



## Chapter 3 Methodology

### 3.1 Introduction

How can I introduce this large-scale artificial project, to explain the Grand Canal developed on such a wide regional area and influenced the most urban structures? It needs to find an well defined methodology to solve this problem. The cultural landscape could be one concept used for understanding the large artificial project on our land and waterway, but I also need two steps to make a clear order in discussing the great waterway and the prosperous land.

First, Grand Canal is a cultural landscape objects which created by human wisdom on natural condition, it would be a diversified waterway passing through a long periods in history of China. From the diachronic view, it is necessary to know why people from different time they insisted in using this cross-region waterway. Every character of the waterway could support the identity of present Grand Canal.

Next, the cultural landscape could be defined

as one assessment methods to revalue the waterway and cities of canal. It helps me to discover the new demands from modern life, which also is promoting the changing structure of urban and regional space. Under the national background, Grand Canal and hundreds of cities and towns, they are possible to form an integrated cultural identity.

Last, land management has been defined by different scales for various urban authorities in modern urban policies, but now the large-scale artificial waterway provides an opportunity in integrating the riverside metropolitan cities and regional developments which could improve a most hopeful cultural landscape, like the Belvedere project in Netherlands.

### **3.2 A diachronic method for understanding the cultural landscape of the Grand Canal and how to develop a waterway connecting people and territories.**

The Grand Canal has a historical mission to promote the cultural exchange between the northern and southern plain in eastern China, it has to overcome the large distance between the two plain, one is the Yellow river delta plain in the north, and the Huai River delta plain in the south.

In many centuries, the main waterway of Grand Canal has passed different territories in this plains, formed its landscapes, which were building on multiple agricultural models and correspond with local economic structure, they were high integrated landscape model, not individual and singular. Then, it's necessary for matching of scales in time and space with relevant processes in society, administration and management.

Generally, the waterway has two principal functions in Grand Canal, the transportation and the irrigation. The waterways were designed to transport goods and tributes from south to north, but in south regions, it also used as one part of water network for irrigation. (Defend flood was another important thing in waterways, but this was not initial function of Grand Canal). There were two administrative scales in history, one is the governmental transporting water route, governed strictly by state's office, it was found in Sui dynasty, AD 6th century, first time the whole waterway worked for transporting food and tributes to capital Chang'an and Luoyang, from both northern and southern China in hundreds of kilometres away connected most agricultural productive areas; the other one kind of waterway are branches rivers and smaller artificial canal used by local region, they were public waterways, could be integrated in joint transportation network with small-scale rural and urban water and land route, more deeply touch far

away productive area and make business wider, so that some small size agricultural products such as the tea, could be transported by farmers from its mountainous area which passed the rough rock road, narrow country lanes, then enter the regional smaller waterways collected and sold their tea in port city Hangzhou, finally a large part of the tea would be packed and shipped by the official waterway to central capital Chang'an, the biggest consumption and market centre in the state. So this two kinds of waterway connected the productive and consumptive areas in the most land of ancient China, also they have formed a communication structure and network in cultural and economic exchanging in those cities, towns of the waterway.

These waterway's networks served as:

- in northern plain, the Yellow river basin, the waterway connected agricultural irrigational water channel, it helped to weave the cultivated landscape units in the flat land.

- in the southern area, when the waterway gets into the lower land, people dig the water pond for collecting water and fishing, also they collected the soil to build higher land for habitation, they could live there and plant paddy or fishing,

- in southern plain of Yangtze downstream river basin, the Grand Canal most widely connected to

local water transporting network, people frequently use the smaller waterway in their daily life by their black awning boat, Wu Peng boat, passed numerous bridges and canals,

- in many water cities, such as Hangzhou, Suzhou, Yangzhou, etc, the waterway of Grand Canal could be built as city moat completely encircled the cities, some of them have defensive water gate and observation tower,

- in a rural area, people channelized water rounds with stone pavement, drain water to the rice field, constructs ditches, waterwheel, aqueduct and deposit,

- meanwhile, many walking routes, viewpoints and drinking fountains introduced benefit at the landscape. People built many monuments relation to water culture, the art water course in private garden, and glorious lake in public space, the temples of Buddhism and Taoism, lots of beautiful places in villages,

All of these were passing through various centuries, it was a singular result, a unique place where appreciated so many diverse appearances, the water constructions. Well diverse cultures have contributed to shape this special cultural landscape:

- Spring-Autumn Period, earliest artificial waterway built to connect lakes in water regions of

Wu state,

- from Sui to Tang dynasty, the developed water route used for transporting food and tributes, to collect tax from many other provinces in the empire, developing big stone arch bridges on the river, like Zhao Zhou bridge,

- public life in water cities developed largely in Song dynasty, the urban park opened water space for citizen leisure, such as West Lake in Hangzhou, due to busy shipping near inner river port, a local trade place named street-market developing well parallel to waterway in Kaifeng city, where had markets, storehouse, retailer shops, and theatres, hotels, restaurants for travellers and boatmen,

- Yuan dynasty, the first time the Grand Canal could directly reach to the capital inner area by mooring the ships in Ji Shui Lake near the royal palace, so that the waterway also named as Beijing to Hangzhou Grand Canal, mean that the water route had two destinations from north capital Beijing to south economic centre Hangzhou city,

- Ming and Qing dynasty, it developed a financial system that was based on tax collection by some customhouses in many cities of canal, in this period, important large-scale water conservancy project kept developing in Huai'an, the Qing Kou water control project, and water distribution project

in Nan Wang town near Ji'ning city.

Grand Canal became an exceptional example to create a landscape in many centuries by the inhabitant effort, in conjunction with singular physical conditions, with establishment well respectful in the land. The principle adopted measures suiting local conditions, to transform the river from harmful to profitable waterway for living, transporting and production. Different shape of water, the fountain, streams, water channel, and river, they were suitable for various scales of human industries. Waterway could change to smaller size extended into the mountainous area or far away flat land for irrigating the cultivated land, or grow to a strong water body for transporting heavy ship cargo, come and go by the Grand Canal in 1800 kilometres crossed the rivers and different elevations used countless water gates. The Grand Canal is a genuine representative water transporting and water conservancy engineering. On the eastern plain of China, it has represented notable cultural diversity in centuries, all of these, contribute to enrich and diversify meaning of constructing waterway that also make a unique land.

### **3.3 A spatial strategy for defining a large-scale waterway used to analyze the regional scale of the cultural landscape.**

Beyond all doubt, Grand Canal was a long history artificial waterway, its cultural heritages and beautiful water landscape could arouse everybody's concerns. The water route crossed many eastern river basins and deltas in China, it was a large-scale infrastructure promoted the cultural and economic communication between north and south China. Naturally the waterway has developed different scales and forms for its spatial activities in the land, from a regional perspective a principal criterion of intervention could be set under territorial exploration.

Concerning the sections of Grand Canal, it is a north to the south longest artificial waterway, almost 1800 kilometres, an economic corridor passed land in four provinces, its two end points are located at the heart of most important coastal economic circles in China, the north Bohai Economic Rim and south Yangtze River Delta. After became the world heritage, China Grand Canal attempts to seek for transforming to a new developing model, which would avoid destroyed the waterway and its cultural heritages, to respect its plentiful natural and cultural landscapes. Therefore, in the beginning of this the study has to set the questions and aims:

what models of urbanism could guide to form a cross-regional structure for large scale waterway in Grand Canal?

which method could be suitable to examine the values of cultural resources and which could promote the local development?

Then, the study requires an interpretation of prosperous natural and cultural resources, will include:

1 tries to interpret the prosperous natural and cultural resources of Grand Canal waterway, just like evaluation of different morphological models of settlement,

2 analysis the intervention in cultural landscape, the alternative urbanization model which respect the local value also developing the living quality,

3 making urban strategies, based on a continued mixture of scale, (territory, infrastructure, settlement and activities, cultural resources...). these strategies have to complete in a territorial diagram in places where would be a catalyst in desired local transformations.

### **3.4 Changing scales from urban planning to land management for discovering territorial identity.**

#### **3.4.1 A multi-model corridor: the waterway creates a cross-regional scale for regional development**

Contemporary urban planning has to face the challenge comes from the regional competition and collaboration both in natural and cultural condition, the urbanism should be considered the urban structure with their physical environment to keep a good situation for rural and urban activities. The physical environment gradually becomes to one part of infrastructure highly associated with human settlement, but people now could not manage the physical environment in a large weight, because it has a positive value but there is a risk of excessive attention or sacredness of it<sup>40</sup>. Therefore, the what is called multi-model corridor among those regions should be a positive way of observation, which helps us to seriously understand what physical environment are changing the large-scale social activities. Then every place and the region could have a correlative strategy and cultural context development, which could identify their regions under large-scale corridor.

Undoubtedly the Grand Canal had been an important economic corridor which can be defined as a collect of routes linking several economic centres, cities and ports. While some are only water transport corridors, most of them include more than one mode of transport.

<sup>40</sup> Jesús María Erquicia. Olaciregui Del planeamiento urbanístico a la ordenación del territorio la necesidad de un cambio de escala 2003, Gráficas Santamaría, S.A. Vitoria-Gasteiz

- the water corridor is a multi-model corridor connecting two points of economic activity, such as Grand Canal with its Beijing (Bohai Economic Rim) and Hangzhou (Yangtze River Delta Economic Area, the centre city Shanghai), now there more effective transport developed in this corridor, the railway from earlier industrial period, to recently high-speed rail, which provide users with most choices in passenger and freight transport.

-the multi-model natural corridor is passing south to north different water regions in eastern land of China, due to the remarkable changing with latitude, there is obviously a diversity of fluvial morphology and biodiversity, every section of Grand Canal could show us its typical landscape in its geographical position.

-the water corridor is multi-model cultural corridor is passing through a large number of villages, towns and cities, waterways of Grand Canal have been creatively integrated into the human settlements for different functions in living, it's not only a long history heritage of waterway, but it's a waterway cultural transformation in our land.

British has produced the documents to encourage the integration of the inland waterways of England and Wales into the development plan system. The document has two main aims:

- to encourage local planning authorities to adopt a holistic and comprehensive approach to protecting the multi functional nature of the inland waterways, and

- to advise local planning authorities on the key planning policy issues relating to the waterways.

China Grand Canal is national, regional, and local cultural and natural assets, linking historic buildings and structures with the wider landscape and forming key strategic wildlife corridors. They are playing an increasingly important role in tourism industry and there is a growing national awareness of the added value and commercial betterment deriving from the presence of waterways in development.

### **3.4.2 A strong cultural link: regional strategy to reevaluate and integrate historical and cultural resources for heritage management**

The physical environment could be transformed by humans, by their intelligent and technical projects, so that an unsuitable natural place could be changed into a suitable land for human habitation. The Dutch has practiced their wisdom and willpower in changing land where lower than the sea level, they have constructed a huge dykes system to hold back the sea to avoid a flood. Dutch have a saying that "God created the earth, but the Dutch made



Holland". They have an ability to recreate their land that is considered the most fundamental heritage of the Dutch, which seems as if it's in their blood.

So from the year 1999 to 2009, Holland, a Belvedere national strategy<sup>41</sup> came out to promote a respectful approach in regard to cultural and historic values within a spatial development. This strategy shows us a way how to enhance a national identity by a large scale waterline:

- the objective of strategy, "preservation by development", according to Belvedere approach, "cultural heritage has to be regarded as being of vital importance to our society and to each individual citizen, the preservation and use of our cultural heritage adds an extra cultural dimension to the spatial structure", that means the cultural heritages would receive a new purpose, such as museums and hotels; with increasing attention for the environment, the waterline could offer plenty of room for nature, water

- due to heritage plays such a distinctive role in the regional design, the towns and cities of waterway could take a highly selective approach to exploiting their history, become a creative city, no longer concentrate on the production of physical goods, but

41 National Belvedere project: The New Dutch Waterline. <http://www.belvedere.nu/index.php?section=01&p=english>

focus on providing social experiences and images.

- in a forward goal the heritage approach to be adopted in dynamic situations is one that centres on inspiring development rather than conservation or replacement. The heritage of waterway could make use of our cultural heritage and landscape in development plans, in a further step, the water route could be treated as a strong link to connect more cities and towns.

### 3.4.3 Thematic units: a bottom-up requirement to reshape the regional structures

In 2001, after studying many examples in the US and Europe with regional conservation and development projects involving river valleys, industrial heritage, and agricultural preservation, Joaquín Sabaté presented a two years research report<sup>42</sup> of designing the Llobregat river corridor in Catalunya. The study group attempted to organise the natural and cultural resources by setting eight main thematic units<sup>43</sup> in course of the river, such as the

42 Joaquín Sabaté i Bel, J. Mark Schuster (Editors). Designing the Llobregat Corridor, Cultural Landscape and Regional Development. Press, University of Catalonia Polytechnic, Massachusetts Institute of Technology, 2001.

43 The eight thematic units are from the river delta to the natural spring of river in Pyrenees mountain, they are Agricultural Park, Stream Train, Vineyards, Manresa Irrigation Canal, Textile Towns, Reservoir, Coal and Wood, Cement and the Narrow-gauge Railway.

agricultural and industrial heritage park in Llobregat river delta. The new supra-municipal parks could reshape the regional structure in the fluvial area. Each thematic unit discusses an important stage in Catalonia's economic history. Taken together, the eight chronologically ordered episodes constitute a comprehensive interpretation of the entire river. The Llobregat river valley is becoming more of a space for recreation and culture.

Thematic units' interpretation routes and elements make two parts to define its identity and connection,

- the unit's physical structure is defined through the detection of the main elements, such as interpretation centre, entryways and resources, etc.

- the internal and external connections that link them together by routes such as trails, roads, railways, waterways, etc.

Thematic unit could have two types smaller intervention areas: zones and articulations,

- zones are extensive areas of natural and cultural value, in which are mainly oriented toward basic conservation and signposting.

- in contrast, the articulations are nodal areas, entryways to thematic units, in which are oriented toward provision of tourist services.

### 3.5 Conclusion

China Grand Canal could be one prior example that is seeking for a methodology in concluding the cultural landscapes and its regional development. I have to emphasize that the waterway is not only a blue line, it could be a colourful belt which is binding people and their land. No matter how large-scale waterway, it could be considered as living example of cultural landscape that even keeps working and effecting on urban lives. The cultural landscape of Grand Canal could build a strong link which enrich the regional strategies, such as cultural heritage management would be one important strategy for integrating natural and cultural resources.