

# Regional tourism to Regional Transformation: The case of Jining area of Shandong Province in China

**Lu Guo**

Tsinghua University, School of Architecture, 100084 Beijing, China  
e-mail: glguolu@gmail.com

**Jian Liu**

Tsinghua University, School of Architecture, 100084 Beijing, China  
e-mail: liujian@mail.tsinghua.edu.cn

## Abstract

*China is facing the urgent problem of transformation development and the rapid development of tourism at the same time. Regional tourism could be the stimulus and impetus for the transformational development of an area by rousing the vitality in various fields. Jining area of Shandong Province is an important coal energy base in China demanding transformation, as well as a traditional tourism area owing abundant tourism resources and development opportunities but with a lack of enough attention. It is proposed in this article that a regional wetland system could be established in the water area caused by coal field subsidence with the natural and culture resources in Jining area to develop regional tourism. Starting from this, the following will be realized gradually: ecological restoration, landscape reshaping, space integration, industrial restructuring and culture revival, and ultimately the comprehensive transformational development.*

Keywords: regional tourism, transformational development, Jining area, wetland system.

## 1 Regional Tourism and Regional Transformation

Transformation of development mode, which has been discussed from the beginning of last century, has become the focus of the global concern with the global economic crisis, climate change and etc. Nowadays the cities of China are facing “the best opportunities and the most acute contradictions” (Wu Liangyong, 2009). The high-speed development of economy and city construction is followed by various problems, including ecological crisis caused by blind development, the disorder of urban space in rapid urbanization, social & economic contradiction during the changing process from planned economy to market economy, the decline of regional culture under the global impact, and etc. The transformation of development is inevitable since the existing model could not satisfy the demand and challenge of the real world. The transformation problem is particular complicated in such a vast country as China of which the situations varies in different areas.

Tourism is developing rapidly in China over the last decades with the increasing numbers of both domestic and foreign visitors. (Figure 1&2)The cooperation of various fields, such as natural and cultural landscape, traffic environment, economic condition, is needed for the development of tourism, therefore multiple benefits would be produced during this process, such as ecological restoration, landscape shaping, economic growth, etc. Regional tourism, which owns more abundant resources by connecting various tourism areas in a certain region, could be the stimulus and impetus for the transformational development of a region by rousing the vitality in various fields.

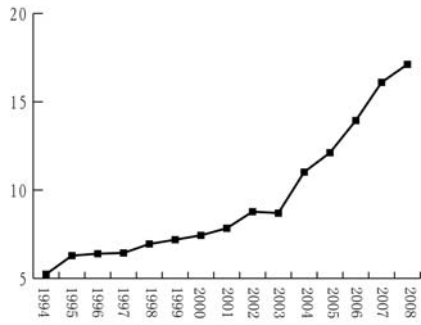


Figure1: Annual Domestic Visitors of China<sup>1</sup>  
(Unit: 100 Millions Person-Times)

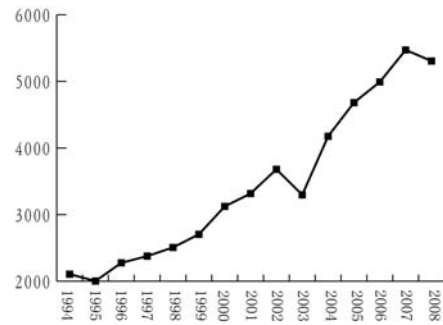


Figure2: Annual Visitor Arrivals to China<sup>2</sup>  
(Unit: Ten Thousands Person-Times)

## 2 Jining Area faced with transformational development

Jining City locates in the southwest of Shandong Province, in charge of two districts, three cities and seven counties<sup>3</sup> with a total area of 10,685 km<sup>2</sup> and a population of 8.23 million. Jining area in this article refers to the polycentric urban area comprising the downtown area (which is always called Jining, containing the Central District and the Rencheng District), Yanzhou, Zoucheng and Qufu with a total area of 3,871 km<sup>2</sup> and a population of 3.5 million (the data of 2008). It covers the regions with the highest level of urbanization and economic development in Jining City.

As West Shandong Province is one of China's key coal bases, coal resource is the deciding factor of the urban development and the spatial layout of Jining Area. Coal field accounts for 35% of the total areas of Jining City (Jining Planning Bureau, 2008) and is mainly located in Jining area (Figure 3). Long-term coal mining and industrial production brought economic prosperity but also caused a lot of problems in environment, spatial development and economy.



Figure 3: The range of Jining City, Jining area and coal field

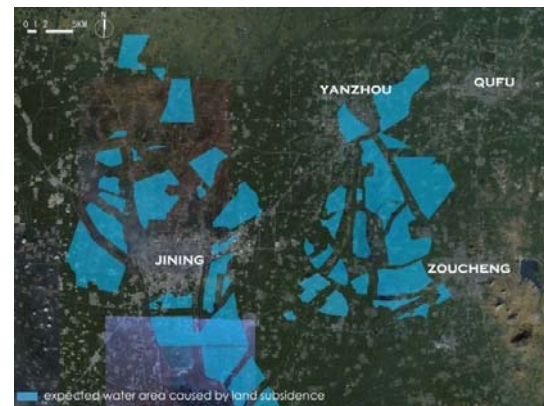


Figure 4: Expected water area caused by land subsidence

<sup>1</sup> The data is based on *The Yearbook of China Tourism Statistics* from 1995 to 2009.

<sup>2</sup> The data is based on *The Yearbook of China Tourism Statistics* from 1995 to 2009.

<sup>3</sup> Central District, Rencheng District, Qufu City, Yanzhou City, Zoucheng City, Weishan County, Yutai County, Jinxiang County, Jiaxiang County, Wenshui County, Sishui County, Liangshan County.

## 2.1 Coal Field Subsidence Requires Recovery

Dust, waste gas, waste water and residue emitted by industrial production have seriously polluted the air, water and soil in Jining area and large-scale mining subsidence has become the most severe environmental problem. The area of land subsidence of Jining City was 120km<sup>2</sup> in 2007 which is estimated to be 2,600km<sup>2</sup> in 2050, accounting for 23.7% of the city's total land and 50% of the arable land (Jining Planning Bureau, 2008). The depth of land subsidence in this area ranges between 3-10 meters, which belongs to deep subsidence that is difficult to be recovered. (Figure 4)

Land subsidence resulted in serious environment problem: spread of water pollution, damage to water conservancy, communication and other infrastructure, threatening the residents' living and the ecological security. At the same time, large area of farmland and construction land was eroded, greatly restricting the city's development. Despite the grim reality, there is still considerable unexploited coal field and shallow subsided area which can be used for urban construction after recovery. These areas will be the main space for future urban development; thus, they are critical to Jining area where land resource is quite limited. Besides, large subsiding water area has great potential of being unique ecological and landscape resource through the management and integration with the regional water network. Therefore, considering the demand for urban development and coal mining, it is necessary to recover the subsiding lands under scientific planning as early as possible in order to maximize the limited land resource on the basis of ensuring ecological security.

## 2.2 Urban Expansion Lacks Integration

Jining area is the part with the highest population density and urbanization level in the City of Jining. The four cities (Jining, referring to the downtown area, Yanzhou Zoucheng and Qufu) in the area are accelerating their urban development with quick population growth. The urban space is also expanding rapidly, while the large-scale coal land subsidence exacerbating land shortage further.



Figure 5: The expansion of land use in the four cities in Jining area

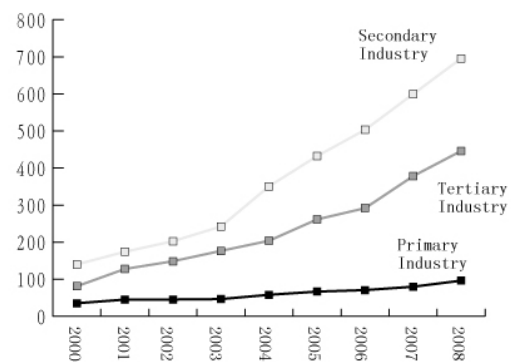


Figure 6: GDP structure of Jining area during 2000-2008<sup>4</sup>  
(Unit: 100 Millions Yuan)

The four cities are located nearby with limited land resources. If the master plans of the four cities are put into one map<sup>5</sup>, the urban land use would be found in an almost continuous sheet. (Figure 5) Meanwhile,

<sup>4</sup> The data is based on the GDP of Central District, Rencheng District, Yanzhou City, Qufu City and Zoucheng City from *Jining Statistical Yearbook* from 2000 to 2008.

<sup>5</sup> The Master Plan of Jining City (2008-2030), The Master Plan of Zoucheng City (2005-2020), The Master Plan of Qufu City (2003-

reasonless urban expansion has invaded the agricultural “green heart” surrounded by the four cities, which not only shakes the agriculture foundation but also reduces the overall quality of the regional space. Considering the contradictions presented here and the needs for future transformational development, the four cities also face the challenge of building a new urban spatial system. Therefore, it is necessary to integrate, coordinate and plan the urban space in regional scale.

### *2.3 Aging Industrial Structure Needs Transformation*

Jining area is a traditional resource-based area where the tertiary industry has gained limited development by gradually introducing high-tech industries such as bio-pharmacy, but the secondary industry has always been the backbone of regional economy with increasing output growth. There is a typical “II, III, I” industrial structure (Figure 6), with heavy dependence on coal mining, coal chemical industry, electric power and other coal-related industries.

Local economy has grown very slowly due to uneven industrial structure. GDP per capita was about 3570 dollars in 2009 of Jining City, ranked 14 among the 17 prefecture-level cities in Shandong Province (Liu Xinghui, 2010). In the future, resource depletion and industrial decline after large-scale exploitation will be hidden troubles to the regional development. Therefore, industrial transformation should be studied in advance to scientifically avoid the possible risks and lead the industrial structure transformation.

## **3 The Problem, Resources and Opportunities of the Tourism Development of Jining Area**

Jining area as the core district of the city of Jining which is awarded the "China Excellent Tourism City" in 2005 is a traditional tourism area with rich natural and cultural tourism resources and encounters opportunities of time, but this drew little attention in the past while Qufu is the only tourism centre in the area.

### *3.1 The Problem of Single Center*

Jining area is an important tourism area in Shandong Province, but Qufu with Temple and Cemetery of Confucius and the Kong Family Mansion as the World Cultural Heritage attracts most tourists in this area, for example in the first two days of the May Day holiday in 2004, Qufu received 98,000 tourists while its near neighbour Zoucheng only 2,456. (Shi Feng, 2007)

Because there is only one tourism centre in this area, Jining area owns a large number of tourists but with short stay time and low consumption, Although the number of tourists received in the city of Jining ranked the fourth in the 17 cities in Shandong Province in 2008, the average per capita expenditure by domestic and international tourists ranks the 8th and the 12th (Shandong Provincial Tourism Administration, 2010) (Figure 7).The benefits of scale could not be translated into the benefits of economic. At the same time, the historical heritage, ecological environment, urban infrastructure of Qufu would be under great pressure since a large number of tourists assembled in a small city during a short time. And more importantly, the prosperity of the single center could not drive the overall development of the whole area.

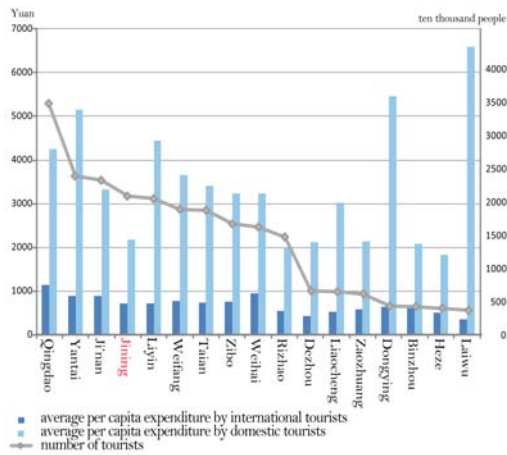


Figure 7: The number of tourists and average per capita expenditure of the cities of Shandong Province, 2008<sup>6</sup>

### 3.2 Abundant Regional Tourism Resources

Jining area, where human beings have been thriving since the Paleolithic age, has profound historical cultural resources as well as superior natural landscape with rolling hills and complicating water network since it is located in the transition zone between the Huang-Huai-Hai Plain and Tai-Yi Foothills. However, these tourism resources have not been given enough attention.

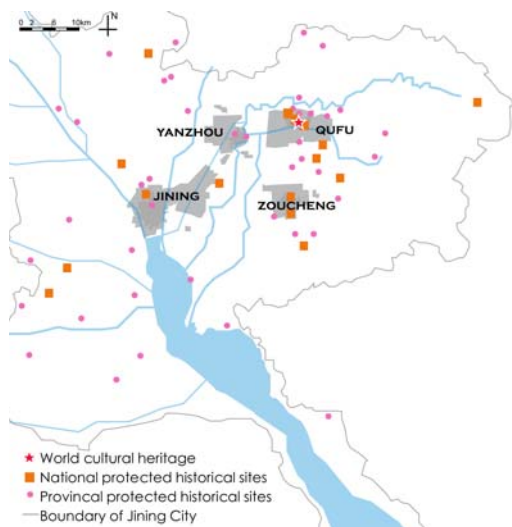


Figure 8: Cultural tourism resources in Jining area

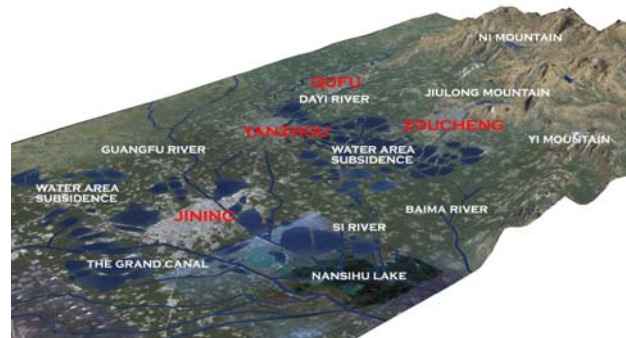


Figure 9: Estimated overall structure after coal-mining land

There are a great amount of historical heritages in Jining area. “Confucian Holy City” Qufu is the hometown of Confucius owning Temple and Cemetery of Confucius, the Kong Family Mansion, Temple of Yanhui, the Mausoleum of Shaohao and so on. “Canal Capital” Jining is the management centre of the

<sup>6</sup> The data is based on the *The Tourism Statistics of Shandong Province 2009*, the expenditure by international tourists is converted from dollar at the exchange rate of 2008.

canal transport in Ming and Qing dynasty, where the ancient canal flowing across the city centre, dotted are the Taibai Tower, Shengyuan Tower and Dongda Temple. “Traffic Hub” Yanzhou is a flourishing city since the Tang Dynasty, owing the Xinglong Tower first built in Sui Dynasty. “Mencius Hometown” Zoucheng is also a historical city with the Temple and Cemetery of Mencius, the Meng Family Mansion, as well as the inscriptions on precipices of the four mountains in the city. The scattered historical cultural resources in this area could be connected and integrated to form a regional cultural tourism network to develop regional tourism. (Figure 8)

Jining area owns superior natural resources in Northern China. Complicating water network is formed by the Grand Canal, the Yi River, the Si River and other rivers; dotted are the Ni Mountain, the Yi Mountain, the Jiulong Mountain and other mountains; and located in the South is Nansihu Lake, the largest freshwater lake group in Northern China. The large-scale water area caused by mining land subsidence which is still growing, could also be transformed into characteristic natural and ecological tourism resources with comprehensive treatment and an integrated plan combining with the natural mountains and rivers in the area.

### *3.3 New Opportunities for Regional Tourism Development*

Sustained economic growth and rapid urbanization in China provides many new opportunities to the tourism development of Jining area.

First, the tourism development environment is growing mature. China's tourism industry is developing rapidly with a growing scale and diversified types expanding from the sightseeing tour to leisure tour, study tour, business tour and so on (Liu Deqian, 2011). Shandong Province will enter into the mature development stage of tourism during 2011-2020 (Shandong Provincial Tourism Administration, 2001), which will bring a good opportunity for Jining area to develop the regional tourism by exploring its historical culture and natural landscape.

Second, large construction projects are driving the tourism development in this area. Jining area is an important part in the overall application of the Grand Canal for World Heritage and also a key area of South-to-North Water Diversion Project, which offers a turning point to improve the ecological environment, integrate urban space, develop culture tourism and re-shape local features.

At the same time, the improvement of the regional traffic is providing better conditions for the tourism development. Jining Qufu Airport was put into use in 2008 and the Beijing-Shanghai high-speed rail was opened in 2011 with a station set up in Qufu. Moreover, local water transport and land transport have been gradually improved. Convenient traffic system will become an important driving force for regional tourism development.

## **4 Regional Transformation Driven by Regional Tourism**

Jining area, which is facing various problems including ecological environment, spatial development, economy and etc, demands transformational development led by integrated strategy. At the same time, it is a traditional tourism area owing abundant tourism resources and development opportunities. A regional wetland system could be established in the water area caused by coal field subsidence with the natural and cultural resources in Jining area to develop regional tourism. Starting from this, the following will be realized gradually: ecological restoration, landscape reshaping, space integration, industrial restructuring and culture revival, and ultimately the comprehensive transformational development.

### *4.1 Construction of the Wetland System to Develop Regional Tourism*

Transformational development should be led by an integrated strategy. Jining area has been covered by dense rivers and dotted with several mountains since ancient times. And now the large-scale water area

formed by coal field subsidence adds new element to the existing water system (Figure 9) constituting the construction base for the wetland system which will also be endowed with cultural connotations from rich historical culture in the region. Therefore, it is possible to form regional wetland system through building multi-level wetland parks to develop regional tourism, and then to lead the overall development.

Multi-level wetland park system could be established by appropriate ecological management technologies based on the analysis of current land subsidence and its future development as well as the comprehensive relationships between subsidence treatment and urban development. A national wetland park could be set up in the center of the system away from the urban areas; several rural wetland parks could be built in order in the vast rural areas outside of the center; and a number of urban wetland parks could be developed in the suburban areas. Development of wetland parks would be closely connected with the construction in urban and rural areas at the same time. (Figure 10, Figure 11)

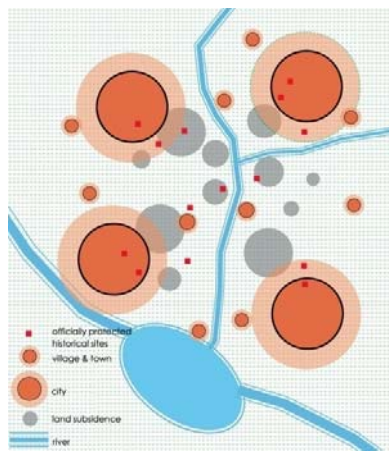


Figure 10: Current space status in Jining area

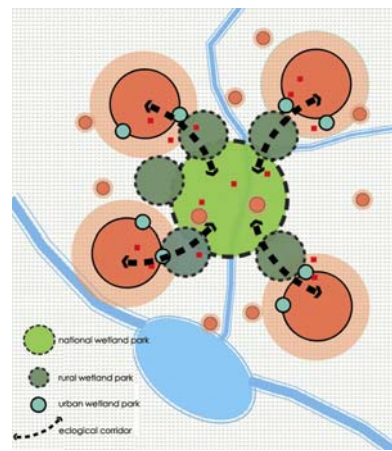


Figure 11: Future plan of the urban wetland system in Jining area

#### 4.2 Recovery of Ecological Environment to Re-shape Regional Landscape

A good ecological environment is the basis for regional development. Large-scale coal mining has seriously damaged the ecological environment in Jining area, but also provides an opportunity to recycle ecology and re-shape landscape.

Comprehensive treatment of land subsidence, polluted water bodies and wetland construction could solve the existing environmental problems and realize ecological functions such as pollution purification, water conservation and biodiversity maintenance. Meanwhile, a variety of artificial wetland landscape could be created by different treatment measures taken to land subsidence according to the subsidence depths (Table 1). The regional wetland system would restore the ecological environment as well as create a unique regional landscape combining artificial wetlands, urban space and natural scenery, laying the foundation for regional tourism and transformational development.

Table 1. Treatment of coal field subsidence based on local conditions

Subsidence depth	Strategy	Technical measures	Landscape features	Functions
> 8m	Ecological treatment of deep water	Shape water front to make use of the water	Broad water area	Aquiculture, Water sports
3m-8m	Ecological treatment of medium depth water	Further dig the deeper part and reclaim land in the shallow part	Water and land crisscross	Dike-pond agriculture, Agricultural tourism
<3m	Ecological treatment of shallow depth water	Drain water and partly reclaim land	Agricultural area and forests crisscross	Modern planting, Agricultural Experience

#### 4.3 Integrated Regional Planning to Form Overall Spatial System

Healthy regional development depends on a reasonable choice of spatial development pattern. Urban space is limited and jumbled in Jining area because of coal field subsidence and rapid urban expansion. However, fine landscape environment and polycentric spatial frame are important resources that could be used.

First of all, wetland system should be established by planning and reusing the large-scale land subsidence (especial water area subsidence) to eliminate the negative impact on the regional spatial development. Then, regional green space system could be formed by connecting the inter-city wetlands and agricultural land to promote the overall spatial quality in the area. At the same time, the wetland system and cities could be integrated as a whole by traffic axes. A regional wetland system can solve the problem of the tense space as well as create a polycentric pattern, in which a green heart is encircled by urban space, the urban and green space is mingled and dispersal and concentration is combined forming an integrated spatial system for transformational development.

#### 4.4 Development of Tourism to Drive Industry Transformation

Since industry is the driving force for regional development, regional transformational development should be driven by new industries. It is urgent to change the industrial model dominated by coal mining industry in the long term of Jining area. And rich local tourism resources and diverse external opportunities also provide the conditions for industrial restructuring.

Featured regional landscape, which is formed by ecological treatment and landscape reshaping, is a fine source for developing tourism. Based on the regional wetland system, a large-scale, multiple culture coexisting tourism area could be formed by combining the natural scenery and cultural tourism resources: forests in the East and North, lakes in the South, the Grand Canal in the West, the ancient cities in the center, etc. Tourism development would improve local environment, stimulate economic development as well as promote city image, which will further attract investment on high-tech and new energy industries.

The regional wetland system could be a carrier of regional tourism development. A multi-level tourism area would be formed with the wetland “green heart” as the core and historical urban landscape and natural sceneries as surrounding edge, thus boosting the overall industrial transformation in the region.



#### 4.5 Combination of Ecological Civilization and Regional Culture

Culture is the soul of regional development, so regional transformational development would be accompanied by cultural revival and creativity. There has been rich historical and cultural heritage in Jining area where industrial civilization has also been developed because of the coal mining for many years.

The establishment of wetland system is targeting for promoting harmony between man and nature and the local sustainable development. It represents the new concept of ecological civilization which would add new content to local culture. Meanwhile, industrial civilization could be preserved by shaping the post-industrial landscape. In addition, profound and diverse traditional culture needs to be fully understood and explored, which includes the landscape-saints culture originated from the Yellow River, the Tai Mountain, Qufu city and Zoucheng city in the center, the canal culture based on the Grand Canal in the West as well as the mountain culture relied on the Jiulong Mountain, the Ni Mountain and the Yi Mountain in the East.

The regional wetland system, which represents ecological civilization, could act as a bridge to form a culture glorious landscape which connects the history and the future (Figure 9). Culture revival and recreation requires new culture without losing the memory of traditional one, so as to promote the cohesion and driving force of the region to archive the transformational development with strong vitality and influence. (Figure 12)



Figure 12: Regional culture structure

## 5 Conclusions

There are abundant tourism resources in China which is a large country with a long history. And the demand of tourism is growing at a high speed with the increasingly frequent development of international communication and the promotion of national income. How to development the tourism industry with the efficient use of resources has become a hot issue of the society. At the same time, after the rapid economic development in the last 30 years with "Reforming and Opening" policy carried out, a large amount of areas in China are facing the problems of transformation of development. How to achieve comprehensive transformation with high quality is an urgent and widespread problem. This article

explored the way of achieving regional transformation driven by the development of regional tourism with Jining area as an example, trying to provide a possible answer to the two problems of time with holistic thinking and strategic vision. The operation methods could not be copied since different areas have different features and practical problems, but the train of thought could be used for reference.

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