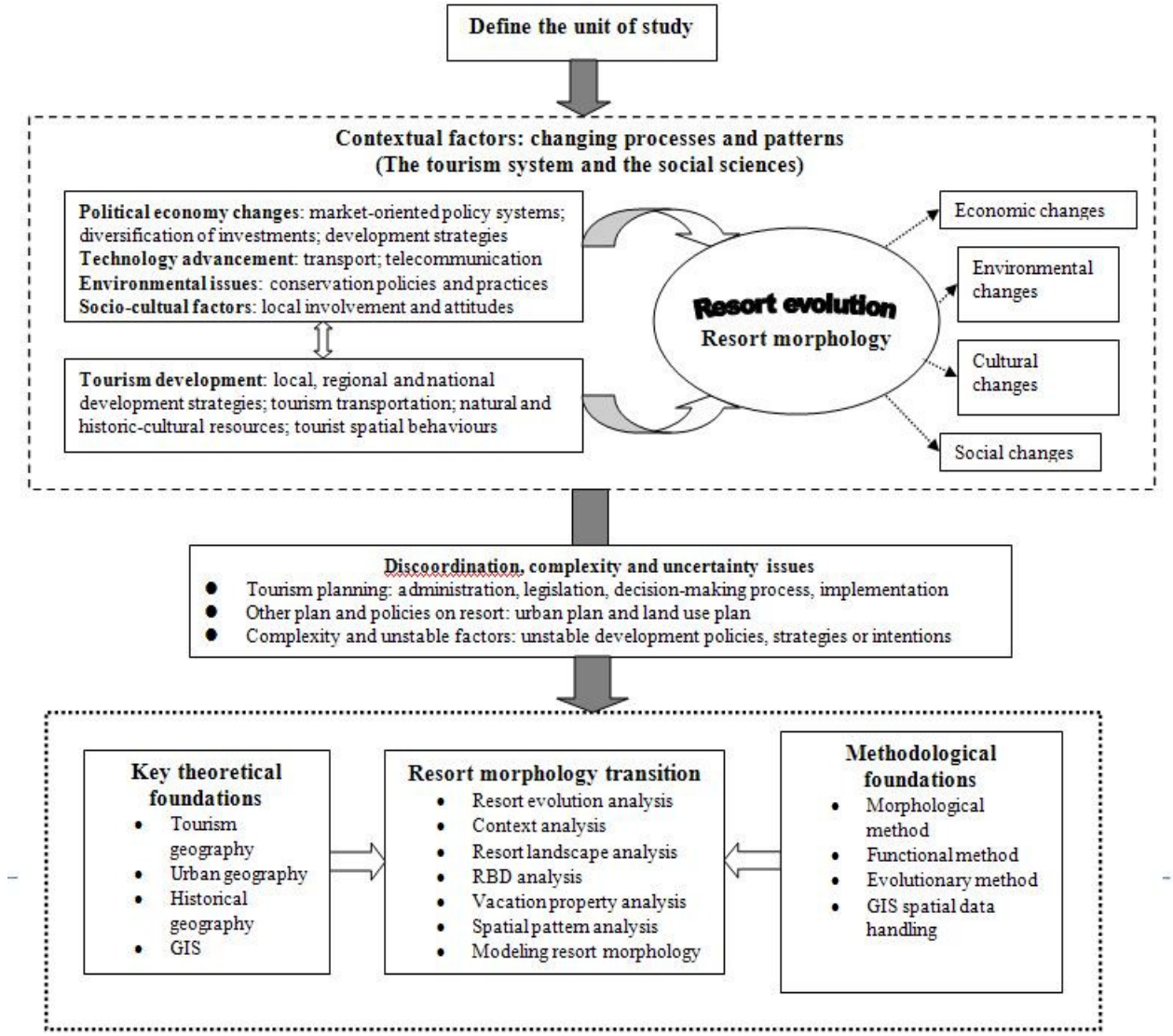


Figure 4.1 Theoretical and methodological framework for studying resort morphology in China

Chapter 5

Sanya: the Transition of Coastal Resort Morphology

5.1 Bounding the coastal resort of Sanya

The area of current Sanya was called Ya Zhou (Cliff State) in ancient China, although the name of Sanya was used in the 16th year of the Empire Jiajing of the Ming Dynasty (1537) until fairly recently to refer to a part of Ya Zhou (CHCX, 2007c). The name entered written Chinese history when the Qin Dynasty (1644-1911) established three southern counties, one of them called Xiang Xian or Ya Zhou (CHCX, 2007c). It was renamed Ya Xian (Cliff County) in 1912, became the seat of a people's government in 1950, and was approved to be a county-level city—Sanya—in 1984, originally belonging to Guangdong Province. Sanya, since then, has risen to be one of the two prefecture-level cities of newly established Hainan Province in 1987。

Figure 5.1 Location of Sanya (Millward, 2004, 3)

Located in the South China Sea and separated from the mainland by the 24-km Qiongzhou Strait, Hainan Island became a new province in 1987 and was designated China's largest Special Economic Zone (SEZ) in 1988. Located on the southern tip of this large island, Sanya is bounded by Ledong Li County to the northwest, Baoting Li and Miao County to the north, and Lingshui Li County to the northeast (Figure 5.1). It covers an area of 1915.21 sq km between 108º56´30″ E and 108°48´28″ E, and between 18°09´34″ N and 18°37´27″ N (Sanya Statistics Yearbook, 2006). Only 0.1 per cent of the total lands of China are located in a tropical zone; Sanya, as a part of this 0.1 per cent, has a geographical priority to be a tropical seaside resort (Wang, 2000, 128).

The transport network of Sanya has been extensively improved in the last two decades, including the transportation of sea, land and air. Sanya Phoenix International Airport, which was opened in July, 1994, is the major entry for passengers; the round-the-island highway, which was completed in December, 2002 (Xinhuanet, 2002), and Haiyu-Zhongxian Road connect Sanya to Haikou and other places of the island. Compared to nearby coastal resorts such as Singapore, Bali, and so on, it is more accessible than others to most main markets of the world (Wang, 2000).

Sanya has a 209.1 km coastline and nineteen natural harbors, in which the Yulin Harbor and the Sanya Harbor are the two largest (Wang, 2000; Sanya Statistics Yearbook, 2006). There are ten islands located within Sanya, as well as more than two hundred mountain peaks with different elevations between 300 m and 1090 m (Sanya Statistics Yearbook, 2006). Ten rivers flow through the region of Sanya, covering 1073.81 sq km basin area (Sanya Statistics Yearbook, 2006). According to the historical statistics, between 1987 and 2005, Sanya has averagely year-round temperature of 26.2°c, with precipitation of 1497.4mm and 2360.3 hours of sunshine. Influenced by its tropical marine monsoon climate, a year can be clearly divided into two distinct seasons—the dry season from November to April, with lower temperatures, and the wet season from May to October, with higher

temperatures--this division contributes a lot to the seasonality in tourism. With the urban green coverage ratio as high as 44.3 per cent and forest coverage of 63 per cent, Sanya was rated the No.1 place for air quality in Chinese cities (CHCX, 2007a, 2007b). The population of the city was 524 thousand at the end of 2005 (Sanya Statistics Yearbook, 2006). More than twenty nationalities, including Han, Li, Miao, and Hui, inhabit this city (SANYA CITY GOV, 2006). On the way to being an international tropical coastal paradise, the city is well-known for superior climate and natural resources such as sunshine, beach and seawater on one hand; and for historical sites and the diverse local cultures like handicrafts, clothing, dance, and other special interests on the other.

Sanya is the second largest city of Hainan Province and includes two districts (Hedong and Hexi) and five towns (Haitang Bay, Tiandu, Fenghuang, Yacheng, and Tianya). It entered a new phase of development and maintained fast growth of its GDP after adjustment in the mid- and the late-1990s (SANYA CITY GOV, 2006). Sanya has undoubtedly become the most important economic, cultural, and foreign trade port in the southern part of Hainan, and a famous international tourism area of China (SANYA CITY GOV, 2006).

The tourism resources of Sanya are diversified, not only in the natural category but also in the cultural (Appendix 5.1). Well-known tourist spots (areas) are scattered mostly along the coastline and highlighted with natural beaches; among them are four AAAA rated tourism areas representing different types: the Yalong Bay National Tourist Resort Zone also approved to be one of the 12 State-designated tourism areas as early as 1992 (2001), Tian-Ya-Hai-Jiao (the End of the Earth) where dated back to Tang Dynasty (618-907) for emperors to banish rebel officers (2001), Nan Shan (literally, Southern Mountain) Culture Tourism Zone (2001), Nan Shan Minor and Major Caves (2005) (CNTA, 2008).

Sanya has evidently benefited from the central, provincial and local government initiatives for developing a tourism industry on the island, as well as from Hainan's superiority as the largest SEZ of China (the State Council, 1988; Zhou, 1993, 143-154). A series of preferential policies for tourism development and for investors have been instigated in many fields. Tourism has become a pillar industry of the city's economic development, with a considerable growth rate, in the last two decades in particular.

This morphological study requires the selection of a destination that is appropriate in size and complexity of institutional tourist development; therefore, Sanya City has been chosen rather than the entire island (Johnston, 2006, 199). Although tourism developed in other contiguous areas along the coastline, creating a 'linked' morphology, Sanya retains a distinctive identity that is meaningfully differentiated from others. Therefore, Sanya was chosen for study, and problems from multiple-site development were minimized, though not entirely eliminated.

5.2 Sequence analysis of resort evolution of Sanya

To establish a sequential profile of change and also build an explanatory and descriptive framework for morphological analysis, Wheeller (2006) indicated that the tendency is to view resort or tourism area development through a linear time frame. A time frame, therefore, was established to show what Sanya has gone through as a coastal resort (Table 5.1, pp.69). Changes contributing to the switches of stages or phases of Sanya are presented sequentially, with five elements for each change: when or during which time period did the change happen or enact; in which scale was the change most influential; what is the content; mechanisms of change (Johnston, 2006, 202); and to which sector does it belong. Official statistics (1987-2006) are examined to help measure the stages and phases quantitatively (Figure 5.2- 5.5, based upon the data obtained from Sanya Municipal Bureau of Statistics). Some kinds of accommodations such as non-star hotels, time-sharing condominiums,

individual tourism properties and family inns, which are not registered in the municipal taxation system, are not included in the statistical database.

A long connection between Sanya humans and the mainland was made evident by the archeological discovery of ten thousand years old Sanya ruins in Luobi Hole in 1992 (Wang, etc., 1996, 104). Because ancient Sanya was far away from the imperial capital and thought to be at "the ends of the earth", it was a government exile place since the Tang Dynasty (Wang, etc., 1996, 104). Some of these exiles settled and became permanent immigrants. In the Song Dynasty (960-1279), more immigrants from the mainland began to settle, first on the north tip of the island, and after years some, further south because the northern area was crowded. Since then, ancient Ya Zhou has become an immigration city. Jiyang Park, in north part of the urban district, was opened at the end of the1920s for local recreational use (Zhou, 1992, 50).

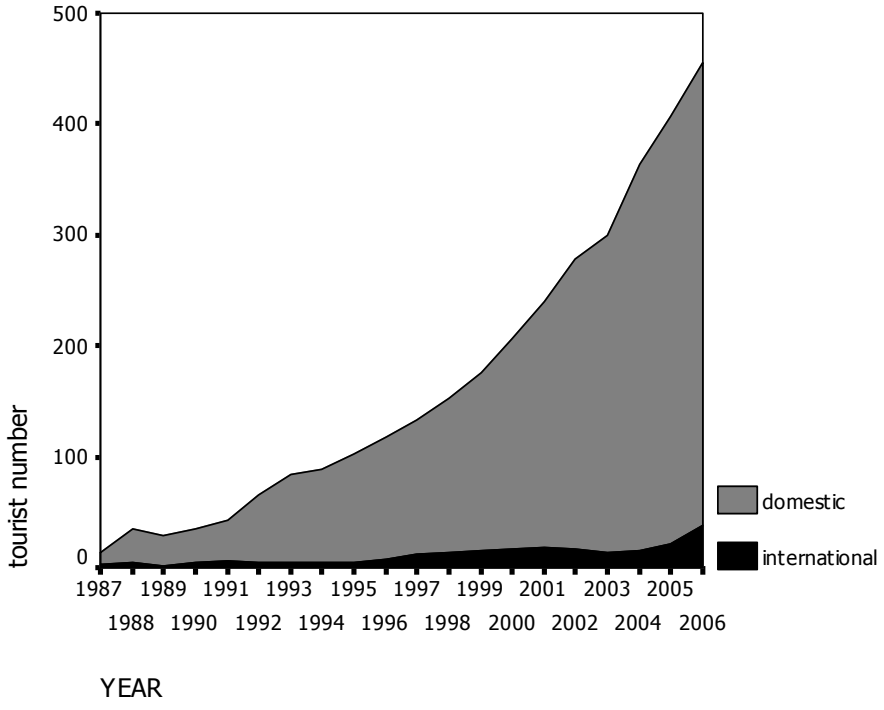


Figure 5.2 Numbers of overnight tourists to Sanya from 1987 to 2006 (10000)

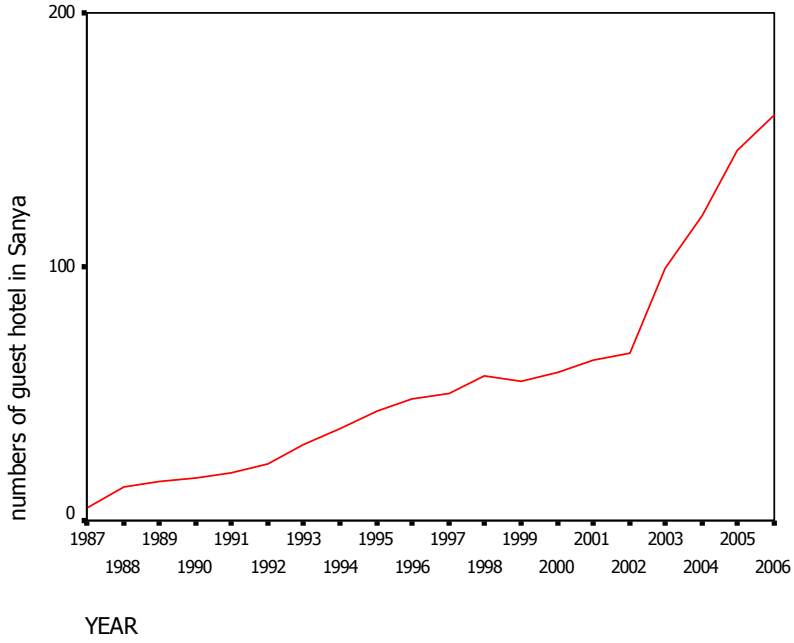


Figure 5.3 Numbers of guest hotels in Sanya from 1987 to 2006

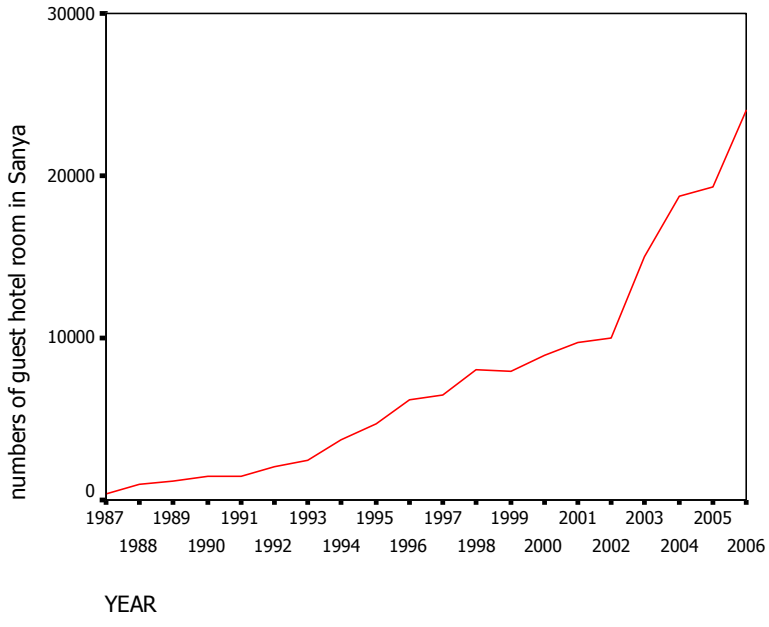


Figure 5.4 Numbers of guest hotel rooms in Sanya from 1987 to 2006

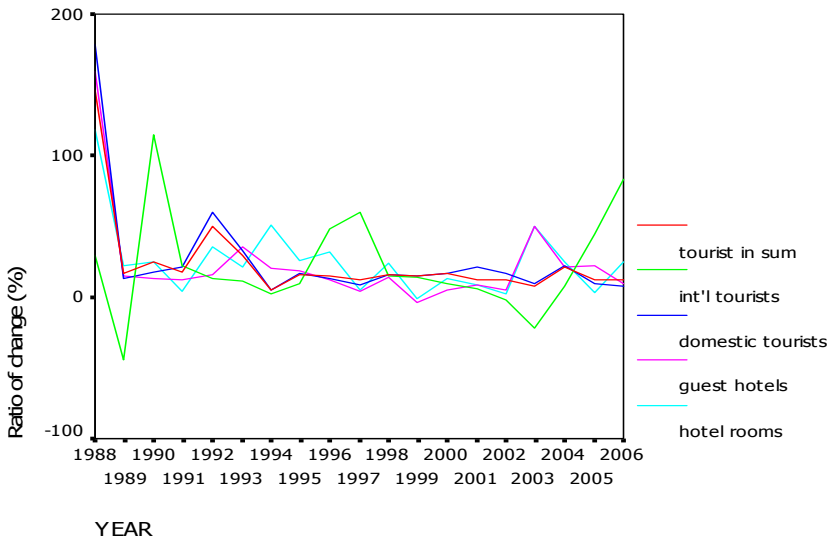


Figure 5.5 Ratios of change between two adjacent years (%)

5.2.1 Exploration stage

The first stage of TALC, exploration, is considered to be pre-tourism as there is little development of tourism industries, no specific facilities are provided for visitors, the physical fabric and social milieu of the area is unchanged by tourism; some tourists do come though (Butler, 2006; Johnston, 2006). As discussed in Chapter 3, it is reasonable to set 1978 as the beginning of the exploration stage for the convenience of this case study on Sanya (Bao and Zhang, 2006). The "Open door policy" paved the way for China's economic reconstruction and reform; as a consequence, tourism was considered both a part of foreign affairs and an economic activity during the early stages of reform from 1978 to the mid-1980s (Wen and Tisdell, 2001; Zhang, 2003).

Prior to 1988, the Island of Hainan, as a peripheral part of Guangdong Province, was underdeveloped and nevertheless strategically positioned in the South China Sea for military consideration (Xu, 1988). Most of the population living on the island, the indigenous Li, Miao, Zhuang, and Hui minorities in particular, depended on agriculture because of limited investment in

industry. Tourism development in Hainan was not even proposed until April, 1983, when it was stated in the central government "Discussion Notes of Affairs on Hainan Island Development" that "Hainan had opportunities to be an international winter-swimming and tourist resort gradually" (Hainan Provincial Master Plan Outline of Tourism Development, unpublished plan, 2003). This document clearly proposed the long-run goal and a blueprint for Hainan tourism development. Three years later, at the national tourism meeting organized by the State Council, Hainan Island was approved to be one of seven national tourism zones.

5.2.2 Involvement Stage

Butler (1980, 2006) defined an involvement stage as the period when numbers of visitors increase and assume some regularity, and local residents then begin to provide facilities primarily or even exclusively for those tourists. Douglas (1997) and Johnston (2006) questioned whether "residents" are not in fact immigrants; in Sanya, for instance, outsiders from other parts of the island have been living in Sanya for decades, sometimes even hundreds of years.

The year 1988 is memorable for both Hainan Island and Sanya: the 7th National People's Congress officially promulgated Hainan's status as a new province and, meanwhile, an SEZ; and Sanya was designated as one of the two prefecture-level cities (another is Haikou, the capital of Hainan Province). Because the central government realized that Hainan's natural resources of tropical biodiversity could be exploited for tourism development, it decided to designate the SEZ, to hasten the development process with the support of the central government. Thus its incomparable resources has meant that, Sanya, performed a leap in resort evolution and started its new stage as a destination.

According to the official statistics, which started in 1987, the number of overnight tourists increased 146 per cent from 1987 to 1988 (3.4 million); in particular, the number of domestic tourists increased 178 per cent. Between these two years, numbers of hotels increased from five to thirteen,

and hotel rooms increased 118 per cent from 432 to 940 (Figure 5.2-5.5). Meanwhile, the relationship between the tourism and real estate industries began to be obvious in 1988. The period between 1988 and 1996 is, in general, viewed as the beginning of Sanya tourism development, characterized by small-scale developments, overall low quality, and obvious seasonality. Two phases are interpreted to have occurred--a property boom phase roughly before 1992 and an urban growth phase afterwards. No clear boundary between them is obvious though. As one participant in interview noted,

There was a saying in the early years of 1990s, that is, you might feel regretful if you'd never been to Tian-ya-hai-jiao, but would be regretful in your life time if you've been there once. This clearly describes a situation of Sanya tourism at that time: good resources but poor products.

5.2.2.1 Property boom phase

In the early years of the province, both the provincial and the local governments focused on real estate development. Spurred by a flexible and subsidized land-leasing policy, both domestic and overseas investors rushed into Hainan and achieved striking profits in real estate (Lu and Xu, 1998). Driven by job opportunities and higher salaries, a large influx of temporary residents came, mostly from the poor inland areas, to find employment in the booming of property market, infrastructural construction and the tourism industry. The real estate boom brought a lot of second homeowners to the city, including a considerable ratio of the retired population, creating an unprecedented occupancy variation between the peak season and the other months of the year. For example, seasonality was obvious in the occupancy rate of second homes because second homeowners usually stay in Sanya from October to May.

From the perspective of tourism types, sightseeing was the only feature of Sanya tourism; in particular, Tian-ya-hai-jiao and Luhuitou were two most popular, if not the only, scenic areas at that time. The government of Hainan first publicized a list of provincial scenic areas in 1988, in which

Luhuitou is included (Wang, 2000, 132). Tourism development was growing fast, although the pace evidently slowed down after the spectacular jump around 1988 (Figure 5.5). Since 1992, the Gross domestic product (GDP) from tertiary industries, primarily tourism, have exceeded that from the primary industries, mostly, tropical agriculture (Figure 5.6).

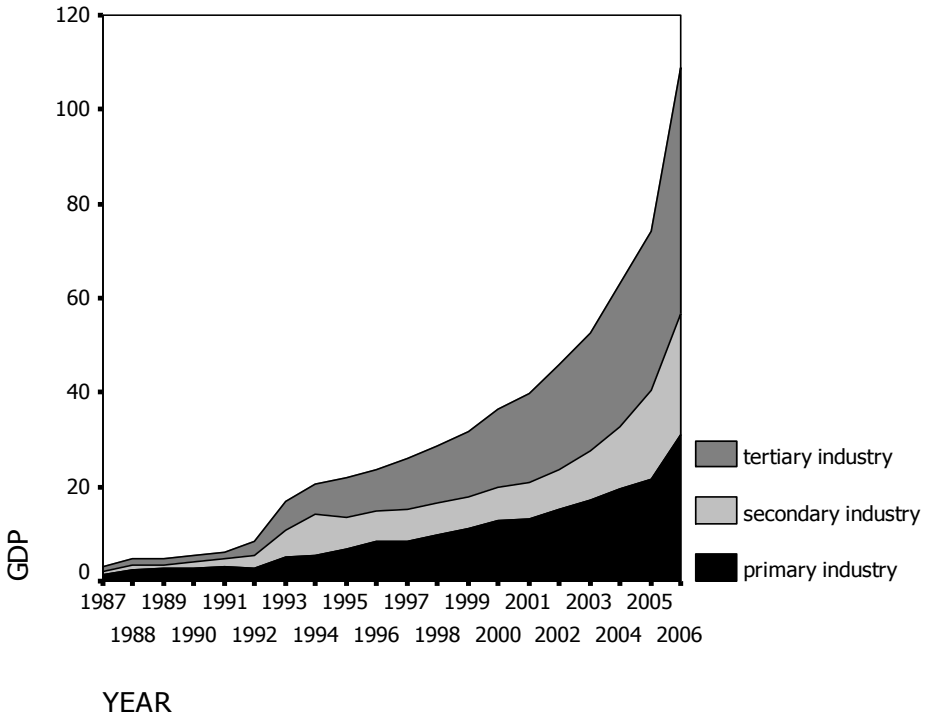


Figure 5.6 GDP composition of Sanya from 1987 to 2006 (billion RMB)

Source: Sanya Statistics Yearbook 2006

5.2.2.2 Urban growth phase

The contextual environment was improved, not intentionally for tourism consideration, but did build a firm basis for tourism development thereafter. First of all, the real estate boom drove urban construction and spatial expansion. Therefore, the municipal government directed a series projects on infrastructural construction with high standards, potentially for real estate development, which not

potentially but in fact, paved the way for resort construction and development. Municipal project 120 was implemented between 1992 and 1994. Infrastructure was improved, including ten roads and four bridges; and more space for urbanization was provided through filling in the sea to reclaim land, such as the area on the east side of Hedong Road. The urban area of Sanya has sprawled to the north direction and the east direction since then. However, the real estate boom ended in 1994, and developments declined quickly to the lowest point around 1997. Like a two-blade sword, the real estate boom left many uncompleted developments, but also advertised the image of the city in the mainland and attracted a lot of continuing external investments. Second of all, transportation was significantly improved. Established in 1989, Hainan Provincial Airlines had no scheduled service until May 1, 1993, when it was renamed Hainan Airlines and became China's first joint-stock air transport enterprise. A crucial leap in Sanya's transportation history occurred in 1994, when Sanya Phoenix International Airport, which was designed by French architects, came into use. Its opening led to a rapid growth in the number of visitors flying to Sanya directly.

Before the mid-1990s, tourism development was fundamentally a government issue in Sanya and Hainan. Yalong Bay Development Stock Ltd. Co. was established in May, 1992. Representing the municipal government, this activity announced the start of Yalong Bay's development as a tourist resort area. In the same year, Yalong Bay was included as one of the twelve state-designated national tourist resorts. In 1994, Sanya National Scenic Area was designated by the State Council, covering a land area of 132.02 sq km and a sea area of 99.06 sq km. It includes three distinct tourism areas--Yalong Bay, Tian-ya-hai-jiao, Nan Shan-Minor and Major Caves, and four tourism spots—the Luhuitou Park, ancient Ya Zhou Town, the Luobi Hole, and the Yezi (Coconut) Zhou. At the provincial level, many efforts were made in the administrative field (Table 5.2).

5.2.3 Development stage

Butler (1980) referred a development stage to a well-defined tourist market area, and indicated that it is shaped in part by heavy advertising in tourist-generating areas. Local involvement and control of development will decline and locally provided facilities will be superseded by more up-to-date, larger facilities provided by external organizations (Butler, 1980). Original attractions will be supplemented by external, artificial facilities or developments (Butler, 1980). From the physical view, a development stage refers to a building boom, characterized by additions to the recreational land uses and particular to the accommodation sector (Johnston, 2006, 209). Johnston (2006, 209) indicated that one way to identify a development stage is to track the changes of accommodation units in the resort town. Generally speaking, the period between 1996 and 1998 refers to a watershed in the evolution process; it is difficult to define a starting point for the development stage of Sanya though. Three phases are interpreted in this stage: pre-holiday-tourism phase, holiday tourism phase and diversified tourism phase.

5.2.3.1 Pre-holiday-tourism phase: 1996-1997

Tourism was firstly announced to be one of the three bases (industry, tropical agriculture and tourism) of Hainan in the provincial-level "Ninth Five Year Plan" in December, 1996. In the following years a lot of efforts were made by the local government in advertising and marketing, city image promotion, attracting investment, development and administration. Infrastructural construction of Yalong Bay was fundamentally completed around 1996, four years after its designation as a national tourist resort. Marked by the ceremony of "the China Holiday Tourism Year" celebrated in the Yalong Bay Square on January 1, 1996, in general, Sanya as a coastal resort town entered the development stage. It was the same year that the first 5-star resort hotel of China—Gloria Resort Hotel—opened at Yalong Bay; though a resort-like hotel--the Sanya Jinling Resort--was built

between 1987 and 1988 at Dadong Sea (it was renewed and re-opened as a 3-star resort hotel in November, 1999). Then in 1997, the municipal government announced of developing the outstanding tourism city of China.

5.2.3.2 Holiday tourism phase: 1998-2002

However, in fact, holiday tourism had not started until 1998, when the local government began to develop Russian tourist market and successfully received tourists from Moscow. Thereafter, a transformation from the sightseeing dominant tourism to holiday tourism dominant tourism has been occurring in the tourism industry, accompanied with an increasing proportion of international tourists.

The local government had been promoting the tourism industry as a leading industry for several years; and achieved significant success. Measured from the statistics in 1998, tourism output represented about 79 per cent local GDP (source: Sanya Municipal Bureau of Statistics); tourism industries contributed to more than three fourths local tax income (source: Sanya Municipal Bureau of Taxation) and shared roughly eighty per cent fixed assets input (source: Sanya Municipal Bureau of Planning); tourism also created 45 per cent local job opportunities (source: Sanya Municipal Bureau of Laboratory). Besides local efforts had been made, benefits also came from the national and regional levels. Hainan was designated one of the eight national tourism zones in the "Tenth Five Year Plan, China Tourism Development and 2015, 2020, Long-term Goal Outline"; it is the only one that was designated as an entire province, and the only tropical island and coastal tourism zone.

Haikou Meilan International Airport significantly supplemented Sanya's accessibility since its opening in 1999. According to the survey (undertaken from July 6 to July 10, 2000 and from September 1 to September 6, 2001) results, Xuan (et al., 2006) indicated most tourists take flight to Phoenix Airport or to Meilan Airport first then get to Sanya by bus through the east-line highway. The opening of Haikou Airport, therefore, made Sanya much more accessible for visitors out of the

island. The day of April 13, 2001 saw the first regular cruise service offered between Haikou and Yalong Bay. It addresses the start of cruise tourism in the island.

5.2.3.2 Diversified resort phase: 2003-present

Influenced by the SARS, Hainan has been given one more conception of "Island of Health" since 2003. A transforming phase started in the late development stage of Sanya resort cycle, refers to the diversified resort phase. It means a comprehensive concept that refers to a combination of holiday tourism, sightseeing, health, tropical coastal resort, and so on. Eventually Sanya began to present some characteristics of both the development stage and the consolidation stage thereafter.

It is evident that the rate of increase in numbers of international tourists started a rapid growth after a break in 2003 (Figure 5.2). However, the rate of increase in numbers of domestic tourists began to slightly slow down, though the total number was still increasing. Marketing, promoting and advertising are currently wide-reaching and both the provincial government and local government have made a great deal of efforts to extent the market area, international markets in particular. The municipal government started urban district development with constructing tourism facilities; and stated the potential to attract tourists into the downtown area. Sanya Bay started a great change because of this blueprint. Immediately adjacent to the downtown area, it suffered a lot from the early property bubble with uncompleted developments. It's renovation in fact has started in 2003, after the construction of Binhai Road (now called Sanya Bay Road). Sanya Bay was becoming the hottest area for investors and second home buyers, and becoming a well-defined RBD with accommodations in varying scales and types and recreational beach. Celebrating tourism festivals and holding high-class conferences and activities have become new attractions of Hainan resorts, among which Sanya achieved great success. One of the most important, Sanya has successfully held the "Miss World Final" since 2003, which brought it to an international stage.

Seasonality in tourism industries still exists but is not as obvious as that was observed at the former stages and phases. The following reasons may address this change. First of all, people elsewhere have more knowledge about Sanya as a seaside resort, and realize that it also has attractive views in the summertime and the temperature is not insufferably high at all. Secondly, the implementation of national holiday weeks (distributed in the Lunar New Year, May and October) created more opportunities for long-haul travel.

5.2.4 Resort evolution partially as a local government issue

Close relationships between resort evolution and political-economy issues are evident in Sanya case. A temporal match is obvious between the evolution process and the transition of local government. The causality between the relationships could be interpreted by changing development strategies and practices in municipal development of different leaderships and their colleagues, some of them are directly on tourism industry and others on contextual environments.

The first municipal committee (1988-1992) is connected to the real estate phase of the involvement stage. They brought forth a development strategy in 1988, briefly called “building the foundation, pursuing development, and fasten the pace” (sanya.gov.cn, 2006). Four years later, this committee in further put forward that the government were developing the tourism industry as a leading industry and central industry of Sanya and developing an international seaside destination (sanya.gov.cn, 2006). Their efforts on infrastructure construction and urban district expansion influenced resort developments in a profound way.

The second municipal committee (1993-1997) basically refers to the urban construction phase of the involvement stage and the pre-holiday-tourism phase of the development stage. They pronounced three development strategies: firstly, developing “the international tropical coastal scenic destination” and “the central city of south Hainan”; secondly, implementing a five-modules development model,

including Haitang Bay module, Yalong Bay module, central module, Tianya module and west module (Minor Cave—Mei Mountain); finally, clearing projects of agriculture, industry and tourism. During the terms of these two committees, the structure of three industries was greatly changed, from 52:20:28 in 1987 (primary industry: secondary industry: tertiary industry) to 32:33:35 in 1992 and to 32:27:41 in 1997 (sanya.gov.cn, 2006, Figure 5.6).

The third committee (1998-2002) is related to the holiday tourism phase of the development stage. Following a peak of urban construction and economic development and suffered from the property bubble, this committee had much pressure in disposing uncompleted housing. They chose tourism as a solution and made all of development strategies about tourism industry. Keeping the "international tropical coastal scenic destination" direction, first of all, they were pursuing to raise the city's international impact by the means of holding high-class conferences and tourist festivals (sanya.gov.cn, 2006). Secondly, they proposed to build the great Sanya tourism circle, covering adjacent counties and cities. Proportion of tertiary industry continued to increase and the structure switched to 33:19:48 in 2002 (Figure 5.6).

The on-stage committee, who began their term since 2002, refers to the diversified resort phase of the development stage (sanya.gov.cn). They proposed a strategic objective of developing "the international tropical seaside scenic destination; leisure and health resort; conference and exhibition, shopping and fashion center". Following their predecessors, they obtained great success in destination promotion and advertising by holding high-class activities (Miss World Final, etc). The proportion of primary industry was continuing declining, whereas that of secondary industry increased and no significant variance with tertiary industry (Figure 5.6).

5.2.5 Summary of the resort evolution of Sanya

The development processes of different tourism spots (areas) and resort areas may vary from each other. Modern tourism had not started in Sanya until tourism development was first proposed for Hainan Island in 1983. In brief, however, Sanya as a coastal resort town has been through its exploration stage and involvement stage, and is in a transforming situation from the development stage to the consolidation stage. It has fundamentally completed its transformation from a sightseeing destination, to a diversified destination; and on the way of internationalization. Two decades after Hainan Province was designated, Sanya to present forms three smaller-degree resort areas in different types: Yalong Bay, Dadong Sea and Sanya Bay. Accommodations are concentrated in the four resort areas and downtown area as well. The following morphological analysis will be proposed within this evolutionary framework and these resort areas are to be scrutinized.

5.3 The transition of resort morphology of Sanya

Resort morphological theory has considered the resort at specific spatial scales: patterns of general resort form, patterns of tourism and recreational land use in specific resort areas, and patterns of components of the resort, for instance, morphological study of accommodation. This morphological study considers a few issues in the evolutionary sequence of the resort: the general morphology of the resort as a city and the relationships to contextual factors such as political-economy, transportation, planning, and the forth; the morphological features of specific resort cores and relationships; as well as the morphology of key components of the resort. The case study of Wuxi also follows such a method.

Table 5.1 Time frame of resort evolution of Sanya

Time	Scale	Event	Mechanisms of change	Sector
● Exploration: 1978-1987				
1983.4	Hainan	"Discussion Notes of Affairs on Hainan Island Development".	Critical - addition	Political economy
1986.1	Hainan	Hainan Island was designated as an important national tourism zone.	Critical - addition	Destination
● Involvement: 1988-1995				
1989	Hainan	Hainan Provincial Airlines established.	Critical - addition	Transportation
1992.5	Sanya	Yalong Bay Development Stock Ltd. Co. established	Critical - addition	Political economy
1992.10	National	Yalong Bay was in the list of the 12 state designated national tourist resorts, covering area of 18.6 sq km.	Critical - addition	Tourism & policy
1992 -1994	Sanya	120 Project	Blurry - addition	Urban construction
1993.1	Hainan	Renamed from Hainan Provincial Airlines to Hainan Airlines	Blurry - addition	Transportation
1993	Hainan	"Outline of Hainan Provincial Tourist Development Planning"	Blurry - addition	Policy
1994.7	Sanya	Opening of Sanya Phoenix International Airport.	Critical - addition	Transportation
1994.10	Sanya	Leaded by former Prime Secretary Sarvinia, World Tourism Organization representatives visited Sanya.	Blurry - addition	Tourism
1995.1	Sanya	The second ring road came into use.	Blurry- addition	Transportation
1995.8	Hainan	"Hainan Provincial Tourism Administration Regulation" was enacted.	Blurry - addition	Policy
1995.9	Sanya	Opened 8 international air routes (Hongkong,	Blurry -	Transportation

		Macau, Singapore, Bangkok, Malaysia, Tokyo, Osaka and Seoul)	addition	
● Development: 1996-2006				
1996.1.1	Sanya	The opening ceremony of "96 China Holiday Leisure Tourism" was held.	Critical - addition	Tourism
1996	Sanya	Gloria Resort Sanya opened as the first 5-star resort hotel of China. (HK capital)	Critical - addition	Hospitality & Tourism
1998.1	Sanya	Cactus Resort Sanya was added by Gloria International Hotels.	Critical - addition	Hospitality & Tourism
1998	Sanya	Nan Shan Buddhism Cultural Tourist Zone was opened to public. As one of the earliest National AAAA Class Tourism Areas, it was awarded "National AAAAA Class Tourism Area" in 2007.	Critical - addition	Tourism
1998.11	Hainan	"Hainan Provincial Tourism Market Administration Regulation" was implemented.	Blurry - addition	Policy & administration
1999	Haikou	Haikou Meilan International Airport opened.	Critical - alternation	Transportation
1999.10	National	National day holiday week began: the length of holiday expanded from 3 days to 7 days.	Critical - addition	Tourism & society
2000	Hainan	Establishment of Hainan provincial tourism development commission.	Blurry - addition	Administration
2000.4.7	Sanya	"Regulations about further encouraging investment, development and construction by Sanya Government" was enacted to improve urban construction of "holiday tourism, ecological type".	Blurry - addition	Policy
2000.5	National	Labor day holiday week began: the length of holiday expanded from 3 days to 7 days.	Critical - addition	Tourism & society
2001. 11.10	National	China formally participated in WTO (World Trade Organization) in the 4th ministerial meeting at Doha.	Critical -addition	Economy
2001.12	Hainan	"Hainan Provincial Tourism Regulation" enacted.	Blurry - addition	Tourism & policy
2002.12	Hainan	Completion of round-the-island highway.	Critical -	Transportation

			addition	
2003.1	Sanya: enterprise	Sanya Shareton Hotel opens, 45 million USD invested by Sanya Ying-wan Tourism Limited Co.	Critical - addition	Hospitality & tourism
2003	Global	SARS	Critical - juncture	Health & society
2003	Sanya	The 53rd Miss World Final was celebrated in Sanya.	Critical - addition	Tourism & culture
2003	Sanya	Development of Sanya Bay started; fast to be the hottest land.	Critical - addition	Land resources management
2004.7.1	National	Opening of freely traveling between Hong Kong and Macau and the Mainland.	Blurry - addition	Tourism & policy
2005.9.26	Sanya	Some architects in Nanshan tourism area were demolished by typhoon.	Blurry- cessation	Tourism & climate
2006.5.1	Sanya	Opening of Sanya Loving Big World.	Critical- addition	Tourism
2007.2.25	Sanya	"2.25 Event": tourists from Sichuan were bitten by salesmen in Tianyahaijiao. Sanya Mayor Zhiyuan Lu apologized openly, and, government established a team to deal with this accident and overall tourism administration problems of Sanya.	Blurry - cessation	Tourism & administration
2007.4.18	Sanya	West-line railway began in use, with Sanya as the terminal. Number of road passengers along railway on the island decreased.	Critical - alternation	Transportation
2007.5	Sanya	Bus routes to tourism sites opened.	Critical- alternation	Transportation
2007	Sanya	Opening of direct flights between England and Sanya.	Blurry - addition	Transportation

Source: Sanya Municipal Bureau of Statistics

5.3.1 A historical view of Sanya

The original location of Sanya was in Yacheng which is forty km west of the location of the urban districts of Sanya today (Gu, 2002). When the government of Republic of China renamed Ya Zhou to Ya Xian in 1912, the total area of it was only one sq km (Huang, 1992, 149). Most local people settled in handmade huts in seaside areas, and made a living from fishing and selling fishes, providing good transportation sometimes. Immigrants from Wencang, Qionghai, Beili, Wuchuan and Yanxian settled in the inlands, mostly in tile-roofed houses beside the two cement roads: the east-west road was one km long and six meter wide, and the south-north road was also one km long to the ferry of Luhuitou (Huang, 1992, 149). Along the cement roads were mostly tile-roofed houses, roughly more than 100 in total and one tenths were two-floor buildings (Huang, 1992, 150). There was one market in the core area of the town, allowing five hundred people trading at the same time. The largest company, named Yuanxing and had a two-floor building, controlled almost all salt and fishery trades (Huang, 1992, 150). Jiyang Park in north of the town was opened to the public in the 1920s for local recreational use (Zhou, 1992, 50). Infrastructure built during the period of the Anti-Japanese War was mostly for military considerations; a cement road was built from Sanya Bay to urban district with five km long and six m wide (Huang, 1992, 151).

5.3.2 Transitional resort morphology of Sanya

Although the central government of China first proposed a blueprint of tourism development of Hainan as early as 1983 and designated the entire island as one of seven national tourism zones three years after, there was a lag between the increasing demands (represented by the number of tourists) and the development of tourism and recreational facilities and activities. Although tourist number increased dramatically in 1988 and after; eventually, significant coastal tourism and recreational

development in Sanya did not take place until the fundamental accomplishment of urban infrastructure construction and the end of the property bubble during the early 1990s.

In common, plans always reflect the request of current situations and are supposed to guide the future development. The initial master plan of Sanya was formulated in 1988 and approved in 1990, which proposed Sanya to be developed as a "tourism and high-tech industry emphasized, tropical coastal scenic tourism city". In this plan, scenic tourism land parcels were clustered at Luhuitou hill, and linearly distributed along the beach of Haipo, Sanya Bay and the beach of Dadong Sea. This plan was fast superseded by actual situations and changing demands since then, in tourism and property development in particular. Thus, the 1988 master plan was modified in 1994, 1999, and 2005. The plan that was revised in 1994, re-proposed Sanya as an "international tropical coastal scenic tourism city", clearly indicating an oriental transition of Sanya from a conventional, comprehensive city to a tourism-dominant city. The central square of Haipo, Sanya Bay was planned then. Compared with the 1988 master plan, it added new land parcels for tourism and recreational use at river-mouth, riverside areas and along the beach of Sanya Bay; and, it indicated much more intricate land use of the urban district and Tiandu, which serves as the major road-transportation entrance of Sanya from east regions. The plan was modified once again in 1999 and adopted some contemporary western theories and practices of 'Neo-urbanism'; it proposed a new conception of landscape modification which emphasized two major landscape zones—seafront and riverfront and specifically, called for stopping constructing multi-floor buildings (4-10 floors). The 1999 plan initiated a significant transformation of the urban landscape of Sanya, especially in Sanya Bay and the urban district.

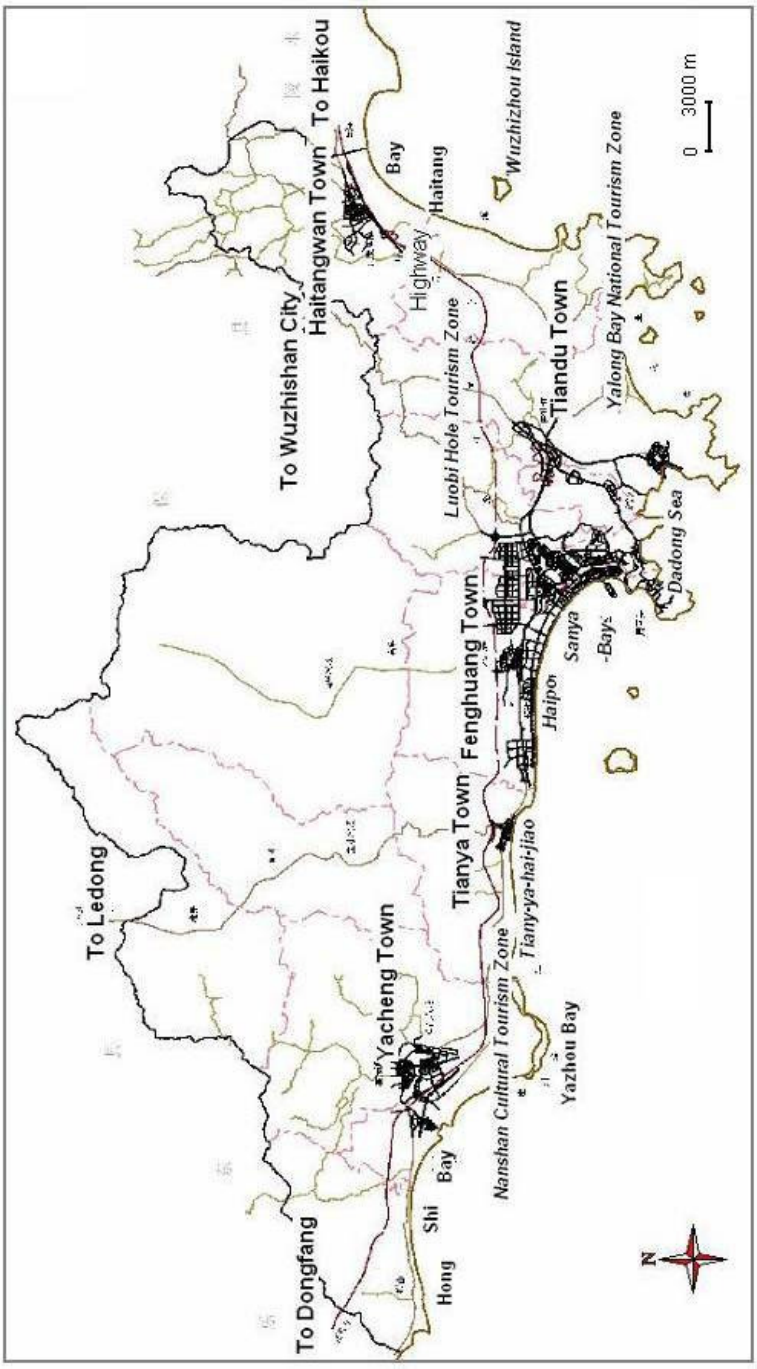


Figure 5.7 Distribution of resort clusters and townships

Note: redrawn on the base map obtained from Sanya Municipal Bureau of Urban Planning

Basically, the spatial structure of Sanya adopted a linear cluster form as identified in the first master plan, so did that of the tourism activities. Major clusters of tourism and recreational utilized sites, such as Yalong Bay, Dadong Sea, Sanya Bay, Nan Shan and Tian-ya-hai-jiao, are scattered along the shore. These clusters were not developed equally; instead, they represented the transitional spatial focus of tourism development of Sanya, as well as its transitional resort concept. Therefore, it is reasonable to specifically address three most typical clusters—Dadong Sea, Yalong Bay and Sanya Bay--to trace the transitional coastal resort morphology of Sanya (Figure 5.7).

Although their development process are mutually influenced by the contextual factors, such as infrastructure and transportation method, government strategy, and relative proximity to the urban districts, the specific site location of these clusters is best interpreted by the local physical environment. Sand beach is the prime tourism and recreational attraction for most clusters of the Sanya case; river mouth locations comprise a second of recreational locations; mountain coast where a scenic view or an artificial attraction is provided comprise a third.

5.3.2.1 Yalong Bay

Yalong Bay is thirty km east to the urban district and has a ten km sand beach and well-conserved tropical ecological environments. It was designated National Tourism Zone in 1992; then, its master plan was formulated in 1993, in which it was oriented as "international standard tourism resort with characteristics of tropical ocean and ethnic minority and Chinese traditional cultures" (Detailed Development Control Plan ((DDCP) of Yalong Bay, 1997). The first DDCP for Yalong Bay, which was approved in 1997, identified a 146 sq km area as Yalong Bay National Tourism Development Zone, in which 18.2 sq km was earmarked for building tourism and recreational facilities. This plan divided Yalong Bay into three functional zones according to the land utilization: golf courses in the central part, public recreation facilities in west and luxury resort hotels in east area.

Also, land parcels, land use types, plot ratio, building density, height and stories, green space ratio and parking capacity were addressed. Since then, Yalong Bay became to be transformed from an agricultural floodplain to a coastal resort complex for international competition. Large-scale constructions were taking place in Yalong Bay, however, not all of them followed instructions and guidance addressed in the plan because it lacks a strong legal foundation of its implementation.

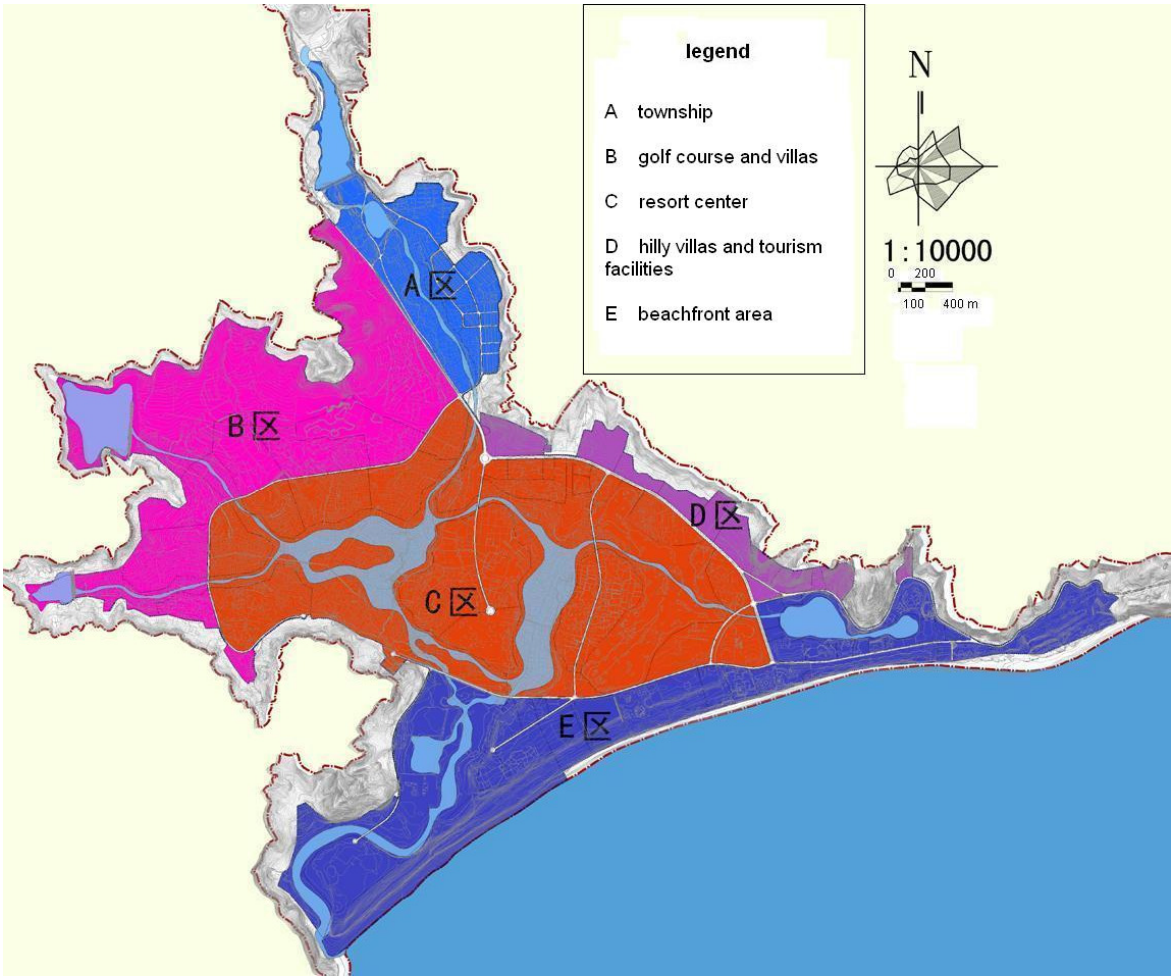


Figure 5.8 Functional zoning plan of Yalong Bay

Source: Sanya Municipal Bureau of Planning (by China Academy of Urban Planning and Design, 2002)

Four years later, a new DDCP for Yalong Bay was formulated with correspond to the increasing tourism recreational demand. According to the new plan, tourism and recreational developments were expanding to west hinterland; and finally, five functional zones was defined for township development (zone A, 107.37 ha), golf course and villas (zone B, 325.94 ha), resort center (zone C, 538.4 ha), hilly villas and tourism facilities (zone D, 47.59 ha), and beachfront area (including Longtan lakeside area, zone E, 334.09 ha) (Figure 5.8).

5.3.2.2 Sanya Bay

The urban district of Sanya and Sanya Bay constitute mixed development. North Sanya Bay, also called Haipo, has been developed for recreational use since the late 1980s. Although having many priorities to be a core recreational area, such as the close proximity to the urban core and transportation ports, a long sand beach, Sanya Bay became one of the areas that suffered the most severe impact of the property bubble. The local government launched extensive Binhai Dadao (Binhai Road, renamed Sanya Bay Road) modification around 2000, with a budget of roughly 240 million RMB (about 29 million USD according to The Annual Report 2000, China Development Bank). The old road was expanded in length and width and renovated; green belt between the pavement and the sand beach was occupied by more than 4000 coconut trees and other tropical plants. In 2001, Rui-hai-hao-ting (Richen Vista) first developed high-rise sea-view properties and these properties were soon sold out. This issue immediately inspired a quick growth of vacation property (also called holiday home or second home) development in Sanya; and Sanya Bay soon obtained developer preference not only because of its well-constructed infrastructure, its specific location and physical environment, but also because of problems with other development potentials such as Dadong Sea was crowded and Yalong Bay was quite restricted in land utilization. Accompanied with the expansion and land use intensification of urban core, therefore, Sanya Bay was through significant change since then, and regenerated as the hottest area for vacation property development.

5.3.2.3 Dadong Sea

Dadong Sea was developed on a 2.3 km sand beach and nearby traditional tourism spot—Luhuitou. It became transforming from a winter health resort exclusively for government officials to a public resort area since the opening of Dadong Sea tourism center (currently is South China Grand Hotel) in 1985, which was thought as the best hotel of Sanya then. With an admission ticket visitors were able to access to the beach and bathing facilities. Development was rapid and it became a well-known sea-water bathing place, albeit without planning and efficient regulations. Originating diving tourism in Sanya, there were more than ten enterprises offering diving activities at the peak time. Without control, the intensive development of Dadong Sea caused significant problems on its ecological environment, for instance, coral reef, sea water, and beach, and gradually lost its attraction to tourists in the late 1990s; and therefore, diving services declined soon. Local government proposed to obtain capital by selling resource; then, in 2000, Dadong Sea Operation and Management Ltd. Co. obtained the 20-year development license of Dadong Sea by investing 18 million RMB (about 2.17 million USD according to annual report 2000, China Development Bank) to launch new development, and to somehow ended the unordered situation and tried to re-develop this area.

5.3.3 Morphological analysis of tourism and recreational features

The different development processes result in distinct morphological characteristics of Dadong Sea, Yalong Bay, Sanya Bay and the urban district, which can be clearly shown through tracking the location, opening date and size of currently existing accommodations of Sanya and, specifically, within these areas (Table 5.2-5.6, based upon 2007 survey data obtained from Sanya Municipal Tourism Information Centre; Figure 5.9-5.12, Sanya Transportation and Tourism Map (Hainan Surveying and Mapping Resource Information Center, 2007) was used as the base map). In this section, the overall development of accommodation in Sanya will be discussed first; then concerns

will be taken to three key resort areas: Yalong Bay, Sanya Bay (Haipo, urban district), and Dadong Sea so as to understand the geographical differentiation of morphological characteristics.

Base maps of three resort areas were digitized with GIS software (MapInfo professional 7.0). Layers produced for each of them consist of annotation (text), hotel, other features (point), transport route and pier (polyline), built-up lands, water body, and island (polygon). An attribute table was built for features in the hotel layer, consisting of id, title, rate, number of bedrooms, opening date and building type. Without coordinate information, these data are not used for spatial analysis but for illustrating and explain morphological characteristics.

Table 5.2 Licensed hotels in Sanya

No. of Bedrooms/ No. of Hotels	Evolution stage or phase of Sanya	400+	300-400	200-300	100-200	100-	Total %
-1987	Exploration stage					194/2	0.8%
1988-1992	Property boom	458/1		218/1			2.8%
1993-1995	Urban growth		300/1	699/3	831/6	147/2	8.3%
1996-1997	Pre-holiday-tourism	403/1		754/3	831/5	342/5	9.8%
1998-2002	Holiday-tourism	1196/2	1084/3	1593/7	1861/13	1331/22	28.8%
2003-2007	Diversified-resort	3323/7	1651/5	903/4	2780/21	3097/57	49.5%
1976-2007	Total (%)	22.6%	12.8%	17.1%	26.5%	21%	23777/171

A few small accommodations arose in the contemporary urban core (currently Jiefang Road), in the late 1970s of Sanya and the early 1980s. Since then the accommodation development were mutually driven by expansion of transportation infrastructure, urbanization, official development strategy and physical environment (sand beach in particular), and expanded to outside-urban locations. During the period from the late 1980s to the mid-1990s, concentrated accommodation development

left away the urban district, where was occupied by booming property developments and urban infrastructure construction, and moved to northwest and south. Dadong Sea began to grow fast and were major concentrated with mid-scale hotels and then was Haipo. Yalong Bay became to grow up as a planned, upscale seaside resort area since 1996. Compared with Yalong Bay and Haipo, accommodations built during the late 1990s and the early 2000s in Dadong Sea were clearly declining in scale and amount. Dramatic growth of accommodation occurred in the entire Sanya in the last two evolution phases, and now representing significant geographical differentiation. Generally speaking, it seems that closer to the urban core, there is a higher proportion of those smaller and cheaper accommodations and less proportion of upscale hotels.

Table 5.3 Licensed hotels at Yalong Bay

No. of Bedrooms/ No. of Hotels	Evolution stage or phase of Sanya	400+	300-400	200-300	100-200	100-	Total %
-1987	Exploration stage						
1988-1992	Property boom						
1993-1995	Urban growth						
1996-1997	Pre-holiday-tourism	403/1				68/1	10.3%
1998-2002	Holiday-tourism	585/1	717/2	452/2		122/3	41.1%
2003-2007	Diversified-resort	1469/3	638/2		108/1		48.6%
1996-2007	Total (%)	53.9%	29.7%	9.9%	2.4%	4.1%	4562/16

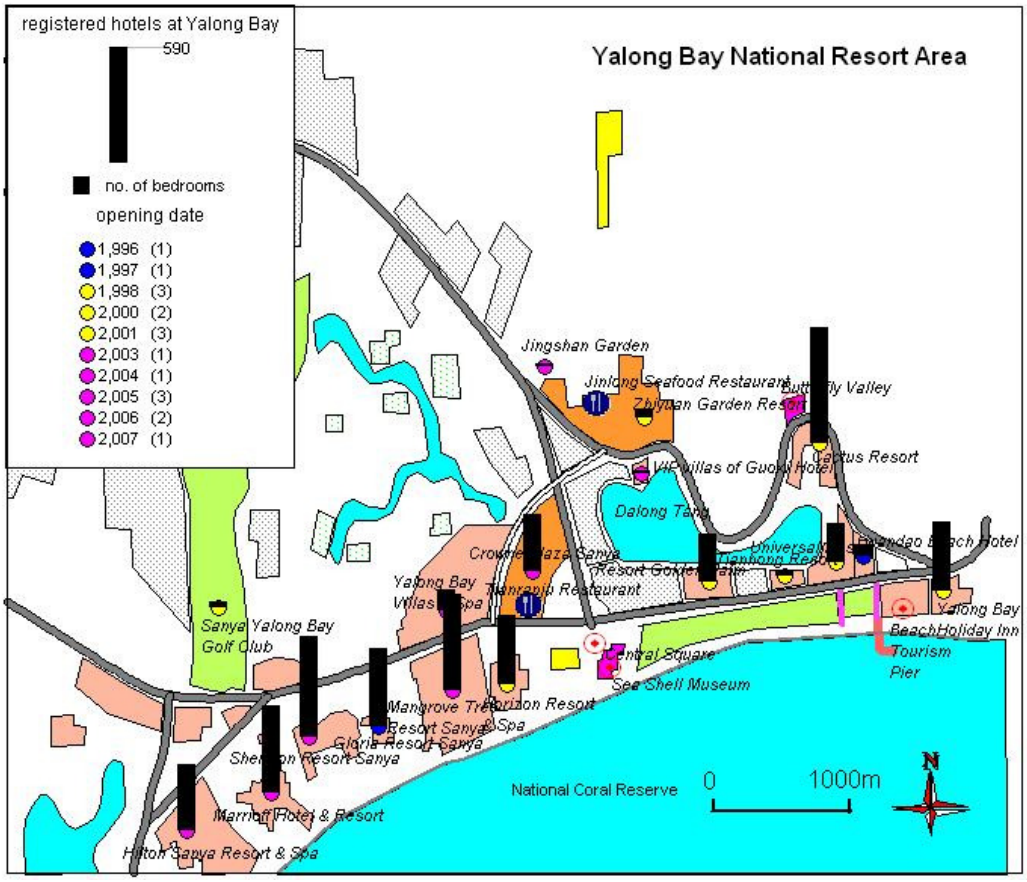


Figure 5.9 Hotel thematic map of Yalong Bay

In the late phase of involvement stage of Sanya, the morphological change of Yalong Bay first began with the construction of transportation infrastructure, which defined its basic spatial structure with three major routes: one access to the proposed square, one route parallel to the beach, and another one parallel to the lakeshore. Secondly, accommodation and artificial attraction development started in the early phase of Sanya's development stage. A central square was first constructed and defined a center of tourism and recreational developments; in the meantime, previous local residents were resettled in a new township far behind the resort frontier. Then, resort hotels became to be built at the seafront, firstly close to either natural or artificial attractions; and, golf courses came into use. Since the mid-phase of development stage of Sanya, recreational developments became more

intensive in the seafront and surrounding transport routes, along with more diversified composition (resort hotel, family inn, vacation property, restaurant, recreational pier, retailing service). Hotels became to be expanded along the beach then backward. It seems that more luxurious international resort hotels were likely to be clustered then formed a remarkable hotel-lined beach with mixed building types (high-rise main building complex and villas); smaller-size resort hotels were settled at the lakeside and behind the front transport route (mostly low-rise building complex or villas); very few family inns were located at more hinterland places (villas); vacation property developments were started and concentrated along the square access (mostly high-rise building group). The government potential for Yalong Bay and the enterprise decision-making mutually generated such a distribution: government preferred more luxurious, international-reputation hotel chains and the best beachfront locations were offered as incentive factor; and the quite high land price also set a threshold. Recently, a RBD is being generated around a free public beach access, a public parking place and a recreational pier.

Table 5.4 Licensed hotels at Haipo, Sanya Bay

No. of Bedrooms/ No. of Hotels	Evolution stage or phase of Sanya	400+	300-400	200-300	100-200	100-	Total %
-1987	Exploration stage						
1988-1992	Property boom	458/1					9.3%
1993-1995	Urban growth			205/1			4.1%
1996-1997	Pre-holiday-tourism			235/1	166/1		8.1%
1998-2002	Holiday-tourism	611/1	367/1		347/3	65/1	28.1%
2003-2007	Diversified-resort	1439/3		474/2	393/3	154/3	50.4%
1989-2007	Total (%)	50.8%	7.4%	18.5%	18.9%	4.4%	4941/21

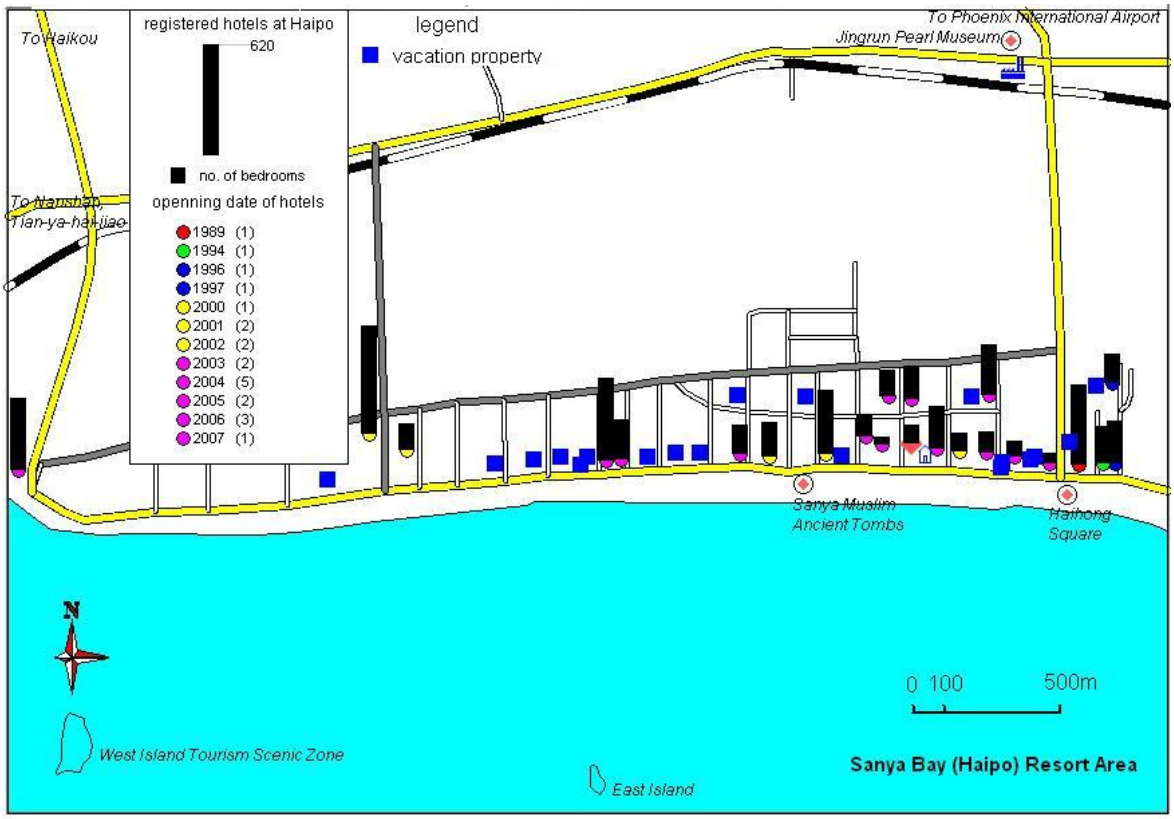


Figure 5.10 Hotel thematic map of Haipo, Sanya Bay

Table 5.5 Licensed hotels in the urban district (include south Sanya Bay)

No. of Bedrooms/ No. of Hotels	Evolution stage or phase of Sanya	400+	300-400	200-300	100-200	100-	Total %
-1987	Exploration stage					194/2	2.1%
1988-1992	Property boom						
1993-1995	Urban growth		300/1	294/1		79/1	7.5%
1996-1997	Pre-holiday-tourism			280/1	513/3	111/2	10%
1998-2002	Holiday-tourism			438/2	665/5	1018/8	23.5%
2003-2007	Diversified-resort		680/2	429/2	1412/11	2619/44	65.9%
1976-2007	Total (%)		10.9%	16%	28.7%	44.4%	9032/84

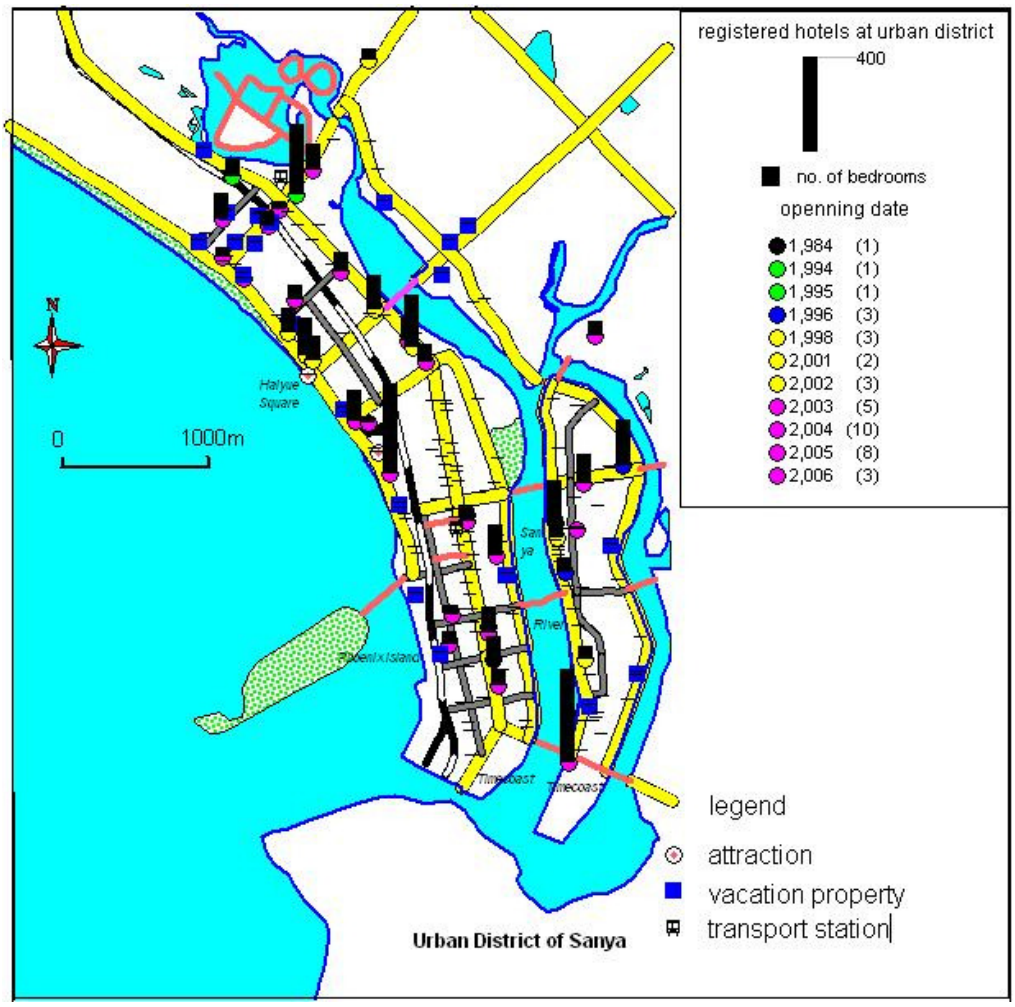


Figure 5.11 Hotel thematic map of north Sanya Bay and the urban district

Separated by a large special-use land, Haipo differentiates itself from south Sanya Bay with a well-defined resort-hotel-lined beach (mostly low-rise building complex or villas, a few high-rise building complexes in more recently built upscale resort hotels). Even though their remarkable difference in accommodation composition and building types (high-rise building complex are commonly seen at south Sanya Bay and river front but often multi-floor building complex in the urban core) (Table 5.3, 5.5), both of them started significant morphological change along with the transportation infrastructure construction, which defined a parallel route system in the involvement

stage of Sanya. Then, hotels became to be built near major transport junctions in the early phase of Sanya's development stage. The shoreline modifications then generated intensive recreational land use first at the seafront and near squares and then a trend to sprawl both vertically and horizontally.

Table 5.6 Licensed hotels at Dadong Sea

No. of Bedrooms/ No. of Hotels	Evolution stage or phase of Sanya	400+	300-400	200-300	100-200	100-	Total %
-1987	Exploration stage						
1988-1992	Property boom			218/1			4.2%
1993-1995	Urban growth				572/4		10.9%
1996-1997	Pre-holiday-tourism			239/1	152/1	163/2	12.5%
1998-2002	Holiday-tourism			703/3	749/5	149/3	30.6%
2003-2007	Diversified-resort	416/1	651/2		751/5	374/7	41.8%
1992-2007	Total (%)	7.9%	12.4%	22.2%	44.4%	13.1%	5237/35

Morphological transition of Dadong Sea truly emerged in the involvement stage of Sanya. Except the first hotel built at the beachfront, hotel locations seems were first driven by transportation infrastructure and they were concentrated to the major transport route first and less-class routes second. Beach served as another driving factor to location preference of hotels, associated with tourism activity and environmental changes. During the peak time of diving tourism at Dadong Sea, hotels were concentrated in west beachfront, where diving services were clustered nearby a yacht pier. The intensive activities brought out a lot environmental problems: water quality was decreasing and coral reefs were damaged severely. Tourism and recreational center was switching to east and to backward since then, responding to the mutual influence of government strategies (a series of infrastructure development and shoreline modifications), urbanization and transitional market demands (vacation property market growth).

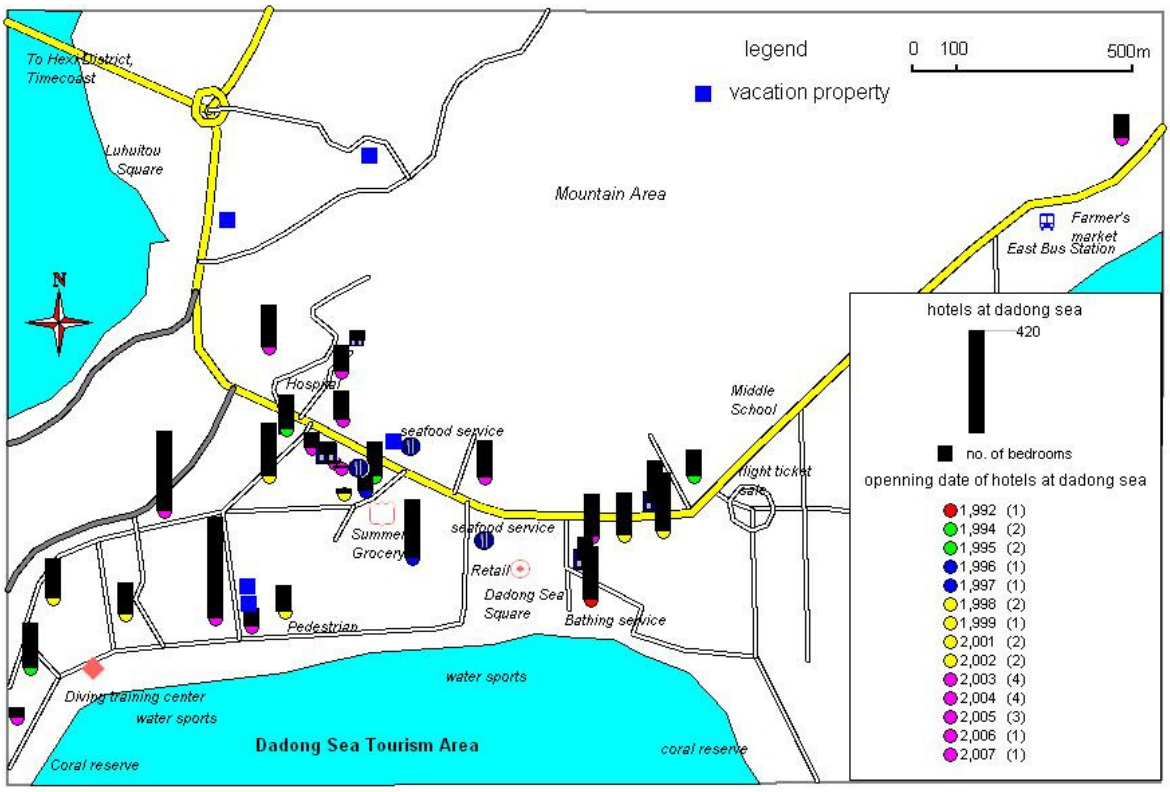


Figure 5.12 Hotel thematic map of Dadong Sea

Distinct morphological features of tourism related facilities and services, registered hotels in particular, can be clearly observed in each resort areas, however, there are some characteristics of morphological transition in common. Though Dadong Sea and Sanya Bay began to be developed much earlier than Yalong Bay, remarkable morphological changes of them all started in the involvement stage (Yalong Bay in the late phase and the others a little bit earlier), along with the infrastructure development and particularly, transportation infrastructure. The early development phase was often connected with developments of accommodation and artificial attractions. Transport routes, beach and other attractions combined to define the trends of distribution of accommodations. The mid-development phase saw increasing intensive and complex recreational land uses in each area with additional tourism and recreational services and facilities; and, significantly, the growing

tourism and recreational demands drove modifications of infrastructure as well as environment. Vacation property market was growing rapidly in the late-development phase and became a strong influence factor of morphological changes. Vacation properties, mostly in high-rise building type, have remarkably intensified and heightened the beachfront landscape of Sanya Bay, as well as the behind-beachfront zones of both Sanya Bay and Dadong Sea. Finally, several phenomena addressed in western studies i.e. seafront or beachfront, the T-shape based upon a transport station and its connection to the coast were also observed in the case of Sanya. Because a large part of travelers arrive Sanya by plane and as part of group, the T-shape phenomenon in Sanya is not as obvious as that in most British seaside resorts, which responded to the demands of individual tourists arrive by railway or car.

5.3.4 Tourism development and vacation property development

The mutual development of tourism and real estate become more and more remarkable in the third phase of the development stage along with the dramatically growing vacation property market. In a resort area specifically, the vacation property selling presents a quite obvious seasonality, similar to hotel markets, and seems very different from typical residential real estate markets.

According to the analysis of monthly vacation property selling from 2004 to 2006, both the curves and the descriptive statistics (Figure 5.13, Table 5.7, based upon the data obtained from Sanya Municipal Bureau of Real Estate Administration) show remarkable seasonality in vacation property markets. December to March or to April is the peak season, while July to September is the low season. Compared with the situation of 2004, it seems that seasonality is becoming less significant than it was, and two secondary peak times can be observed as May and October.

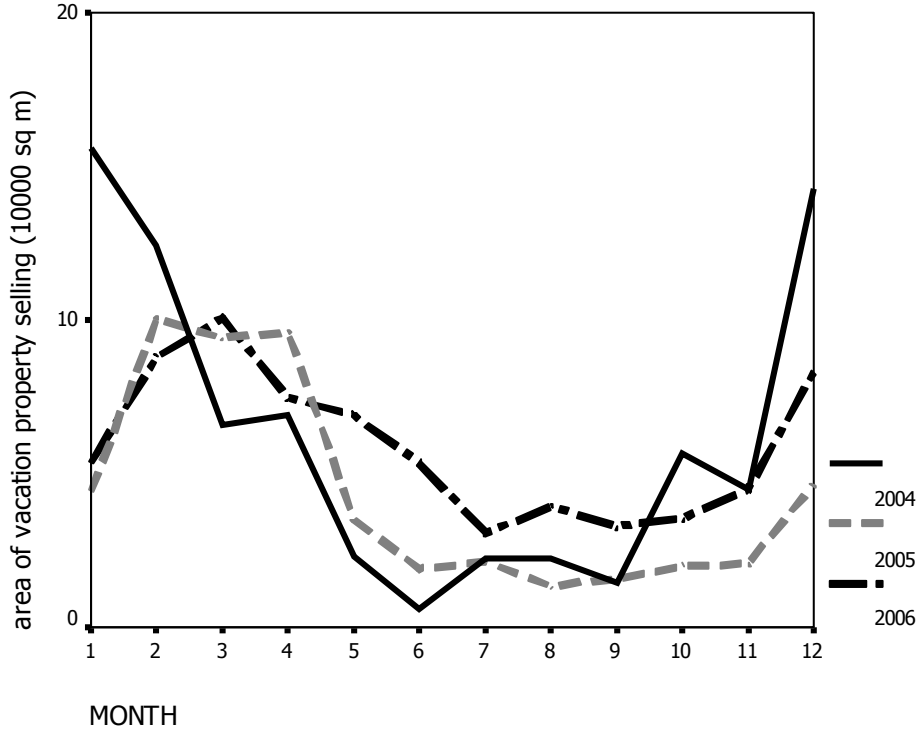


Figure 5.13 Monthly distribution of vacation property sales

Table 5.7 Descriptive statistics of monthly distribution of vacation property sales

Area (10000 sq m)	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
2004	12	15.00	.61	15.61	6.2217	5.1974	27.013
2005	12	8.70	1.34	10.04	4.3825	3.3654	11.326
2006	12	6.98	3.08	10.06	5.8792	2.3725	5.629
Valid N (listwise)	12						

Table 5.8 Geographical distribution of vacation property sales

2005/2007	Proportion by No. of sold-unit	Area per unit	Average price per sq m
Urban district	72% / 23%	80.9 / 95.8	3886 / 7767
Sanya Bay (urban district)	2% / 51%	60.8 / 91.7	5774 / 10225
Dadong Sea	6% / 7%	101.52 / 101.7	6798 / 18174
Haipo	15% / 15%	32.75 / 83.9	6191 / 11297
Yalong Bay	3% / 4%	77 / 78.3	14935 / 14993
Sanya	100 % / 120%	77.49 / 93.58	4814 / 10384

The vacation property distribution shows close relationship with the distribution of tourism and recreational activities and services. Based upon the records of vacation property sales in the October holiday week, 2005 and the May holiday week, 2007, dramatic increase of price and significant geographical differentiation can be observed (Table 5.8). Significant property increase both in quantity and price can be seen in the entire Sanya Bay, which has recreational beaches and is either close to the urban core and coach terminals (south Sanya Bay) or close to the airport (north Sanya Bay or Haipo). Excluding one luxury property which is at a river-mouth location, the average price within other parts of the urban district increased slightly compared with Sanya Bay. New property developments in Dadong Sea are performing a tendency of switching from high-rising, high-density apartments to low-density, luxury villas, along with the pursuing of lands from an old village. Generally speaking, first of all, where concentrated higher proportion of large-size, more expensive hotels generally are to be developed for properties of higher quality, as well as higher price. Secondly, within the properties of similar quality, higher price of property connects with a location nearer to a recreational beach. Finally, it is true that quite difference exists even in the same building between a higher, with-sea-view unit and a lower, without-sea-view unit.

The increasing prosperity of vacation property market in the past several years has driven a dramatic growth of family inns, which has become a significant portion of tourism accommodation in Sanya. Most family inns are concentrated in residential buildings, which are located by the major and secondary roads of urban district, specifically in the area between the west bank of Sanya River and Sanya Bay Road, and the outer fringe of Dadong Sea. These properties are close to both RBDs and the urban core, with convenient transport access, but comparatively low in property price. Without effective official control, these un-registered family inns have problems in security, administration, and generate problems to the taxation system.

5.3.5 The RBD and the CBD in transition

It is agreeable that Sanya, as a tourism-dominant city, has eventually no CBD but only CBD-like area, which is generally defined as the urban core. Place names can always help to track the transformations of an urban area. In the 1980s, the original urban core can be defined as the area around current Jiefang Lu (road), part 1 and 2, where, meanwhile, very few accommodations were built. This situation had remained until the intensified urban infrastructure construction began in the early 1990s, driving an expansion of urban core northwards along with the elongated Jiefang Lu and eastwards to (Sanya) river banks gradually. At first, there was no clear defined RBD in the urban districts; and, tourism and recreational services were mixed with other urban functions. This situation remained until the extensive shoreline modifications at Sanya Bay became to drive services primarily for tourists to be concentrated at or possibly close to the seafront.

The seaside area of Haipo and Dadong Sea began to be developed potentially for tourism and recreation; the former has the nearest beach to the airport, which was under-construction then, and the latter is adjacent to a traditional attraction--Luhuitou—but also not far away to the urban core. However, no RBD had truly formed in Sanya until a series of projects (square, pedestrian path,

retailing fringe, and food service) were undertaken in Dadong Sea between 2000 and 2002 (Appendix 5.2). The start of offering regular bus service among tourism areas and urban districts gave birth to the development of the RBD in those remote tourism areas, such as Yalong Bay and Nanshan. For instance, a small-scale RBD became to form in Yalong Bay, nearby the bus terminal, recreational pier, and a public beach access.

The distribution of RBDs is showing a geographical dispersion along with moving to higher evolution stages and phases, and a close relationship to natural or cultural attractions. A gradual separation between RBDs and the urban core was observed either within urban districts or within the entire Sanya. This confirms the locational separation between the RBD and the CBD observed along with the resort evolutionary process in European, North American, and Southeast Asian resorts (Pigram, 1977; Smith, 1992a, 1992b).

5.3.6 Spatial analysis of land use transition between 1996 and 2006

Digital 1:500 cadastral data (in Shapefile format, which was originally processed from a digitized field survey completed in 1994 then updated with Hainan 1:10000 Digital Orthophoto Map obtained in March, 1996 and with continuing field surveys) of three key areas, Dadong Sea (including Luhui Tou and the south urban district), Sanya Bay, and Yalong Bay were obtained from Sanya Municipal Bureau of Land Resource Administration. Spatial data (coordinate system: Beijing 54) are presented as polygons; each polygon refers to one land parcel. An attribute table is available, consisting of object id, information defining its location (district, block, street in both text and code), land parcel code, stakeholder, area of land parcel, land right, code of land use in 1996, and land use type in 2006. By using the cadastral administrative system (it defines dimensions and location of land parcels described in legal documentation), original spatial information of land parcels is suitable for both situations but needs to be scrutinized before analysis. Land use types for each land parcel in

1996 and 2006 are defined and comparable with responding to land parcel code. Different national land use category standards were used: the 1984 standard was used for defining the 1996 land use code whereas the 2002 standard was used for the 2006 land use code. ArcGIS 9.2 was applied to modify both spatial data and attribute data.

5.3.6.1 Pre-analysis data processing

Begin with pre-analysis data processing, spatial data was scrutinized and polygons without applicable attribute data were deleted (less than 1% of total). A few overlaid or complicated joint features were modified respectively refers to maps of land use situation in 1996 and 2006. First of all, in order to keep a consistent standard and make the result comparable, the land use code of each feature in 1996 was transformed and re-coded with the 2002 standard according to the comparable table of the two standards. One problem was brought out about features which were coded as 50 and generally defined residential land uses. According to the new standard, these features could be residential lands, residential lands mixed with commercial or industrial uses, or lands primarily for tourist accommodations. The previous research of accommodation showed that only a slight proportion of accommodations were built before 1996; and, each feature under this category was checked and the land use right of most features belonged to individual persons. Therefore, these features were simply re-coded as 251. For the 2006 attribute table, unavailable land use attributes are first complemented according to the field survey (June, 2007). Second of all, generalization and extraction process was undertaken for some low-level categories in order to emphasize key features (tourism and recreational land use). Excepted clearly defined saline-alkali lands (code 312); unused lands were generally defined as code 311 to make the analysis result more reasonable. Lands for vacation property were separated from the residential categories and coded as 250, while both rural residential lands and urban residential lands were joined as one category, and coded as 251.

Table 5.9 Interpretation of land use code in this research

Code	Classification	Code	Classification	Code	Classification
111	Irrigated paddy fields	112	Rain fed paddy fields	113	Irrigated land
121	Orchards	122	Mulberry fields	131	Wood land
132	Shrubbery lands	141	Natural grass land	142	Improved grass land
143	Man-made grass land	153	Rural road	211	Commercial service land
212	Financial service land	213	Accommodation	214	Other tourism and commercial service
221	Industrial land	223	Storage	231	Public facilities
232	Attraction and recreation	241	Institution	242	Education
243	Science and research	244	Culture and entertainment	245	Sanitation service and hospital
250	Vacation property lands	251	Residential lands	252	Residential lands mixed with commercial use
261	Rail roads	262	Highways and major roads	263	Civil airports
264	Harbors and wharfs	266	Streets	281	Specially-used land
283	Religious land	311	Waste land	312	Saline-alkali land
324	Mudflat				

5.3.6.2 Analysis of comparable land use maps

Table 5.9 (modified from national land classification 2002 standard by the Ministry of Land Resource, China) interprets these codes which were used in the Sanya case; and, two land use graphs were produced for each area for comparison of their changes (Figure 5.14-5.16). First and foremost, transitions from other land uses to tourism and recreational land uses, particularly those classified as code 213, 214, 232, 244 and 250, are to be focused and specifically interpreted. Moreover, transitions

from agricultural lands to built-up lands, tourism and recreational lands in particular, are expected along with urban expansion and the growth of tourism developments. Finally, it is expecting to observe more complicated and diversified land composition in the 2006 situation than in 1996. Such a change was also indicated in most western studies.

Some sub-categories were merged by using the same legend to highlight the tourism and recreational land uses in Figures 5.16-5.18. Merging was generally based upon the 2002 national standard, but tourism and recreational functions were specifically emphasized. In detail, land-use categories coded 111, 112, 113, 121, 122, 131, 132, 141, 142, 143 and 153 were merged to "agricultural land"; land-use categories coded 211 and 212 were merged to "commercial land"; land-use categories coded 221 and 223 were merged to "industrial land"; land-use categories coded 241, 242, 243 and 245 were merged to "public service"; land-use categories coded 251 and 252 were merged to "residential land"; land-use categories coded 261, 262, 263, 264 and 266 were merged to "transportation land"; land-use categories coded 281 and 283 were merged to "special land"; and those coded 311, 312 and 324 were merged to "unused land". Other land-use categories listed in table 5.7 (code 213, 214, 231, 232, 244 and 250) remained.

Figure 5.14 shows a transformation from a typical rural area to a resort area. The most significant change is the transformation from rain fed paddy fields (code 112) to accommodation areas (code 213), which are quite clustered at the beachfront, lakeside and roadside areas. Consulted the updated map, the beachfront areas have been entirely occupied by tourism and recreational land uses, of which mostly are accommodation land uses. Most previous residential lands were transformed to accommodation areas, and local residents were resettled in a hinterland new-built township. Differentiated from the other two areas, the overall land use pattern seems more clustered in 2006 than what was ten years ago.

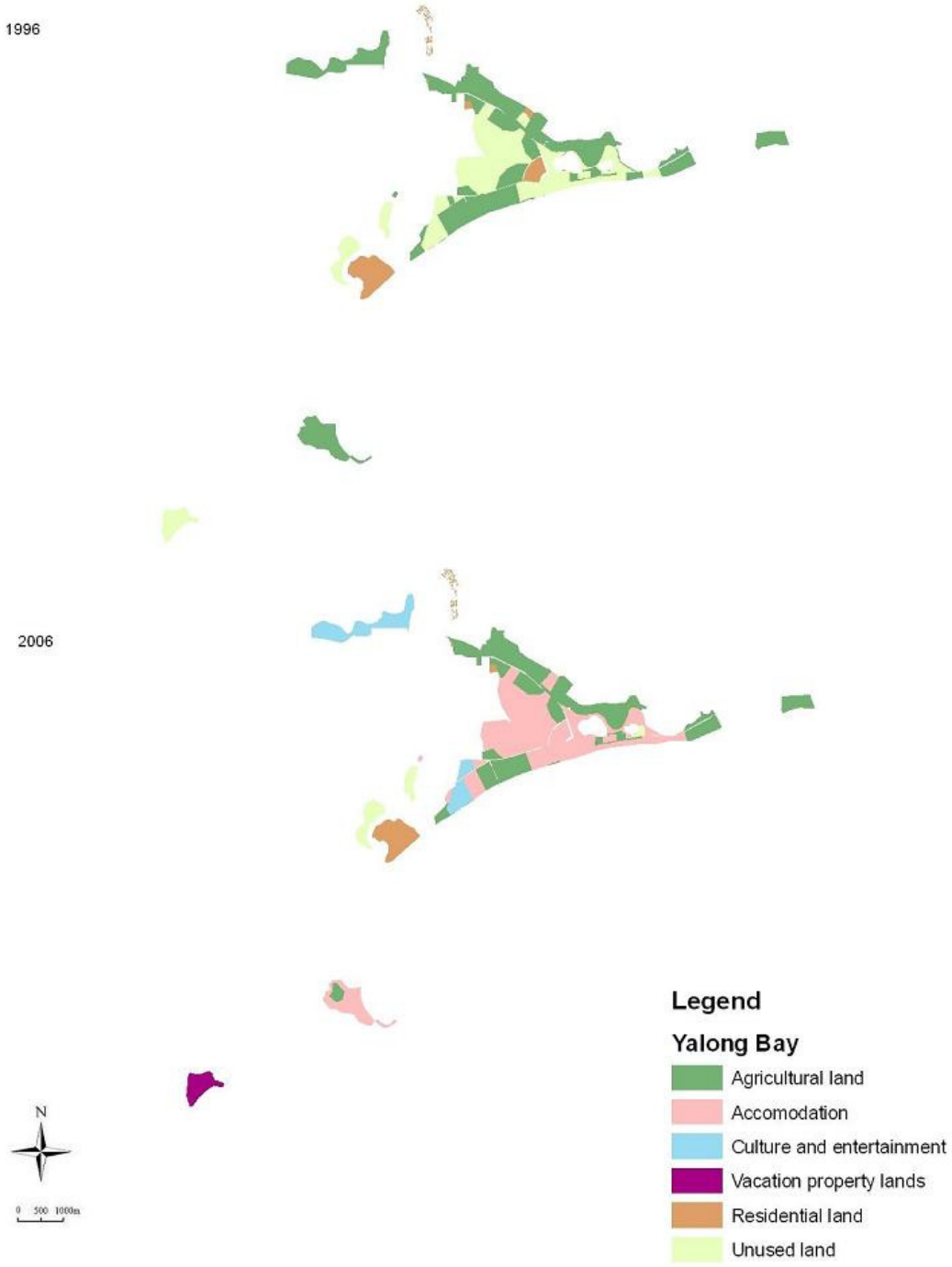


Figure 5.14 Comparable land uses of Yalong Bay in 1996 and 2006

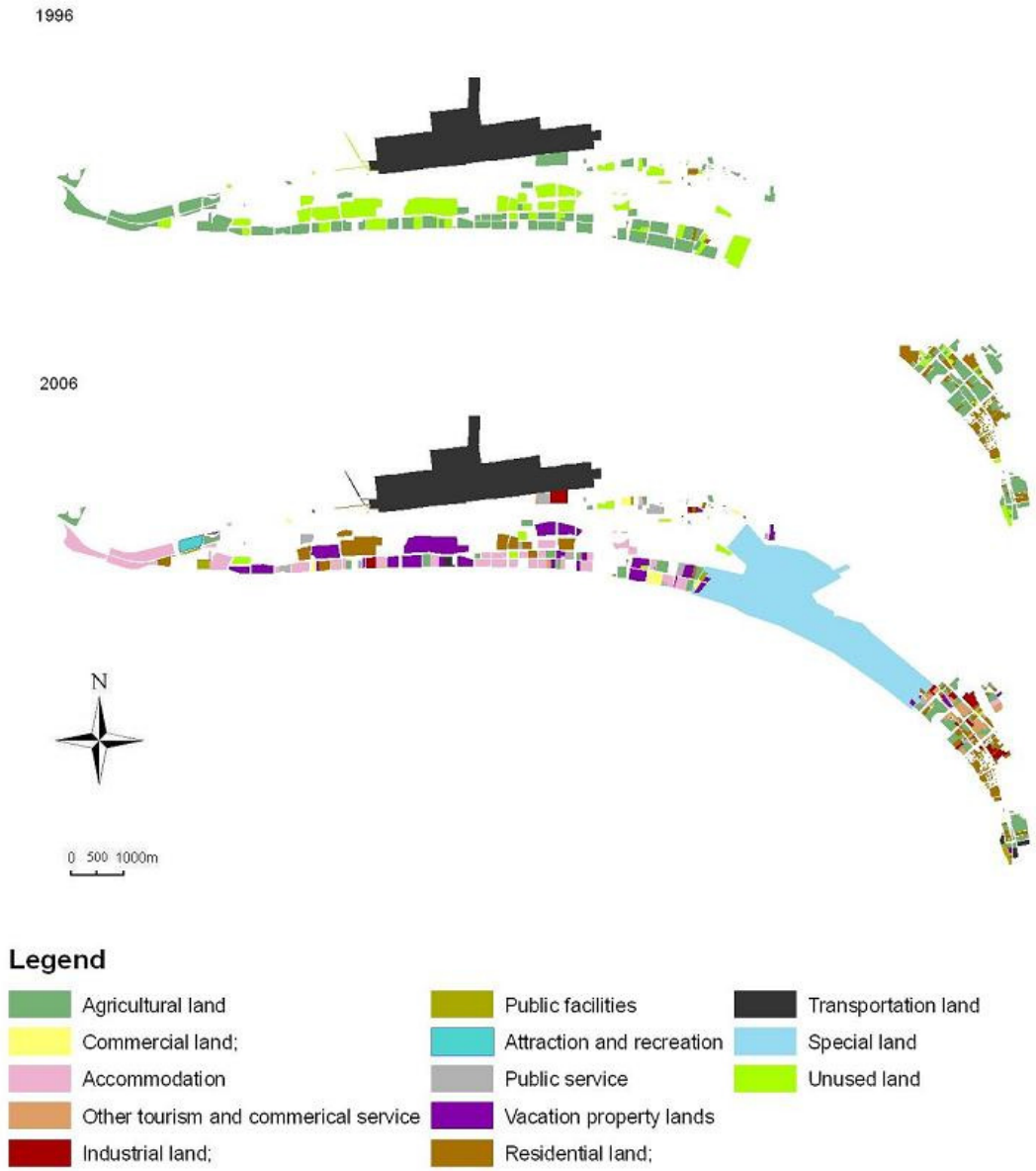


Figure 5.15 Comparable land uses of Sanya Bay in 1996 and 2006

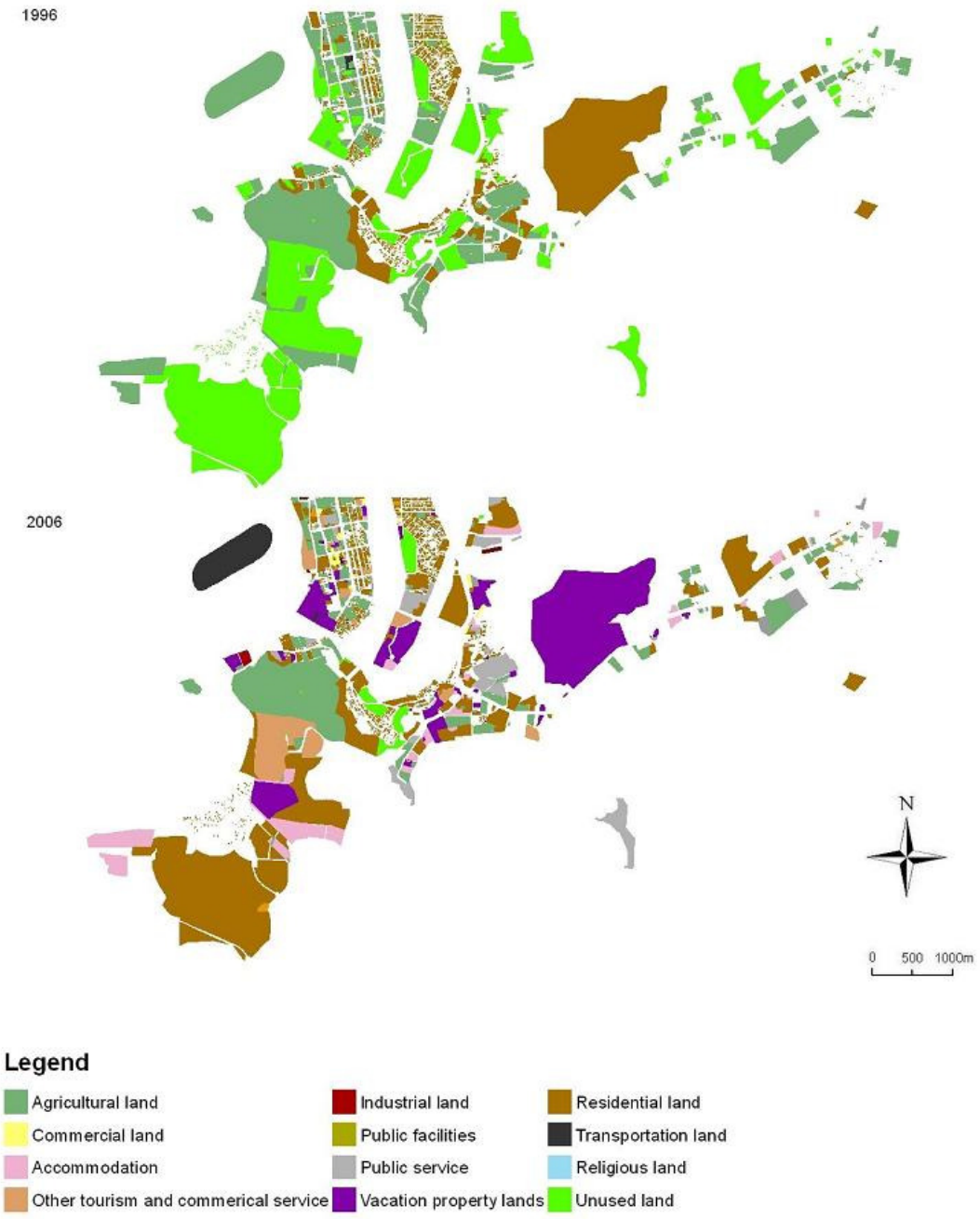


Figure 5.16 Comparable land use of Dadong Sea in 1996 and 2006

The transformation of Sanya Bay (Figure 5.15) is more complicated than that of Yalong Bay; and, a change of land use pattern from more clustered to less clustered is implied. Significant transitions from waste land (code 311) and rain fed paddy field (code 112) to tourism and recreational land uses (i.e. code 213, 214, 232 and 250) occurred in the beachfront and adjacent parallel zone at Haipo. Residential lands in Haipo became more clustered, when associated with growing tourism and recreational developments, gave residents more opportunities to communicate with tourists and recreationists and offer them some services (food service, souvenir shop and grocery). Changes occurred near the airport and at south Sanya Bay, such as transitions from agricultural lands and waste lands to built-up lands and finally to a diversified land composition, showing a clear influence of both urbanization and tourism development.

Land use transition at Dadong Sea and surrounding areas (Figure 5.16) is also complicated and differentiated at different areas. Influenced by rapid urbanization, waste lands were mostly transformed to residential and other urban land uses, and the composition of previous urban district became more complex. Transformations to lands for accommodations and vacation properties were concentrated at bay areas, mountain foot areas and river mouth, primarily from previous agricultural lands and residential lands. Overall speaking, neither significant clustered nor dispersed land use pattern can be expected in Dadong Sea; the pattern is random along with land use intensification and diversification.

5.3.6.3 Further implications

The differentiation between Yalong Bay and the other two can be viewed as an influence of government control and well-implemented planning; and the development of Dadong Sea is more naturally developed and market driven, therefore, leading to different transformations of land-use

patterns. Also, a negative relationship between the influence of urbanization (distance to the urban core) and the clustered degree of a spatial pattern can be suggested.

Literatures on resort morphology suggests that seaside tourism and recreational functions are inclined to be clustered, especially in those locations in proximity to physical attractions, such as a sand beach and river mouth, i.e. an attractive core or beachfront (Pearce, 1978; Brent, 1997). The above discussions of the three resort areas of Sanya also suggested that the beachfront, lakeside and areas close to major transport routes and transport stations tend to show functional clustering. Therefore, locations such as a beach, lake and transport station are spatial hot spots of tourism and recreational developments. In terms of different tourism and recreational functions, accommodations (code 213) are geographically clustered in well-defined resort areas at Yalong Bay, Haipo and Dadong Sea yet may be randomly distributed in other urban areas; however, related tourism services (code 214) and vacation properties (code 250) may be either clustered or dispersed or randomly distributed, since they rely more on other urban facilities, infrastructure, and services.

Finally, different strategies may be suggested for different resort areas associated with different tourism functions. In a planned tourism-dominant resort, which is usually far from the urban core, tourism and recreational functions are generally close to each other in order to maximize the resort image and minimize the efforts of administration and environmental compensation. Resort areas in proximity to the urban core address the needs of local recreationists as well as tourists and have mixed tourism functions and other urban functions are convenient to both tourists and local people. Convenient transportation is necessary to attract tourists to live in the hinterland accommodations.

5.3.7 Resort morphology of Sanya in present

Presently the linear-cluster form of Sanya remains unchanged; however, the key clusters represent both similar and distinct morphological features. Some common features shared among the

case areas (Yalong Bay, north Sanya Bay, south Sanya Bay, Dadong Sea) are quite clear: each of them has a square roughly in the middle area with public beach entrance and surrounded with retailing service and food service; a hotel-lined beachfront; upscale hotels occupy areas closer to beaches than other properties; except Yalong Bay, mid-scale hotels, economic hotels and budget hotels, and family inns are settled behind upscale hotels. Each cluster differentiates itself from others by tourist segmentation, location, development orientation and process, and, in consequence, producing distinctive morphological features.

5.3.7.1 Yalong Bay

Thirty kilometers east to the urban district of Sanya, Yalong Bay is a typical planned and tourist-dominant resort area on a magnificent beach. Also, it is a high quality, exclusive resort area, which lacks the smaller, cheaper accommodations found in many traditional western resort areas. Basically following the first DDCP, upscale resort hotels sprawl from the central park to both sides along the beach and composite the first parallel zone. Hotels offered recreational facilities, such as surfing, swimming, boating facilities and bicycle exclusively to their guests. Across the road are some other clusters of resort hotels, golf course and restaurants, which distribute along main transport routes. Hotels at the back areas, which don't have direct beach access, offer shuttle service to their guests. Local people and tourists who do not live in the resort area (most of them live in the urban district) are now able to access here more conveniently as bus routes opened to tourism areas in May, 2007. At the end zone of those seaside resort hotels, a public recreational beach with a pier can be accessed from the bus terminal. Diversified beach activity services and facilities are offered, such as swimming, surfing, diving, boat cruise, massage, and food service and souvenir sale are available (figure 5.17). Cross an automobile road to the other side, is a retailing cluster (figure 5.17). Further to the hinterland area, between the transport route and the mountain area are being developed for high-class vacation properties. Since hotels are potentially located as close to the beach as possible, the

Figure 5.17 Typical morphological features of Yalong Bay

Source of photograph: Author (June, 2007)

building density is higher in the areas closer to the sea, but the overall density of this area is considerably lower than that of other resort areas. And, generally, the seaside hotels have some high-rise buildings for the limit land area and high land price. Vacation property developments are always in higher density and height than hotels. Previous residents have been resettled in a newly developed hinterland township.

Figure 5.18 Typical morphological features of Haipo, Sanya Bay
Source of photograph: Author (June, 2007)

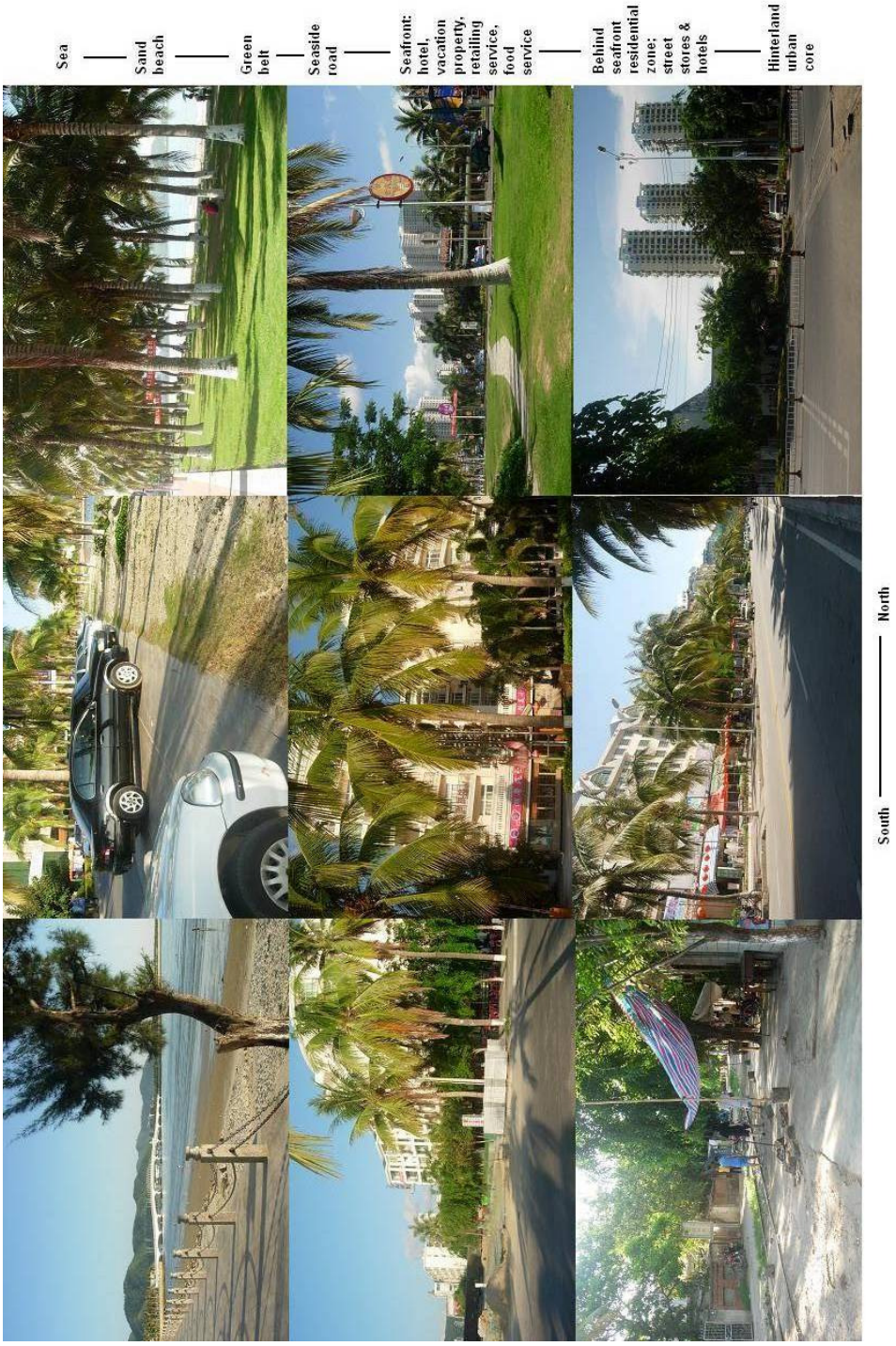


Figure 5.19 Typical morphological features of Sanya Bay (urban district)

Source of Photograph: Author (June, 2007)

5.3.7.2 Sanya Bay

Because it is in close proximity to the urban core and coach terminal, Sanya Bay has been altered by both vacation property development and urbanization to an urban recreational area. Divided by special-use land parcels, Sanya Bay has different morphologies in the north part (Haipo, figure 5.18) and the south part (urban district, figure 5.19). Wide green space and pavement design in the south part offers more room for both local people and tourists. And the north part possesses no pavement but more parking lots, where are comparatively dominated by tourists.

Compared to the south part, Haipo is a typical seaside resort area with a parallel transportation route pattern. The hotel-lined beachfront eventually starts from the recreational square (Haihong) to west. Scattered recreational facilities scatter on the beach, which are offered by hotels for their guests. A few food services and retailing services are scattered beside beachfront hotels and vacation properties; behind the beachfront are mostly occupied by vacation properties, completed or in-construction; and the further hinterland is township settlements and rural areas. The whole area shows diversified building types, such as high-rise, multi-floor, or low-rise building or building complex or villas. Generally, vacation properties are often seen as high-rise buildings, and mixed types are seen in resort hotels; and land parcels for vacation properties are higher in building density than those for hotels.

The landscape of the south part also marked by Haiyue Square, where upscale hotels sprawl along the shore northward with high-rising buildings and high density, luxury restaurants and high-rise properties are located in the middle area, and restaurants, retailing service and property service sprawl southward. Behind a railroad, which is parallel to the beach, high-rise vacation properties are more concentrated in more recently developed northern blocks, and traditional local townhouse-style residences are more seen in the south. Shops, mid-scale hotels as well as family inns are located by

streets, which are vertical to the seaside road. The area between the railroad and Jiefang Road defines the transforming area from the seaside RBD to the CBD-like urban core. Construction of an artificial island—Phoenix Island—has started at the south tip of Sanya Bay since 2006 (hainan.gov.cn, 2006). Connected with Sanya Bay Road by a bridge of 395 m long, the 36.5 sq km island is designed to be an international harbour and a new luxury resort centre, with international cruise service, conference center, yacht club, resort hotels, and business buildings. It has changed the landscape of Sanya Bay, and is driving the linear RBD to expand southward.

5.3.7.3 Dadong Sea

The landscape of Dadong Sea represents a roughly parallel pattern but partially disturbed by roads. The recreational frontier is crowded with upscale resort hotels, restaurants and recreational services and facilities (figure 5.20). A public square is located in the central area and provides the main beach access, around which clustering souvenir shops. From the square along a recreational beach are restaurants, resort hotels and facilities and services for water activities such as diving and swimming. Significantly, a promenade separates hotels from the beach, most part of which is occupied by hotels as food courts (figure 5.20). Mixed upscale and mid-scale hotels, and souvenir shops and western restaurants around the main roads confined areas behind the seafront, within which some vacation properties and family inns are located (figure 5.20). In brief, Dadong Sea is a mature resort area with mixed land use of local recreational activities and tourism activities, which is closer in form and function to those western cases described above. Because of its longer period of tourism and recreational development and closer proximity to the urban core than other resort areas, the overall built-up density of Dadong Sea is quite high; and, further from the beach, blocks have higher building density and height, as well as larger proportion of tourism properties.

Figure 5.20 Typical morphological features of Dadong Sea

Source of photograph: Author (June, 2007)

5.4 Summary and further concerns

Factors influencing Sanya's evolution as a coastal resort are varying and diversified with conclusion of above descriptions and analyses. Stronger travel potential has been brought with the growing national economy and improving living standards. More convenient transportation has been provided throughout the island and between it and the outside world. People feel more convenient with traveling by plane, a method costing less transportation time and offering more convenience than the other methods such as railway and coach. A tropical coastal climate makes Sanya a fascinating resort for either leisure or health-related concerns, as the pursuit of sunshine is always a nature of mankind. From the morphological perspective, generally speaking, political-economy issue, transportation, property development (both the earlier property bubble and the later vacation property growth), and the local physical environment have worked with tourism development mutually. These factors defined the transition of Sanya more significantly than other contextual factors.

The "coastal region development strategy" began from the end of the 1970s and drove SEZs to become growth poles. Therefore, both tourism and real estate industry have been interactively developed in the context of urban growth of Sanya since the late 1980s, when Hainan was designated China's largest SEZ in 1988. First of all, various economic activities were more dynamic in Hainan, Sanya and Haikou in particular, than in the hinterland of China; and the job opportunities became magnetic pull force for the people of local rural areas and other regions, both of the island and of inland provinces. Therefore, a great deal of temporary population is generated. Secondly, the coastal location generated a floating population, defined as visitors, tourists, business travelers and commuters (Gu, 2002). Both of them composed a promising property market, in consequence, generated a large amount of real estate developments and driving the necessity of urban infrastructure construction as well as driving urban expansion. The early 1990s truly saw booming real estate

developments throughout Sanya, but also the entire island, and, growth in the transitional economy of this former agriculture-dominant tropical island had occurred at an extraordinary rate, which has been labeled the “Hainan Phenomenon” (Gu and Wall, 2004). Within this transforming political-economy background, the distinct physical landscape and environment defined a fundamentally linear distribution of development clusters, tourism and recreational clusters in particular within the city as a whole, whereas distinctive spatial patterns within these clusters. Detailed official planning controls, government development strategies, infrastructure construction and real estate development extensively enhanced the basic single-centre linear-cluster form but made unequal development processes and produced differentiated morphological features among different parts of the city.

Although plans of Hainan and Sanya, such as plans for the provincial and municipal socioeconomic development, comprehensive land use plans and urban plans, provincial tourism development outlines were drawn up to guide Sanya’s development, improper implementation and ineffective coordination were observed. Planning can only be expected more reasonable, powerful and efficient through collaboration of stakeholders, such as related institutions, property developers, and local residents. In 2006, for instance, cooperated with other government institutions, such as land resource administration and tourism, the municipal bureau of urban planning required that only hotel development can be approved since after. This decision is intentionally to define a hotel-line beach for a to-be-developed resort area. For those developed resort areas, although it may not change their seafront landscapes significantly, but seems to drive intensively vacation property development behind the seafront.

Controversies over more intensive tourism development became occurring, in both natural and cultural aspects, and on key resort areas in particular. One long-existing problem is about keeping the

balance between conservation and development. With a natural perspective, coral reefs have been destroyed in some areas because of intensive tourism activities; sand beaches are excessively used and water quality is also decreasing. Designation of natural reserves is a common way for local and central governments to protect resources and prevent naturally susceptible areas from excessive development. Presently, there are ten natural reserves in Sanya, including one national, two provincial and seven municipal natural reserves. These reserves occupy 237 sq km, including 55.68 sq km of coral reserves (hainan.gov.cn, 2008). Designation of natural reserves is, without doubt, helpful to relieve the tension between environment protection and development. However, the regulations associated with these designations need to be more strictly enforced. From a cultural perspective, problems related to resettlement are emerging and calling for concerns about related issues, such as, resettlement location, architecture style of resettlement housing, compensation issue, job opportunity, and residents' attitudes. For instance, developments of Yalong Bay engendered controversies over the displacement of the existing Li minority villages and the resettlement of those Li minority people (Wang and Wall, 2005). Similar situations also took place in other tourist areas, such as Dadong Sea and Luhuitou. New regulations started to be implemented in 2005 to make guidance for resettlement activity and, probably, solve this problem. The new policy represents a "Jiujin Anzhi' principle: briefly, people who live in places, which are planned to be developed or re-developed, will be resettled in areas nearby. Before the application of this regulation, they always were resettled in developing hinterland urban districts. This regulation is becoming nationally adopted but evaluation is needed for its reasonability and applicability.

Chapter 6

Wuxi: the Transition of Lake-based Resort Morphology

6.1 Background of the prefecture-city of Wuxi

6.1.1 Bounding the lake-based resort of Wuxi

As in many countries in the world, lakes are important in China's tourism industry and China has abundant lake tourism resources. In the "China International Lake Tourism Forum 2005" held in Zhejiang Province, Liufeng (2005) categorized current lake-based tourism development in China into five types: (1) the synthetic type including both sightseeing and leisure activities such as entertainments or water-based sports; (2) the sightseeing-dominated type; (3) the leisure and holiday type for aging people particularly; (4) the water-based sports or physical training type; and (5) the scientific expedition type. Taihu Lake tourism can be placed in the synthetic type and it plays a leading role in China's lake-based tourism.

Taihu Lake is the third largest fresh water lake in China with an area of 2250 sq km. It extends about 56 km from east to west and 68 km from north to south (Wuxi Statistics Yearbook, 2006). The eastern, northern, and western shores of the lake and the islands (48 in total) are the origin of the Wu and Yue Cultures that define the Jiangnan Region (TBA, 2006). Literally referring to "South of the River", the term Jiangnan was originally put forward in the Tang Dynasty (618-907), first encompassing most of the modern provinces of Jiangsu, Jiangxi, Anhui and Zhejiang but later used confined to only those portions of Jiangsu, Anhui, and Zhengjiang lying south of the Yangtze River. The term was modified in the period between the Tang Dynasty and the Qing Dynasty (1644-1911). In the first part of the Qing Dynasty (1626-1643) it was revived as the name of Jiangnan Province but this lasted only a short while. In the Kangxi reign of the Qing Dynasty (1662-1722) it was divided

into the two modern entities of Anhui and Jiangsu (Johnson, 1993). Currently it refers to south Jiangsu and north Zhejiang, identifying it as a major component of the Lower Yangtze macro-region (Figure 6.1). Because of the rapid economic growth and tourism development of eastern China, the land use conversion in this area has been mainly from agricultural to built-up land: one seventh of the arable land was lost from 1985 to 1997 (TBA, 2006).

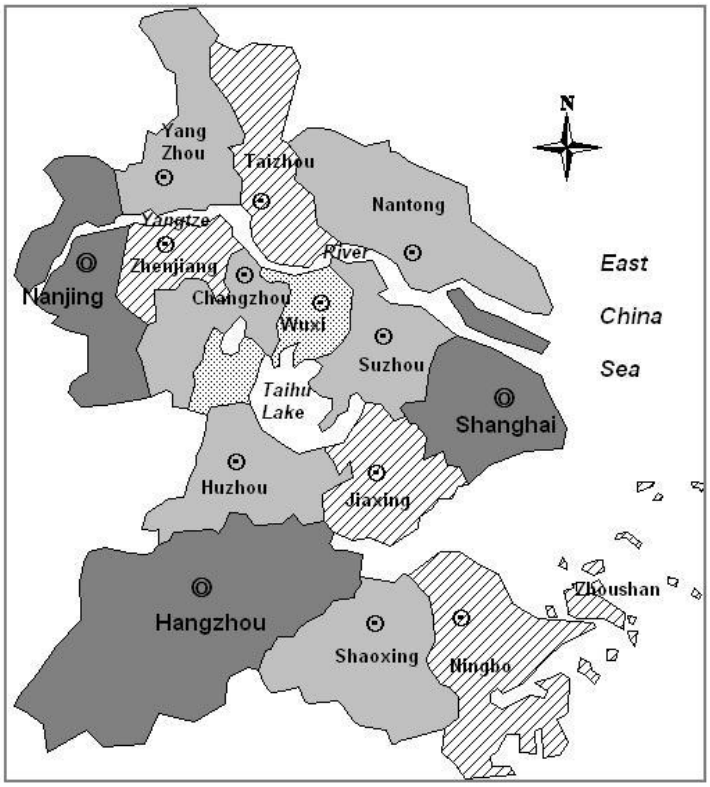


Figure 6.1 Illustration map of Jiangnan Region

Note: based on map of huadong, source from Jiangsu Provincial Bureau of Tourism

In common thinking, it is Wuxi and not Changzhou, Huzhou or even Suzhou that has the highest reputation in Taihu Lake tourism (Wuxitour, 2005). This is not only because of its rich resources within and around the lake area, but also as a result of its continuous efforts to promote lake-related tourism activities. It has proved to be so appealing to visitors that many gardens were created by the

lakeside in ancient days and many projects are being implemented or planned currently. Taihu Lake tourism refers to six main types: Buddhist tourism in Lingshan tourism area; natural sightseeing tourism in Yuantouzhu (the Islet of Turtlehead) and Taihu Xiandao (the Islands of Deities); film-and-television cultural tourism in Tang Town, Three City and Shuihu Town; classical garden tourism in Mei Park and Li Park; recreation in open lakeside tourism areas; and agricultural tourism. The concentration of tourism on the Taihu Lake shoreline is further confirmed by the municipal plans for city development, land use and tourism (WXGH, 2006).

6.1.2 Introduction to Wuxi

Wuxi originated from the present Meicun town, Binhu district. It has a long history that can be dated back to the Zhou Dynasty, about 3000 years ago. From then on it has become a center of Wu culture (Gu, 1984). The name of Wuxi first entered the written history of China ("*Shi Ji"* and "*Han Shu. Di Li Zhi*") when Emperor Gaozu of Han (the first king of the Western Han Dynasty, period of reign: 206-195 BC) established Wuxi Xian (Wuxi County) in the fifth year of the West Han Dynasty (202 BC), belonging to Suzhou Wu Jun and Jiangsu Kuaiji Jun (both are regional levels in ancient China) (Gu, 1984; Wang and Feng, 1988, 3). In 1724, Wuxi County was split into two, roughly along a diagonal axis extending from northwest to southeast; the portion incorporating the western and southern districts retained the old name, Wuxi County, while the portion incorporating the northern and eastern districts was named Jinkui County. At the onset of the Republic of China in 1912, the two portions were rejoined as Wuxi County.

The prefecture city of Wuxi is on a waterway of the Yangtze River Delta between the Yangtze River and Taihu Lake. It is located between 31°7′ N and 32° N，119°31′ E and 120°36′ E. It covers an area of 4787.6 sq km, of which 782 sq km is mountainous and hilly, 1502 sq km is water and 193 sq km is urban districts (Wuxi Statistics Yearbook, 2006). Wuxi is rich in water resources, having

above 3100 rivers and canals with a total length of 2480 km (wuxi.gov.cn, 2006). Wuxi itself is on an alluvial plain with low hills scattered across the region. The topography of Wuxi slightly descends from the southwest to the northeast (wuxi.gov.cn, 2006; Wuxi Statistics Yearbook, 2006). Located not far from the East China Sea, Wuxi belongs to the subtropical zone with a monsoon and maritime climate. Also, the water body of Taihu Lake and the hilly region in the southwest diversify the local microclimate (wuxi.gov.cn, 2006; Wuxi Statistics Yearbook, 2006). It has four distinct seasons with an average year-round temperature of 18°c, reaching the lowest in January with a mean monthly average of 2.8 °c and the highest in July with a mean monthly average of 28°c (wuxi.gov.cn, 2006; Wuxi Statistics Yearbook, 2006). The average yearly precipitation of the urban districts of Wuxi is 1048 mm, with an average of 2019.4 hours of sunlight per year (wuxi.gov.cn, 2006).

Since important decisions are made by governments, it is necessary to describe the administrative changes that have occurred in Wuxi in recent decades. Wuxi County was divided into Wuxi City and a new Wuxi County in 1949. With the designation of Jiangsu Province in 1953, Wuxi became a prefecture-level city. When a changed urban administrative system - "the city-leading-counties region" (*shiguanxian*) - was introduced by the central government in 1982 and first implemented in Jiangsu on March 1, 1983, the prefecture-level city of Wuxi administered three counties: Wuxi, Jiangyin and Yixing. They were renamed Xishan City (in 1995), Jiangyin City (in 1987) and Yixing City (in 1988). In January 2001, Xishan City was divided into two districts: Xishan and Huishan. At present, the prefecture-level city of Wuxi administers nine county-level divisions, including seven urban districts (Chong'an, Nanchang, Beitang, Binhu, Huishan, Xishan and New District) and two county-level cities (Yixing and Jiangyin). It has a population of 4.57 million: 2.32 million in urban districts, 1.19 million in Jiangyin and 1.06 million in Yixing (wuxi.gov.cn, 2006).

Split in half by Taihu Lake, Wuxi borders Changzhou to the west, Suzhou to the east, and

Zhejiang Province in the south. It is 128 km from Shanghai. Despite its significant location on the Grand Canal and the road transportation network, Wuxi did not prosper as much as its neighbouring city, Suzhou, until the end of the 19th century when Shanghai investors and foreign technicians came to the area and started to develop the grain and filature industries (Wang and Feng, 1988, 138-153; wuxi.gov.cn, 2006). In 1981 it was proclaimed to be one of the top fifteen economic centres in China and was authorized to be an open coastal economic city in the Yangtze Delta in 1985 (wuxi.gov.cn, 2006).

Wuxi is not only a business, art and cultural centre, it is also an important tourist destination that is well-known for the lake and mountain view, classical gardens, historical buildings, traditional Wu Culture, and modern artificial attractions. Besides, the new regional development conception of the Yangtze Delta as a whole is bringing growth opportunities, to Wuxi, particularly in tourism.

6.2 The resort evolution of Wuxi

The analysis of the resort evolution of Wuxi begins with a discussion of scales. Generally, a consistent scale is kept for the study unit and data analysis to facilitate the detection of changes. However, this criterion is modified in this case because of data availability and in order to be able to make a meaningful analysis.

The prefecture-level city of Wuxi as a whole will be described to give an overall background for the following morphological study. This is because statistical information is available for this area. A detailed discussion of the evolutionary process of the urban districts will also be provided. However, when discussing the morphological transition, only the urban districts will be considered. Tourism developments have been concentrated in the urban districts, with emphases on the lake and the Grand Canal, rather than in Jiangyin and Yixing. As indicated above, the administrative divisions of Wuxi have been changed from time to time making it difficult to use statistical information to discuss an

individual district in a longitudinal or an historical way. Furthermore, most official graphic data, such as land use maps, city maps and planning maps, cover the urban districts with Yixing and Jiangyin excluded. Also, tourism developments were historically concentrated in urban districts, Binhu District (literally lakeside district) particularly, shaping their morphology in a profound way. For instance, Table 6.1 presents the very different distributions of star-rated hotels among urban districts, Jiangyin and Yixing.

Binhu District will be paid more attention than other districts in the morphological analysis, because of its leading role in Wuxi tourism and the proximity to Taihu Lake (Figure 6.2). It currently covers an area of 631.5 sq km and has a population of 42,000. It also has six economic zones (Wuxi Taihu National Tourist Resort Zone, Mountain-water City Tourist Resort, Huli Industrial Park, Binhu Economic-Technological Development Zone, Wuxi National Industrial-Design Park, and Wuxi Taihu Lake Creative Industrial Centre) Binhu District is the most important tourism area, a new community and the economic centre of Wuxi. With an 88 km long lakeshore, Binhu District contains the majority of the traditional tourism attractions of Wuxi, in addition to new projects such as a golf course, cultural square, garden, and an ecotourism and agricultural tourism zone. The Taihu Lake area in Wuxi as used in this study refers to Binhu District.

A significant correlation was observed between the tourism and economic statistics of the prefecture-level city of Wuxi and those of the urban districts. This minimized the problems resulting from the scale inconsistence in data resources, though it did not eliminate them entirely. Similar to the method used in the Sanya case study in the previous chapter, first a time frame was established to show how Wuxi has evolved as a lake-based resort (Table 6.2).

Table 6.1 Distribution of star-rated hotel in the prefecture-level city of Wuxi (2000, 2005)

No. of guest beds/ No. of Hotels (%)	5-star	4-star	3-star	2-star and less	Total %
Urban districts 2000	460/1 (4.4%)	2639/7 (25.2%)	4600/15 (44%)	2766/14 (16.4%)	66%
Urban districts 2005	851/2 (7.4%)	2845/8 (24.7%)	6435/22 (56%)	1365/10 (11.9%)	64.9%
Jiangyin 2000		1162/4 (39.5%)	1225/6 (41.6%)	557/4 (18.9%)	18.6%
Jiangyin 2005	604/1 (16.5%)	1274/4 (34.9%)	1536/8 (42.1%)	238/2 (0.7%)	20.6%
Yixing 2000			1214/4 (49.8%)	1226/8 (50.2%)	15.4%
Yixing 2005		630/4 (24.5%)	1448/8 (56.3%)	495/3 (19.2%)	14.5%
Total 2000	2.9%	24%	44.4%	28.7%	
Total 2005	8.2%	26.8%	53.2%	11.8%	

Note: based on data obtained from Wuxi Municipal Bureau of Tourism

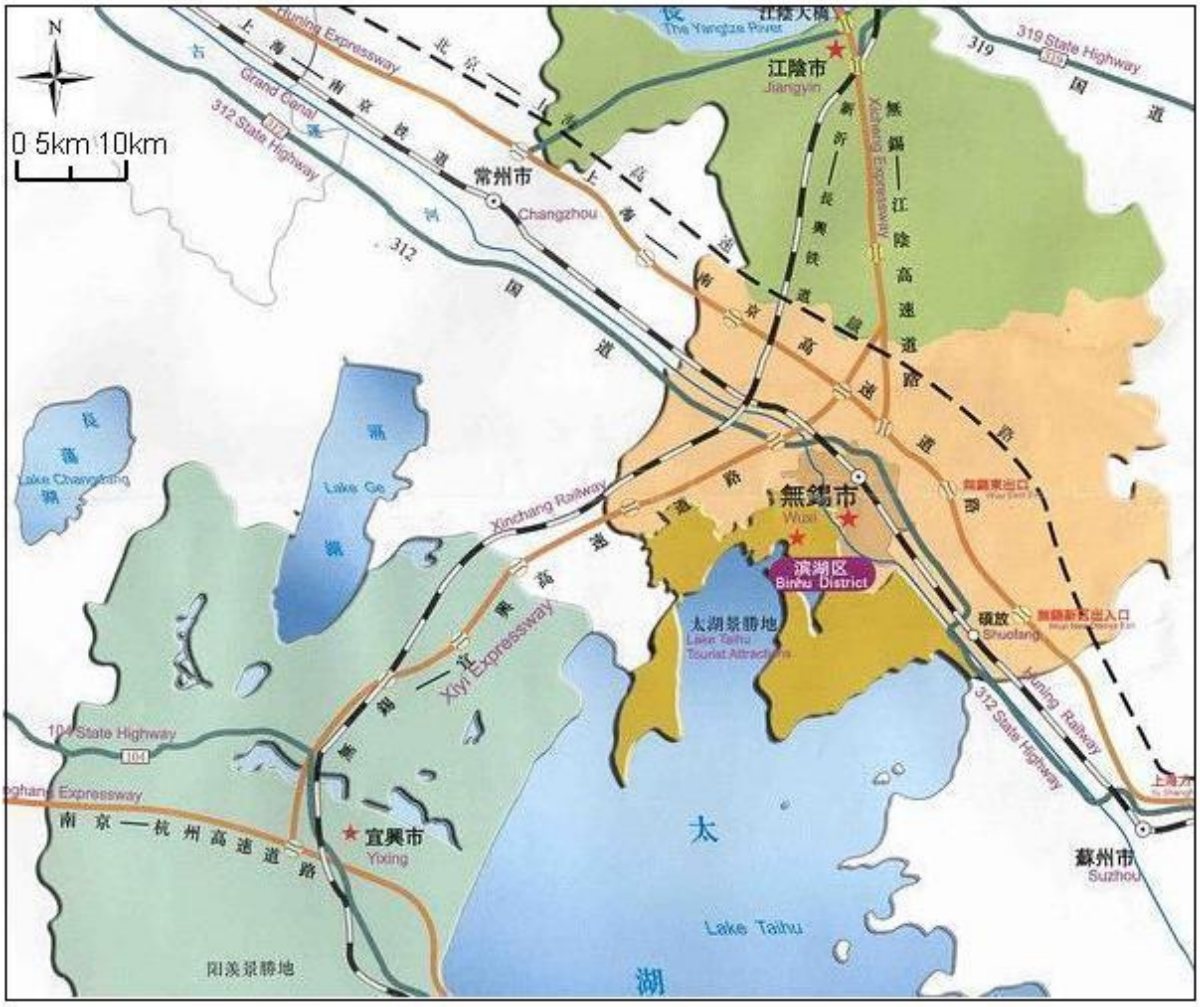


Figure 6.2 Location of Binhu District in Wuxi

Source: www.wuxi-binhu.gov.cn

Table 6.2 Time frame of resort evolution of Wuxi

Time	Scale	Event	Mechanisms of change	Sector
● Exploration: 1912-1948				
1912	Wuxi	Mei Park was opened to the public firstly.	Critical-addition	Tourism
1918	Wuxi	Yuantouzhu was formally opened to the public as a tourism spot.	Critical-addition	Tourism
1928	Wuxi	The original Li Park, which was half part of Li Park today, was opened to the public.	Blurry-addition	Tourism
1930s	Wuxi	Jing Park, which built by Zongjing Rong immediately beside Mei Park, was opened to the public.	Blurry-addition	Tourism
1936	Wuxi	Yu Park (Yu Zhuang) as another half part of today's Li Park, was opened to the public.	Blurry-addition	Tourism
● Involvement: 1949-1977				
1950.3	Wuxi	Wuxi Scenery Administration Department offered the "Wuxi scenery package". (12)	Critical-addition	Tourism & administration
1952	Wuxi	Opening of Taihu Lake Hotel (11)	Critical-addition	Hospitality
1954	Wuxi	Public bus service started to be offered, including bus routes to scenic areas as Yuantouzhu, Li Park, Mei Park and Hui Mount. (11)	Critical addition	Transportation & tourism
1956	Wuxi	Wuxi China Travel Service was established.	Critical-addition	Tourism & political
1955-1956	Wuxi	CITS (Wuxi branch) and Wuxi Oversea Chinese Travel Service were established (11)	Critical addition	Tourism
1959	Wuxi	The first tour guidebook of Wuxi-"Wuxi Scenery"-was published. The first tourism film-'Wuxi Scenery'-came to the widescreen. (11)	Critical addition	Tourism & culture
1965	Wuxi	Opening of the first domestic travel service of Wuxi, namely, Taihu Lake Travel Service. (11)	Critical-addition	Tourism
● Development: 1978-2000				

1978	Wuxi	Opening of Lakeside Hotel (Hubin Fandian).	Critical-addition	Hospitality & tourism
1979	Wuxi	Wuxi Grand Hotel was invested partly by a Japanese company and was specifically the first joint-stock hotel.	Critical-addition	Hospitality & tourism
1980	Wuxi	The Grand Canal Trip was offered.	Critical-addition	Tourism & culture
1982	Wuxi	Establishment of Wuxi Tourism Administration Bureau. (11)	Critical-addition	Tourism & administration
1982	Wuxi	Wuxi taihu was designated as a National Scenic Zone.	Critical-addition	Tourism
1983	Wuxi	Wuxi was designated as one of the ten tourism cities of China.	Critical-addition	Tourism
1986	Wuxi	A song "*Wuxi Lvqing*" was composed in Japanese.	Critical-addition	Tourism & culture
1988	Wuxi	Wuxi China-Japan friendship cherry woods planted in Yuantouzhu scenic area	Blurry-addition	Tourism & political
1991	Wuxi	Opening of Tang Town	Critical-addition	Tourism & culture
1993	Wuxi	Openning of European Town	Blurry-addition	Tourism
1994	Wuxi	The new Bao Jie Bridge was built immediately beside the old one in 1994, which was named Bao Jie Shuang Hong as a new attraction accompanied with the old one.	Blurry-addition	Tourism & transportation
1994	Wuxi	Openning of Three City	Critical-addition	Tourism & culture
1995	Wuxi	State Post Ministry published a set of stamps of Taihu Lake. (12)	Critical-addition	Culture & Tourism
1996	Wuxi	The 1st Wuxi Famous Dishes and Deserts Exhibition (2)	Critical-addition	Tourism & culture
1996-2000	Wuxi	Installed multimedia tools in star-rated hotels for introducing wuxi tourism information (1)	Blurry-addition	Tourism & technology
1997.3	Wuxi	Opening of Shuihu Town	Critical-addition	Tourism & culture

1997	Wuxi	Lingshan Scenic Area was completed and opened to the public.	Critical-addition	Tourism & culture
1998	Wuxi	The 1st Ling Mountain Historical Cultural Tourism Festival (1)	Critical-addition	Tourism & culture
1998.7	Wuxi	Enactment of "Wuxi Tourism Administration Professional Regulation" (temporary) (1)	Critical-addition	Tourism & administration
1998.12	Wuxi	Approved to the 1st list of "China Outstanding Tourism Cities"	Critical-addition	Tourism
1999	National	Eco-environment tourism year	Critical-addition	Tourism
1999.10	National	National day holiday week began: the length of holiday expanded from 3 days to 7 days.	Critical-addition	Tourism & society
1999	Wuxi	Tourism sightseeing bus route; 16081 Wuxi tourism traffic information channel was opened by the cooperation between Bureau of Tourism and telecom department; Jiangyin Yangtze River Bridge and accompanied tourism facilities were completed by the National Day (2)	Critical-addition	Tourism & transportation & technology
1999	Wuxi	Wuxi Taihu Lake Tourism Festival (include Wuxi Rose Wedding Ceremony); the 1st Dragon Boat Race (October 9th) (2)	Critical-addition	Tourism & culture
1999	Wuxi	Action of "creating 3 outstanding": outstanding tourism environments, outstanding tourism orders, and outstanding tourism services. (2)	Critical-addition	Tourism administration
1999	Wuxi	Start of creating green hotel action (2)	Critical-addition	Tourism & environment
2000.5	National	Labour day holiday week began: the length of holiday expanded from 3 days to 7 days.	Critical-addition	Tourism & society
2000	Wuxi	Year of "Century Travel": the 1st Azaleas Flower Festival, China Drummer King Race (cooperated with CCTV) (1,3)	Critical-addition	Tourism & culture
2000	Wuxi	New scenic spots opened: Longtouzhu Park, Tongyijiayuan in Mountain & Water Town tourism area; Shuanghong Park in Li Lake tourism area. Existing ones' renovation completed: Jichang Park, Li Park and Mei Park. (3)	Blurry-addition	Tourism

2000	Wuxi	3 more tourism areas (Lingshan Buddha, Shuihu Town and Ebizui Park) (1)	Blurry-addition	Tourism
2000	Wuxi	The ratio of tourism receipt to urban GDP rise from 6.2 per cent in 1995 to 9.16per cent (1)	Blurry-addition	Tourism & economy
2000.9	Wuxi	Taihu Hotel, which was first-time opened in 1952 but closed in 1998, was reopened after the reorganization of assets and renovation. (3)	Blurry-addition	Tourism
2000	Wuxi	Wuxi Oversea Tourism Joint-stock Co.: the first tourism night shop, opening until 9 o'clock at night; the first individual tourist contract signed. Wuxi CTS (China Travel Service): the first tourism supermarket opened (3)	Critical-addition	Tourism & business & legalization
2000	Wuxi	Yuantouzhu scenic area administration department: at the first time sold "leisure year admission" with 58 RMB to Wuxi citizen. (3)	Critical-addition	Tourism
2000	Wuxi	China film & television base: the modification of Three City was completed, participatory activities added (3)	Blurry-addition	Tourism
● Maturity: consolidation: 2001-present				
2001	National	Start of rating tourism spots and areas. Yuantouzhu tourism area, Lingshan Buddha tourism area and CCTV film and video Wuxi base (Three city and Shuihu town) were included in the first list of AAAA tourism spots (areas). (4)	Critical-addition	Tourism
2001	Wuxi	Binhu District was established, combining the former Xishan City and Surburban.	Critical-addition	Administration
2001.11.10	National	China formally participated in WTO (World Trade Organization) in the 4th ministerial meeting at Doha.	Critical-addition	Economy
2002	Wuxi	"Jiangsu Tourism Administration Regulation" was enacted in Wuxi since 1st October. All tourism enterprises signed 'honesty and credit contract'.	Critical-addition	Tourism & policy
2002	Wuxi	Growth rate of tourism passed that of number of domestic tourists at the first time; tourism economics grew faster than GDP. Sampling survey result indicates tourist satisfactory ratio reached 98 per cent. (5) (6)	Blurry-addition	Tourism & economy
2002	Wuxi	Firstly, constructed Taihu Lake Avenue and Taihu Lake square; started the Li Lake new town project and lakeshore green space project. Secondly, determined	Critical-addition	Tourism & transportation & urban

		"*Taihu Mei* (Taihu Lake Beauty)" as the city song of Wuxi. Thirdly, Wuxi and other Taihu Lake around cities as Suzhou, Changzhou, Huzhou were building a "Taihu Lake around tourism circle" together. Fourthly, the lake-around road project in Lingshan resort area was completed. (5) (6)		construction and planning
2002	Wuxi	Carried the first place in re-estimating 'national outstanding tourism city' in Jiangsu Province.	Blurry-addition	Tourism & Society
2002	Wuxi	"Collaborated and honest holiday" by CITS (China International Travel Service), CCT (Kanghui Tourism) and Wuxi Oversea Tourist CO. LTD.; "united holiday" by CTS, CMIT (China Merchants International Tourism) and WLHITS (Weilin Holiday International Travel Service). (5)	Critical addition	Tourism & Business cooperation
2002	Wuxi	Wuxi tourism website opened by Wuxi Municipal Bureau of Tourism: www.wuxitour.com.cn. "wuxi tourism consultation centre' opened at railway station area. Expanded the coverage of wuxi tourism consultation telephone. (2)	Critical-addition	Tourism & technology & administration
2002-2004	Wuxi	Enactment of "three-year Outline for Wuxi Tourism Development Action'. (5) (9)	Blurry addition	Tourism
2002.8	Wuxi	One investment part—Yilian Ltd. Co. of Macau—withdrew capital from the European Town project.	Critical-cessation	Tourism & economy
2003-2020	Wuxi	Master Plan of Wuxi Tourism Development (9)	Critical-addition	Tourism & Planning
2003	Global	SARS	Critical-cessation	Tourism & society
2003	Wuxi	Started a new annual event-Taihu Lake Expo-with a Taihu Lake Tourism Festival and Yangtze River Delta Tourism Trade-meeting. (9)	Critical-addition	Tourism & regional development
2003	Wuxi	Conversion from fishery area to lake water and ecological cleaning project was completed. The area of Li Lake expanded to 8.6 sq km, opening 6.5 km long lakeside scenic band to the public completely. Road pattern of Li Lake new town was fundamentally built. (7)	Blurry-addition	Tourism & environment & urban construction
2003	Wuxi	Opening of the highway between urban districts and Yixing. (7)	Blurry-addition	Transportation

2003	Wuxi	Binhu Tourism Concept Plan was completed.	Critical addition	Tourism & policy
2004	Wuxi	"2004 Yangtze river delta tourism trade-meeting" was organized, which made the city brand-Taihu Lake pearl-more well-known. (8)	Blurry-addition	Tourism & regional development
2004	Wuxi	25 holiday tourism news of Wuxi was reported on CCTV channels (1, 2, 4, and news) during spring festival holiday week. (8)	Blurry-addition	Tourism & communication technology
2004	Wuxi	First passenger airway between Beijing Capital Airport and Wuxi Shuofang Airport opened on 18th February, followed by a governmental promotion visiting to the great Beijing region (Beijing and Hebei). (8)	Critical-addition	Tourism & transportation
2004	Wuxi	Based upon openings of airways (between Wuxi Shuofang Airport with Beijing, Guangzhou, Shenzheng, Haikou, Chengdu, Kunming and Changchun), wuxi built strategic collaboration relationships with above 60 domestic cities until the end of 2004. Wuxi government made promotion visits to cities and regions as Beijing, Hebei, Shenzheng, Guangzhou, Hong Kong, Macau, Yantai, Chengdu, Hunan and Hubei, and countries as Korea, Japan, Canada and America. (8)	Blurry-addition	Tourism & regional collaboration
2004.7.1	National	Opening of freely traveling between Hong Kong and Macau and the Mainland. (8)	Critical-addition	Tourism & policy
2004	Wuxi	6 tourism areas were included in the first national agricultural (industrial) tourism examples, as 38per cent of the total number of Jiangsu. (8)	Critical-addition	Tourism & agriculture
2004	Wuxi	Opening of Mashan Taihu Lake golf course. (8)	Critical-addition	Tourism
2004	Wuxi	Opening of Wuxi individual tourist center. (8)	Critical-addition	Tourism & transportation
2004	Wuxi	Opening of wuxi tourism emergency center in Wuxi 5th Hospital. (8)	Critical-addition	Tourism & health
2004	Wuxi	Marked tourism transportation direction at entrances and exits of major roads to important tourism areas. Tourism directions in major tourism areas like Yuantouzhu were renewed in Chinese, English, Japanese and Korean. (8)	Blurry-addition	Tourism & transportation
2005.7.	Wuxi	Opening of ancient grand canal between Wuxi and	Critical-	Tourism &

3		Suzhou.	addition	transportation
2006.9	Wuxi	Unite of three websites: wuxitour.com.cn, wuxitour.gov.cn and 1th.net, focusing on tourism information, administration and business.	Blurry-addition	Tourism & technology
2006.12	Wuxi	Until the end of 2006, there were 17 economic hotels in Wuxi, including 3 international brands and 9 domestic brands. (13)	Blurry-addition	Hospitality & tourism
2007.5-10	Wuxi	2007 Jiangsu Countryside Tourism Culture Photography Competition: free park entrance for photographers	Critical-addition	Tourism & culture
2007	Wuxi	Water pollution of Taihu Lake was clearer than ever. Algae issue was one of the hottest news on media during the summer.	Critical-cessation	Environment
2007	Wuxi	Wuxi Airport has attracted Shengzhen Airlines, South Airlines, East Airlines and China Union Airlines on service. New terminal is to be opened before October.	Blurry-addition	Transportation
2007	Wuxi	At a meeting of "the 2nd Xu Xiake International Tourism Festival" (also the 'Wuxi Taihu Lake Tourism Festival'), 3rd March (lunar calendar) was defined as the city tourism day of Wuxi. Therefore Wuxi is the first city who has city tourism day.	Blurry-addition	Tourism

(1) Report of Wuxi Tourism Development during the Ninth Five Year

(2) Wuxi Tourism Yearbook 1999

(3) Wuxi Tourism Yearbook 2000

(4) Wuxi Tourism Yearbook 2001

(5) Wuxi Tourism Yearbook 2002 (Outline)

(6) Report of Wuxi Tourism Development during 2002

(7) Report of city government works (2003, presented in 2004)

(8) Report of Wuxi Tourism Development during 2004 and guidelines for 2005

(9) Report outline of Wuxi Tourism Development (2001-2004)

(10) Public report of Wuxi National Economy and Social Development Statistics, by Wuxi Statistics Bureau.

(11) Wuxi Tourism Development Master Plan, 2003.

(12) Yin, Lingshan (edt), *Binhu Ming Sheng (Binhu Famous Sceneries)*, 2005, Beijing: International Culture Press.

(13) Report of Wuxi Tourism during 2006.

Source: Wuxi Municipal Bureau of Tourism

6.2.1 An historical review of tourism in Wuxi

The earliest connection between Wuxi and tourism can be dated back to 2500 years ago, when the King Helv (514 BC-496 BC) of the Wu Kingdom visited Taihu Lake. In the Tang (618-907) and Song Dynasties (960-1279), Taihu Lake inspired the creativity of poets. In the Ming Dynasty (1368-1644), Xu, Xiake (1587-1641), both a travel writer and geographer, traveled throughout China for more than thirty years and visited Taihu Lake and Shanjuan Hole. Born in Wuxi, he documented his travels extensively and ultimately compiled them into an enormous work: "*Xu Xiake Youji*" (Xu Xiake's Travel Diary). In the Qing Dynasty, Taihu Lake, Xi Shan (the Mountain of Tin) and Hui Shan (the Mountain of Kindheartedness) were well-known for their natural scenery and religious reputation, and they attracted many visitors. However, modern tourism activities in Wuxi started with the opening of private gardens to the public, underpinned by the development of industry and commerce.

6.2.2 Exploration stage

Two critical events signal the start of the exploration stage of Wuxi: Mei Park, which had been the private garden of Rong, Desheng, was opened to the public in 1912; and a scenic spot in Taihu Lake, Yuantouzhu, was formally opened to the public in 1918 as a tourism attraction. Afterwards, small numbers of people began to make individual travel arrangements to visit Wuxi from nearby cities. Most of them were attracted by the natural beauty of Taihu Lake.

Travel agencies dealing with inbound tourism to China were originally set up in the 1920s and concentrated in Shanghai. Benefitting from its proximity to Shanghai, tourism activities began to be developed in Wuxi, mostly by individuals, in the early years of the twentieth century. A few wealthy businessmen started to construct private gardens beside the lake and later provided access to visitors. Between the early 1910s and the late 1930s, four private gardens (Mei Park, Li Park, Jing Park and

Yuzhuang) were opened to the public. Other facilities were added soon after, such as sightseeing boats, by which visitors could travel on the lake. In the meantime, Shanghai Railway Administration Bureau organized a bus, as well as bus rental services, between Shanghai and Wuxi on Sundays, and accommodations for tourists were provided in the urban district. A shipping company organized a cruise route starting from Wuxi and crossing Taihu Lake to Huzhou, Zhejiang Province. However, tourism activities stopped after 1937 because of the Anti-Japanese War, restarting after the war. Tourism routes were developed from the downtown area to Mei Park and Yuantouzhu. There was a day-trip service from Shanghai to Taihu Lake in Wuxi and night cruises were offered in Li Park.

6.2.3 Involvement stage

Nationally, tourism was a political activity between 1949 and 1978 and the tourists then were either overseas Chinese or foreign friends and guests. Most hotels and transport operators were state-owned enterprises. These features reflect a phenomenon called “reception tourism”. Like many other older destinations in China, Wuxi entered a reception tourism phase in 1949.

According to Butler (1980), the involvement stage refers to a period in which some facilities begin to be provided primarily for visitors, advertising to attract tourists can be anticipated, tourism-related organizations are set up, and the government and public agencies realize the necessity to provide or improve transportation or other facilities for visitors. The *Taihu Fandian* (Taihu Lake Hotel) was opened in 1952. It was the first state-owned hotel of Wuxi and was built primarily for the reception of foreign guests and state leaders. The first multi-entry ticket of China - Wuxi Scenery Package - was offered by Wuxi Scenery Administration Department in 1950, including admissions to Mei Park, Li Park and Yuantouzhu. The first guidebook of Wuxi and the first tourism film on the wide screen, both named “Wuxi Scenery”, were released in 1959. Three travel services were established between 1955 and 1956, specifically for the reception of international visitors. About a

decade after this, Taihu Lake Travel Service was added to the Taishan Hotel to offer arrangements for domestic tourists. However, tourism activities almost stopped during the second half of the 1960s and most of the 1970s because of the political situation in China.

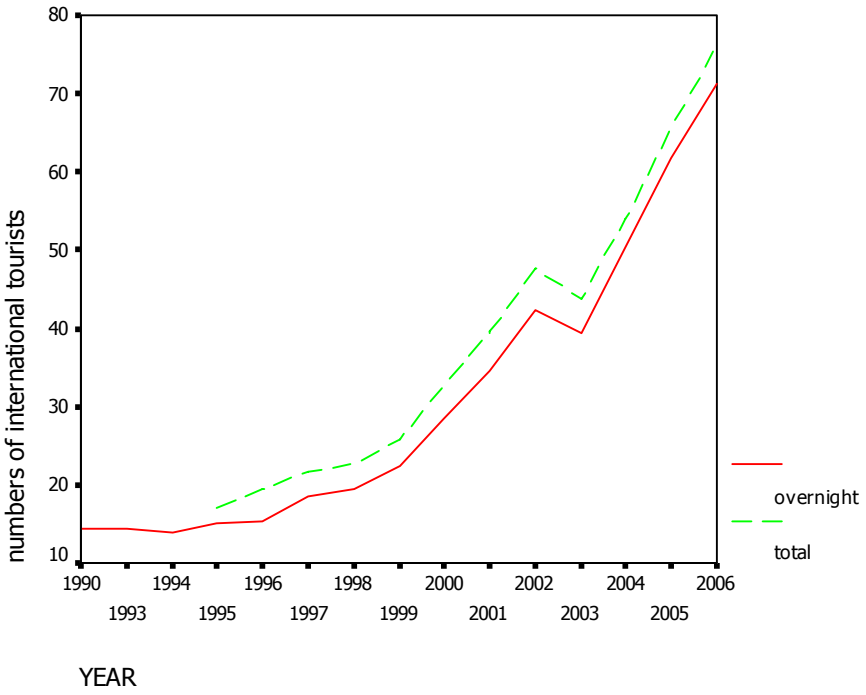


Figure 6.3 Numbers of international tourists (10000)

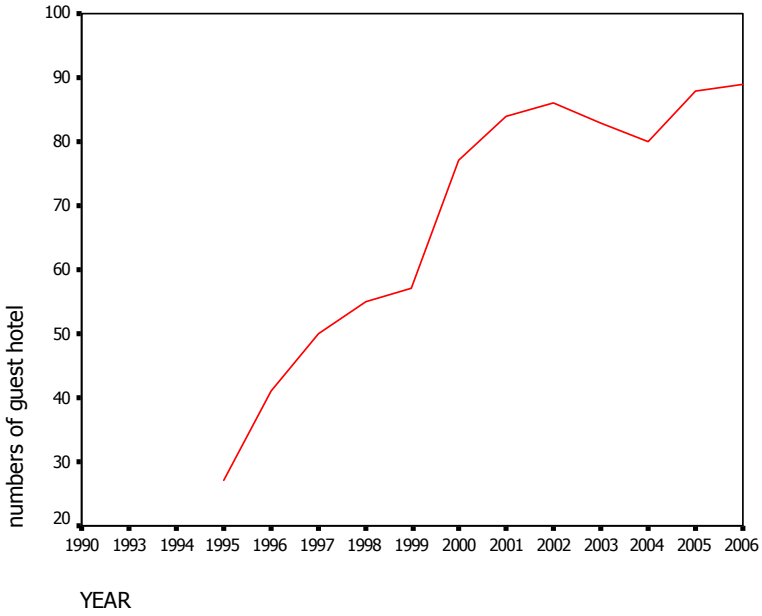


Figure 6.4 Numbers of hotels of Wuxi from 1995 to 2006

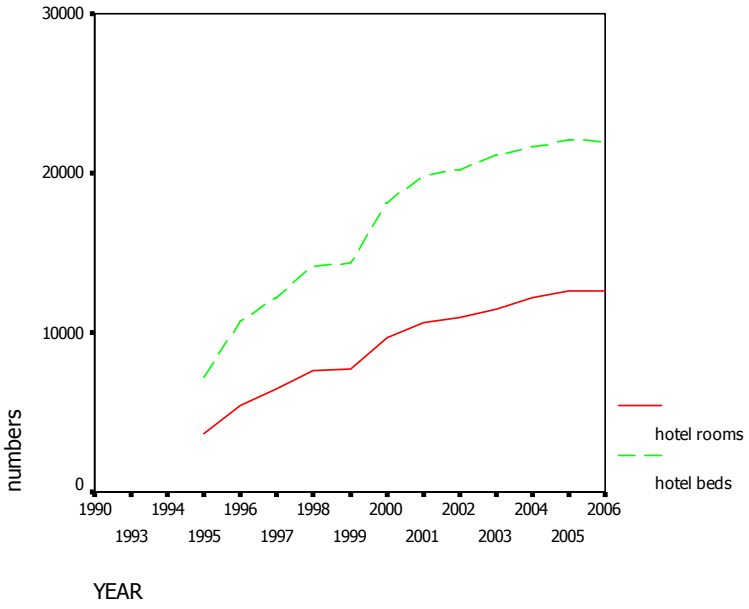


Figure 6.5 Numbers of hotel rooms and beds of Wuxi from 1995 to 2006

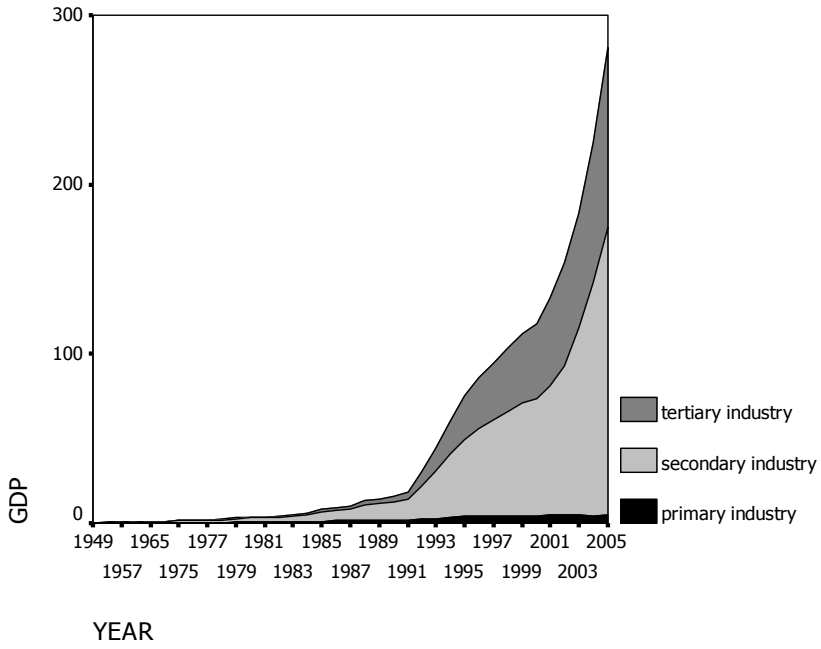


Figure 6.6 GDP growth from three economic sectors of Wuxi, 1949 to 2005 (billion RMB)
Source: Wuxi Statistics Yearbook (2001-2006)

6.2.4 Development stage

The year 1978, when the CPC held the Third Plenary Session of its eleventh Congress, marked the start of a shifting emphasis from political struggle to economic reconstruction in China. This was based on the "Four Modernizations" of industry, agriculture, science and technology, and national defense. In addition, China declared that it would "open its door" to the outside world. These decisions are often referred to as China's "second revolution". Tourism in China was regenerated with these historic political changes (Zhang, 2003).

The establishment of Wuxi Municipal Bureau of Tourism (once called Wuxi Tourism and Travel Administration Bureau) in 1982 announced the end of Wuxi Foreign Affair Office's control of tourism development. Tourism, thereafter, was viewed more as an economic than as a political issue. Wuxi entered the development stage and the tourism industry grew rapidly in the two decades,

especially in the mid-1990s (Figures 6.3-6.5, based on data obtained from Wuxi Municipal Bureau of Tourism). The development stage is interpreted as consisting of three phases: the canal tourism phase between 1978 and the end of the 1980s; the theme park phase since then to the mid-1990s; and the post-theme-park phase during the late 1990s.

6.2.4.1 Canal tourism phase

During the early stages of reform from 1978 to the mid-1980s, tourism was considered both a part of foreign affairs and as an economic activity. However, tourism practices still put politics before economic gains (Zhang, 2003). The national government stressed the importance of tourism as a service industry in the early 1980s, promoting the development of tourism in traditional destinations like Wuxi.

Butler (1980) indicated that a sign of the start of the development stage can be the appearance of "larger, more elaborate, and more up-to-date" facilities provided by external organizations. After the growth in the hotel industry during the late 1970s, joint-venture and cooperative development started in the 1980s not only in Wuxi, but also in other traditional destinations of China (Yu, 2003). Wuxi Da Fandian (Wuxi Grand Hotel), which obtained investment from a Japanese company, was the first joint-venture hotel of Wuxi. Wuxi received 460000 international tourists from more than 70 countries and regions between 1979 and 1985, and 12.51 million domestic tourists in 1985, making it the fifth-ranked tourism city of the country. Taihu Lake continued as central focus of tourism development in Wuxi, as evidenced by the designation of Taihu Lake in Wuxi as a National Scenic Zone in 1982. In the spring of 1986, a luxury cruise ship brought 473 foreign tourists to Shanghai. These tourists were offered two choices: a day trip to Suzhou or day trip to Wuxi but only twenty three of them selected the latter. Therefore, Wuxi CTS, which was responsible for their reception, made a decision to provide them with free services but required them to attend a meeting held by the tourism bureau. In

that meeting, a common perception was found among the foreign tourists that Wuxi had been thought of as a fishing village beside Taihu Lake, small and out-of-date. The mid- and late-1980s, therefore, saw a switch in inbound tourism from reception to promotion, starting with advertising and promotion in the Japanese tourist market.

Beside the traditional Taihu Lake tourism, the 1980s saw the golden age of Grand Canal travel. As early as about the 12th century BC, Taibo (one son of King Tai of the Zhou Dynasty) directed people to dig Dugang, a canal connecting Suzhou and Meili (currently Wuxi). In the time of King Fuchai (496 - 473 BC) of the Wu Kingdom, an ancient canal called Gangou was dug to link the Yellow River, Huai River and Yangtze River. The ancient Canal that is the precursor of the present canal was started during the time of King Suiyang (569-618) of the Sui Dynasty (581-618) and completed in the Yuan Dynasty (1271-1368). The construction of the new Jinghang Grand Canal within the region of Wuxi started in 1958 and finished in 1983. However, a part of the ancient Canal remains (12.4 km long). The "Ancient Canal Trip" as a tourism product was first offered by the local tourism agency and Wuxi CTS in 1980 and it immediately achieved international success. The part of ancient Canal that is used for tourism is 6.6 km long and begins from the Wu Bridge, through Xishuidun and Nan Men (South Gate) to the Qingming Bridge (Figure 6.7). Different from ancient canal within other cities, it crosses the old town (currently the downtown area) of Wuxi. The environment was conserved and it satisfied the imagination of foreign visitors, who thought of China as a country of abundant ancient civilizations. They enjoyed crossing under ancient stone bridges, admired the view of old riverside residential buildings and faraway ancient towers. In 1986, roughly 65000 foreign tourists (167000 foreign tourists in total) included the "Ancient Canal Trip" in their schedules. However, this product declined quickly after the late 1980s because of the imbalance between conservation and development (Figure 6.7). The water quality of the canal decreased dramatically, smelling bad and presenting colors of blue and black. Secondly, the newly-developed

buildings were poorly planned and did not fit into the original environment. Thirdly, only a small part of historic buildings in the riverside area were restored and opened to the public. Most were either occupied by public agencies or becoming dilapidated.

Figure 6.7 The Grand Canal in Wuxi

Source of photograph: Author (May, 2007)

6.2.4.2 Theme Park phase

After 1978, and especially in the 1990s, the central government issued several policies to encourage domestic tourism as a means of stimulating consumption and growing the country's economy (Zhang, 2003). China started building expressways in 1988 and most of the network has been concentrated in the heavily populated eastern coastal areas (Jiangsu, Zhejiang and Shanghai) (Mak, 2003). Because of its locational superiority, Wuxi benefited significantly from this national strategy and land transportation was rapidly developed. These factors spurred the tourism

development of Wuxi in the first half of the 1990s. Most importantly, the theme park boom, which started in the late 1980s and continued until the mid-1990s, inspired a rapid growth of tourism, as well as a shift from resource-driven to market-driven tourism development.

Splendid China was built in Shenzhen and opened to the public in 1989 as the first modern theme park of China. Thereafter, theme park tourism boomed and Wuxi led China in this field. These theme parks share some common features: they are a type of property run as a business enterprise with a focus on amusement and entertainment; they have a specific theme and facilities, operations and the environment of the park conform to that theme; they enable visitors to escape from the routine of everyday life; they often provide many human-made attractions; and they have admission fees which are often relatively high compared to the income level of most Chinese (AP, 2003). Xiyouji Culture Palace was built in the late 1980s but soon disappeared. Wuxi's first theme park as it is commonly understood was Tang Town. It was initially built by China Central Television (CCTV) for the production of an historical drama serial, "*Tang Ming Huang*" (A king during the Tang Dynasty), and opened to the public in 1991. It achieved immediate success and inspired the construction of European Town (opened in 1993), Three City (opened in 1994) and Shuihu Town (opened in 1996). These theme parks spurred the tourism development of Wuxi significantly, quickly attracting over 100000 annual visitors. Located close to each other, they supplemented the natural and historical attractions within the Taihu Scenic Zone. In order to make these theme parks more accessible, a new Baojie Bridge was built adjacent to the old one and the two bridges, which look exactly alike, became a new attraction named BaoJie Shuanghong.

The 1990s also witnessed the development of private ownership and stock ownership in the hotel industry of China (Yu, 2003). Upscale hotels supported by external domestic and international hotel companies were constructed in the top destinations like Wuxi. In 1995, there were twenty-seven

hotels in Wuxi, including one four-star hotel, nine three-star hotels, and seven two-star hotels. They provided about 3700 rooms and 7200 beds. Wuxi began to explore the prospects of becoming a holiday destination when the Taihu Lake National Tourist Resort Zone was designated on October 14, 1992.

6.2.4.3 Post-theme-park phase

Theme park tourism peaked in the mid-1990s and declined quickly soon after both in Wuxi and throughout the country. Many theme parks were closed after a short opening and some even failed to be built completely. A significant case from Wuxi is the European Town and Asian Town project. With joint investment by CCTV and Yilian Ltd. Co. of Macau (Yilian), European Town was opened in the Taihu Scenic Zone in 1993, and the construction of Asian Town followed immediately. Unlike Tang Town, Shuihu Town and Three City, European Town was never used for film or television productions, although it was supposed to be. Unsatisfied with the management of European Town, Yilian withdrew their capital in 2002 and this led to the complete failure of the on-going Asian Town project. Lacking cultural relevance and further development, European Town was closed in the early 2000s.

Influenced by the nationwide decline of theme park tourism, Wuxi became less competitive than it had been in the early 1990s. Wuxi's market share of the inbound tourism of Jiangsu Province decreased from roughly one fifth in the early 1990s to roughly one sixth in 1999. A similar situation was observed in the domestic tourism and, in contrast, the market shares of Suzhou and Nanjing, two other major destinations in Jiangsu Province, increased continually. Nevertheless, the importance of tertiary industry, especially tourism, in the local economy has increased continually (Figure 6.6). The number of domestic and international tourists increased rapidly from 1995 to 2000; and the tourism receipts totalled 10.99 billion RMB in 2000 (about 1.32 billion USD according to annual report 2000,

China Development Bank) (4.75 billion RMB in 1995, about 0.57 billion USD, stats.gov.cn). In 1995, tourism represented around 17.8 per cent of the local GDP from tertiary industry and 6.2 per cent of the local GDP; and increased to 23.5 per cent and 9.16 per cent respectively in 2000 (source from Wuxi Municipal Bureau of Tourism).

Tourism festivals and exhibitions were organized regularly both as a means of advertising and promotion and as an attraction. The most famous of these is the Wuxi Taihu Lake Tourism Festival. The well-planned Lingshan Scenic Area was constructed in Mashan and opened to the public in 1997 and, in the following year, the Lingshan Historic-cultural Tourism Festival was first held. This Scenic Area soon became one of the most popular tourism areas of Wuxi and it helped to counteract the decline of theme park tourism. The implementation of a national-day holiday week since 1999 has allowed a seven-day holiday from October 1 to 7. This had an immediate effect on Wuxi tourism. An obvious growth in the hotel occupancy rate (from 22 per cent in 1998 to 78 per cent in 1999) and in the number of admission tickets sold in scenic spots (increased 90 per cent to 1.12 million in 1999) can be observed (Wuxi Tourism Yearbook, 1999). The implementation of the Labour-day holiday week, which started in 2000, contributed to an increase of the number of admission tickets sold in scenic spots to 1.58 million in that year. Moreover, environmental issues began to be addressed in tourism development. Action to create "green hotels" started in 1999 and the Lakeside Hotel (Hubin Fandian) was the first to achieve International Standards Organization (ISO14001) recognition. Also, in 2000, the Mashan Taihu Lake National Tourist Resort Zone was approved by Jiangsu Province to be a provincial sustainable development experimental zone (Wuxi Tourism Yearbook, 2000).

Prior to the end of the twentieth century, the tourism system has focused on Taihu Lake with the Mashan National Tourist Resort Zone and the Water and Mountain Town Tourism Zone as two wings. According to a report of the Municipal Bureau of Tourism, the tourism system was comprised of a

combination of sightseeing tourism, cultural tourism and leisure tourism described as “one lake, two zones, three topics”.

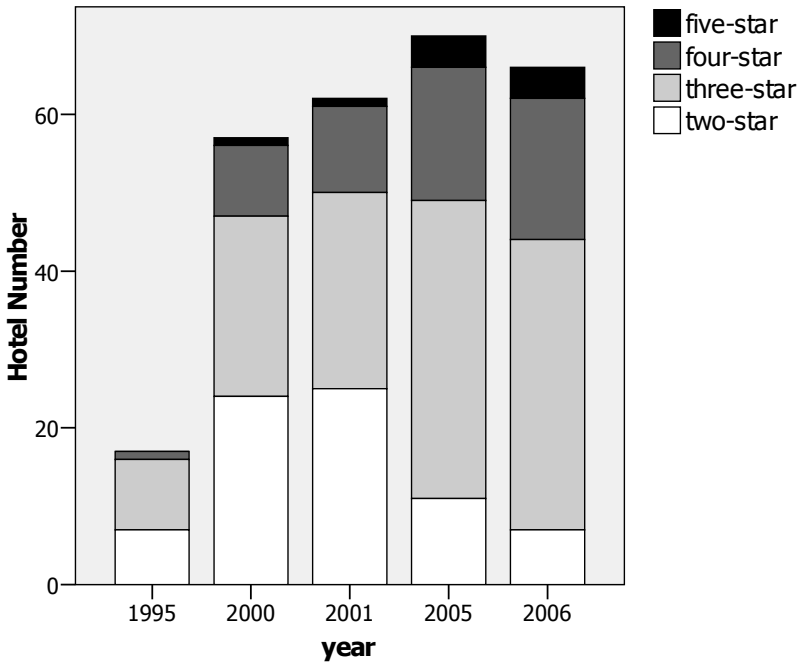


Figure 6.8 Growth of the number of star-rated hotels

Source: Wuxi Municipal Bureau of Tourism

6.2.5 Consolidation stage

Characterized by a slow-down in the growth rate of tourists and accommodation unit numbers (Figure 6.4, 6.5), Wuxi and its Taihu Lake tourism entered the consolidation stage in the early 2000s. In 2002, the growth rate of tourism receipts surpassed that of domestic tourist numbers for the first time and the expenditures of in-bound tourists became the highest in Jiangsu Province (source: Wuxi Municipal Bureau of Tourism). Accommodations became more diverse in scale and type: upscale (four-star and five-star) hotels increased significantly and middle- (three-star) and lower-rated (two-star) hotels grew very rapidly in number during the mid- and late-1990s (Figure 6.8).

Economy/budget hotels also increased rapidly. Seventeen economy or budget hotels were recorded in 2007, including international brands (Super 8, GreenTree Inn and IBIS) and nine domestic brands (Jinjiang Inn, Home Inn, etc.). Sightseeing (38.96 per cent) is the primary objective of domestic tourists but holiday tourists (18.84 per cent) and business tourists (14.38 per cent) also increased in the most recent years.

As a part of the local government development strategy, the former Xishan City and suburban areas were merged and became a new Binhu District in 2001. This was done to promote more efficient administration of the development of Taihu Lake and surrounding environment. This district includes 46 per cent of the total tourism resources of Wuxi, including the majority of Taihu Lake resources (source: Wuxi Municipal Bureau of Tourism). Soon afterwards the local government announced a "Three-year (2002-2004) Outline for Wuxi Tourism Development Action" incorporating three city brands: the excellent Taihu Lake scenic spots (areas), the well-known cultural tourism spots (areas) and the new holiday leisure products. Fifteen billion RMB (about 1.8 billion USD, according to middle rate on December, 31, 2004, Bank of China) were invested in this action (source: Wuxi Municipal Bureau of Tourism).

Highways and railways always are two major transportation methods for tourists to access Wuxi. Even tourists coming by air mostly fly to Nanjing or Shanghai and travel to Wuxi by road or railway. The completion in December 2000 of the Beijing-Shanghai expressway that links Tianjing, Jiangsu, Shandong and Hebei significantly improved the accessibility of Wuxi (Zhou, 2000; Mak, 2003). Local government generally has the main responsibility for marketing a city-level resort like Wuxi. Extensive efforts have been done in the last decade, especially in 2004, to extend the market areas, both domestic and international. An annual tourism festival has been held, promotional visits have been arranged, and strategic collaborate relationships with other cities have been built. The Yangtze Delta contains fifteen cities and the local government of Wuxi was the first to make a promotional

visit to the Greater Beijing Region (Beijing and Hebei) soon after the opening of passenger traffic between Beijing Capital Airport and Wuxi Shuofang Airport on Febrary 18, 2004. Also, the local government is the most important "investor" in tourism development, tourism-related infrastructure construction and environmental improvement. Since 2003, the budget for tourism-related infrastructure construction has being increased every year. However, the rate of investment will decline since most work has been done already.

6.2.6 Summary of the resort evolution of Wuxi

Taihu Lake is most important feature content of Wuxi tourism for tourism activity first occurred here. Therefore, Wuxi can be regarded as a lake-based resort town with a relatively long tourism history for China. As a traditional destination, modern tourism started in Wuxi in the 1910s and entered its involvement stage in 1949. After a reception period for politically-favoured visitors during the 1950s and the first half of the 1960s, tourism development ceased for political reasons. Economic reconstruction, which began in 1978, revived the tourism industry and Wuxi tourism experienced rapid development. The "Ancient Canal Trip" was popular in the 1980s and attracted many international tourists. After this declined, theme park tourism boomed in the early- and mid-1990s. Since then, many efforts have been made, primarily by local government, to counter the subsidence of interest in theme parks. Currently Wuxi is in the consolidation stage. It is being transformed into an even more diverse destination than before.

6.3 The transition of resort morphology of Wuxi

Wuxi is a city that originated from scattered human settlements about 6000 years ago, which were located close to water resources, Taihu Lake in particular, and also close to mountains such as Xi Shan (the Mountain of Tin) and Hui Shan (the Mountain of Kindheartedness). People have a fundamental affinity for great bodies of water (Alexander, 1977, 136) and such a locational

preference is described in the Chinese saying: “humane people like mountains and wise people like water”. The original ancient canal was dug about 3000 years ago. Since then new canals have been dug and old ones have been extended and renovated. With a roughly circular plan like many older Chinese cities, Wuxi had been criss-crossed with ancient canals since the Han Dynasty and the main one still sees heavy barge traffic.

6.3.1 An historical view

Although Mote (1973) identified the remarkable morphological stagnation of ancient Chinese cities as one distinguishing feature of Chinese urbanism, periods of economic prosperity still led to great spatial expansion (Rowe, 1993). This meant settlement beyond the city walls, the re-creation of city walls to correspond with the new realities of urban growth, and the development of settlements and commercial districts at the termini of major trade routes, either in urban or suburban areas (Rowe, 1993). Two features characterized the morphology of ancient Wuxi, like many other ancient Chinese cities: city walls and canals. The former basically defined the urban area and the latter were important transportation and trade routes.

Wuxi was designated a county in the West Han Dynasty (206 BC-220 AD), with a clearly defined city boundary. Luocheng, also called the outer city wall, defined the tortoise shape of the urban district and Zicheng, also called the inner city wall, defined the inner city. Both walls were made from clay. According to “*Yuejue Shu*” (History of Wu Kingdom and Yue Kingdom), the outer city wall was as long as eleven li and 128 bu (about 5628 m), and as high as one zhang and seven chi (about 5.7 m). Four gates were located in the outer city wall in the four cardinal directions: east, south, west and north. The inner one was two li and nineteen bu long (about 1015 m), and two zhang and seven chi high (about 9 m), with one gate and four towers. Both city walls were rebuilt with brick in the Yuan Dynasty, around 1355. After the outer wall was reinforced several times, the inner one was

demolished. Thereafter, the outer city wall was further elongated during the Ming and Qing Dynasties. It was as long as 1620 Zhang (5400 m) in the early years of Hongwu of the Ming Dynasty (1368-1398), elongated to 1783 Zhang (about 5743 m) in the 33th year of Jiajing of the Qing Dynasty (1554) and then to 1854 Zhang and nine chi and seven cun (about 6093 m), which was slightly longer than that in the Han Dynasty. The urban district remained its original location at about five sq km in area as defined in the Han Dynasty.

Transportation technology was decisive in the modification of ancient Chinese cities (Rowe, 1993). The morphological transition of ancient Wuxi was driven primarily by water transportation. Also, the waterside area could be irrigated conveniently for cultivation. For example, during the Southern Dynasties, Yang Lake banks were enhanced and the Liang Xi (Liang River) was dredged resulting in increased cultivated lands of several hundred ha (Wang and Feng, 1988). People lived beside the lakes, rivers and older canals, such as Dugang, Gangou and Xicheng Canal, in small scattered settlements. The Grand Canal originally was started in the Sui Dynasty and finally completed in the Yuan Dynasty. Crossing the ancient urban area, the Grand Canal gave birth to a period commercial prosperity in the cities alongside it. People preferred to build their residences alongside the Grand Canal and those built before it. In 612, the first bridge across the Grand Canal was built in wood, called Lijin Bridge. Several more were built in the early Tang Dynasty (Wang and Feng, 1988). Canals, rivers and bridges became the most important components of Wuxi's transport network. Based on these, a distinctive urban landscape, called the "water alley", gradually formed in the urban district. Residences were located between South Gate and Qingming Bridge, along with stores and factories of varying heights along both banks of the Grand Canal. These canals made Wuxi the transportation hub of the whole Jiangnan Region and also an economic centre. The so-called cloth, money, silk and grain docks that were located along the canals can be regarded as distinct trade districts. The water transportation connection between Taihu Lake and the urban district in ancient

times was the Liangxi River. The immediate lakeside area was occupied by small rural communities in which people made a living from the land, the fishery and weaving.

Transportation development in the early 1900s further enhanced Wuxi's importance in the regional transportation network and in local economic development. Construction of Wuxi Railway Station began on the north bank of the Grand Canal in the 31st year of Guangxu of the Qing Dynasty (1905) and it came into use in July 1906, shortly after the railroad between Shanghai and Wuxi was constructed (part of the railroad between Shanghai and Nanjing). Daily trains from Shanghai brought early travelers to Wuxi.

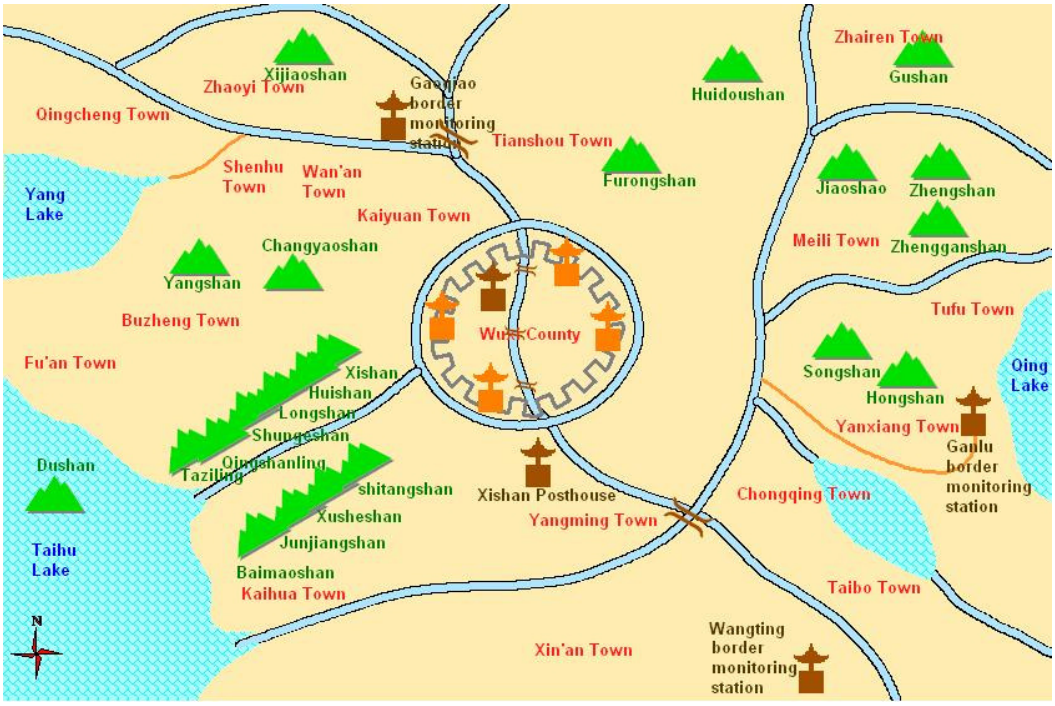


Figure 6.9 An illustration map of Wuxi in 1268

Note: drawn from a copy of the original map. The original "Wuxi County geographic map" is in a gazetteer—"*Xianchun Piling Zhi*" by Shi, Nengzhi during the period as the major of Changzhou Fu (the larger level of administration district than *Xian*) (around 1270s)

Source of the copy: Wuxi Municipal Bureau of Planning

Although not geographically accurate, this map (Figure 6.9) shows the morphology of Wuxi in the Song Dynasty, which had not been significantly changed since the West Han Dynasty. The urban area was much smaller than at present and was enclosed by city wall and connected to the outside through four gates. Rural communities and towns were located mostly on the west and east sides, close to the lakes and around the mountains. It is recorded that the distance between the urban district and Taihu Lake was about eighteen Li (about nine km).

6.3.2 Start of the Resort Morphology of Wuxi

Until the early 1910s, Wuxi was a centre of manufacturing and commerce. Rejoined with Jinkui County, an expanded Wuxi County was established in the first year of the Republic of China (1912). It covered an area of 912.5 sq km at the end of the 1920s and, two decades later, its area was expanded to 1190.95 sq km. The urban district was expanded to roughly 10 sq km with a perimeter of about 5640 m (Wang and Li, 1998). During the Republican period, Wuxi extended approximately 120 li (about 60 km) from east to west and 110 li (about 55 km) from north to south (Bell, 1999). There were diverse manufacturing establishments in Wuxi, with a concentration on textiles and grain processing. In the early 1930s, Wuxi led all contemporary Chinese cities, except for Shanghai, in the number of factories and employees (Chen and Qian, 1996). From the perspective of out-of-town transportation, railway and road transportation were both enhanced. Xihu (Shanghai and Wuxi) Coach Company was established in 1935. As the largest at that time in China, it offered regular coach service between Shanghai and Wuxi (five times per day) (shtong.gov.cn, 2008). In April 1949, a new passenger lobby of more than one thousand sq m was added to the railway station to cater to the increasing demand. A few small-scale car-rental businesses were established after 1927, with a major market focus on travel groups, pedicabs (tricycle propelled by pedaling) were the major means of transportation within Wuxi from the mid-1900s to the early 1950s (source: Wuxi Municipal Archives of Urban Construction). In the late 1940s, increasing tourism and recreational demands prompted

more car-rental services between Tongde Bridge at Xi Men (West Gate) and the major lakeside scenic areas (Mei Park, Li Park and Yuantouzhu). Three bus routes were put in place in 1947, connecting the main traffic terminal and lakeside scenic areas: one lakeside route from the railway station through West Gate, Li Park, Baojie Bridge, and so on, to the terminal at Yuantouzu; and one Xijin route from the railway station through West Gate, Hefu Kou, Rong Xiang to the terminal at Mei Park.

The old urban district had not expanded greatly since the Qing Dynasty because of the restriction of the city walls. The urban landscape was, still defined primarily by the water network. Along the Grand Canal, the urban space expanded to north and south. Rong (1912) indicated that roads in the urban district were commonly very narrow and there was little space to broaden the road because these stores were located on the canal banks and immediately adjacent to the water and could not be moved back.

In the early 1910s, there were only two roads around Taihu Lake: one began from Xi Men (West Gate) and ran southwest to Beidu Shan (the Mountain of Beidu); another began from South Gate, through the South Bridge to Shitang Bridge. The morphological features of the Taihu Lake surroundings began to be changed during the 1910s, because of the prosperity of national industries and commerce in Wuxi. At first, a few wealthy national capitalists were attracted by the natural beauty of Taihu Lake and its surrounding environment and began to build private gardens beside the lake, such as Mei Park, Jing Park, Li Park and Yu Zhuang (later joined to the current Li Park). These gardens were soon opened to the public, resulting in an increase in day trips to the lake area, either from the urban area of Wuxi or from nearby cities and towns, Shanghai in particular. Other facilities and services, such as cruise ships and boats, were added later resulting in the creation of the original lakeside tourism area. Commercial accommodations began to appear in the urban district, although they were very few in number and small in scale. Transportation was improved to enable people to

travel more conveniently between the urban district and lakeside area. For instance, the first portion of Hushan Road was built in 1934. It connected two important scenic areas, Li Park and Yuantouzhu, and it also provided a direct route from the railway station to the lakeshore (Zhang, 1960).

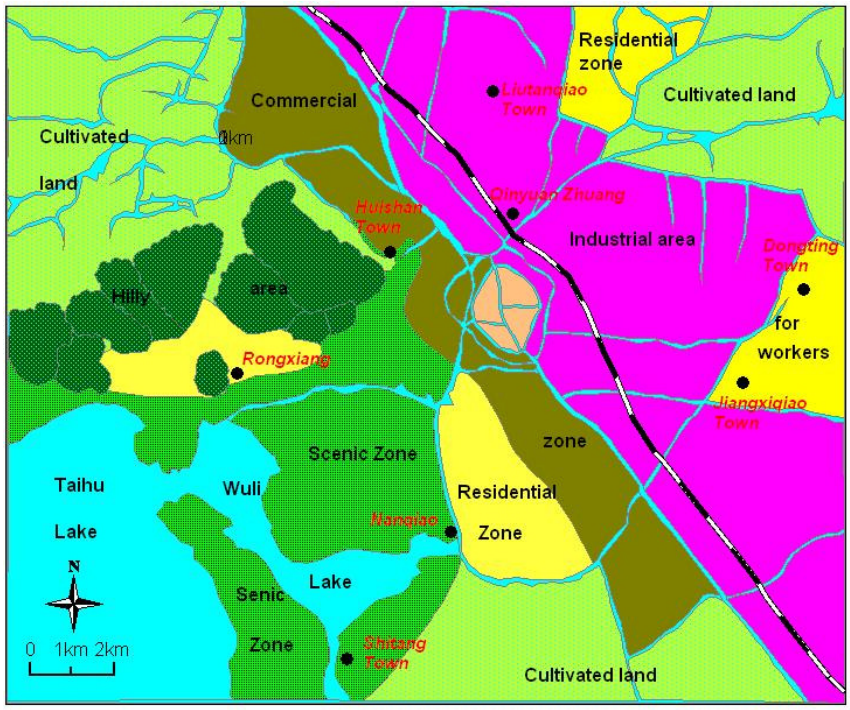


Figure 6.10 Functional zone plan of Wuxi in the Republican period

Note: Processed on a copy of the original map "Wuxi functional zone plan" (1930)

Source: Wuxi Municipal Bureau of Planning

The potential to establish a defined tourism area around Taihu Lake can be seen clearly in a zoning plan made by the local government in 1930 (Figure 6.10). Influenced by western urban planning theories and practices, this blueprint divides the entire region of Wuxi, except for the hilly area, into distinct functional zones. Scenic, administrative, cultivated, business, industrial and residential zones were identified. A roughly parallel pattern around Taihu Lake can be observed from this blueprint. The lake is surrounded by scenic areas (attractions and other land uses). Cultivated lands and residential areas occupy the second parallel zone. Cultivated lands are also served as a

transitional zone of urban growth. For leisure considerations, the southwest residential zone is located between the hilly area and scenic lands, and the southern one is surrounded by scenic and cultivated lands. Land uses relatively distant from the lake were primarily shaped by the Grand Canal. The southwest area of the Grand Canal, which is closer to the lake than the northeast area and can be regarded as a third parallel zone, is defined as commercial zone. The northeast area, or the fourth parallel zone, which is far from the lakeshore but closer to the Yangtze River than others, is defined as an industrial zone with residential areas for workers. The industrial zone is also along railroad for convenient transportation. The urban district is confined as an administrative zone, where all public and official institutions are located. However, as with most plans made in the Republican period, this plan was not implemented and, eventually, the features were changed by individual interests, creating mixed land uses around factories, high building density of residential areas in the urban district, and private gardens and villas at the lakeside.

Individual national capitalists contributed a great deal to both the tourism and infrastructural development in this period. Among them, Rong, Desheng (1875-1952) was one of the most important contributors, whose enterprises in Wuxi included such industries as grain processing, textiles and machinery, agriculture, transportation, finance and electric power. He initiated the era of constructing private gardens in Wuxi, as well as developing the resources of Taihu Lake. In 1912, he proposed to develop the scenic resources of Taihu Lake and build villas and gardens at the lakeside (Rong, 1912). He first purchased the lakeside at Dongshan (the East Mountain), with an area of 150 mu (about 0.1 sq km) and constructed a free-entrance private garden - Mei Park. Later, in 1929, he aided his brother, Rong, Zongjin to construct another free-entrance park, Jing Park, at the lakeside of Xiaoji Shan. In the meantime, he continued to renew Mei Park with architectures and collections of flowers, stones, trees and inscriptions. Also, he sponsored the renovation of Miaoguang Ta (literally, Tower of Miraculous Light) in Nanchan Si (Nanchan Temple) which was rebuilt in the Tang Dynasty (782).

Rong, Desheng also contributed to infrastructural development in many innovative and significant ways. In 1914, the construction of a nine km long and nine m wide road was started under his sponsorship along with some other local entrepreneurs. This road is regarded as being the first wide road in the western suburbs of Wuxi, starting from Yinglong Bridge at West Gate , through Hefu Kou and Rong Xiang (where Rong resided), to Kaiyuan Road at Mei Park (the beginning of Xiyi (Wuxi-Yixing) Road). This made travel more convenient between the urban district and the lakeside attractions than ever before. In 1918, they sponsored another transportation project, building a road connecting the railway station and Hui Shan, called Tonghui Road (literally, the road to Hui Shan). This road was later elongated from Hui Shan, through Hefu Kou, and ultimately connected to Kaiyuan Road. It improved the connection between the north suburbs and other portions of Wuxi. Also, in 1927 he established a bus company with two 20-seat buses and started a bus service between Tongde Bridge at West Gate and Mei Park. He also influenced bridge construction. Realizing the inconvenience of road transportation in Wuxi, in 1929, Rong, Desheng and Rong, Zongjin created an organization devoted to local bridge construction called "Company of One Hundred Bridges'. Finally fifty-seven bridges were built in Wuxi by the time the War started (1937). Most of them crossed the Grand Canal or Liangxi River (Chen and Qian, 1996). Among them, Baojie Bridge come to be the first and the only route between Taihu Lake scenic area (currently Taihu Lake mountain-water town tourism area) and the hinterland until 1994, when a new Baojie Bridge was built nearby. Finally, his innovative idea of replacing the city walls with ring roads was realized later.

In sum, the Republican period saw the initiation of the transformation of many parts of the Taihu Lake area into distinctive tourism and recreational landscapes. First driven by the economic prosperity of national industry and commerce, a few local dignitaries began to add tourism attractions and recreational facilities to the lake area, and followed this with provision of the means of access to

these attractions. Then transportation within and to the region was improved, prompted by the increasing local and regional demand for lake tourism and recreational opportunities.

6.3.3 Morphological transition in the Involvement Stage

Since 1949, both tourism development and urban growth have been influenced primarily by contemporary political-economy issues, resulting in modified resort morphology. Briefly, with a continuing emphasis on agriculture and the rural economy between 1949 and 1978, the rate of urban growth was less than that of economic growth (represented by GDP). The urbanization level increased until the late 1950s when the Great Leap Forward began. This was a nationwide campaign to collectivize and rapidly increase China's industrial and agricultural production. Failure of the policy resulted in factories and communes fabricating reports about production levels. The rate of urbanization decline and the rate of decline increased after 1966 because of the start of the Great Cultural Revolution (an ideological political campaign to eradicate revisionist and bourgeois capitalist elements in the Communist Party and Chinese society). The lowest point was reached in 1970 when the decline was reversed. During this period, although a single core to the built-up area remained, urban space sprawled rapidly to the northeast and northwest, and industrial zones expanded especially along the canal and roads.

Realizing that the city wall restricted the expansion of the urban area, in December 1949, the new local government made a far-reaching decision that the city wall was to be demolished and replaced by a ring road around the old urban core. This project was started in April 1950 and completed the following year. In the 1950s, fast urban growth, urban infrastructure construction in particular, was concentrated in areas far removed from the lakeside. The urban space of Wuxi expanded to the northwest and southeast along the Grand Canal, with some growth to northwest along Liangxi River but not to the lakeside area (Appendix 6.1).

The landscape of the lakeside areas was transformed by recreational developments, scenic area (spot) renovation and expansion, as well as by extensive shoreline modifications. An example is the East-China Rest Home which was first built in Du Shan (or Daji Shan) in 1951 and currently belongs to Shanghai Municipal Bureau of Sanitation. Rest homes became a popular accommodation type in the Taihu lake area from the early 1950s. Some of them were built in the 1950s by governmental agencies or enterprises (joint state-private ownership or state-owned) for the use of their employees and for guest reception. Since then until the 1980s, roughly one hundred rest homes were built at lakeside locations. Some major scenic areas were renovated or expanded; for instance, Mei Park was expanded from originally 81 (about 0.05 sq km) mu to 812 mu (about 0.54 sq km) in 1960, with additional planting. Mashan, currently an important component of the entire Taihu Lake tourism area, was prepared for development in the 1960s when it transformed from a small isolated island to a peninsula in a project called "weihu zaotian" (reclaimed from the lake and turned over to arable land). This activity reclaimed 18.53 sq km of lands, including 25,000 mu (about 16.67 sq km) of arable lands. Although initially considered for agriculture, this landscape transformation eventually paved the way for later infrastructure construction and, consequently, led to tourism and recreational development. Reclamation activities were undertaken in other locations along the shore of Taihu Lake and the western lakeshore of Wuli Lake (an inner lake of Taihu) during the early 1970s, totally 4.14 sq km in all, including 2473 mu (about 1.65 sq km) of arable lands. However, "weihu zaotian" generated problems with flood control, disturbed the ecological balance and destroyed tourism resources. In 1975, the local government decided to promote "tuitian huanyu" (turn fields to fishing areas by destroying dams around them) and returned reclaimed lands either back to lake or to fishing areas except for a small portion used as orchards.

In the 1960s, the local government had plans for Wuxi to become the "Oriental Geneva": a lakeside city which is characterized by low buildings and wide roads, with declining buildings height

and density, and declining density of population from the lakeshore to the inner lands. However, this blueprint was soon found to be impracticable in Wuxi because of its high population density and rapid urban growth.

6.3.4 Morphological transition in the development stage

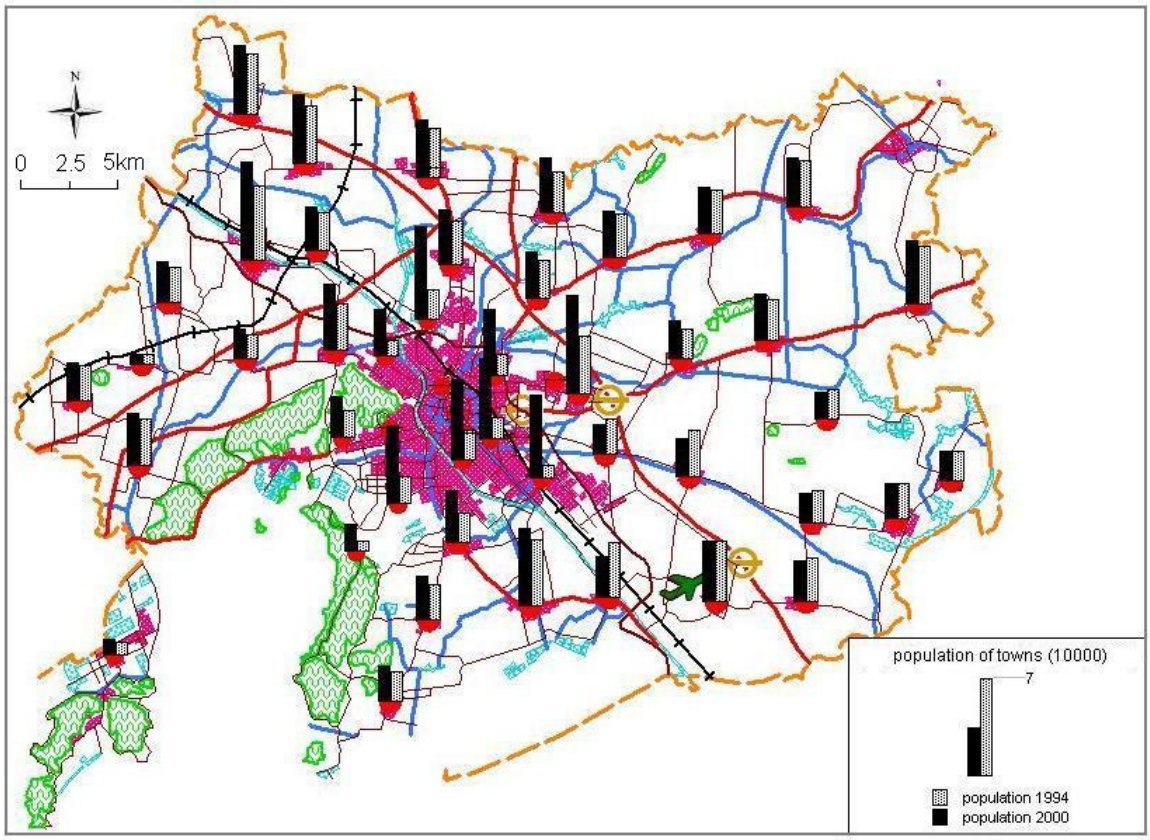


Figure 6.11 Population of townships in 1994 and 2000

The morphological changes of Wuxi that started in the 1980s were primarily driven by a significant change in the transportation system. A new canal, which came into use in 1983, drove the urban space to expand to southwest and around it (Appendix 6.1). Then, the rapid development of the road network broke the previous "water-driven" urban landscape and resulted in a multi-clustered urban form, albeit with one main core. New industrial and residential developments occurred along

roads to suburban areas and built-up lands began to surround the mountainous areas completely (Figure 6.11). These changes were associated with a growing use of motorized vehicles and increased commuter flows between the urban core and new development areas. One source said that it could take no more than one hour from the urban districts to the furthest xiang (township) (Wang and Feng, 1988).

For Figures 6.11 and 6.12, a 1:10000 base map (JPEG) was obtained from Wuxi Municipal Bureau of Tourism and digitized in MapInfo Professional 7.0. Layers produced consist of township and other features (point), transport routes, water routes and boundaries (polyline), built-up lands, water bodies and scenic areas (polygon). An attribute table was produced for the layer of township (point), consisting of information on population and accommodation.

Political-economy changes were the major factors accounting for changes in the resort morphology of Wuxi during this period. The generation of township and village enterprises (TVE) and the rapid growth of these small-scale labour-intensive businesses in the 1980s and their transformation into larger, capital-intensive conglomerates in the 1990s drove fast growth of the local economy. Associated with the spread of urban settlements, the development of TVE hastened significant non-agricultural expansion adjacent to the city core, as well as more dispersed transformation from agricultural land to non-agricultural land in and around townships and villages (Ho and Lin, 2004b). The fast growth of stand-alone industrial sites generated obvious environmental problems, among which water pollution of the Grand Canal was most obvious. The severe environmental problem of the Grand Canal accounted for the quick declination of tourism activities based on it and pushed the increasing tourism and recreational land uses to the lakeside area.

The tourism development administration called for specific planning to be undertaken for tourism and recreation with the revival of domestic tourism soon after the start of economic reform.

In 1984, the "Plan of Taihu Lake Scenic Zone of Wuxi" was approved by the provincial government and implementation was initiated. This plan covers a region of 366 sq km from Lihu in the east (including Jincheng Wan, the Changguang River, Xuelang Shan, Nanfang Quan, Beitang Men, Wuyun Shan and the outer Taihu Lake) to Heng Shan in the west (including Mei Park, Jilong Shan, Taohua Shan, the Lv River and Xueyan Bridge) and also included islands such as San Shan, Tuo Shan, Ma Shan and Jiao Shan. The whole planning region consisted of 240 sq km of water, 52 sq km of mountains, 52 sq km of lakeside plains, and 115 km of lakeshore. Lacking of legal support, this plan did not control the details of development projects but was a far-reaching, comprehensive development concept for Taihu Lake and the lakeside areas as a well-defined tourism and recreational area. This later contributed to the modification of governmental strategies in urban development.

6.3.5 Morphological transition in the new century

The governmental strategy of urban development was switched to a lakeside emphasis in 2000, leading to the modification of administration districts i.e. the designation of Binhu District. The government first started a series of infrastructure construction and lakeshore modifications and, in the meantime, began to sell lands in Lihu New Town and Taihu New Town. Combined with a broadening concept of Wuxi tourism, these changes encouraged urban expansion in the main tourism areas, resulting in significant transformation of the lakeside landscape (specifically the landscape of Binhu District) with rapid property development, extensive shoreline modifications, environmental restoration, enhanced transport infrastructure and increasing tourism and recreational developments.

Although tourism to Taihu Lake has been explored and developed for a long period, the urbanization process has only touched the lakeside areas in recent years. Strong connections between tourism development and property development are more significant in Binhu District than in other areas of Wuxi. Tourism development can raise a city's image and consequently attract both property

investors and customers. Secondly, the physical environment of a tourism area is often an asset for property development. The average land price of Binhu District is the highest in all sub-districts of Wuxi with strong interest to develop real estate in the lakeside areas. Moreover, there is an evident distance decline in property values: the closer to the lakeshore, the more expensive the price of land. The land price around Taihu Lake is now more than 2 million RMB (about 0.26 million USD, according to middle rate on May 1, 2007, Bank of China) per mu (1 mu is equal to about 667 sq m). The most expensive property presently is "Baojie Shanzhuang (Baojie Villas)", which is located between Taihu Lake and Li Lake where one villa sold for 22.8 million RMB (about 2.96 million USD, according to middle rate on May 1, 2007, Bank of China). The increase of land prices and the development of real estate influence each other and, in consequence, the capital investment in real estate exhibited significant growth between 2000 and 2005. Real estate investment received 4.47 billion RMB (about 0.54 billion USD, according to annual report 2000, China Development Bank) in 2000 and increased to 22.8 billion RMB (about 2.83 billion USD, according to middle rate on December, 31, 2005, Bank of China) in 2005, with an annual growth of about 82 per cent (Wuxi Statistics Yearbook, 2006).

Since 2000, most old residences have been demolished (including some old houses built in the Qing Dynasty (1644-1911) and replaced by developments in new structures, such as western villas and high-rise apartments. However, some older buildings have been conserved or restored, such as those built outside Mei Park in the late 19th century. The last urban plan (2000-2010) regulated the height of lakeside buildings and indicated a parallel built-up lakeside landscape. In detail, villas and low-rise buildings, multi-floor buildings and high-rise buildings are to be located sequentially from the lakeside to the hinterland areas. Also, within one block, buildings located in the northern part should be higher than those located in the southern part; this regulation to some degree makes the largest possibility of obtaining lake view.

6.3.6 Discussion of specific morphological features

6.3.6.1 Morphological analysis of accommodation development

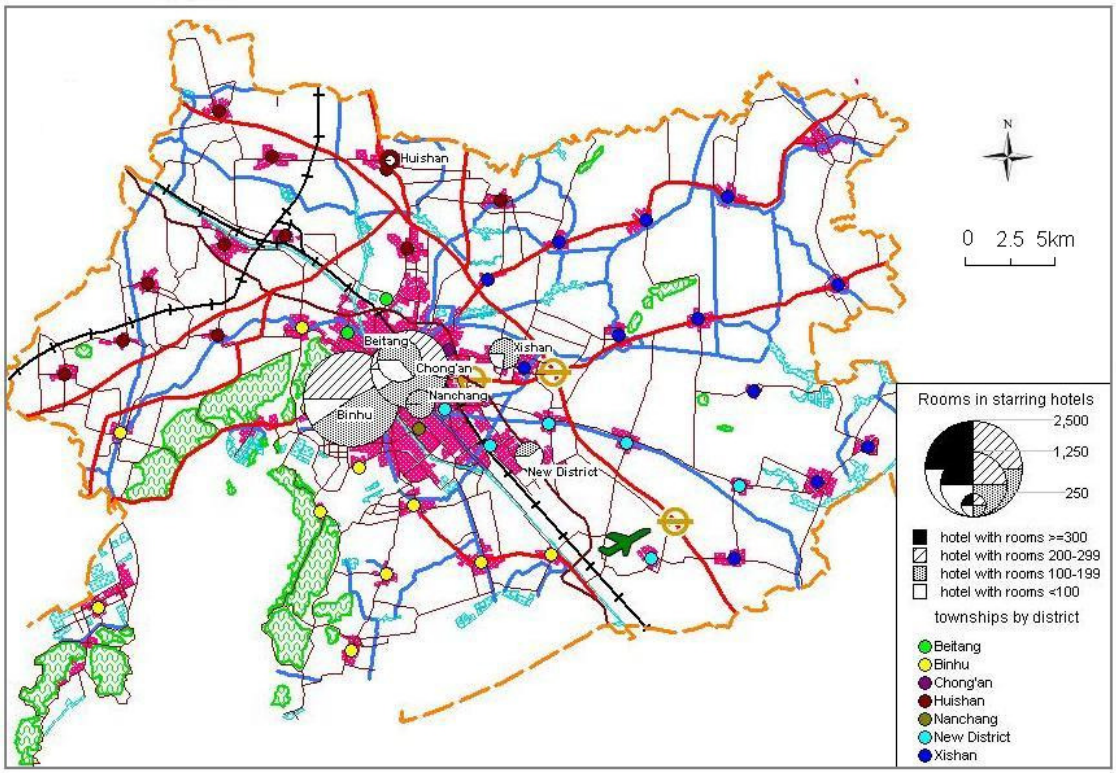


Figure 6.12 Distribution of star-rated hotels in urban districts (2004)

The distribution of accommodation is often regarded as an important resort morphological feature. Statistics for star-rated hotels were mapped for 2004. The result (Figure 6.12) indicates a hierarchical distribution primarily according to proximity to the main transport stations (railway station and coach terminal) and tourism resources. At the top of the hierarchy are Binhu and Chong'an: the former has the best access to Taihu Lake tourism areas while the latter has the best accessibility to transportation and recreational opportunities. Beitang, which is adjacent to Chong'an and Hui Shan, is the second, with less star-rated hotels in either quantity or quality. Others are classified into the third place. Unlike the railway station and coach terminals, the airport has not

generated significant accommodation developments in the New District. This reflects the geographical distribution of the origins of tourists to Wuxi, which presents significant distance decay: the majority of tourists come from East China with about half of the total from the Yangtze Delta. The top three transportation methods of tourists to Wuxi are train, coach and self-driven car.

Table 6.3 Time-space distribution of registered hotels (year-end of 2006)

No. of bedrooms/ No. of hotels	Exploration	Involvement	Canal tourism phase	Theme park phase	Post-theme-park phase	consolidation
Binhu			800/5	851/6	1727/13	429/3
Chong'an		111/1		479/2	1429/7	686/3
Beitang	166/1		180/2		305/4	513/3
Nanchang				127/1	148/1	108/1
New District						425/4
Xishan				266/1	283/2	
Huishan				95/2		
Urban districts	1.8%	1.2%	10.7%	19.9%	42.6%	23.7%

Note: six hotels of lower rank and smaller size were closed in 2006, These include one hotel (opened in the Canal tourism phase) in Beitang with 87 bedrooms, two hotels (opened in the post-theme-park phase) in Beitang with a total of 96 bedrooms, one hotel (opened in the post-theme-park phase) in Binhu with 139 bedrooms, one hotel (opened in the theme park phase) in Chong'an, and one hotel (opened in the post-theme-park phase) in Xishan with 188 bedrooms. Taihu Fandian in Binhu was first opened in the 1950s but was renewed and re-opened in 2000.

Temporal changes in the spatial distribution of hotels are presented in Table 6.3 according to Wuxi's the evolutionary framework. The hotels were assigned to time periods according to their opening date (chain economy hotels were excluded). Significant growth of hotels occurred in the Canal tourism phase and reached a peak in the post-theme-park phase. The growth rate slowed down

in the two most clustered districts when Wuxi entered its consolidation stage. New developments in the consolidation stage were more evenly distributed than in previous stages and phases. Although more concentrated tourism development occurred alongside Taihu Lake after the theme park phase, the proportion of hotel capacity declined in Binhu District while increasing slightly in central urban areas. This phenomenon can first be interpreted as a result from the development of transportation infrastructure and services, which was driven by the demands of either urban growth (such as construction in Lihu New Town and Taihu New Town, Figure 6.13) or tourism development (such as construction in Mashan) and, in consequence, increased the accessibility of Taihu Lake tourism areas. Although some vacation developments have been started in Mashan, lakeside areas generally lack developed recreational facilities and services which can be obtained more easily in central urban areas. Therefore, it is understandable that rest homes and resort hotels, which are primarily designed for conference or special groups, are often located in the lakeside areas. Individual tourists are more likely to use the hinterland hotels.

A new data frame was built on the base map used for Figures 6.11 and 6.12 to specify waterside areas. Layers added include annotation (text), hotels, other features (point), roads, water routes, bridge (polyline) and urban core, scenic areas and water bodies (polygon). An attribute table was built for the hotel layer consisting of id, title, opening date, floor area, plot ratio and number of bedrooms. Four features (opening date, floor area, plot ratio and number of bedrooms) of star-rated hotels in the downtown and Lihu areas were mapped using Mapinfo Professional 7.0 (Figure 6.13). Then both spatial data and attribute data were transferred to Shp format and prepared for spatial analysis using ArcGIS 9.2. Global Moran's I method was used to examine hotel data sets for the yearly situations between 1978 and present and the results were compared. Global Moran's I is the most commonly used test statistics for spatial autocorrelation in univariate map patterns or in regression residuals (Appendix 6.2). Generally, I score near 1.0 indicates clustering while a score near -1.0 indicates

dispersion. Inverse distance was chosen to define the conceptualization of spatial relationships, meaning that the impact of one feature on another feature decreases with distance. As the distance method, Euclidean Distance was chosen to calculate distances when measuring concentration. And, row standardization was applied to facilitate comparison of different sets of results. Note that the calculation of the statistic will be influenced by the sizes of the study area and the units within it. Therefore, caution is needed in the interpretation of results for what is considered to be widely dispersed or random at one scale may be dispersed at another. The results indicate a remarkable evolution in the patterns of two features: plot ratio and floor area. Before 1989, hotels were distributed in a dispersed pattern which changed to a random pattern until 1994. Since 1995, hotels have demonstrated a clustered pattern in plot ratio and floor area, and the level of clustering has increased over time. Now, the I score for the plot ratio data is 0.21, indicating that hotels with similar plot ratios are inclined to locate in proximity and hotels with very different plot ratios are far apart. The I score for the floor area data is 0.18, indicating that hotels occupying larger land area are often located near each other and separated from those occupying smaller areas. I scores (-0.06, -0.03) for bedroom numbers and opening date present suggest random patterns. If these spatial pattern analysis results are scrutinized in the context of figure 6.13, four hotel clusters can be identified according to their relationships to transport features, the urban core and tourism resources. Hotels clustered around the two major transport stations and in the city core comprise cluster 1; those concentrated around another coach terminal define cluster 2; those located adjacent to the junction of an early major road to the lake and a major road to Suzhou define cluster 3; and hotels at the waterfront and close to Baojie Bridge defined cluster 4. Furthermore, morphological differentiation can be observed among the clusters. Comparatively, cluster 1 is characterized by larger size, smaller floor area and higher plot ratio (mostly with high-rise buildings), cluster 4 has a larger floor area and lower plot ratio (most are

resort hotels with low-rise buildings and villas), and cluster 2 and 3 are in the middle (mostly with multi-floor buildings or building complexes).

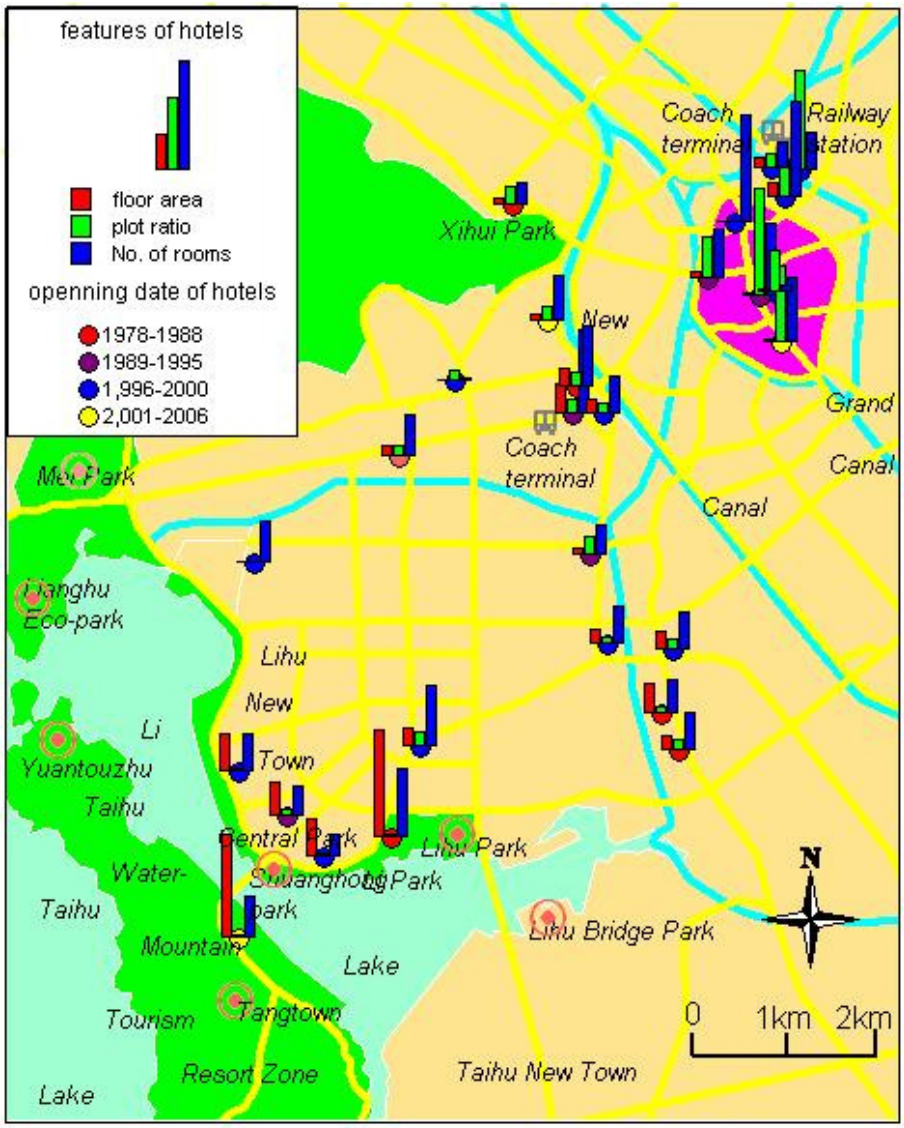


Figure 6.13 Morphological features of hotels in lakeside area and downtown area

6.3.6.2 Spatial relationships between the RBD and the CBD

Although the old town of Wuxi (confined by city wall and then later by a ring road, belongs to Chong'an) and the surrounding area is clearly defined as a CBD on the Transportation and Tourism

Map of Wuxi (urban districts) (2007), it is not a typical CBD but is a CBD-like urban core. There are a few recreational clusters in this area. These recreational clusters first grew from a recreational park or historical districts, for instance, Chong'an Si and Nanchan Si. They have been renovated with dense pedestrian streets and have clustered restaurants, retailing services and a few recreational facilities. They are often small in scale and mixed with other urban services. Although attracting many tourists, they are not primarily designed for tourists but serve as local recreational centres.

A RBD primarily for tourists recently started to be developed in Binhu, corresponding to the switch in urban development strategy from canal side to lakeside. This may gradually generate a RBD that is separate from the CBD. Unlike seaside areas, no RBD was observed at the lakefront or in the nearby areas. Except for accommodations, a few restaurants are scattered along the lakeshore, and food service and souvenir shops are few and mostly located in or at the outside of tourism spots or areas. Li and Tao (2003) examined the spatial pattern of the RBD in Suzhou, a neighbour of Wuxi, and indicated an order of evolution from a single-cored structure to a double-cored structure and to a chain structure. The spatial form and revolution of RBDs in Wuxi are similar to that of Suzhou, closely relative with its urban spatial dispersal. Therefore, it can be suggested that intensifications can be proposed for RBDs in urban core while well-defined RBDs can be developed with clustered tourism and recreational attractions.

6.3.6.3 Transitional landscape beside the lake

The tourism and recreational development more influence on areas adjacent to the lake than on hinterland areas because the lake itself is a natural attraction for tourists. It is also suggested that areas adjacent to the previous city core are more vulnerable of urban expansion. The lakeside area (shown in Figure 6.13) then, which is between the urban core and the lake, will be discussed in detail.

The major transformations of the lakeside landscape mainly consist of the addition of tourism and recreational developments, the increase in transportation land uses, and the sprawling of urban settlements. To begin with, artificial attractions were built at the water's edge, primarily along two roads to make these attractions accessible. However, the area was then mostly occupied by rural settlements and agricultural lands. Rapid urban growth and new canal's building resulted gradually in land-use conversions, initially of land near the canal, and some rural settlement became dense urban settlements. The near-lake lands were less influenced than those near the urban core. The peak time of theme park tourism was associated with the construction of a few accommodation establishments which were built along the water's edge and, at the same time, as close to roads as possible. Significant transformation of lakeside landscape did not occur until the local government altered the strategy on urban development, leading to the construction of transportation infrastructure within this area as well as a rapid movement of urban settlement toward the lake. Fishery ponds no longer existed, the land immediately along the water's edge was modified with a common recreational green belt. Roads were built parallel to the water's edge with one along the water's edge with green space on both sides. As well as other parallel road, roads were also built at right angles to the water. They formed a net-like pattern and resulted in dense developments. Public squares and recreational parks were built where the roads met the water's edge. Agricultural lands were quickly converted to built-up lands, particular for residential land uses. So far, the latest comprehensive urban plan has worked efficiently to control building heights, resulting in a recommended pattern of lower heights when closer to the water.

Mashan has experienced a distinct morphological transition that is different from other places. It is an example of tourism driving transportation infrastructure construction. Mashan was transformed from an isolated island to a peninsula through "weihu zaotian", and then became an important agriculture area of Wuxi. The lakeside hill also made a good location for building rest homes. The

tourism development of Mashan benefited from the decline of theme park tourism in the mid-1990s. Lingshan Buddhism cultural tourism zone was constructed in Mashan and was expected to lead to new growth of the tourism industry in Wuxi. Mashan was later designated a national tourist resort zone and oriented to be a resort centre of Wuxi. This stimulated through-town and out-of-town road construction. A few resort hotels were randomly built at the previous agricultural lands. One road surrounding the north peninsula is far more than transport route and is really part of the tourism attraction. The improved transportation infrastructure attracted vacation property developments to the lakeside area. A new waterfront landscape will be in place once those vacation property developments are completed.

6.4 Summary and further concerns

The encroachment of urban districts, designated towns, development zones, highways and in-city roads have changed the landscape of Wuxi in a dramatic way (Ho and Lin, 2004b). When considering it specifically as a lakeside resort, specifically, varying factors have influenced its morphological transition and these have changed from one stage to another. The Republican period saw the initial transformation of some parts of the lakeside area into distinct tourism and recreational landscapes. During this period, the national economic prosperity and significant individuals were two major forces in the addition of tourism attractions and recreational facilities to the lake area, as well as in offering access to them. Both through transportation and regional transportation were improved and then further enhanced by the increasing local and regional demands for lake tourism and recreational opportunities. During the involvement stage, both tourism development and urban growth were primarily influenced by contemporary political-economy issues and, consequently, the morphology of Wuxi was modified. Specifically, the landscape of Taihu lake and the lakeside area was transformed by recreational developments, scenic area (spot) renovation and expansion, as well as extensive

shoreline modifications. Then morphological changes in the 1980s were primarily driven by a significant change in the transportation system, secondly by political-economy issues and thirdly, by planning directives. Since 2000, the altered governmental strategy of urban development played a leading role in shaping lakeside landscapes. The new strategy emphasized a new lake-oriented urban development, leading to transportation infrastructure construction and intensive property developments, as well as more environmentally-oriented modifications at the lakeside. At the same time, a more diversified concept of tourism in Wuxi than before accounted for the recent tourism and recreational developments of Mashan, represented by vacation property development and construction of a golf course. The requirements of tourism and recreational development in Mashan resulted in the construction of transportation infrastructure in town and to the town.

Although one should not expect the tourism industry to determine the structure of urban space, tourism in Wuxi has been a significant driving factor of land use conversion. Currently, a new policy is on trial which allows land conversion from agriculture to non-agricultural uses of Wuxi to be compensated in north Jiangsu. It appears to be facilitating considerable urban growth, including tourism and recreational developments. Therefore, the tension between agricultural land use and tourism and recreational land use in Wuxi can be expected to decrease.

Intensive development in the lakeside areas during the early 2000s has brought economic benefits but also controversies. Property development in Binhu District has generated large commuting populations who live in Binhu but work in urban core or in other districts, generating a significant increase in transportation flows. Although transportation infrastructure has been improved, more efforts are to be expected to address this daily traffic problem, which is very severe in rush hours.

Resettlement activities have brought about negative attitudes and dissatisfaction among some local residents, aged people in particular. Because of the modification of lakeside land uses, residents that formerly lived beside Li Park were required to move out of their townhouse-like residences several years ago to be resettled in a high-rise apartment building in Lihu New Town. However, as an aged resident said,

"Most aged people like me (over 60) would not prefer a tall building. We are afraid of the possible trouble of using an elevator. We are not satisfied with the poor condition of our temporary residences, either. We have lived there for more than two years. It is improper to ask us to move before new housing is available." (Wuxi Survey, 2007)

This common problem in the urban development is exacerbated by insufficient communication between policy makers, planners and local residents.

Besides these transportation and resettlement problems, water pollution is another issue. Water pollution that increased as a result of the intensive development of stand-alone industrial sites and the expansion of urban and rural settlements was a major cause of the decline of the Grant Canal tourism. Currently, remaining industrial sites (including dye, chemicals, paper-making, steel-making and food manufacturing plants) as well as intensive tourism and property developments in lakeside areas are harming Taihu Lake tourism. In spite of regular efforts, the water quality of Taihu Lake has continued to get worse since the 1960s and has influenced far more than tourism activities. An algae outbreak in Taihu Lake at the end of May 2007 rendered tap water undrinkable for about ten days, affecting more than one million residents of Wuxi. Recently lakeshore modifications have significantly improved the lakeshore environment, enabling local people to "be closer to Taihu Lake" and a few tourism and recreational services have been provided in areas immediately adjacent to the lake. Modifications include transforming fish ponds to lake water, the construction of a major road along the lakeshore

with green space separating the road from lake, the construction of lakeside recreational squares and other artificial attractions, as well as a lakeside pedestrian path with accesses to the water (Figure 6.13). However, a new conflict is occurring between the increasing tourism and recreational activities and the protection of water quality. Stronger and more efficient means are being sought to control algae blooms in the lake and to resolve the lake pollution problem. Some tough regulations were introduced in 2008. For instance, emissions affecting chemical oxygen demand, and ammonia, nitrogen and phosphorus in industrial waste water and sewage disposal must meet first-class national standards, cruise restaurants on the lake have been closed, and some small and medium-sized chemical plants, many located on the banks of the lake, are to be closed by the end 2009.

Figure 6.13 Pictures about lakeshore modifications

Source of photograph: Author (May, 2007)

Chapter 7
Discussions

This study has described and explained the resort morphology of Sanya and Wuxi and the evolution of these morphologies. Now, comparative comments will be made on the morphologies of Sanya and Wuxi before addressing the ultimate question of whether or not there is a model of Chinese water-based resort morphology?

7.1 Sanya and Wuxi: distinctions

At first sight, Sanya and Wuxi are two distinct resort towns from the perspectives of tourism resources, history, evolutionary process, location, economic development level, and so on. These things have been addressed individually for each place in Chapter 5 and 6. To begin with, their patterns of tourist origins that are associated with features of tourist behavior will now be examined. First of all, with respect to transportation methods, out-of-island tourists usually take a flight to Sanya or to Haikou and then take a coach to Sanya. In contrast, the top three methods used to access Wuxi are train, coach and self-driven car. Secondly, Sanya and Wuxi have distinct patterns of domestic tourist origins. The regional distribution of tourists to Wuxi is characterized by a clustered pattern and significant distance decay: half of domestic tourists are generated from the interactive tourist flows among destinations within the Yangtze Delta region. In contrast, neither spatial nor economic distance is of great importance to the regional distribution of Sanya's tourist origins, although a significant influence of the economic level of the place of origin has been found (Xuan et al, 2004) (Table 7.1). Thirdly, the average length of stay of tourists in Sanya is about 3.2 days (calculated from survey data undertaken in 15 holiday weeks between 2000 and 2005, standard deviation is 0.4831. Source data obtained from Sanya Statistics Yearbook, 2006) compared to about one day in Wuxi

(source: Wuxi Municipal Bureau of Tourism, 2002). Fourthly, tourist expenditure compositions in Sanya and Wuxi are very different. In Sanya, expenditures on accommodation, food and beverage, and shopping account for about seventy percent of the total while, in contrast, admission to tourism spots (areas) accounts for more than other expenditures in Wuxi, followed by food and beverage, and transportation. Originally interpreted by their different locations and tourism resources, the above features imply two distinct resort towns: a traditional sightseeing-dominant Wuxi with a growing holiday industry; and a new, yet fast-growing Sanya, with a significant holiday industry.

Table 7.1 Correlations of tourist distribution of Sanya

Indicators		Regional distribution of tourists	Spatial distance	Economic distance
Regional distribution of tourists	Pearson Correlation	1.000	-0.414	-0.440
	Sig. (2-tailed)	.	.026	0.028
	N	29	29	25
Spatial distance	Pearson Correlation	-0.414	1.000	0.984
	Sig. (2-tailed)	0.026	.	0.000
	N	29	29	25
Economic distance	Pearson Correlation	-0.440	0.984	1.000
	Sig. (2-tailed)	0.028	.000	.
	N	25	25	25

Note: *Correlation is significant at the 0.01 level (2-tailed). Based on data obtained from Xuan, et al. (2004), where Euclidean distance between the capital of the origin province and Sanya is calculated as spatial distance (km); air ticket fee from the capital of origin province to Haikou plus coach fee from Haikou to Sanya is calculated as economic distance (RMB).

Their distinctions in physical environment are also significant and influence the development of the resort towns in a profound way. Climate is one of the most important physical environment features and the climate of Sanya is very different from that of Wuxi. Fan and Guo (1998) applied a temperature humidity index (THI) and an index of wind effect (K) to evaluate climate suitability for tourism and recreation or rest and recuperation in Chinese coastal cities. Their study indicated that a longer tourism season can be expected in more southern cities (Table 7.2). Taking account of the influence of tropical cyclone frequency, the season of tourism suitability of Sanya can be as long as eight months (October to April. Also, January to March and October to December are suitable for rest and recuperation in Sanya, which is much longer than most other coastal cities in China). Therefore, it has climatic advantages to be a winter seaside resort and this is clear in the orientation of tourism development for Sanya. Compared with Sanya, Wuxi has a shorter season that is suitable for both tourism and recuperation. Their different climates also contribute to the fact that the vacation property market is far more significant in Sanya than that in Wuxi, although dense property developments are currently visible in waterside areas of both cities.

Besides the influence of climate, the local physical environment features largely explain the specific site locations of resort developments. A sandy beach is the prime recreational attraction at each of the resort clusters of Sanya; the river mouth comprises a second set of recreational locations; and the mountainous coast, where a scenic view or an artificial attraction is found, provides a third tourism setting. In Wuxi, both the local physical and the historical-cultural environments are important. There is a relationship between the significant site location of developments and tourist attractions, either a scenic view or a historic-cultural attraction or, usually, both. The island and peninsula comprise the prime recreational locations; mountainous sites in close proximity to the lake comprise a second desirable site for developments; and the lake or canal bridge surroundings comprise a third type of recreational sites.

Table 7.2 Months suitable for tourism and recuperation in Chinese coastal resort towns

Climatic zone	Resort town	No. of (1)	(1)Months suitable for tourism	No. of (2)	(2) Months suitable for both tourism and recuperation
North temperate zone	Dalian	5	May to September	4	June to September
	Qingdao	6	May to October	4	June to September
North subtropical zone	Wuxi	7	April to October	3	May, June, September
	Hangzhou, Ningbo	6	April to June, August to October	3	May, June, September
Middle subtropical zone	Fuzhou, Wenzhou	7	April to June, August to November	4	May, June, September, October
South subtropical zone	Xiamen	9	March to June, August to December	4	April, May, October, November
	Zhuhai, Shenzhen	8	March to June, September to December	4	April, May, October, November
	Beihai	8	March to June, September to December	3	April, October, Novemeber
South tropical zone	Haikou	9	September to May	4	March, April, October, Novemeber
Middle tropical zone	Sanya	8	September to April	6	October to March

Note: based upon Table 2 (Fan and Guo, 1998) and source obtained from Wuxi Municipal Bureau of Tourism (only THI is calculated for Wuxi).

7.2 Resort morphological similarities between Sanya and Wuxi

Although differences clearly exist, a comparison of Sanya with Wuxi reveals many similarities in their present morphological and development patterns. Although Sanya has experienced a much shorter evolutionary period and is in an earlier stage of development than Wuxi, both are seeing a growing holiday industry associated with an enriched concept of tourism.

7.2.1 Development patterns of resort morphology

Although the factors that influence resort morphology and evolution vary and are changeable, the physical environment, political-economy issues and transportation are, generally speaking, most significant in influencing development and resort morphologies.

The overall resort evolution of both Sanya and Wuxi is largely a function of national, provincial and local political-economy issues. This is understandable if we recall the transformation of tourism in China. Tourism was first considered to be a political issue only, and then it was regarded as both a part of foreign affairs and an economic activity during the decade following 1978. Thereafter, it came to be considered more from an economic perspective. Modern tourism had not started in Sanya until the central government first proposed tourism development for Hainan Island. The development in Sanya was spurred soon after when Hainan was designated a province and then China's largest SEZ. Close relationships between resort evolution and political-economy issues is further interpreted through a temporal match between the evolution process and changes in local government of Sanya. The prosperity of the economy in the Jiangnan Region (roughly the Yangtze Delta) in the Republican is an important reason for the much earlier start of Wuxi than Sanya. The involvement stage of Wuxi was characterized by national political underpinnings first and, then, a one-decade hiatus because of political struggles. Since the national shift to economic reconstruction in 1978, tourism in Wuxi entered a fast development period with greater influence of local government strategies and policies. The development of both Sanya and Wuxi indicated that national and provincial political-economy issues have had a primary influence on the resort towns at the earlier stages or phases but local policy and strategy have become more prominent later. Local political-economy issues have greatly influenced the details and implementation of tourism and recreational developments.

In view of the natural attraction of water, governments have emphasized tourism development in the waterside areas, and urban expansion has gravitated towards the water and the key resort areas. In the earlier evolutionary stages, the construction of infrastructure, transportation infrastructure in particular, initiated the morphological changes and drove intensive tourism and recreational land uses into key resort areas. In other words, significant waterside tourism and recreational development, generally speaking, did not take place until public access to these areas was put in place. Public access, for instance, was a road to the beachfront or to lakeside attractions or, perhaps, a bus route. The latter can generate significant growth of recreational services and facilities, and may stimulate the development of an RBD at the end of the line.

Relative proximity to the urban core, which is associated with planning issues, also influences changes in morphological features. Analyses of key resort areas of Sanya suggest that the degree of clustering of land uses within an area probably declined over the evolutionary stages when in close proximity to the urban core. On the other hand, it increased when development was under strict government control and well-implemented plans. The relation to planning issues is uncertain and likely depends on the specific plans and the efficiency of implementation and control. With a broader view of the whole resort town an increasingly clustered land use pattern commonly occurs over the evolutionary process because tourism activities have been intentionally concentrated in several key resort areas. Besides, this analysis suggests two relationships between land use changes and resort evolution. First, more complex land-use composition often occurs as the evolutionary stages unfold. Second, one significant land conversion is indicated from agricultural or waste lands to tourism and recreational lands, among which the conversion to lands for hotel and vacation property developments accounts for a large proportion.

7.2.2 Present morphological features

In view of present situations of Sanya and Wuxi, tourism and recreational developments are eventually, either intentionally or not, more clustered at waterside than in hinterland areas. These clustered tourism and recreational developments, in consequence, created a linear morphology in both study areas; even more, they have created a necklace-shaped recreational belt surrounding Taihu Lake and Hainan Island. Unlike popular western cases, the distribution of these sites, which is characterized by clustered tourism and recreational developments, is not necessarily in proximity to the urban settlements which constitute their recreational hinterlands. For instance, the island itself does not contribute a significant proportion to the demand of Sanya tourism. The specific location of Sanya associated with major transportation access by plane makes Sanya very different from those popular western seaside resort towns that grew during much of the last century in terms of demand.

Common morphological features also occur among those well-defined resort areas. A belt of public access can usually be observed along the water (along the beach in the case of Sanya). The width of the belt may vary with the type of water, the density of development along it, and the physical environment. It is generally comprised of an accessible green belt and promenade parallel to the waterfront and, may be, a small centrally-located square and a few scattered recreational facilities. Adjacent to higher density development, the belt is often, but not in necessarily, narrower and simpler. In some extreme situations with very high density development, like Dadong Sea, it may be no more than a stone promenade and a parallel green space within which some entertainments and food service are offered. However, a wide recreational belt is present in Sanya Bay although, adjacent to this, the density of development is high.

Behind this belt there is always a road to provide automobile access. In some cases, it may be located behind developments, for instance a hotel-lined waterfront (Yalong Bay) or a hotel cluster

(Dadong Sea), while in other places it may be closer to the shoreline (Lihu, Mashan, Sanya Bay). A net-like route pattern often occurs at the waterside, particularly when the waterside area is in close proximity to the urban core. This pattern is usually composed of parallel roads along the water and roads at right angles to the water. Transport stations and transport junctions are important nodes for tourism and recreational developments, tourist accommodations in particular. The waterfront and the anterior transport routes are major axes that guide development.

The density of developments is largely a function of relative proximity to the waterfront and the urban core. The overall density of a resort cluster is higher when it is in closer proximity to the urban core and, within a resort cluster, the density of developments declines with increasing distance from the waterfront. Waterside morphological features are likely to be characterized by a clustered spatial pattern, such as that observed in the land uses of Dadong Sea, Sanya Bay and Yalong Bay, and in the accommodation sector of lakeside areas in Wuxi. Significantly, results from both Sanya and Wuxi demonstrate that hotels are inclined to be clustered in well-defined resort areas. In view of the land use analysis of key resort areas in Sanya, it is implied that a negative relationship exists between relative proximity to the urban core and the level of clustering of land uses. Also, the complexity of land uses increases with greater proximity to the urban core.

7.3 Discussions: Is there a model for water-based resort morphology in the Chinese context

So far, the comparison of Sanya with Wuxi reveals both differences and similarities in their resort morphologies. Then, are the similarities sufficient to propose a model for water-based resort morphology in the Chinese context is there a model or are the differences so great to undermine such a proposition? Although similarities exist when the present landscapes of resort clusters or key resort areas are examined, differences are noticeable when Sanya with Wuxi are compared. Nevertheless, it

is reasonable to suggest consistency in Chinese water-based resort morphology by addressing both overall development patterns of resort towns and the morphological transformations in key resort areas, rather than suggesting a model based upon a series of patterns that are each derived from specific water-based resort towns.

With an evolutionary perspective, it can be suggested that resort towns in China have experienced three generations. First, the period after the reform and open door policy of 1978 is often a suitable point from which to benchmark the development stage. Secondly, newly-exploited or developed resort towns are likely to come into the development stage very quickly (especially when compared with western resorts) because their external condition is relatively mature (Bao and Zhang, 2006). Thirdly, it is suggested the period before 1949 should be considered when a traditional resort town is discussed. Chinese water-based resort towns, therefore, are growing at a quite different pace from that experienced by traditional western coastal resorts, which evolved over a considerable period of time. The evolution of most British seaside resorts can be dated back to the eighteenth century, originating as small sea-bathing places and gradually evolving into larger towns.

The characteristics of morphological transformation in a typical Chinese water-based resort town are summarized in Table 7.3 within an evolutionary framework. The overall morphological transformation of a typical Chinese water-based resort town is to some degree similar to that of a typical western coastal resort town (see figure 2.2, in Chapter 2), these resort towns have different physical environments, economies, social structures, path of development and holiday traditions though. In short, a sequence of resort morphology typically in Chinese water-based resort towns can be suggested from pre-tourism in the exploration stage, to low-density, low-diversification development in the involvement stage, then from high-density, high-diversification development after the development stage to an urbanized, mature resort town. This sequence has involved both the increasing intensity of tourism and recreational functions and the rapid expansion of urban functions.

It is, more specifically, characterized by decreasing agricultural lands and increasing infrastructural facilities, tourism and recreational lands and residential lands, an expanding and intensifying transportation network, an increasingly identifiable RBD and a gradual separation of the RBD from the CBD or urban cores.

Table 7.3 Transitional morphology in a typical Chinese water-based resort town

Elements	Exploration	Involvement	Development	Consolidation	Stagnation (anticipated)
Land use	Simple composition, dispersed pattern	Conversion from agricultural to non-agricultural use starts	Increasing complexity, intensive land use and land conversion	Increasing complexity, more intensive land use, decelerated land conversion	Maximum complexity and intensification
Accommodation	Few, dispersed	Increasing, random pattern	Increasing fast, clustering pattern	Increasing, clustered pattern	Peak
Vacation property	None	Few	Increasing	Increasing	Peak
Transportation infrastructure	Few	Increasing fast	Increasing	Fundamentally completed	Few improvement
Artificial attraction	Few	Increasing	Increasing fast	Increasing yet at a slowing pace	Peak
Residential areas	Few	Increasing	Increasing	Increasing	Peak
RBD	Not exist	Not identifiable and mixed with the CBD	Identifiable, separating from the CBD	Separating from the CBD; expanding scale	Utterly separated from the CBD, max scale
Resort clusters	None	Developed at urban core-nearby waterside	Newly developed at further waterside, competition observed	Chain pattern around water, increasing competition, exploring distinction	Tourism and recreational belt around water
Overall morphological transformation	Not exist	Begins	Increasing	Increasing fast	Maximum

The morphology of a water-based resort cluster varies with the distance between it and the urban core, the population of its recreational hinterlands (urban areas), and whether it is highly planned or more naturally developed. The clustering of land uses generally decreases in and after the development stage yet the inverse situation could occur in a planned resort area. Land uses of a well-planned resort area like Yalong Bay, for instance, are particularly neatly defined. The area was transformed from a natural landscape to a number of clearly-sectioned functional zones. This may result in the segregation of people and activities. Secondly, the development of vacation property is relatively more significant when the hinterland population is smaller yet the residential development is more significant when the hinterland population is larger. Thirdly, resort clusters at a further distance from the urban core generally have a higher proportion of larger hotels, lower building density and a smaller proportion of residential areas or vacation property developments. Areas further from and less accessible to urban facilities and services have more flexibility in terms of land use, especially in the earlier development phases. In consequence, larger and even all-inclusive resort hotels that satisfy varying tourist demands may be built in such places which are less attractive to residential or vacation property developers.

Regardless of the above relationships, several common morphological features can be anticipated in water-based resort clusters. First, a hotel-lined waterfront, an accessible green belt along the water, and water access generally characterize a typical water-based resort cluster. As observed in many British, North American and Asian water-based resort areas, this pattern satisfies the human desire to be close to water. It is also a transitional zone from a natural to a built environment. Hotels are likely to first be concentrated close to transport nodes as well as in the immediate waterside lands for better accessibility by transport to natural attraction. They then expand into the hinterland when those areas are fully occupied. The road pattern usually starts with a few access routes connecting the main transport station to the water so as to enhance the connection

between urban settlements and natural attractions. Then roads are constructed parallel to the water. As transportation routes and nodes increase in the urban resort landscape (Brent, 1997), ultimately a net-like road pattern is formulated in the consolidation stage.

7.4 Contextual factors and resort morphology

The tourism development strategies and practices associated with significant influencing contextual factors on resort morphology change through the evolutionary stages and phases of a resort town. As suggested in the theoretical and methodological framework (Figure 4.1), the contextual factors, tourism development, resort evolution and resort morphology are mutually influenced and associate the original resort morphology to interpret a resort area evolved the way it has. Among those contextual factors, four aspects are more influencing on Chinese water-based resort morphology and will now be interpreted.

Political-economy changes at an upper level, such as a modified national development strategy or policy, often trigger alterations in resort development in a resort town and play an important role in the evolution process. On the other hand, the significance of local political-economy changes on morphological transformation increases with the involvement stage, along with the increasing significance of tourism in the local economic system. For instance, municipal development of different leaderships and their colleagues largely account for the overall resort evolution process as well as morphological transformation in terms of changing development strategies and practices either directly on the tourism industry or on contextual environments i.e. transportation infrastructure construction, environmental modification, resettlement policy, urban expansion plans. Significant morphological changes are primarily directed by local government, such as shoreline modifications undertaken around Taihu Lake and at Sanya Bay, and have also been associated with the increasing

influence of market demands. The growing tourism industry, conversely, transforms the local economy, the place image as well as government strategy.

Improvements in transportation are a significant driving factor in morphological transformations. They are often prompted by an increasing internal and external demand for tourism and recreational opportunities. The construction of transportation infrastructure generally occurs from the very beginning stage, speeds up in the involvement stage and is essentially completed at the late development stage. Remarkable morphological changes of key resort areas usually start with the provision of water access and take place along with significant improvements of transportation. Major routes and sites such as transport stations are eventually important components of resort morphology and obviously influence the distributions of other tourism and recreational functions; to some degree. It complements typical phenomena such as a hotel-lined waterfront in front of or behind a major road parallel to the shoreline, a T-shape based upon a transport station and the route connection to water, and linear distributed resort clusters on the waterfront. The clustering of buildings around transportation nodes was also found by urban transportation scholars, while in most other cities than resort towns, the types of land use overwhelmingly represented industry and retail services (Muller, 1986). However, because the majority of tourists arrive by plane as a part of group, the T-shape or the clustering phenomenon around a transport station is less obvious in newly developed Chinese seaside resorts like Sanya than that in western cases, which responded to the significance of the railroad in their resort evolution.

As interpreted earlier in this Chapter, climate and local physical and historical-cultural features are essential determinants of special site locations of resort developments. Regretfully, cultural and environmental issues have generally been overlooked in the earlier stages and phases until visible problems occur and, probably, until they hold back the tourism industry. Those problems are mostly generated and exaggerated by inappropriate developments that result from lack of environmental

concerns or efficient controls. Negative attitudes of local residents who have been resettled have been heard in both sites, mostly because of separating residential areas from the potential tourism and recreational developments or unconcerned design of new settlements. Water pollution was a major factor in the fast decline of the Grand Canal tourism in Wuxi and is undermining tourism activity on Taihu Lake; in Sanya, mangroves and coral reefs has been destroyed in areas with dense tourism and recreational developments; the sandy beach is contaminated and both sea water and lake water face the problematic phenomenon of argillization. The environmental decline of a resort area may probably spur developments in other potential locations and change the overall distribution of tourism and recreational functions; however, simply exploring replacements to keep the overall growth of local tourism and economy cannot help with existing problems but may generate new ones. Areas near water are usually environmental and cultural vulnerable because they are most vulnerable to tourism development as well as urban expansion, therefore, characterized by intensifying and complicated land uses and very dynamic land transitions. Environmental and cultural issues have become of more concern recently when government is making development decisions. For instance, shoreline environmental modifications are commonly applied in water-based resort towns and new resettlement policies that have a common conception, “Jiujin Anzhi” (discussed in Chapter 5), are being implemented.

Compared with plans for large areas, local plans, site plans and specific plans for key resort areas place more significance on resort morphology. Generally, urban master plans are able to control the overall morphological transformation of the planned area while specific plans do well in defining the morphology of certain key resort areas when they are previously undeveloped areas in a “natural” condition and are less vulnerable to urban expansion. Although legalization on urban planning was enacted in 1990, improper implementation and ineffective coordination are two common problems that are found in planning and result in significant differences between a planned landscape and a real

one. The discord among different plans, such as the land use plan, the urban plan and the tourism development plan, remains unsolved (also discussed in Chapter 3). It is hard for the planning activity to keep pace with the rapid changes within resort towns and the outside environments; therefore, planners are required to have both historical knowledge and foresight so as to make plans flexible and applicable. Also, it is suggested that plan modifications should be undertaken regularly and the interval should be shorter.

7.5 Summary

This chapter presented a comparative discussion of Sanya and Wuxi and summarized common characteristics of Chinese water-based resort towns. Differences between the two areas are significant in terms of history and location, evolutionary process, tourism resource, level of economic development, tourist origins, and associated features of tourist behavior. In short, Wuxi is a traditional sightseeing-dominant resort town with a growing holiday industry; whereas Sanya is a new yet fast-growing resort town with a significant holiday industry. A profound influence of the physical environment on the development of a resort town was indicated. Specifically, their different climates partly explain why the vacation property market is far more significant in Sanya than that in Wuxi; and, local physical environmental features largely explain the specific site locations of resort developments.

Beside these distinctions, similarities between the two areas were emphasized, first on development patterns of resort morphology. First of all, the overall resort evolution of both is largely a function of national, provincial and local political-economy issues. Secondly, a visible trend of urban expansion can be observed toward the water and the key resort areas in view of the natural attraction of water and its surroundings, and associated with government emphasis on developing tourism in the waterside areas. Thirdly, the relative proximity to the urban core associated influences

of planning issues also accounts for changes of morphological features. Two relationships between land use changes and resort evolution are suggested: more complex land-use composition often takes place over evolutionary stages and one significant land conversion is indicated from agricultural or waste lands to tourism and recreational lands.

Several similarities were also indicated between their present morphological features. Tourism and recreational developments in both sites are eventually more clustered in the waterside than in the hinterland area; in consequence, they create a linear linked morphology, or, even more, a necklace-shape recreational belt around either the lake or the island. Well-defined resort areas in Sanya and Wuxi generally share some common features: a common-use belt along the water (or the beach), a road for automobiles behind this belt, a net-like route pattern at the waterside, transport stations and junctions as important nodes for tourism and recreational developments while the waterfront and behind transport routes are major axes. Furthermore, the density of development of resort clusters is largely a function of relative proximity to the waterfront and also with relative proximity to the urban core.

According to those distinctions and similarities, this Chapter indicated that it is not reasonable to simply define models applicable to distinct Chinese water-based resort towns but to identify aspects of homogeneity. At the start, three rules for resort study in the Chinese context were recommended and the characteristics of morphological transformation in a typical water-based resort town were summarized in view of resort development patterns. Then, it indicated that the morphology of a typical water-based resort cluster can be in large part a function of the distance between this cluster and the urban core, the population of its recreational hinterlands (urban areas), and whether it is well-planned or naturally developed.

This chapter finally interpreted the relationships among contextual factors, tourism development, resort evolution, and resort morphology in the context of Chinese water-based resort towns. Specifically, those contextual factors that significantly influence water-based resort morphological change through the evolutionary process are political-economy issues, transportation improvement, cultural and environmental issues, and planning issues.

Chapter 8
Conclusions

Water is always precious and clean water is always attractive to tourists. However, it is accessed from the land and this makes shoreline areas, where land and water are in juxtaposition, the recipients of a wide variety of uses and a challenge for land and water managers and planners. Among the special large natural bodies of water and their shorelines, ocean beaches and lakeshores were singled out because they are natural tourist attractions, because special patterns of land use have evolved in these places, and because they are irreplaceable and, therefore, require careful management. A theoretical morphology was introduced by Alexander (1977) with the aim of conserving the shoreline and also satisfying the vital and profound needs of people for access to water. He suggested that roads should not be built parallel to the shoreline or within one mile of it. Instead, all access roads should run at right angles to the shoreline and be far apart. With such a route pattern, problems caused by roads for automobile access and industrial uses can be minimized. Dense settlements would only be allowed at the water's edge at infrequent intervals. Besides, a strip of public space is recommended along the water's edge. However, the study of two Chinese water-based resort towns, Sanya and Wuxi, indicates that neither of them exactly follows this ideal pattern, which was proposed several decades ago.

The major concern of this research has been the morphology of water-based resorts in the Chinese context. This study has been divided into three main parts: a theoretical discussion of resort morphology and related topics, their significance to the Chinese context and discussion of research methods applicable to China, and case studies of resort towns in two coastal provinces, Jiangsu and Hainan, leading to a comparative discussion of water-based resort morphology in the Chinese context.

The first two Chapters, part one, explored the concepts, theories and methods that underpin the examination of resort morphology. To begin with, Chapter 1 briefly introduced the background of research as well as the goal and objectives. Furthermore, it discussed the concepts of resort and morphology and provided a definition of resort morphology, which is, "the forms and associated functions of a destination area and their development". Finally it discussed research into resort morphology within a geographical context: tourism geography, historical geography, urban geography and GIS. Chapter 2 reviewed the studies on resort morphology and discussed two particular aspects: the topical emphasis on coastal or seaside resort towns; and the modeling of resort morphology. This chapter then addressed achievements and weaknesses to date. It also introduced the contributions and implications of related research topics to this field, including studies of resort evolution and RBD, urban morphological study and GIS applications.

Part two consists of Chapter 3 and 4, which introduced resort morphology in the context of China and discussed applicable research methods. At the start, Chapter 3 discussed the concept of resort town in the Chinese context, resort evolution studies undertaken in China, political issues in planning and development and why they are important to resort morphology, and data collection concerns. Then the research goals, questions and detailed objectives were presented. Chapter 4 focused on methodological issues. Firstly, it established a comprehensive methodological foundation for this study, which includes the morphological method, the functional method and the evolutionary method, and identified their relationship to this study. Secondly, it suggested a mixed approach that refers to classify land uses, build up a descriptive and explanatory framework, create form-function maps, and the analysis of morphological characteristics. Finally, it identified two study sites and described pertinent data resources.

Part three is comprised of Chapters 5, 6 and 7. It is focused on responding to the proposed objectives and hypotheses. Basically based upon the research approach discussed in Chapter 4,

Chapter 5 and 6 discussed the resort morphologies of Sanya and Wuxi respectively. To begin with, the evolutionary process of each area was described and explored. Four planned objectives were interactively responded to in the following parts of Chapter 5 and 6 by exploring the morphological changes of Sanya and Wuxi associated with key contextual factors related to tourism and recreational development. This was done within a conceptual framework of resort evolution. In the summary parts of both chapters, further concerns were addressed regarding issues of resort planning, development and management that have implications for the future development of the two areas. However, specific recommendations for development are not made as this is beyond the scope of the thesis. In order to answer the ultimate question of this study, also part of objective 3: Is there a model of Chinese water-based resort morphology? Through a comparable discussion of Sanya and Wuxi, Chapter 7 argued that it is reasonable to identify aspects of homogeneity instead of simply defining a model potentially applicable to distinct Chinese water-based resort towns. To begin with, it generated three rules for resort study in the Chinese context and summarized the characteristics of morphological transformation in a typical water-based resort town in view of resort development patterns. Then, it indicated that resort morphology can be significant influenced by the relation between resort and urban core (distance), the population of resort's recreational hinterlands, and whether resort is well-planned or naturally developed. Moreover, it interpreted the relationships among contextual factors (political-economy issues, transportation improvement, cultural and environmental issues, and planning issues), tourism development, resort evolution, and resort morphology in the Chinese context.

The findings and contributions of this study have both academic and practical implications that can be summarized as follows. First, by estimating and discussing concepts of resort and morphology, resort morphology in both Chinese and western context has been clarified. Secondly, a systematic approach, which combines the morphological method, the functional method and the evolutionary

method, has been suggested to study resort morphology. Significantly, by using resort evolution theory, TALC in particular, it has been indicated that resort morphology can be clearly identified and explored within a conceptual framework. Thirdly, this study has shown that GIS techniques are highly applicable in the study of resort morphology. For instance, spatial analysis tools in GIS software are useful in analyzing patterns of morphological features as well as in tracking their transformations. Finally, the common characteristics of Chinese water-based resort towns has been explored and summarized. Hypotheses generated from western studies have been tested in the Chinese cases, for instance, on the seafront, the parallel distribution of land uses, the T-shape based on a transport station and its connection to the coast, the relationship between the RBD and the CBD, and the similarity between lake-based resorts and seaside resorts. Water-based resort morphology in the Chinese context is presently characterized by intensive land use and dense development, fast settlement expansion associated with growing vacation property development, and a generally clustered pattern of accommodation.

Sanya and Wuxi lead China in terms of water-based tourism developments; therefore, their experiences are of benefit to the development of other water-based resort towns. This study has indicated that existing and foreseeable tensions exist in land conversion, resettlement and the environment along with resort development. With retrospect of the above case studies and discussions, for instance, it is general that cultural and environmental issues are overlooked in the earlier development stages and phases until visible problems occur and, probably, until they restrain the tourism industry. Those problems are generated and exaggerated by inappropriate developments that result from lack of environmental concerns or efficient controls. First and foremost, environmental and cultural issues have to be more concerned especially by planners and government when they are making plans and development decisions in a resort town. In detail, high density developments are suggested to be avoided from the immediate waterside area; transportation infrastructure construction

need to be carefully planned since it can largely drive the foreseeable resort development and influence the entire resort morphology; government can set market-oriented threshold or regulation, such as land price, to prevent naturally susceptible areas from mass developments; resettlement housing needs to be carefully designed and long-run services, such as career training courses and developing employment opportunities in tourism industry, are expected to be provided to resettled people in resort development projects.

Lane (1993) indicated the significance of morphological research on current as well as past resort structure to future planning and conservation activities. Tourism planning in China has developed procedures and strategies with little consideration for the historical process. Learning the past changes of resort town is obviously of potential benefit to the undertaking of future development. Tourism development in most water-based resort towns is associated with many fast-changing internal and external factors, such as rapid urban expansion, growing demand for vacation properties, diversifying destination concepts and these require the development and implementation of more flexible and forward-looking plans. After all, only with retrospect as well as foresight can reasonable development strategies and efficiently implemented policies and plans be formulated to relieve and even resolve existing problems and guide foreseeable development.

China is a country where the pace of change is so quick that everything is changing before your eyes (Logan, 2002). Modern tourism in China started only recently but it has grown very fast. This study has documented substantial transformations of Chinese water-based resort towns, especially in the last twenty years. Compared with a history of more than half a century in the western world, resort morphological study in the Chinese context is a novel research direction and the contributions in this study are a step forward in pushing back this research frontier. There were common morphological characteristics among most water-based resorts in the world, primarily because most recreation takes place at the water's edge and it is at the land-water interface that most of the impacts

of both tourism and urban development occur. It is crucial to understanding the history of resort towns as well their transforming internal and external environments before we choose to adopt models that have been successful somewhere else, because the timing of development, the institutional context, the size, and the demands of current and prospective clients can be quite different. Most traditional British seaside resorts studied by resort morphologists, for instance, grew in an essentially unplanned manner, evolved over one or two centuries and primarily served individual travelers arriving by railway or car (Wall, 2001). While group travel by train, coach and plane are common in China, individual travelers and self-drive car tours have grown in recent years though they still constitute a small proportion of the total. Some resort areas, especially designated national tourist resorts, are highly planned. As modern tourism is relatively recent in China, most Chinese resort towns are still essentially in earlier stages of development yet changing at an astounding pace. Also, compared to traditional western seaside or lakeside resort towns, Chinese water-based resort towns usually are much larger in terms of area and population. In fact, the TALC and much of the Western and even the Asian resort morphology research has assumed little preceding land use activity and the incremental growth of resorts. In contrast, many Chinese resorts, such as Wuxi, are attachments to existing large settlements and, even in the case of Sanya, there were ports and large military bases in place prior to the development of tourism. The cultural and environmental pressure which Chinese water-based resort towns are suffering cannot be seen in most western cases. Although we have observed some similarities between these two Chinese water-based resort towns and those traditional western cases described in the literature in both evolutionary process and morphological characteristics further careful examination should be undertaken of the similarities and differences between resorts, including more detailed investigations of Western resorts such as the studies present her for Chinese cases Therefore, there is a need for further study of resort towns in

China and elsewhere in the world, including further comparative studies, perhaps leading to development of a typology of resorts.

Appendix 4.1 Description of key data

	Sanya				Wuxi			
Category	Title	Time	Description	Source	Title	Time	Description	Source
Interview	Key person interview	June 2007	Voice records, Written down notes	Author	Key person interview	May 2007	Voice records, Written down notes	Author
Official statistics: social economy	Yearly GDP	1978-2005	Sanya Statistic Yearbook 2006	Sanya Municipal Bureau of Statistics	Yearly GDP	1949-2006	Wuxi Statistic Yearbooks	http://www.wxtj.gov.cn
Official statistics and document: tourism	Expenditure survey	1995-1998	Sanya Statistic Yearbook 2006	Sanya Municipal Bureau of Statistics	Yearly tourism statistics	1990-2006	Official documents (not all information is available for each year)	Wuxi Municipal Bureau of Tourism
	Expenditure survey in holiday weeks	2000-2005	Sanya Statistic Yearbook 2006					
	Hotel survey	By Jan 2007	Sanya hospitality survey, interior	Sanya Tourism Information Center	Hotel survey	2001-May 2007	Yearly hotel documents	
					Tourism resources survey	2005-2007	With coordinates and graphic descriptions	Wuxi Municipal Bureau of Tourism, Faculty of Geography, NJU
Official statistics and document: real estate and tourism	Real estate yearly sales	2001-2006	Sanya real estate reports, interior	Sanya Municipal Bureau of Real Estate Administrat-ion				
	Real estate monthly sales	2003-2007	Sanya real estate reports, interior					
	Distribution of buyers in holiday weeks	2005 and 2007	Sanya real estate reports, interior					
	Real estate survey	By End-2006	Document, interior	Sanya Municipal Bureau of				

				land resources				
Official statistics and document: urban	Urban built and residential housing statistics	1987-2005	Sanya Statistic Yearbook 2006	Sanya Municipal Bureau of Statistics	Yearly urban construction statistics	1995-2006	Wuxi Statistic Yearbooks	http://www.wxtj.gov.cn
					Report of transition of urban space	1956-2004	Official report, interior	Wuxi Municipal Urban Planning and Design Institute
Official document: land-use	Built-up land-use approval document	1999-2006	Official document	Sanya Municipal Bureau of Land Resource Administrat-ion	Land transfer document	2001-2005	Official data	http://gtj.wuxi.gov.cn
Official graphic database: land use	Cadastral map of key areas	2007	Sanya cadastral map, interior	Sanya Municipal Bureau of land Resource Administrat-ion	Urban growth maps	1956-2004	Illustration maps/ JPEG	Wuxi Municipal Urban Planning and Design Institute
	Present land-use maps	1996, 1998, 2003, 2005	e-data/JPEG, CAD data	Sanya Municipal Bureau of Urban Planning	Present land-use maps	2004	e-data/ JPEG	Wuxi Municipal Bureau of Urban Planning
	Plan maps	1990, 1994	e-data /JPEG, CAD data					
	City maps	2007	Paper-copy	Public resource	City maps	2004, 2007	e-data/JPEG, 2004, Paper-copy, 2007	Wuxi Municipal Bureau of tourism
Field survey	Accommod-ation surveys	June 2007	Selected areas.	Author	Plot-to-plot survey	May 2007	Binhu District.	Author
	On-site photos	June 2007	Digital		On-site photos	May 2007	Digital	

Official plans	Municipal urban master plan	For 1999-2010	Complete version	Sanya Municipal Bureau of Urban Planning	Municipal urban master plan	For 2001-2020	Complete text, most maps attached	Wuxi Municipal Urban Planning and Design Institute
					Tourism development master plan	Dec 2003	Complete version	Wuxi Municipal Bureau of Tourism, Faculty of Geography, NJU
Enterprise document: tourism	Brochures of tourism enterprises	June 2007	Collected in the fields	Tourism enterprises	Brochures of tourism enterprises	May 2007	Collected in the fields	Tourism enterprises

Appendix 5.1 Sanya tourism resources

Main type	Subtype	Fundamental type	Resource	Location	Tourism function	Note
A Geographic Landscape	AA Integrated natural tourism spot (area)	AAC Sand gravel type tourism area	Tian-ya-hai-jiao Tourist Zone	Tian-ya-hai-jiao	Sight-seeing, science popularization	beach with huge gravels
		AAD Beach tourism area	Yalong Bay tourism area	Yalong Bay	Sight-seeing, holiday, science popularization	Best sand beach of China, bath beach
			Dadong Sea tourism area	Dadong Sea	Sight-seeing, holiday, science popularization	Sand beach, bath beach
			Xiaodong Sea tourism area	Luhuitou	Sight-seeing, holiday	Sand beach, bath beach, diving place
			Sanya Bay tourism area	Haipo	Sight-seeing, holiday	Sand beach
			Haitang Bay	Haitang Bay	Sight-seeing, holiday	Sand beach
	AB Sedimentary and tectonic	ABE Tufa and sinter	Karst cave sediments	Luobi Hole	Sight-seeing, science popularization	Stalactite
		ABG Carbonate fossil site	Cave fossils	Lizhigou	Science popularization, science investigation	Animal bone fossils found
	AC Geology and geomorphology process	ACF Stone wall and fracture	Limestone wall	Luobi Hole	Sight-seeing, science popularization	More than 30 m high, rock climbing
		ACL Rock cave	Karst cave	Luobi Hole	Sight-seeing, science popularization	Cave tourism
		ACM Dune	Seaside sand dam	Sanya coast	Sight-seeing	30 m high
		ACN Beach	Seaside beach	South coast	Sight-seeing, holiday	Above 10 scattered
	AE Islands and reefs	AEA Island area	Shoal island	Coconut Island	Sight-seeing	
B Waters Scenery	BB Natural Lake and pond	BBB Swamp and wetland	Mangrove wetland	Sanya River	Sight-seeing, science popolarization	
	BD Spring	BDB Geothermal and spa	Lantian Spa	Sanya	Sight-seeing, holiday	Temperature 47-53 cetidegrees
	BE Estuary and sea	BEA Sight-seeing	Yalong Bay sea area	Sanya	Sight-seeing, holiday	Coral reefs, sea water in good

	area	and recreational sea area				quality
			Dadong Sea	Sanya	Sight-seeing, holiday	Coral reefs
			Sanya Bay sea area	Sanya	Sight-seeing, holiday	
			Tengqiao River estuary	Sanya	Sight-seeing	
C Biological Scenery	CA Tree	CAA Forest land	Tropical forest plantation	Sanya	Agriculture, sight-seeing	
			Tropical fruit forest	Sanya	Agriculture, sight-seeing	
		CAC Unique tree	Wild pineapple tree	Sanya	Science popularization, sight-seeing	
			Dragon tree	Sanya	Science popularization, sight-seeing	Medical use
	CD Wildlife habitat	CDA Aquatic habitat	Lobster and abalone	Sanya	Science popularization, sight-seeing	
			Tropic fancy fishes	Sanya coast	Science popularization, sight-seeing	Tropical fancy fish generate place of China
			Economic fishes	Sanya coast	Science popularization, sight-seeing	
		CDD Butterfly habitat	Artificial habitat	Yalong Bay butterfly village	Science popularization, sight-seeing	
D Astronomy and Climate	DB Astronomic and climate phenomenon	DBC Cold-escaping resort	Seaside cold-escaping resort	Sanya	Sight-seeing, holiday	
E Relic sites	EA Prehistoric human activity	EAA Human activity sites	Luobi Hole	Lizhigou	Cultural tourism	
		EAD Original settlement sites	Sanya human archeological site	Lizhigou	Cultural tourism	Paleolithic age human activity sites
	EB Social, economic, cultural activity relic sites	EBA Historic event took place	Place of Jianzhen's landing	Minor-Major Caves	History, culture	Tianbao Emperor of Tang Dynasty
			Huangdaopo living place	Yacheng	History, culture	She learned textile from Li women and transmitted to people on the mainland

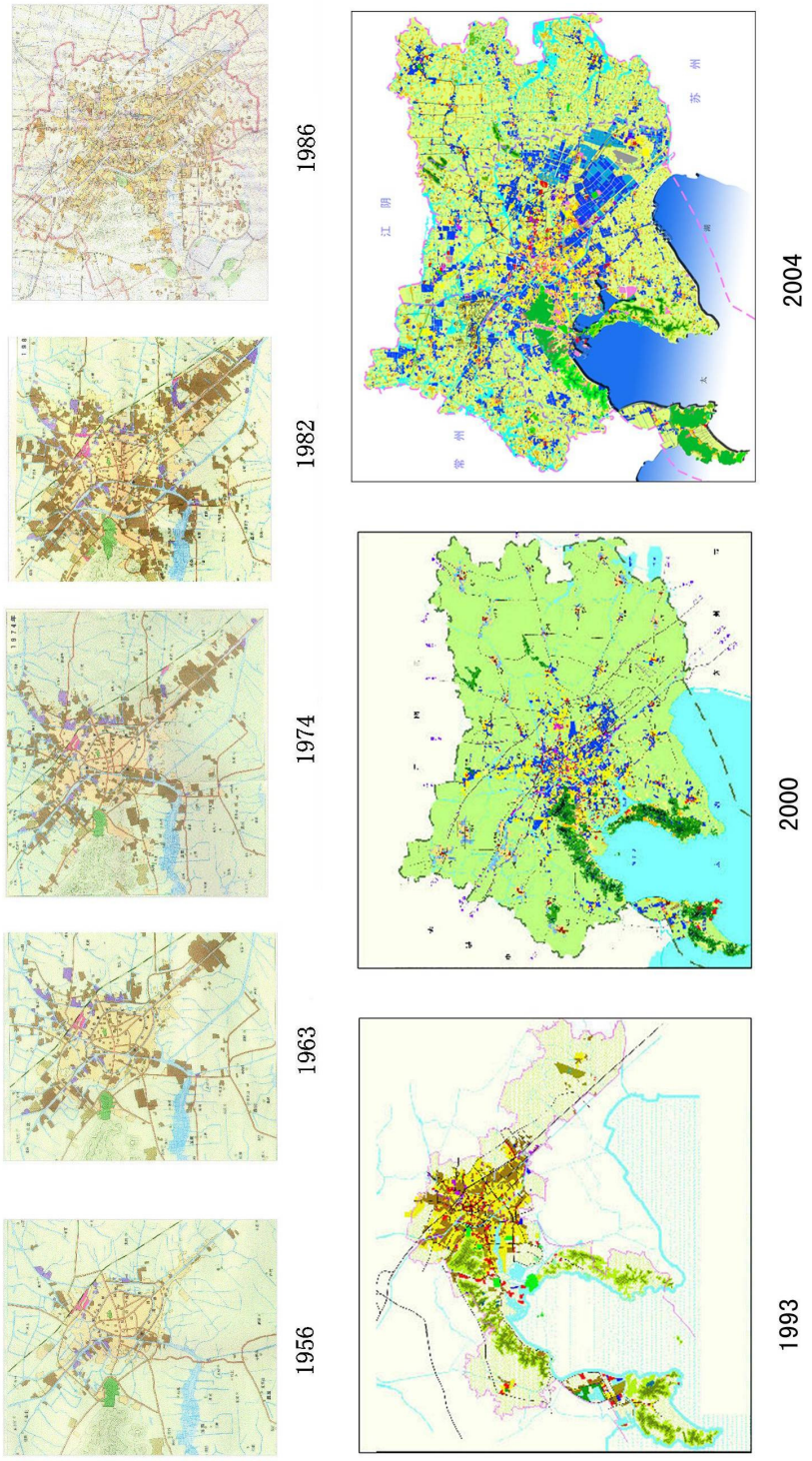
		EBF Ruined city and settlement relic sites	Yazhou ancient town	Yacheng	History, culture	Built in the South Song Dynasty, city wall remains
		EBH Beacon tower	Fire platform	Tian-ya-hai-jiao	History, culture	Used in the Asian Games hosted by China
F Architecture and facility	FA Comprehensive cultural resort area	FAB Health, recreation, leisure resort area	Yalong Bay seaside resort area	Sanya	Sight-seeing, holiday	Best sand beach in China
			Dadong Sea seaside resort area	Sanya	Sight-seeing, holiday	Close to urban district
		FAC Religion and worship place	Nanshan Temper	Nanshan	Religion tourism	Famous temper at south-tip of China
		FAD Park recreational area	Nanshan Buddhism Culture Park	Nanshan	Leisure	
			Yemeng Corridor	Sanya Bay	Leisure	
		FAE Cultural activity place	Sanya Library	Sanya	Cultural tourism	
		FAG Social and commercial activity place	Southern commercial center	Sanya	Business, conference and exhibition	
		FAH Animal and plant exhibition	Loving big world	Sanya	Sight-seeing, science popularization and research	
		FAI Military sight-seeing	Unused military tunnel	Wuzhizhou Island	Sight-seeing	
		FAJ Border	Sanya port	Sanya	Sight-seeing	
	FB Independent activity place	FBA Meeting and reception hall	Universal Great Theatre	Sanya		
			Beauty Crown Hall	Sanya		Place of 'Miss World' final
		FBB Worship place	Nanshan temper	Nanshan		
		FBC Exhibition place	Beauty Crown Hall	Sanya		
			Universal Great Theatre	Sanya		
		FBE Music and	Culture square	Sanya	Culture, entertainment	

		entertainment place				
	FC Landscape architect	FCG Cliff inscription	Tian-ya-hai-jiao	Sanya	Culture, history	Qing Dynasty
			Cixi 'Shou' (longevity) stone	Sea-Mountain Spectacle	Culture, history	
		FCI Square	Dadong Sea Square	Dadong Sea	Culture, entertainment	Culture square
			Yalong Bay Square	Yalong Bay	Culture, entertainment	Culture square
		FCK Architecture oddment	Yalong Bay architecture oddments	Yalong Bay	Sight-seeing	
			Sanya Bay architecture oddments	Sanya Bay	Sight-seeing	
	FD Residence and former residence	FDC Unique community	Hui community	Fenghuang Town	Folk custom	
		FDG Unique store	Jingrun Pearl Shop	Sanya	Shopping	
		FDH Unique market	Seafood market	Sanya	Shopping and food	
	FE Burial place	FEB Tombs	Islamic ancient tombs	Lingshui	Culture, history	Trace of on-sea silk road
	FF Transportation architecture	FFC Harbor and pier	Passenger pier	Sanya	Sight-seeing	
		FFD Airport	Phoenix International Airport	Sanya	Sight-seeing	
G Tourism commodity	GA Local tourism commodity	GAA Food	Fresh fruit drink	Sanya	Food	
		GAB Agricultural, forestry, husbandry product	Local tea	Sanya	Shopping	
		GAC Aquatic product	Seafood and products	Sanya	Shopping	
H Cultural activity	HC Folk custom	HCE Religious activity	Go to church	Fenghuang Town	Religious tourism	Hui people
	HD Modern holiday and festival	HDB Cultural festival	Longevity festival, Wedding festival	Sanya	Festival tourism	Celebrated in November

Appendix 5.2 Activities in key resort areas

Time	Evolution stages or phases of Sanya	Dadong Sea	Yalong Bay	Sanya Bay
-1987	Evolutionary stage	1985: Dadong Sea Tourism Center		
1988-1992	Property boom			
1993-1995	Urban growth	Tourism infrastructure; tourism and recreational facility	1995: infrastructure construction--central square (7.1ha) and resettlement housing (4.15ha)—golf club (89.6 ha, Japanese capital, 0.3 billion RMB, Dec.)	Tourism infrastructure (Haipo)
1996-1997	Pre-holiday-tourism	Addition of tourism and recreational facility, such as diving service	Public facility (post office, water deposition and electronic station, gas station, and television station); 1997: Sea Shell Museum and Butterfly Valley opened	
1998-2002	Holiday-tourism	2000-2001: 11-floor Wanguo Tourism City was demolished for constructing Pearl Square and Tropical Forest Square. Constructed pedestrian, bathing place; retail and commercial property development behind beachfront hotels; 2002: peripheral hinterland hotels rent beach		1998-1999: “Yemeng Changlang” project (seaside greening, 20.3 km); 2000, Sanya Bay Road expansion and modification (16 m wide);
2003-2007	Diversified-resort	2004: square modification, retail service added; 2005, beach and beachfront modification, recreational bar pedestrian and garden added	2004, Universal Cultural and Entertainment Square; golf course；	2004, Sanya Bay Road expansion; construct two square; Haihong (haipo) and Haiyue (urban district); 2006-2011, Phoenix Island project (36.5ha)

Appendix 6.1 Land use change of Wuxi 1956-2004



Appendix 6.2 Calculating Moran's I

Moran's *I* is obtained using:

$$I = \frac{n\sum_{i=1}^{n}\sum_{j=1}^{n}\lambda_{ij}(y_i - \bar{y})(y_j - \bar{y})}{\left(\sum_{i=1}^{n}(y_i - \bar{y})^2\right)\left(\sum_{i\neq j}\sum\lambda_{ij}\right)}$$

where λij is the spatial proximity matrix with the attribute values with the mean *yiy*. The number of zones is given by *n* and $\Sigma i \neq j \Sigma \lambda ij$ is twice the number of adjacent zones. In this paper, λij was 1 where zones were neighbours and zero where they were not; a weighting scheme based on distances could be used instead. Recognition that global *I* obscured local variation led to the development of a local form of *I* that could be mapped. The local form of Moran's *I* for observation *i* is given by (Anselin, 1995):

$$I_i = z_i \sum_j \lambda_{ij} z_j, \quad j \neq i$$

the observations are deviations from the mean and the summation includes only the neighbouring zones. The spatial weights $zi\lambda ij$ may be in row-standardised form (that is, they sum to one) to facilitate comparison of different sets of results. The sum of local Moran's *I* is given as:

$$\sum_i I_i = \sum_i z_i \sum_j \lambda_{ij} z_j$$

and Moran's *I* is given as:

$$I = (n / S_0)\sum_i \sum_j \lambda_{ij} z_i z_j / \sum_i z_i^2$$

Reference:

Anselin, L. (1995) Local indicators of spatial association—LISA. *Geographical Analysis*, 27, pp.93-115.

Lloyd, C., Shuttleworth, I. and McNair, D. (2004) Measuring local segregation in Northern Ireland. http://www.qub.ac.uk/c-star/pubs/lloydetal.pdf, accessed April 8, 2008.

Note: Definitions in the Chinese Context

Chinese ancient measurement unit

li, bu, zhang, cun and *chi* are ancient Chinese units of measurement: one *chi* is equal to one thirds meter, one *zhang* is equal to ten *chi*, one *bu* is equal to five *chi* and one *li* is equal to three hundred *bu*, one *cun* is equal to one tenths chi.

Joint venture hotels

Hotels built jointly by Chinese and foreign developers, both parties share the profits and losses according to their proportion of the investment. The Chinese joint venture law stipulates that the investment rate of the foreign partner should not be less than 25 percent of the hotel's investment.

Special Economic Zone (SEZ)

Cities and regions designated by the Chinese Central Government to experiment with free-market economic systems, they are mostly on the coast and have experienced tremendous economic growth and international investment in the last decade of the 20th century.

Star-rated hotels

The Chinese government's National Tourism Administration introduced the five-star hotel rating system in 1990 to ensure management standards and service quality.

Three industries

According to the method of China, the three industries are defined as the following. Primary industry refers to extraction of natural resource. In China, primary industry means agriculture, including planting, forestry, animal husbandry, sideline production and fishery. Secondary industry involves processing of primary products. It is industry, including mining and quarrying, manufacturing, water supply, electricity generation and supply, steam, hot water, gas, and construction. Tertiary industry

provides services of various kinds for production and consumption. All other industries not included in primary or secondary industries, are divided into four levels. First level is circulation sector, including transportation, postal and telecommunications, services, commerce, catering trade, material supply and marketing, and storage. Second level is service sector proving service for production and consumption, including banking, insurance, geological survey, real estate, public utilities, service for residents, consultancy services, and comprehensive technical services, and services for agriculture, forestry, animal husbandry, fishery, water conservancy, and maintenance of highway and inland water ways, etc. Third level is the service sector of upgrading scientific, education and cultural level of the people, including education, culture, broadcasting, television, science reserach, public health, sports, and social welfares, etc. Fourth level is the sector providing service for public needs, including government agencies, political and party organization social organizations, armies, and police force.

Urban

Two types of officially designated urban places are distinguished in China: City (*shi*) and Town (*zhen*). Designation of a settlement as a town or as a city, means that the place will be given larger state financial resources for urban infrastructure construction, funding subsidies, industrial investment and, in some cases, larger land use rights and greater autonomy to approve foreign investment projects (Gu, 2002; Wang, 1990). Prefecture-level cities (*dijishi*) are subdivided into urban district(s) (*Shiqu*) and suburban district(s) (*shixiaqu*). Streets (*jiedao*), towns and townships (*xiangzhen*) were organized by Residents' Committees and Villagers' Committees, which are also the basic unit of population census in China. The criteria for designating a town or city have been changed several times since 1955. According to the 1984 criterion, a settlement with a non-agricultural population of more than two thousand could be designated as a town. In 1986, either a town with a non-agricultural population over sixty thousand and GDP over 200 million RMB, or the capital town of a county with a population not more than 500 thousand and the town with a non-agricultural population over 100

thousand can be designated as a city. Changed in 1993, a region with non-agricultural population over 250 million and GDP over 3 billion RMB can be designated as a prefecture-level city (Liu and Wang, 2000).

Urban population

Two urban population data series can be found in the Chinese statistics yearbook. One is agricultural population and non-agricultural population based on China's household system (*hukou*); and, all people were assigned a registration status of either agricultural or non-agricultural (Gu, 2002). The other series divided population by living place, designated rural area and urban area. According to the State Statistical Bureau, urban population refers all population, both agricultural and non-agricultural, who live in areas under the administration of cities, and only non-agricultural population who live in designated towns; rural population refers the difference between total population and urban population. According to this definition, China's population in 1996 was 29.4% urban and 70.6% rural (China Statistic Yearbook, 1999, 111). Because the administration of cities and designated towns in fact extends to rural areas, this definition probably leads to exaggeration in the size of the urban population. In 1999, China added population density to the criteria used to determine whether a settlement should be deemed urban. The revised criteria stipulated that urban settlements must have a minimum population density of 1500 persons per sq km (China Statistics Yearbook, 2000). The 2000 population census, using the new definition of *urban*, reported that China's population was 36% urban (China Statistics Yearbook, 2001). Generally, when the boundaries of "urban administrative areas" (officially designated urban districts and towns) were defined, urban population are considered to be international comparable (Gu, 2002).

Bibliography

Agarwal, S. (2001). Restructuring seaside tourism: the resort lifecycle. *Annals of Tourism Research*, 29(1), pp.25-55.

Agarwal, S. and Brunt, P. (2006). Social exclusion and English seaside resorts. *Tourism Management*, 27, pp.654-670.

Andriotis, K. (2003). Coastal resorts morphology: the Cretan experience. *Tourism Recreation Research*, 28(1), pp.67-76.

Andriotis, K. (2006). Hosts, guests and politics: coastal resorts morphological change. *Annals of Tourism Research*, 33(4), pp.1079-1098.

Ap, J. (2003). An assessment of theme park development in China. In Lew, A.A., (ed.) *Tourism in China*, pp.195-214.

Baker, N.J. and Slater, T.R. (1992). Morphological regions in English medieval towns. In J.W.R. Whitehand and P.J. Larkham (ed.) *Urban Landscapes: International Perspectives*. London and New York: Routeledge, pp. 43-68.

Ban, Gu (32-92), *History until the Han Dynasty (Geography Section), (Han Shu*: *Di Li Zhi).* (in Chinese)

Bao, Jigang, Chu, Yifang and Peng, H. (1993). *Lv You Di Li Xue(Tourism Geography)*. Gaodeng Jiaoyu Chubanshe. Beijing: Higher Education Press, pp.185.

Bao, J.G. and Zhang, C. (2006). The TALC in China's tourism planning: case study of Danxia Mountain, Guangdong Province, PRC. In: R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp. 107-116.

Baptistide, J.-C. (1979). *Tourism et Développement de la Guadeloupe, Thèse de Troisième Cycle* (unpublished), Institut de Géographie, Faculté des Lettres et Sciences Humaines de Rouen, Rouen. In: Pearce, D. (1995). *Tourism today: a geographical analysis*. England: Longman Group Limited.

Barrett, J.A. (1958) *The Seaside Resort Towns of England and Wales.* PhD thesis. University of London, London, UK.

Bowen, M. (1981). *Empiricism and Geographical Thought: from Francis Bacon to Alexander Von Humboldt*. London: Cambridge University Press.

Bredon, P. (1991). *Thomas Cook: 150 Years of Popular Tourism*. London: Secker and Warburg.

Brent, M. T. (1997). *Coastal Resort Morphology as A Response to Transportation Technology*. Ph.D Thesis, University of Waterloo, Waterloo, Canada.

Britton, S.G. (1982). The political economy of tourism in the Third World. *Annals of Tourism Research*, 9: 331-358.

Bryant, C.R.and LeDrew, E.F. (1989). The scope of land use change research. In Bryant, C.R., LeDrew, E.F., Marois, C. and Cavayas, F. (ed.) *Remote Sensing and Methodologies of Land Use Change Analysis*. University of Waterloo, Canada: Department of Geography Publications, pp. 1-6.

Butler, R.W. (1980). Concept of a tourist area cycle of evolution: implications for management of resources. *The Canadian Geographer*, 24, pp.5-12.

Butler, R.W. (2006). The origin of the Tourism Area Life Cycle. In: R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp.13-26.

Chapman, D.W. (2006). Applying macro urban morphology to urban design and development planning: Valletta and Floriana. *Urban Morphology*, 10(1), pp.23-40.

CHCX, 2007a, Natural resources of Sanya, Hainan. http://info.chcx.com/ib/200711/1283890451125000016727.html, accessed Jan 8, 2008.

CHCX, 2007b, Natural resources of Sanya, Hainan. http://info.chcx.com/ib/200711/1283891568279687501506 7.html, accessed Jan 8, 2008.

CHCX, 2007c, The origin of Sanya's place name. http://info.chcx.com/ib/200711/1283891568210937501 5009.html, accessed Jan 28, 2008.

Chen, Wenyuan, and Qian, Jiang (1996) Rong Desheng and Wuxi modernization (Rong Desheng he wuxi chengshi jindaihua), in Jiangsu PCC Cultural and Historical Data Committee, Wuxi Municipal Committee of Construction, and Wuxi PCC Cultural and Historical Data Committee (ed) (1996), *Wuxi Urban Development (Wuxi Chengshi Jianshe),* Jiangsu PCC Cultural and Historical Edition Office, pp.7-22. (in Chinese)

Choy, D.J.L. (1992). Life cycle models for Pacific Island destinations. *Journal of Travel Research*, 30(3), pp.26-31.

Clary, D.(1993). *Le tourisme dans l'Espace Français*, Paris: Masson.

CNTA, 2008, List of AAAA-rated tourism resorts of China. http://www.cnta.gov.cn:8000/Forms/ExcellentDes/ExcellentDesList.aspx?catalogType=view&resultType=4A&imgOn=3&menuType=ExcellentDes, accessed in July 22, 2008.

Conzen, M.R.G. (2004). *Thinking About Urban Form: Papers on Urban Morphology, 1932-1998*. Edited by Conzen, M.R.. Switzerland: Peter Lang AG, Bern, pp.304.

Conzen, M.R.G. (1966). Historical townscape in Britain: a problem in applied geography. In J.W.R. Whitehand (ed.) (1981). *The Urban Landscape: Historical Development and Management: Papers by M.R.G. Conzen*. London: Academic Press, pp. 55-74.

Cooper, C., Fletcher, J., Gilbert, D. and Wanhill, S. (1998). *Tourism: Principles and Practice*. New York: Longman, pp.530.

Cospodini, A. (2001). Urban design, urban space morphology, urban tourism: an emerging new paradigm concerning their relationship. *Europe Planning Studies*, 9, pp.925-934.

Creswell, J.W. (2003). *Research Design*. London: Sage Publications.

Daniel, P. and Hopkinson, M. (1979). *The Geography of Settlement.* Edinburgh: Oliver & Boyd.

Dai, E., Wu, Shaohong, Shi, Wenzhong, Cheung, C-K., Shaker, A. (2005). Modeling change-pattern-value dynamics on land use: an integrated GIS and artificial neural networks approach. Environmental Assessment, 36(4), pp.576-591.

DeMers, M.N. (ed.) (2005). *Fundamentals of Geographic Information Systems*. John Wiley & Sons, Inc.

Demars, S.E. (1979). British contributions to American seaside resorts. *Annals of Tourism Research*. 6(3), pp.285-293.

Douglas, N. (1997) Applying the life cycle model to Melanesia. *Annals of Tourism Research*, 24(1), pp.1-22.

Fabbri, P. (ed.) (1990) *Recreational Uses of Coastal Areas*, Dordrecht: Kluwer.

Fan, Yezheng, and Guo, Laixi. (1998) Evaluation of climate suitability for tourism in Chinese coastal resorts (Zhongguo haibin lvyoudi qihou shiyixing pingjia). *Journal of Natural Resources*, 13(4), pp.304-311 (in Chinese).

Feick, R.D. and Hall, G.B. (2000). The application of a spatial decision support system to tourism-based land management in small island state. *Journal of Travel Research*, 29, pp.163-171.

Ferras, R. (1975). Tourisme et urbanization dans le Maresme Catalan. In *Tourisme et Vie Régionale dans les Pays Médierranéens, Actes du Colloque du Taormina*, Centre Géographique d'Etudes et de Recherches Médierranéens and Scuola di Studi Turistici in Rimini dell Universita di Bologna, Rimini, pp.135-142.

Fresco, L.O., Verburg, P.H. and Veldkamp, A. (1999). Simulation of changes in the spatial pattern of land use in China. Applied Geography, 19, pp.211-233.

Garcia, M. V. (1976). Social production and consumption of tourist space: outline of methods applied to the study of the Bay of Palma, Majorca. In: *ECE*, *Planning and Development of the Tourist Industry in the ECE Region*, New York: United Nations, pp. 83-94.

Gauthier, P. and Gilliland, J. (2006). Mapping urban morphology: a classification scheme for interpreting contributions to the study of urban form. *Urban Morphology*, 10(1), pp.41-50.

Gauthiez, B. (2004). The history of urban morphology. *Urban Morphology*, 8(2): 71-89.

Geng, Y.S. (2000). Spatial analysis in urban planning based on GIS (Jiyu GIS de chengshi guihua kongjian fenxi). *Planners (Gui Hua Shi)*. 6(16), pp.12-15. (in Chinese, with English abstract)

Getz, D. (1992). Tourism planning and destination lifecycle. *Annals of Tourism Research* 19(4), pp.752-770.

Gilbert, E.W. (1939). The growth of inland and seaside health resorts in England. *Scottish Geographical Magazine* 55(1). pp. 16-35.

Gilbert, E.W. (1949). The growth of Brighton. *The Geographical Journal*, 114(1/3), pp.30-52.

Gu, K. (2001). Urban morphology of China in the post-socialist age: towards a framework for analysis. *Urban Design International*, 6, pp.125-142.

Gu, K. (2002). *Urban Morphology of the Chinese City: Cases from Hainan*. Ph.D Thesis, University of Waterloo, Waterloo, Canada.

Gu, K, and Wall, G. (2007) Rapid urbanization in a transitional economy in China: the case of Hainan Island. *Singapore Journal of Tropical Geography* 28, pp.158-170.

Gu, Xiwen (1984) Brief introduction of Wuxi County history. In Wuxi Culture and History Resource Research Committee (eds), *Wuxi Culture and History Resources (section 1) (Wuxi Xian Wen Shi Zi Liao* (1)*)*, pp.1-6. (in Chinese)

Guo, Renzhong. (2001). *Spatial Analysis (Kongjian Fenxi)*. Higher Education Press, Beijing, pp.255. (in Chinese)

Hainan.gov.cn, 2006, Construct Phoenix Island with 3.5 billion RMB, start three key projects of Sanya. http://www.hainan.gov.cn/data/news/2006/12/24002/, accessed March 26, 2008.

Hainan.gov.cn, 2008, Sanya is stepping into a national environmental-protection city. http://www.hainan.gov.cn/data/news/2008/06/51987/, accessed June 12, 2008.

Halbwachs, M. (1970). *Morphologie Sociale*. Paris: Librairie Armand Colin, pp.185.

Hall, A.C. (2000). How morphology can improve development plans. *Urban Morphology*, 4, pp.29-32.

Hall, C.M. (1994). Tourism and Policies: Policy, Power and Place. Chichester: John Wiley & Sons.

Hall, C.M. (2006). Introduction. In R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications.

Harris, L.K., Gimblett, R.H. and Shaw, W.W. (1995). Multiple-use management: using a GIS model to understand conflicts between recreationists and sensitive wildlife. *Society and Natural Resources*, 8, pp.559-572.

Hartshorne, R. (1946). *The Nature of Geography: A Critical Survey of Current Thought in A Light of the Past.* Lancaster: The Association of American Geographers.

Haywood, K.M. (1986). Can the tourist area life-cycle be made operational? *Tourism Management,* 7(3), pp.154-167.

Haywood, K.M. (2006). Evolution of tourism areas and the tourism industry. In R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications,* Clevedon, Buffalo and Toronto: Channel View Publications, pp.51-70.

Hillier, B., Hanson, J., Peponis, J., Hudson, J. and Burdett, R. (1983). Space syntax: a new urban perspective. *Architects Journal,* 11 Nov., pp.47-63.

Hillier, B., Hanson, J. and Graham, H. (1987). Ideas are in things: an application of the space syntax method to discovering house genotypes. *Environment and Planning B*, 14, pp.363-385.

Ho, S.P.S. and Kueh, Y.Y. (2000). Sustainable Economic Development in South China. UK: MACMILLAN PRESS LTD.

Holden, A. (2006). *Tourism Studies and the Social Sciences*. London and New York: Routledge.

Hovinen, G.R. (2002). Revisiting the destination lifecycle model. *Annals of Tourism Research,* 29(1), pp.209-230.

Hovinen, G.R. (2006). Lancaster County, the TALC, and the search for sustainable tourism. In R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp.73-90.

Huang, Xueqian (1992) The retrospect of Sanya urban district. In Cai, M.K. (ed.) *Sanya Culture and History: Part Four*. Sanya PCC (Political Consultative Committee) Culture and Historical Data Collection, Publication and Edition Office, pp.149-152. (in Chinese)

Huffadine, M. (2000). *Resort Design: planning, architecture, and interiors*. New York: McGraw Hill.

Jeans, D. N. (1990). Beach resort morphology in England and Australia: a review and extension. In Fabbri, P. (ed.) *Recreational Uses of Coastal Areas*. Dordrecht: Kluwer, pp.277-285.

Johnson, D.D. and Howarth, P.J. (1989). The effects of spatial resolution on land cover/land use theme extraction from airborne digital data. In Bryant, C.R., LeDrew, E.F., Marois, C. and Cavayas, F. (ed.) *Remote Sensing and Methodologies of Land Use Change Analysis*. University of Waterloo, Canada: Department of Geography Publications, pp.117-134.

Johnson, L.C (ed.) (1993) *Cities of Jiangnan in Late Imperial China*. Albany: State University of New York Press.

Johnston, C.S. (2001). Shoring the foundations of the destination life cycle model. Part 1: Ontological and epistemological considerations. *Tourism Geographies,* 3(1), pp.2-28.

Johnston, C.S. (2006). Shoring the foundations of the TALC in tropical island destinations: Kona, Hawai'i. In: R.W. Butler (ed.), *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp.198-221.

Johnston, R.J., Gregory, D., Pratt, G. and Watts, M. (ed.) (2000). *Human Geography*. Oxford, UK: Blackwell Publishers Ltd..

Kalivas, D.P., Kollias, V.J. and Karantounias, G. (2003). A GIS for the assessment of the spatio-temporal change of the Kotychi Lagoon, Western Peloponnese, Greece. *Water Resources Management*, 17, pp.19-36.

Kermath, B.M. and Thomas, R.N. (1992). Spatial dynamics of resorts: Sosúa, Dominican Republic. *Annals of Tourism Research*, 19, pp.173-190.

Land Administration Law of the People's Republic of China, 1998. MLR (The Ministry of Land and Resources P.R.C).

Larkham, P.J. (2002). Misusing 'morphology'? *Urban Morphology*, 6(2), pp.95-97.

Lavery, P. (1974). Resort and recreation. In: *Recreational Geography.* Lavery, P. (ed.) Newton Abbot: David and Charles, pp.167-196.

Lewis, P.H. (1964). Quality corridors for Wisconsin. *Landscape Architecture*, Quart. (Jan), pp.100-107.

Li, Limei, and Tao, Wei (2003) Spatial structure evolution of system of recreation business district—a case of Suzhou City. Chinese Geographical Science (English Version), 4.

Li, X. and Yeh, A.G.O. (2004). Analyzing spatial restructuring of land use patterns in a fast growing region using remote sensing and GIS. *Landscape and Urban Planning*, 69, pp.335-354.

Li, Xiaogang, Xu, Mengjie, Ou, Minghao and Niu, Xing. (2005). Coordination of landuse planning and tourism planning (Tudi liyong guihua yu lvyou guihua xietiao yanjiu). *Resource Development & Market (Ziyuan Kaifa yu Shichang)*, 21(4), pp.330-332. (in Chinese, with English abstract)

Lilley, K., Lloyd, C., Trick, S. and Graham, C. (2005). Mapping and analysing medieval built form using GPS and GIS. *Urban Morphology*, 9(1), pp.5-15.

Liu, J. and Wang, Y. (2000) *Regulations and Innovations (Zhidu yu Chuangxin)*. Nanjing: Nanjing University Press (in Chinese).

Logan, J.R. (2002) The New Chinese City: Globalization and Market Reform. Blackwell.

Lu, B., and Xu, B. (1998) *Ten-Year Reform in China's Large Special Economic Zone*, *(Zhongguo Datequ de Shinian Biange)*. Beijing: Zhonggong Zhongyang Dangxiao. (in Chinese)

Lundgren, J.O. (2006). An empirical interpretation of the TALC: tourist product life cycles in the eastern townships of Quebec. In: R.W. Butler (ed.), *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp.91-106.

Mak, B. (2003). China's tourist transportation: air, land, and water. In Lew, A.A. (ed.) *Tourism in China*, pp.165-193

Marois, J. and Hinch, T. (2006). Seeking sustainable tourism in Northern Thailand: the dynamics of the TALC. In: R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*. Clevedon, Buffalo and Toronto: Channel View Publications, pp.250-268.

Martin, L. and March, L. (ed.) (1972). *Urban Space and Structure*. UK: The Cambridge University Press.

Martin, L.R.G. (1989) An evaluation of Landsat-based change detection methods applied to the rural-urban fringe. In Bryant, C.R., LeDrew, E.F., Marois, C. and Cavayas, F. (ed.) *Remote Sensing and Methodologies of Land Use Change Analysis*. University of Waterloo, Canada: Department of Geography Publications, pp.102-116

Masser, I. (2001). Managing our urban future: the role of remote sensing and geographic information system. *Habitat International*, 25, pp.503-512.

McGlynn, S. and Samuels, I. (2000). The funnel, the sieve and the template: towards an operational urban morphology. *Urban Morphology*, 4, pp.79-89.

Meyer-Arendt, K.J.(1990). Patterns and impacts of coastal recreation along the Gulf coast of Mexico. In Fabbri, P. (ed.) *Recreational Uses of Coastal Areas*, Dordrecht: Kluwer, pp.133-148.

Miller, H.J. (1999). Potential contributions of spatial analysis to Geographic Information Systems for transportation. *Geographical Analysis*, 31(4), pp.373-399.

Millward, A.A. (2004) Pixels and patterns: a satellite-based investigation of changes to urban features in the Sanya region, Hainan Special Economic Zone, China. PhD thesis, University of Waterloo.

Mongeau, D. (2003). Coastal access and public policy: a selective annotated bibliography. *Reference Service Review*, 31(4), pp.374-384.

Mote, F.W. (1973) A millennium of Chinese urban history: form, time and space concepts in Soochow. *Rice University Studies*, 59, pp.35-65.

Moudon, A.V. (2002). Thinking about micro and macro urban morphology. *Urban Morphology*, 6(1), pp.37-39.

Muijs, D. (2004). *Doing Quantitative Research in Education with SPSS*. London: Sage Publications, pp.228.

Muller, P. (1986). Transportation and urban form: stages in the spatial evolution of the American Metropolis. In: Hanson, S. (ed.) *The Geography of Urban Transportation*. New York: The Guilford Press, pp.24-48.

National land classification (Quan Guo Tu Di Fen Lei (Shi xing)). (2001). MLR (The Ministry of Land and Resources P.R.C). (Implemented from January 1st, 2002). (in Chinese)

Newcomb, R.M. (1969). Twelve working approaches to historical geography. In Green, D.B. (ed.) (1991). *Historical Geography: a Methodological Portrayal*. Maryland: Rowman & Littlefield Publishers, INC., pp.106-125.

Norton, W. (1982). Historical geography as the evolution of spatial form. In: Green, D.B. (ed.)(1991). *Historical Geography: a Methodological Portrayal*. Maryland: Rowman & Littlefield Publishers, INC., pp.363-370.

Ouyang, H. (2000). *Resort Morphology and Local Economic Development Examples from Hainan Province, China*. Unpublished Master Thesis, University of Waterloo, Waterloo, Canada.

Papatheodorous A. (2004). Exploring the evolution of tourism resorts. *Annals of Tourism Research*, 31(1), pp.219-237.

Pearce D. G. (1978) Form and function in French resorts. *Annals of Tourism Research*, 5(1), pp.142-156.

Pigram, J. J. (1977). Beach resort morphology, *Habitat International*, 2(5-6), pp.525-541.

Pijanowski, B.C., Gage, S.H., Long, D.T. and Cooper, W.C. (2000). A land transformation model: integrating policy, socioeconomics and environmental drivers using a geographic information system. In Harris, L. and Sanderson, J. (ed.), *Landscape Ecology: a top down approach*. Boca Raton: Lewis Publishers, pp.183-199.

Pijanowski, B.C., Brown, D.G., Shellito, B.A. and Manik, G.A. (2002). Using neural networks and GIS to forecast land use changes: a Land Transformation Model. *Computers, Environment and Urban Systems*, 26, pp.553-575.

Plog, S.C. (1973). Why destination rise and fall in popularity. *Cornell Hotel and Restaurant Association Quarterly* 13, pp.6-13.

Plog, S.C. (2002). The power of psychographics and the concept of venturesomeness. *Journal of Travel Research*, 40, pp.244-251.

Powers, T. and Barrows, C. W. (1999). Introduction to the Hospitality Industry. New York: John Wiley & Sons, INC.

Priestley, G.K. (1986). El tourismo y la transformación del territorio: un estudio de Tossa, Lioret de Mar Y Blanes a traves de la fotografia aerea 1956-81. In: *Jornaldes Tecniques Sobre Turisme I Mediambient Sant Feliu de Guixols-Costa Brava*, Bacerola, pp.88-106.

Priestley, G.K. (1995) Evolution of tourism on the Spanish coast. In Ashworth, G.J. and Dietvorst, A.G.J. (ed.) *Tourism and Spatial Transformations: Implications for Policy and Planning,* UK: CAB International, pp.37-54.

Rhind, D. and Hudson, R. (1980). *Land Use*. London and New York: Methuen.

Robinson, H. (1976). *A Geography of Tourism*. London: Macdonald and Evans, pp.476.

Rong, Desheng (1912) The future of Wuxi (Wuxi zhi jianglai), in Jiangsu PCC Cultural and Historical Data Committee, Wuxi Municipal Committee of Construction, and Wuxi PCC Cultural and Historical Data Committee (ed) (1996), *Wuxi Urban Development (Wuxi Chengshi Jianshe),* Jiangsu PCC Cultural and Historical Edition Office, 1-4. (in Chinese)

Rouse, J. (2004). Masterplan masquerade. *Building Design*, 9 Jan, 8.

Rowe, W.T. (1993) Introduction: city and region in the Lower Yangzi. In Johnson, L.C (ed) *Cities of Jiangnan in Late Imperial China*. Albany: State University of New York Press, pp.1-17.

Qian, W. (2003). Travel agencies in China at the turn of the millennium. In Lew, A.A., (ed.) *Tourism in China*, pp.144-164.

Sanya Statistic Yearbook (2006) Sanya Municipal Bureau of Statistics.

Sanya.gov.cn, 2006, Work harder to promote the development of Sanya. http://www.sanya.gov.cn/leaderspeak/200607210070.shtml, accessed Jan 30, 2008.

Sauer, C.O. (1925). The morphology of landscape. In: *University of California Publication in Geography*, Berkeley, California: University of California Press, 1929, 11(2), pp.25-55.

Sheldon, P.J. (1997). *Tourism Information Technology*. London and New York: CAB INTERNATIONAL.

Shtong.gov.cn, 2008, Coach transportation. http://www.shtong.gov.cn/node2/node4/node2249/zabei/node39189/node39204/node63298/userobject1ai24450.html, accessed March 10, 2008.

Si, Maqian (145 BC-90 BC), *The Book of History (Shi Ji).* (in Chinese)

Smith, M.K. (2004). Seeing a new side to seasides: culturally regenerating the English seaside town. *International Journal of Tourism Research*, 6, pp.17-28.

Smith, R.A. (1991). Beach resorts: a model of development evolution, *Landscape and Urban Planning*, 21, pp.189-210.

Smith, R.A. (1992a). Beach resort evolution: implications for planning. *Annals of Tourism Research*, 19, pp.304-322.

Smith, R.A. (1992b). Review of integrated beach resort development in Southeast Asia, *Land Use Policy,* July, pp.211-217.

Smith, S.L.J. (1989). *Tourism Analysis: A Handbook*. England: Longman Scientific & Technical, pp.312.

Soane, J.V.N. (1993). *Fashionable Resort Regions: Their Evolution and Transformation*. Wallingford, CAB International.

Stansfield, C.A. (1969). Recreational land use patterns within an American seaside resort. *Tourist Review*, 24(4), pp.128-136.

Stansfield, C.A. (1970). The recreational business district. *Journal of Leisure Research*, 2, pp.213-223.

Stansfield, C.A. (1978). Atlantic City and the resort cycle: background to the legalization of gambling. *Annals of Tourism Research*, 5(2), pp.238-251.

Stats.gov.cn, 2000, Exchange currency (2000), http://www.stats.gov.cn/tjsj/qtsj/gjsj/2000/t20020111_402192347.htm, accessed June 17, 2008.

Strapp, J.D. (1988). The resort cycle and second homes. *Annals of Tourism Research*, 15, pp.504-516.

Tarrant, M.A. and Cordell, H.K. (1999). Environmental Justice and the spatial distribution of outdoor recreation sites: an application of Geographic Information Systems. *Journal of Leisure Research*, 31, pp.18-34.

Thomas, R.W. (1981). *Information Statistics in Geography*. W.H. Hutchins & Sons, pp.42.

Toth, R.E. (1988). Theory and language in landscape analysis, planning, and evaluation. *Land Ecology*, 1(4), pp.193-201.

Towner, J. (1996). *An Historical Geography of Recreation and Tourism in the Western World: 1540-1940*. Chichester: John Wiley & Sons.

Wall, G. (1975). Form and function in British seaside resorts. *Society and Leisure*. 4, pp.217-226.

Wall, G. (1982a). Recreation land use in Muskoka. In: Wall, G. and Marsh, J. (ed.) *Recreational Land Use: Perspectives on Its Evolution in Canada*. Ottawa: Carleton University Press, pp.139-154.

Wall, G. (1982b). The fluctuating fortunes of water-based recreational places. In: Wall, G. and Marsh, J. (ed.) *Recreational Land Use: Perspectives on Its Evolution in Canada*. Ottawa: Carleton University Press, pp.239-254.

Wall, G. (1997). Sustainable tourism – unsustainable development. In Wahab, S. and Pigram, J. (ed.) *Tourism, Development and Growth*. London: Routledge, pp.33-49.

Wall, G. (2000). Resort morphology: western concept and Chinese applicatio*n*. In *Urban Tourism: Theory and Practice*. Bao, J., Pan, X. and Wall, G. (ed.) (2001) Scientific Publications, Beijing, pp.205-211.

Walton, J.K. (2000). *The British Seaside*. UK: Manchester University Press.

Wang, F.Y. (2000) *International Resort Development Analysis: Strategic Thinking of Sanya to be A International Tropical Seaside Resort*. Beijing, China Tourism Express. (in Chinese)

Wang, Gengtang and Feng, Ju (ed.), 1988, *History of Wuxi (Wuxi Shi Hua).* (in Chinese)

Wang, J. (1990) *The theory and method of urban design (Chengshi Sheji Lilun he Fangfa)*. Beijing: China Architecture and Building Press (in Chinese).

Wang, Tianjin, Liang, Zi, Luo, Ying, and Bai, Yan (1996) *Folk Customs and Tourism of The Pearly Hainan (Mingzhu Hainan de Minsu yu Lvyou)*. Beijing: Tourism Education Press. (in Chinese)

Wang, Yang, and Wall, G. (2005) Resorts and residents: stress and conservatism in a displaced community. *Tourism Analysis* 10(1), pp.37-53.

Wang, Yuanhong and Li, Zhan (ed.), 1998, *Wuxi Municipal Land Gazetteer (Wuxi Shi Tudi Zhi).* Nanjing: Jiangsu Renmin Chubanshe. (in Chinese)

Wen, J. J. and Tisdell, C.A. (2001). *Tourism and China's Development: Policies, Regional Economic Growth and Ecotourism*. Singapore: World Scientific.

Wheeller, B. (2006). The king is dead. Long live the product: Elvis, authenticity, sustainability and the product life cycle. In: R.W. Butler (ed.) *The Tourism Area Life Cycle, Vol. 1: Applications and Modifications*, Clevedon, Buffalo and Toronto: Channel View Publications, pp.339-348.

Whitehand, J.W.R. (1981). Background to the urban morphologenetic tradition. In: *The Urban Landscape: Historical Development and Management: Papers by M.R.G. Conzen*, J.W.R. Whitehand (ed.) (1981). Academic Press, London, pp.1-24.

Whitehand, J.W.R. (1987). Urban morphology. In Pacione, M. (ed.) *Historical Geography: Progress and Prospect*. London: Croom Helm, pp.250-276.

Whitehand, J.W.R. and Larkham, P.J.(1992a). The urban landscape: issues and perspectives. in J.W.R. Whitehand and P.J. Larkham (ed.) *Urban Landscapes: International Perspectives*. Routeledge, London and New York, 1992, pp.1-19.

Whitehand, J.W.R. and Larkham, P.J.(1992b). Urban landscape research: achievements and prospectus. in J.W.R. Whitehand and P.J. Larkham (ed.) *Urban Landscapes: International Perspectives*. Routeledge, London and New York, 1992, pp.299-312.

Whitehand, J.W.R. and Gu, K. (2006). Research on Chinese urban form: retrospect and prospect. *Progress in Human Geography*, 30(3), pp.1-18.

Wong, P.P. (1990). The geomorphological basis of beach resort sites—some Malaysian examples, *Ocean and Shoreline Management*, 13, pp.127-147.

World Bank (1993). *China: Urban Land Management in an Emerging Market Economy*. Washington, DC: World Bank.

Wu, Bihu (2001). *Qu Yu Lv You Gui Hua Yuan Li* (*Fundamentals of Regional Tourism Planning*). Beijing: China Tourism Press, pp.711.

Wuxi Statistic Yearbook (2001-2006), Wuxi Municipal Bureau of Statistics.

Wuxi.gov.cn, 2006, Wuxi in modern times, http://www.wuxi.gov.cn/intowx/survey_wx/history.shtml, accessed Jan 11, 2008.

Wuxi.gov.cn, 2006, Wuxi in modern times, http://www.wuxi.gov.cn/intowx/survey_wx/history.shtml, accessed Jan 11, 2008.

Wuxi.gov.cn, 2006, an introduction of the geography of Wuxi, http://www.wuxi.gov.cn/intowx/survey_wx/geography.shtml, accessed Jan 13, 2008.

Wuxi.gov.cn, 2006, an introduction of the climate of Wuxi, http://www.wuxi.gov.cn/intowx/survey_wx/geography.shtml, accessed Jan 14, 2008.

Wuxi.gov.cn, 2006, an introduction of the population of Wuxi, http://www.wuxi.gov.cn/intowx/survey/populace/20068/200682926389.shtml, accessed Jan 14, 2008.

Xiao, H.G. (2003). Leisure in China. In Lew, A.A. (ed.) *Tourism in China*. New York: The Haworth Hospitality Press, pp.263-276.

Xiao J.Y., Shen, Y.J., Ge, J.F., Tateishi, R., Tang, C.Y., Liang, Y.Q. and Huang, Z.Y. (2006). Evaluating urban expansion and land use change in Shijiazhuang, China, by using GIS and remote sensing. *Landscape and Urban Planning*, 75, pp.69-80.

Xinhuanet, 2002, Completion of the largest round-the-island highway project, creating four Chinese No.1. http://news.xinhuanet.com/newscenter/2002-12/31/content_675305.htm, accessed Jan 8, 2008.

Xu, S. (ed.) (1988) Hainan Province: Geography and History. (*Hainan Sheng: Dili yu Lishi*). Beijing: China Commerce and Trade Press.

Xuan, Guofu, Lu, Lin, Wang, Degen, Zhang, Jinhe and Yang, Xiaozhong (2004) Spatial characteristics of tourist flows in coast resorts: a case study of Sanya City. *Geographical Research*, 23(1), pp.115-124.

Yu, L. (2003). Critical issues in China's hotel industry. In Lew, A.A. (ed.), *Tourism in China*, pp.129-141.

Zhang, Dezai (1960) Wuxi municipal construction outline and institution transion (Wuxi shizheng jianshe gaiyao jiqi jigou yange), in Jiangsu PCC Cultural and Historical Data Committee,

Wuxi Municipal Committee of Construction, and Wuxi PCC Cultural and Historical Data Committee (ed) (1996), *Wuxi Urban Development (Wuxi Chengshi Jianshe),* Jiangsu PCC Cultural and Historical Edition Office, pp.30-36. (in Chinese)

Zhang, G.R. (2003). China's tourism since 1978: polices, experiences and lessons learned. In Lew, A.A. (ed.) *Tourism in China*. New York: The Haworth Hospitality Press, pp.13-34.

Zhou, Zhendong (1986) 40 years of Yaxian from 1911 to 1950. In Cai, M.K. (ed.) *Sanya Culture and History: Part One*. Sanya PCC, Guangdong Province, Culture and Historical Office and Edition Office, pp.44-96. (in Chinese)

Zhu, H.Y., He, S.J. and Zhang, M.(2001). GIS spatial analysis and its application in the research of land use change, (Tudi liyong bianhua yanjiu zhong de GIS kongjian fenxi). *Progress in Geography (Dili Kexue Jinzhan)*, 20(2): 104-110. (in Chinese, with English abtract)