



Economic Growth Pattern in Restricted Areas
-The Case Study of Kangding City in Sichuan Province

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Thesis submitted as partial requirement for the conferral of the degree of

Doctor of Management

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Instituto Universitário de Lisboa

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Abstract

The construction of regional development patterns based on the main functional areas is a major strategic innovation which not only conforms to the national regional policy but also incorporates regional features. On June 8, 2011, the state council issued the National Main Function Area Planning to readjust guiding thoughts of regional development of our country. In 2013, Sichuan province formulated and published the Main Function Area Planning which divided the restricted areas into main producing areas of agricultural products and key ecological functional areas. And among them, the key ecological functional areas are the important research subject of this thesis. In light of the strategic pattern of main functional areas, the structure of regional interests has undergone a major adjustment, which means that economic development pattern in restricted areas need a fundamental transformation. Such areas need to build up economic system rooted in main functions and enhance their self-sustainability. It also poses a new challenge for policymakers in these areas. Research on economic growth pattern of restricted areas has become an important topic in the study of China's regional economic theory.

This thesis employs the competitive advantage theory and the comparative advantage theory comprehensively. Specifically, on the basis of Porter diamond model, it constructs an economic development pattern suitable for the restricted areas.

This thesis takes Kangding City in Ganzi Tibetan Autonomous Prefecture as an example, and obtains the primary data through field investigations. Combining the field evidences with the theoretical foundation, this thesis makes comprehensive evaluation of the social and economic development conditions of Kangding City, analyzes its mechanism of regional development, studies the driving forces, and discusses how to build up a suitable framework of regional economic development in the restricted areas. This research argues that most ecological fragile areas are listed as prohibited or restricted areas under the main functional area planning, but restricted

exploitation is not equal to restricted development, which means that appropriate development patterns coordinated with the social, economic, and environmental resources are necessary for the restricted areas.

This thesis analyzes the economic growth potential of Kangding City from the aspects of institutional environment, opportunities, supporting conditions and related industries, and proposes some policy measures and suggestions to promote the economic growth of Kangding City, including exploration of the ecological compensation mechanism of hydropower industry, development of tourism culture industry, consolidation and enhancement of ecological agriculture and animal husbandry, and promotion of the Tibetan medicine industry.

Keywords: Restricted Areas; Economic Development; Kangding City; Porter's Diamond Model

JEL: O13; M20

Resumo

A definição de padrões de desenvolvimento regionais baseados em áreas funcionais principais constitui uma inovação estratégica, que não só está de acordo com as políticas regionais, mas também permite a inclusão das características específicas de cada região. A 8 de junho de 2011 as autoridades nacionais Chinesas publicaram o documento intitulado National Main Function Area Planning para reajustar, a nível nacional, as linhas estratégicas de desenvolvimento regional. Em 2013 a província de Sichuan editou e publicou o Main Function Area Planning que dividia as áreas de desenvolvimento restrito em dois tipos: áreas de produção maioritariamente agrícola e áreas funcionais ecológicas chave. O principal objeto de investigação desta tese é a segunda destas áreas. Tendo em consideração os padrões estratégicos das áreas funcionais principais, a estrutura dos interesses regionais tem sido sujeita a ajustamentos importantes, o que significa a necessidade de transformações fundamentais nos padrões de desenvolvimento económico das áreas de desenvolvimento restrito. Estas áreas necessitam de construir um sistema económico baseado nas funções principais e que seja autossustentado, o que constitui um novo desafio para as políticas públicas. Os padrões de crescimento económico em áreas de desenvolvimento restrito tornou-se um importante tópico de investigação na teoria económica regional da China.

Esta tese utiliza as teorias da vantagem competitiva e da vantagem comparativa como base do seu modelo conceptual. Mais especificamente, baseia-se no modelo do diamante de Porter para construir um padrão de desenvolvimento económico apropriado às áreas de desenvolvimento restrito.

Esta tese usa a cidade de Kangding na província autónoma Tibetana de Ganzi como caso de exemplo, tendo obtido informação primária através de trabalho de campo. A evidência recolhida no trabalho de campo combinada com fundamentação teórica, permite responder aos objetivos principais desta tese: apresentar uma avaliação das condições de desenvolvimento económico e social da cidade de Kangding, analisar os mecanismos de desenvolvimento regional e estudar as suas forças condutoras, e discutir como construir um enquadramento adequado ao

desenvolvimento económico regional de áreas de desenvolvimento restrito. Nesta tese argumenta-se que as áreas ecológicas mais frágeis são classificadas como áreas de exploração proibida ou restrita, mas que a classificação de exploração restrita não deve ser entendida como de desenvolvimento restrito. Isto significa as áreas de desenvolvimento restrito necessitam de padrões de desenvolvimento adequados, coordenados com recursos sociais, económicos e ambientais.

Esta tese analisa os diferentes aspetos relacionados com o potencial de crescimento económico da cidade de Kangding: o ambiente institucional, as oportunidades, as condições de apoio e as indústrias relacionadas, e propõe sugestões e medidas políticas para promover o crescimento económico da cidade de Kangding, incluindo a possibilidade de concessão de mecanismos de compensação ecológica à indústria energética, desenvolvimento da indústria do turismo cultural, consolidação e engrandecimento da agricultura ecológica e da produção de gado, e promoção da indústria tradicional Tibetana de medicamentos.

Palavras-chave: Áreas de Desenvolvimento Restrito; Desenvolvimento Económico; Cidade de Kangding; Modelo do Diamante de Porter

JEL: O13; M20

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Chapter 1: Introduction

1.1 Research Background and Significance

China is vast in territory but its regional economic development suffered with limitations by such factors as resource endowment, social and economic conditions and technical-economic policies. In specific areas, it is a challenge for local government to determine an economic development pattern, conforming to national and regional policies and, at the same time, integrated with local regional characteristics. Based on this, the main functional area strategy was definitely formed during the Eleventh Five-year Plan (2006 to 2010) on how to improve the economic and social development of China. The Five-year Plan is related to national economic and social development of the People's Republic of China, and it is an important part of the national economic development project in China. It makes rules for the key construction projects, the distribution of productive force and the important proportions in the national economy, and sets forth objectives and orientations for the development of the national economy. This national strategy and the general strategy for regional development, together form the space development strategic pattern of China national land. Then, the national and provincial main functional area plans are implemented gradually. Meanwhile, The National Twelfth Five-year Plan (2011 to 2015) proposed to implement the main functional area strategy, and issued the Proposal of the Communist Party of China (CPC) Central Committee for Formulating the Twelfth Five-year Plan for National Economic and Social Development. This proposal clearly indicates that, based on the requirements of the national economic scientific scheme, standard development processes are needed to properly limit the development strength and build stable, harmonious and effective national land space development pattern. It also suggested that in order to guarantee ecological balance, large-scale industrialization and urbanization development in main ecological functional areas should be prevented and also the development areas should be guided to strictly follow the main functional orientation requirements.

On June 8, 2011, the State Council issued The National Main Functional Area Planning to divide the national land into optimized development areas, major development areas, restricted areas and prohibited areas, according to development patterns and to re-adjust the national regional development guiding instructions. Among the four types of areas, restricted areas refer to areas with restricted resources and poor conditions for the economy and population while having a significant impact on the ecology. The main development targets in restricted areas include two functions, improvement of overall agricultural productivity and production capacity of ecological products. In these areas, it is restricted to carry out large-scale and high-capacity industrialization and urbanization projects, which will result in transforming the pattern of economic development. It is necessary to develop an economic system, which is based on the main functions, and also improve the vitality of the local economy. Thus, leaders in these areas are faced with new challenges.

Ganzi Tibetan Autonomous Prefecture is a Tibetan inhabited region and suffers with a weak ecological environment. Therefore, the development of Ganzi is faced with great challenges. The focus and direction for development of Ganzi Tibetan Autonomous Prefecture is to build functional areas by developing ecological industries and other industries satisfying the ecological functions. It does not need to give up integrated development in order to achieve this target. In the context of building main functional areas, large-scale industrialization and urbanization development processes in restricted areas would be restricted by corresponding ecological compensation, financial support (financial transfer from center government) and any other means by the government, so as to help achieve the ecological protection function in such areas. However, due to differences and obstacles in social, economic and cultural background, it is difficult to accomplish development in restricted ecological areas only with compensation mechanisms.

Kangding, the capital and economic center of Ganzi Tibetan Autonomous Prefecture in Sichuan Province will be taken as an example in this research to conduct full analysis of the development mechanisms and endogenous development patterns in restricted ecological areas. This research is of important theoretical value and practical significance for ecological environment protection and regional development research in these areas. During The Eleventh Five-year Plan (2006 to 2010), the whole Ganzi Tibetan Autonomous Prefecture was

classified as a national restricted area. Its main function was to maintain the biological diversity and provide ecological products. Under such planning, with adjustments from the corresponding national and local policies, patterns for ecological construction, economic and social development in Ganzi Tibetan Autonomous Prefecture will change greatly in the future. Therefore, Ganzi is now faced with great challenges to improve the capacity to provide ecological products, develop local characteristic economy and coordinate the intra-regional and inter-regional relations. As one of the areas inhabited by ethnic minorities, Ganzi has always been restricted by factors such as geographical conditions, factor structure and infrastructure. Its economic development lacks behind in Sichuan Province. Under the guidance of the new regional development directives, Ganzi will be given new development opportunities. Thus, an important task for this period is to reasonably utilize this opportunity. Kangding is the most vigorous city in terms of economic development in Ganzi with the largest development potential. So Kangding can be considered a representative case study to research the economic growth patterns in restricted areas.

The restricted ecological areas play an important role in the planning of main functional areas. Therefore, effective coordination of relations between regional development and main functions, such as the protection of the ecological environment, becomes an important issue concerning promotion of development of restricted areas and reasonable construction of main functional areas. Under the background of green, harmonious and sustainable development, it is of great value to achieve sustainable development of restricted ecological areas. Construction and development of these areas will, not only affect ecological balance in surrounding regions and cause great impact on protection of regional ecological safety, but also will affect the target of planning regional development and achieving an overall well-off society. In conclusion, how to achieve a win-win situation between ecological protection and economic development in restricted ecological areas, under the main functional areas strategy, has become the focus of attention and research for government and academic circles. Kangding City will be taken as the research object in this research. On the one hand, it is a scientific exploration of the areas with typical significance in main functional areas, and on the other hand, it serves as an effective implementation of the main functional areas strategy and realization of an overall well-off society.

Table 1-1 presents the definitions and functional orientations for the different areas – Optimized, Major, Restricted (Agricultural production and Ecological functional areas) and Prohibited areas – as described in The National Main Functional Areas Planning.

Table 1-1 Definitions and Functional Orientations of Different Areas in The National Main Functional Area Planning

Category	Definition	Functional Orientation
National optimized development areas	These areas have strong overall advantages and reflect the national competitiveness; these areas have a large economic scale, so they can promote and support the national economic development; these areas have a complete urban system and are able to build and develop super urban agglomerations with global influence; the internal economy in these areas is correlated; these areas have relatively strong scientific and technical innovation, being able to drive national independent innovation and improve the economic development pattern.	Key areas to strengthen national competitiveness and improve national development advantages; benchmark and model to lead the national overall economic and social development; key areas to achieve national independent innovation; important concentration areas for population gathering and highly economic development; and key bases for the country to support strong international division of labor to build economic development areas with high influence.
National major development areas	These areas have high-level economic development, can perform the effective independent innovation and have high development potential; the urban system in these areas formed to a considerable process of organization ; these areas have foundations for economic integration, and central cities can effectively drive the economic development in neighboring cities or regions and are able to be developed into new metropolitan groups or regional urban agglomerations; these areas are of important value to achieve harmonious development in different regions of the country.	The key growth pole to promote national economic development; the important bases to achieve the comprehensive strategy for regional development and improve regional harmonious development; national important concentration areas for population gathering and economic development

Table 1-1 Definitions and Functional Orientations of Different Areas in The National Main Functional Area Planning (Continue)

Category	Definition	Functional Orientation
National restricted areas (agricultural production areas)	These areas have good agricultural production basis. The major part of economy is based on agricultural production and the main function in such areas is to provide agricultural products as well as other industrial, ecological and service products; large-scale industrialization and urbanization development in these areas shall be limited, so as to maintain and improve the agricultural productivity.	Providing sufficient agricultural products for the country and favorable production and living environment for farmers; provide benchmarks for construction of new socialist countryside.
National restricted areas (ecological functional areas)	Natural ecological environment in these areas is of great importance to the survival and development of the whole country; at present, the ecological balance is damaged and the natural environment degenerates continuously; therefore, large-scale industrialization and urbanization development in these areas must be effectively avoided, so as to effectively maintain and improve the supply ability of ecological products in these areas.	Important areas to promote the national ecological balance and maintain harmonious development of the ecological environment; strong evidence of peaceful coexistence relationship between humans and nature.
National prohibited areas	These areas have distinctive natural ecosystems; they are natural gathering places of rare wild animals and plants, have abundant natural and cultural relics with important archaeological values; these areas are major ecological functional areas under special protection of the country and the government, so all the industrialization and urbanization development activities in these areas shall be forbidden.	The key areas for national natural and cultural resources protection; the habitats for survival and reproduction of rare animals and plants.

In 2013, The Main Functional Area Planning was prepared and issued in Sichuan Province. According to the development pattern, Sichuan Province divided the land space into three categories according to the actual conditions, i.e. major development areas, restricted areas and prohibited areas. Similar to the National Main Functional Area Planning, the Main Functional Area Planning in Sichuan Province includes guiding directives, planning targets, protection measures, etc.

Table 1-2 shows the definitions, scopes and functional orientations for the different areas as described in the Main Functional Areas Planning for Sichuan Province.

Table 1-2 Definitions, Scope and Functional Orientation of Different Areas in the Main Functional Areas Planning in Sichuan Province

Category	Definition	Scope	Functional Orientation
Major development areas	These areas have good economic development conditions with abundant resources; these areas have high development potentials for the economy and population; these areas are the most suitable places for major industrialization and urbanization development activities.	89 counties in 19 cities of Chengdu Plain, Southern Sichuan, Northeast Sichuan and Panxi region, and surrounding 50 point development cities and towns ¹ . The area is 103,000km ² , covering 21.2% of the total area in the whole province.	Important growth pole to promote the economic development in the whole province; provide important spaces and foundations for further industrial and urban development in the whole province; the provincial important concentration areas for population gathering and economic development.
Restricted areas (agricultural production areas)	These areas have large cultivated land with good conditions for agricultural production; they are suitable for industrialization and urbanization development. The primary development task must be to improve the overall agricultural productivity and large-scale industrialization and urbanization development activities shall be restricted to some extent in these areas.	These areas include five main producing areas of agricultural products, i.e. shallow hills in central plain of Sichuan Basin, low hills mountain areas in east of Sichuan Basin, mountain areas of western Sichuan Basin, low and middle mountainous regions in Southern Sichuan, and Anning River basin. In total, there are 35 counties (or cities) with an area of 67,000km ² , covering 13.4% of the total area of the whole province.	National bases used for breeding high-quality commercial pig; modern agricultural demonstration zones; forestry industry bases; major development agriculture areas; and the homeland for farmers to live and work.

Notes: The Chinese word "市" (shì) is usually loosely translated in English as "city". However, it really has several different meanings due to the complexity of the administrative divisions used in China. By its political level, when a "city" is referred to, it can be a:

- LV 1 (provincial-level):

Municipality of China, for example, Beijing

- LV 2 (prefecture-level):

Sub-provincial city, for example, Shenzhen in Guangdong Province

Prefecture-level city, for example, Shijiazhuang, capital of Hebei Province

- LV 3 (county-level):

Sub-prefecture-level city, for example, Jiyuan (directly under the administration of Henan Province)

County-level city, for example, Yiwu (under the administration of the prefecture-level city of Jinhua)

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-The Case Study of Kangding City in Sichuan Province

Table 1-2 Definitions, Scope and Functional Orientation of Different Areas in the Main Functional Areas Planning in Sichuan Province (Continue)

Category	Definition	Scope	Functional Orientation
Restricted areas (major ecological functional areas)	<p>These areas have bad ecological environment and restricted resources; these areas are unsuitable for large-scale industrialization and urbanization development activities; the primary development target in these areas are the improvement of the production capacity of ecological products. Industrialization and urbanization development in these areas shall be minimized.</p>	<p>There are 57 counties with a total area of 318,000km², taking 65.4% of the total area of the whole province.</p>	<p>Making significant contribution to natural ecological protection in Sichuan Province; important national protected areas for water supply, soil and water conservation and biodiversity; the main areas to provide ecological products in the province and areas with rich ecological resources; important areas to maintain ecological balance and important guarantee for construction of good ecological civilization and peaceful coexistence between human and nature.</p>
Prohibited areas	<p>These areas are national important protected areas with natural and cultural resources established according to laws and are under special protection and support from the country and the government; all industrialization and urbanization development activities shall be forbidden in these areas.</p>	<p>In addition to national protection areas, establish provincial and local-level natural and cultural resource protection areas, drinking water sources and other forbidden development areas established as required</p>	<p>These are important areas to protect the natural and cultural resources of the province; ecological homesteads for forests, wetlands and various rare wild animals and plants; With ecological security protection, properly develop the distinctive tourism resources and develop the local ecotourism industry.</p>

The main development tasks in restricted areas include two functions, improvement of overall agricultural productivity and increasing capacity of ecological production. Large-scale industrialization and urbanization development activities must be effectively restricted. Additionally, fundamental changes on economic development patterns in these areas must be prevented. It is necessary to define an economic development system based on the main functions and capable of improving the endogenous development capacity. Thus, the macro-economic development in these areas faces new challenges.

1.2 Research Dilemma

Compared with other countries and other cities in Sichuan Province, the economic foundation of the Ganzi Tibetan Autonomous Prefecture is weak and the economic growth is slow. The report presented in the Eighteenth National Congress, the CPC suggested it would be possible to build a well-off society in an all-around way by 2020. In order to achieve this target, Ganzi is faced with great challenges and an effective economic growth mechanism suitable for the main functional areas is in urgent need. By means of theoretical framework and a case study approach, this thesis conducts a comprehensive research for the economic development of Kangding City and proposes a new economic development pattern suitable for ecological functional areas.

However, according to the guidelines presented in the National Main Functional Area Planning, GDP will not be considered as the main performance assessment standard for local government in restricted areas. It does not mean that there is no need to develop restricted areas. Instead, there is a need to adopt new standards to assess the economic and social development levels. In this research, a set of new routes suitable for economic and social development in restricted areas will be designed and used for economic and social development in Kangding.

1.3 Research Questions

The thesis intends to build up an economic growth pattern suitable for restricted areas on the basis of Porter's Diamond Model. This research collects the primary and secondary data through field investigations as well as public sources. I have interviews and meetings with representatives from local businesses and government departments to obtain comprehensive information on existing issues of local industries as well as government policies. Finally, the field evidence is combined with the theoretical foundation, this thesis additionally proposes policy measures and suggestions for sustainable economic growth of Kangding.

In order to achieve the research purpose, the following questions will be answered:

Q1: The original industrial structure, which is dominated by hydropower and mineral resources, has created an investment-driven extension growth pattern, which will be difficult to sustain after the completion of resources exploitation in the future. Therefore, how to convert the original leading industries from the extensive growth pattern into an intensive one?

Q2: How to select and cultivate new leading industries to promote the regional competitiveness and improve the regional creation function?

Q3: How can a smooth institutional guarantee mechanism be established to assure the continuity and continuous effectiveness of the development in restricted areas?

1.4 Research Content and Framework

This thesis comprises seven chapters as followings.

Chapter 1: introduces the research background and research value, puts up the research questions to be answered and presents the structure of the thesis.

Chapter 2: includes the literature review on economic development cases in underdeveloped areas. On the one hand, it describes in detail the development situation of domestic and foreign regional economic theory, theoretical frameworks of related research on main functional areas and restricted areas in the country, and presents a summary of the

current research contents and current situations of the problem both in China and abroad. On the other hand, it presents some selected cases of economic and social development in underdeveloped and minority areas both in China and abroad and summarizes those experiences.

Chapter 3: describes the basic information about Kangding, including its basic conditions, economic and social development situation and characteristics of economic and social development.

Chapter 4: introduces the methodology. This chapter mainly describes the conceptual model, the case study method and the different types of data used in the research.

Chapter 5: analyses the economic growth potential analysis of Kangding. This chapter describes the existing problems of regional development in the restricted ecological regions in Kangding based on the discussion of the regional natural, social and economic conditions of such areas. This Chapter also clarifies the problems associated to regional development and their impact, and highlights potential factors to enhance the economic development of Kangding City. Based on regional competitive advantages of Kangding, this chapter gives a detailed analysis of development situations and problems of five competitive industries and the selection of economic growth pattern in Kangding.

Chapter 6: includes the discussion of the results from previous chapters. By using the diamond model presented previously, five endogenous development patterns and corresponding countermeasures and suggestions are put forward specifically by means of the theoretical and empirical analysis of regional development mechanisms.

Chapter 7: summarizes all findings, presents the conclusions and expounds on research limitations and implications for future research.

The technical approach followed in this thesis is presented in Figure 1-1.

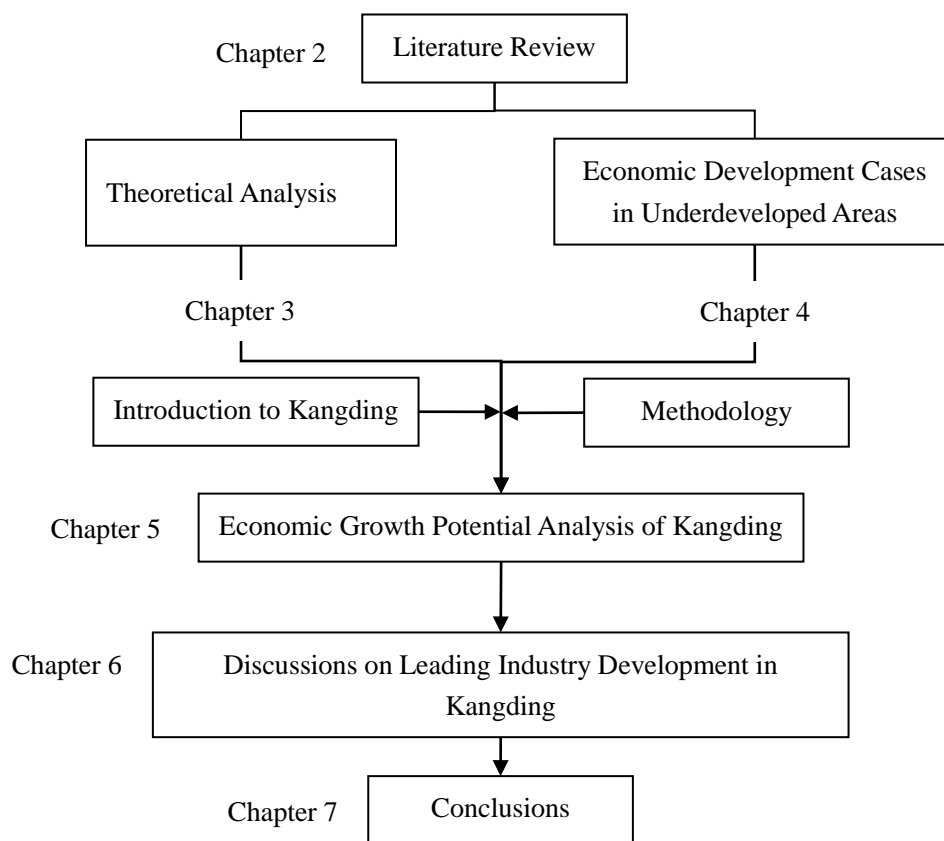


Figure 1-1 Technical Approach

Chapter 2: Literature Review

2.1 Theoretical Analysis

2.1.1 Theoretical Basis of Economic Growth in Main Functional Zone

2.1.1.1 Theory of Sustainable Development

In 1972, the United Nations organized and held the international Conference on the Human Environment, which established the standard concept of sustainable development. In 1987, the World Commission on Environment and Development published the book named as *Our Common Future*, which clearly defined the concept of sustainable development. Sustainable development means the development pattern and the concept to satisfy the life requirements of contemporary people without damages to interests of descendants which means the fairness between different generations. In 1992, the United Nations organized and held the Conference on Environment and Development, which officially promoted the sustainable development as the development strategy of all mankind, and further develops the theory into practice.

Sustainable development refers to the development pattern based on the joint and harmonious development of society, economy, population, resources and environment. The purpose is to maximize the life requirements of contemporary people and to achieve comprehensive harmony and unity of economy, society, culture, ecological environment and livelihood without detriment to future generations (Honachefsky, 1999; Zhang, 2009).

Therefore, the sustainable development theory and definition actually include these three basic factors, development, fairness and sustainability.

1. Development: Different from the conventional economic development model and the “zero growth model”, sustainable development is a new development concept established under current situations. Sustainable development has a primary purpose of promoting

economic growth and national progress. It recognizes development rights of each country and region and puts forward the idea that only development can solve problems. At the same time, environmental degradation poses a major threat to economy, resulting in a vicious circle between economy and environment. Therefore, development is the first task for developing countries. Only high level of development can eradicate poverty, improve the ideological consciousness, enhance wealth accumulation and strengthen scientific and technological innovation capacity, so as to further achieve ecological balance and promote the healthy development of environment. Development shall not be single-orientated, instead it shall be multifaceted. Its main content includes economic growth, transformation of development patterns, improvement of population quality, achievement of basic requirements, enhancement of resources carrying capacity of the earth, harmonious integration of economic development and ecological protection and so on.

2. Sustainability: Although the various regions should pay attention to economic growth, the reconciliation of development and resource carrying capacity should be considered in the meanwhile, moreover, the economic growth can provide the continuous financial support to the local natural resource protection and construction so as to avoid any resource declination and crisis. Human survival and development cannot be separated from the abundant natural resources and excellent ecological environment. Sustainable development focuses on the construction and maintenance of the environment and it suggests developing and using non-renewable resources in a controlled manner. Sustainable development theory puts forward that human being comes from nature and is part of nature. We shall not try to control nature, instead we must realize social development and human prosperity on the basis nature protection which means we should protect nature from the true sense and make possible the harmonious development of man and nature.

3. Fairness: This criterion includes two meanings, time fairness and spatial justice. Time fairness means that both life requirements of contemporary people and development requirements of further generation shall be satisfied. Natural resources and environment capacity are limited. Contemporary people shall not be self-centered considering only current consumption and development and depriving the rights and opportunities of descendants.

Compared with descendants, contemporary people have absolute competitive advantages in exploring and using natural resources. However, resources are limited. Therefore, contemporary people shall consider interests of descendants when meeting their own needs and shall not damage interests of descendants due to the current economic development. people to pursue a better life. Development rights of other regions shall not be damaged due to economic development of a certain region.

The sustainable development concept is different from the conventional development concepts. However, this does not mean that conventional development concepts are to be totally denied. Conventional development concepts emphasize more on economic growth and relatively ignore the harmony between social development and the maintenance of ecological balance, while sustainable development concept strikes a balance between them. The sustainable development concept further improves the connotation of “development”, from a triune development concept of economy, society and environment, and highlights the development concept of harmonious development between human and nature. It proposes that resources and environment are limited, if we pay all attention to economic development and ignore the environmental carrying capacity during development, a series of resources problems will certainly occur, limiting and undermining further development of the society. Therefore, economic development shall always abide by objective laws, improve the concept of resource conservation, respect and protect the nature and improve economic level of each region by intensive development.

Sustainable development focuses on long-term development. It means that we shall consider the economic benefits as well as the social and ecological interests during production and living, we shall consider things in the long run when we realize immediate interests, so as to achieve long-term stable development for regional economy (Man, 2011).

2.1.1.2 Theory of Ecological Economy

In early 1970s, Boulding defined the ecological economy in Economics as a Science to address many developmental problems in real life. Ecological economy is a new concept, method and purpose (Boulding, 1970). Then, the Club of Rome described this theory in detail in the Dialogue about Wealth and Welfare in early 1980s and indicated that ecology belongs

to the expanded economic category and is the foundation to form economics. Ecological economy achieved the effective integration of economics and ecology, the two concepts being inseparable, the existence and growth of wealth depends on a good ecological environment. The development pattern focusing on economy and ignoring ecology will bring negative values or “damaged” values for the society. If there is no advanced or simultaneous human development, there will be no economic development. We can say that ecological economy is formed on the basis of the surging population in the post-industrial society, the deterioration of environment, and the over-saturation of the industry. However, contemporary development requires combination of the omni-directional and the multi-dimensional, social and economic development and ecological environment protection (Tang, 2013).

The ecological economic theory is specially used to research how to ensure mutual harmony and development between ecological environment and economic development. The basic contents of the ecological economic theory mainly include system, balance and benefit. Specifically, the ecological economic system is the carrier, ecological and economic stability is the driving force, and ecological and economic interests are the purpose. They are of great significance to further promote local long-term and sustainable development (Porter & Linde, 1995).

The ecological economic system includes various elements and its functions and organization are unique, fully embodying the compositionality, complexity and unity of opposites of ecological economy. Ecological economic balance means the guarantee of harmony and mutual improvement between ecological environment and social economy. It has strong compositionality, it can not only help test the balance and the sustainability, but also help promote harmonious development between human society and nature. Ecological economic balance is a dynamic (instead of stable) balance. It is formed under ever-changing and developing environment to effectively achieve rapid and harmonious social and economic development. Ecological economic benefits refer to benefits of ecological and economic joint development. During social and economic operation, the ecological economic benefits shall be regarded as guidelines to help achieve overall positive effect for society and ecology, so as to minimize external influences during economic development (Zhang, 2009).

2.1.1.3 Theory of Factor Endowment

In the early 1920s, Ohlin and Heckscher defined the factor endowment theory, stating that products in different regions are different in costs and prices due to differences of production factor supply in different regions or countries, resulting in the emergence and development of regional trade (Heckscher, Ohlin, Flam, & Flanders 1991). That is to say that the regional factor endowment difference is the basic reason for regional division of work and regional trade. In addition, Heckscher presented the preconditions for price differences of products and services (Heckscher et al. 1991). First, regional production factor endowment is different. Second, production of different commodities requires different combinations of production factors. Ohlin inherited and developed the idea and theory of Heckscher and compiled the book *Interregional and International Trade*, providing systematic description of the Heckscher- Ohlin (H-O) factor endowment theory (Bawa & Bradford, 2001).

The core point of H-O factor endowment theory is that differences of production factor endowment lead to differences in product and service prices. Therefore, different regions and countries can sell products, which are made from local rich factors and with low prices in exchange of products, which are made from local scarce factors and with high prices, so as to allocate resource efficiently and maximize benefits each other. In short, the basic idea of the theory is to "avoid weaknesses and give full play to superiority" (Man, 2011).

According to the different production factors, commodities can be divided into capital-intensive products, labor-intensive products, skill-intensive products, etc. Generally, trade flow in different regions and countries is from factor endowment-intensive regions to factor endowment-scarce regions. For example: if a region is short in capital but rich in unique technologies, it will tend to produce technology-intensive commodities and sell these commodities to regions with technology shortage. Conversely, if a region is rich in capital but short in technology, then it will tend to produce capital-intensive commodities and sell these commodities to regions with insufficient capital. In this process, both trading parties can make use of their advantages and achieve mutual benefit and win-win results.

2.1.1.4 Theory of Competitive Advantages

The theory of comparative advantage, represented by David Ricardo, is the cornerstone

of traditional international trade theory. It holds that the competitive advantage of a country's industries or enterprises comes from the comparative advantage in production factors, and emphasizes the externality and static state of comparative advantage. But the comparative advantage determined simply by resource endowments does not necessarily have a competitive advantage in international trade (Hong, 1997). From the 1980s to 1990s, Michael E. Porter, a strategic management scientist at Harvard Business School, systematically put forward the theory of competitive advantage based on the theory of comparative advantage, which explains how to create and maintain sustainable comparative advantage (Fu, 1999).

The research on competitive advantage from Professor Porter has undergone an evolution process from the enterprise and industrial level to the national level, from participation on domestic competition to participation on international competition (Yuan, 2002). In the early 1980s, Michael Porter has proposed the concept of comparative advantage in his books *Comparative Strategy* and *Comparative Advantage* (Porter, 2004a, 2004b). Later on, by the middle of the 1980s, he began to improve his theoretical framework by taking the international competitiveness into consideration in his book about *Competition in Global Industries* (Porter, 1986). In the 1990s, based on his previous research Porter published *The Competitive Advantage of Nations* (Porter, 1998). In this book, he systematically put forward the theory of competitive advantage in the competition advantage of multinational industry, and constructed the corresponding structure and research directions. Based on his study, he concluded the determinant factors for a certain industry's competitiveness, including factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry, chance and government. The first four factors are the basic influencing factors and the latter two are external auxiliary factor. These factors together form a diamond-shaped structure, which is called the Diamond Model. Based on the analysis of this model, Porter believes that the competitive advantage of a country comes from the cultivation of advanced elements, industrial chain agglomeration, enterprise strategy and fierce domestic competition. In addition, in order to transform the factor inferiority into the advantage, the enterprises should have the necessary skills and competitive pressure for innovation, while the government should act as the catalyst and challenger of market competition and play a

constructive role in improving the competitiveness (Zhang, 2001).

Porter's theory of national competitive advantage provides a new analytical paradigm for the study of international competitiveness, the Diamond Model, which emphasized the importance of dynamic factors and innovation in the formation and development of the competitive advantage in a country, and also concerned the significance of domestic factors to competitive advantage. This theory explores and analyzes the micro, meso and macro factors that form and maintain the competitive advantage of a country, enriches and develops the content and theoretical analysis of the theory of competitive advantage of international trade (Yao, 1998).

2.1.1.5 Theory of Spatial Regulation

With continuous development, people are further aware of the existing contradictions between human and environment, so that the theory of "spatial regulation" is established and developed. After the industrial revolution, people are gradually aware of the problems of urbanization, including urban population boom, ecological environment deterioration and rapid urban expansion. Such a situation results in development of the "spatial regulation" theory, providing routes for next economic development. The main content of the theory is that countries should take administrative means to encourage or limit economic activities of companies or individuals in order to obtain public benefit, so as to maximize and equalize related interests (Barbera & McConnell, 1990).

The theory of "garden city" leads to the exploration and analysis of spatial regulation. This theory puts forward an economic development pattern focused on cities with outward radiant development and on how to limit unrestrained urban expansion, and prepares a set of methods and routes to solve urban development problems. Meanwhile, it also adds new ideas such as the increase of urban green spaces in the overall urban development planning (Howard, 2010). At the end of the Second World War, capitalist countries were actively devoted into construction and development, leading to unrestricted urban expansion and development, stimulating the interests of people to research the spatial regulation theory. Among various researches, the most famous research is the research achievements and practical experience in this field in Great Britain and America. In 1947, Britain adjusted the

town and country construction planning, and decided that greenbelts should be constructed to further limit unrestricted expansion of urbanization (Jaffe and Palmer, 1997). America put forward the theory of "smart growth management" and suggested adding the ecology thought into development planning, achieving harmonious and stable development between economy and environment by means of the spatial regulation function, and establishing infrastructure construction standards in actual construction to effectively limit further development pattern of cities (Jorgenson & Wilcoxon, 1990).

With the emerging continuous social and economic development and more complex urban problems, meanings of spatial regulation have been further developed. Currently, the spatial regulation theory mainly includes two assumptions. First, different regions have different spatial regulation requirements, i.e. specific spatial regulation requirements are needed to properly carry out in optimized development, major development, restricted and prohibited regions according to different environmental and resource conditions in different regions. Second, spatial regulation coordination among different regions is required, i.e. coordination of trans-regional spatial regulation departments and activities (Guo, 2013).

2.1.2 Domestic and Foreign Research Status

2.1.2.1 Foreign Research Status

International research on spatial planning and specific region management have a long history. In 1993, the European Union and each member country passed and established the planning of "European Spatial Development Perspective", so as to further promote social sustainable development, achieve regional harmony and unity, and lead to intensive development (Macleod & Goodwin, 1999). In 1999, Honachefsky put forward the concept of "ecology first", indicating that unordered urban expansion and serious destruction of the ecological environment are caused by taking the potential economic values of land prior to the ecological process. (Honachefsky, 1999) Therefore, this belief emphasized that regional ecological values and service functions should be combined with land use policies, so as to further promote and reach social sustainable development (Chen, 1995).

Cui, Wei, and Chen (1999) state that the first spatial planning laws - the Saxon Building

Act was issued in Germany in 1900. Germany is one of the earliest countries in the world to perform regional planning. During the years from 1945 to 1965, Germany entered an overall development phase to prepare regional planning, and the regional planning system began to be perfected gradually by each level of government (Cui et al. 1999). According to Guo (2013) the spatial planning of Germany was divided into four categories, federal, state, prefecture and township levels. The reason and the target were to promote regional harmonious development. Zhang (2009) summarized the German planning system which include following features: accomplishment system, specific target and clear responsibilities, good legal fundamental, public participation willing, good utilization of resource, well-protected environment, sustainable development, strong feasibility.

Healey (1999) took the Tennessee river basin as an example to research the American spatial planning. According to their results there is no official management department in America to perform effective planning and management for land development and utilization. Instead, America set up committees with members from different states and cities to manage land development and utilization. The main duties of the committees were planning, coordination, discussion and consultation. In the 1920s, America carried out an integrated planning and management for the Tennessee river basin. Since then, the ecological environment in this area has improved considerably. Therefore, the case became one of the successful ones for regional planning in the world. Gao (2006) states that since the 1970s, America has performed effective planning for economic development in each region, and timely adjusted regional development measures according to local conditions, so as to provide objective strong foundations for analysis of regional economy, clear investment allocation, formulation of regional policies and performing regional planning. Zhang (2009) points out that since the beginning of the 21st century, the spatial planning of each state in America has been aimed at improving the living standards of people. The features include first, planning construction and implementation of specific schemes are targeted, and second, the strict laws are there, but the flexibility and feasibility should be considered in place (Zhang, 2009).

According to the research by Mao (2000) for Japan, the definition of land spatial planning strategy by the Japanese government included overall development, utilization and

protection of land by spatial planning to coordinate the conflicts of interests, and effective relationship between the central and local governments. In order to achieve a rationalized industrialization development layout, Japan established a special complete land planning system (Mao, 2000). In the 1950s the Japanese government proposed performing regional planning to effectively use regional resources, and develop and improve local economy. In the 1960s, Japan implemented a national comprehensive development plan and divided the country into "overcrowded areas", "development areas" and "treatment areas" according to the development level and resource input of different regions. Due to the high-level development in "overcrowded areas" and shortcomings such as insufficient development space and low resource utilization ratio, strategies were defined to restrict further urban development and expansion in these regions. In 1988, Japan added national comprehensive development planning once again to get the participation of local governments, enterprises and individuals, fully mobilize the public to participate in the regional construction, and stipulate that the country and the government would provide support and carry out coordination works.

Fang (1999) believed that the regional planning of China has some similarities with that of Brazil. The regional planning of Brazil mainly includes the following types of areas: scattered development areas, controlled expansion areas, active development areas, areas to be developed and ecological preservation areas. This division is similar to the division of the main functional areas in China. Yuan (2007) described in detail the characteristics of these different areas. Scattered development areas mainly refer to areas with rapid development of the urban economy but significant deterioration of ecological environment (Yuan, 2007). The process and scale of development in such areas shall be effectively limited. Controlled expansion areas refer to areas with good social and economic structure and vigorous urbanization process. Concentrated industrialization development in such areas should be avoided to prevent excessive economic expansion. Active development areas refer to areas with backward economic development. Guidance and tracking for development from the government are necessary for such areas to accelerate development. Areas to be developed refer to areas which are unsuitable for human settlements and have not yet been developed and used by humans. In such areas, migration of population should be stimulated. Ecological

preservation areas, as the name suggests, refer to areas to be protected. The main purpose of this division is to protect natural resources and maintain ecological balance. Productive utilization and development should be avoided.

2.1.2.2 Main Functional Areas in China

The relevant research in China is mainly embodied in the theory of main functional areas, the division and significance of main functional areas, the strategy supporting the development of main functional areas and the impact of the division of main functional areas on regional economic development.

(1) Significance of Main Functional Area Construction to Regional Harmonious Development

According to Chen and Zhu (2006), the division of main functional areas can not only contribute to the promotion of regional specialization and cooperation but also help achieving the optimal allocation of resources in space. Wang (2006) states that the construction of main functional areas can help promote the orderly movement of production factors, establish and improve the regional division systems, standardize the order of regional development and achieve active and effective spatial governance (Wang, 2006). Zhang and Wang (2006) point out that construction of main functional areas can effectively promote the standardization of urban scale development, improve the rationality of spatial development structure and establish an innovative regional management model. Deng and Du (2006) advance that corresponding regional policies should be implemented based on the characteristics and differences of the development in different areas, so as to promote the harmonious development of the regional economies, promote the sustainable development in an all-around way and promote the harmonious coexistence between human and nature. Han and Chen (2006) put forward that a reasonable economic layout shall be formulated to ensure that the distribution of population corresponds to that of natural resources, so as to realize a spatial development pattern with comprehensive harmonious and sustainable development of humans, resources and the environment.

(2) Regional Policies Supporting the Development of Main Functional Areas

The Development Research Center of the State Council (2008) conducted a

comprehensive research specifically on the formation mechanism of main functional areas and pointed out that in the management of different main functional areas, the differentiated governance model and classified management policy should be adopted. For example, in optimized development areas, it should mainly rely on the market function, the government regulation plays a major role in prohibited areas, moreover, in major development areas and restricted areas, the market enhancement and the government regulation should be balanced. The Land and Region Research Group of the Academy of Macroeconomic Research (2006) reported the design features of classified regional policies in the four main functional areas which contain the standardization in optimized development areas, the promotion of infrastructure and social security in major development areas, the financial support and subsidy in restricted areas and the financial maintenance and supervision in prohibited areas. Lai and Cai (2007) put forward the criteria and methods to further classify regional policy tools, including financial allocation, premium loans, tax free, infrastructure, industrial park, prohibitions, licensing systems and taxation, and, accordingly, proposed a selection and allocation model for the tools above mentioned, which are the policy tools combination are the first five tools for major development areas, the last three points with preferential loans for optimized development areas, allocation, tax concession, infrastructure and prohibitions for restricted areas, allocation, infrastructure and prohibitions for prohibited areas. Du (2008) defined the concept of policy equilibrium for the construction of main functional areas and creatively introduced the equilibrium analysis paradigm of microeconomics into the policy research. He emphasized that the supply and demand of policy should be adjusted to achieve the maximum policy efficiency and the optimal allocation of policy resources based on the actual effect of the regional policy which is similar to the price in commodity market. At the same time, he also suggested effective improving and promoting measures for the initial construction of the main functional areas. The China Institute for Development Planning at Tsinghua University (2009) identified relevant strategies and methods for construction of main functional areas and differentiated policy suggestions suitable for various main functions. Xu (2011) conducted a deep analysis for the theoretical basis of fiscal policies to promote the construction of main functional areas and gave relevant suggestions for these fiscal policies in China, such as promoting the equalization of basic public services in various main function

areas, innovation of interregional ecological compensation mechanism, leading population mobility between main functional areas, establishing green fiscal and tax policies to meet the construction demands of main functional areas and formulating different fiscal policies for different functional areas. In the exploration and study of space supervision, main functional areas and related land policies, Du and Zhang (2011) conducted targeted research and analysis for land policies of main functional areas, and accordingly put forward effective suggestions on policy to further promote and improve the construction of main functional areas.

(3) Impact of Main Functional Areas on County Economic Development

Based on the foothold of county economic development, Liu (2010) analyzed opportunities and challenges brought by construction of main functional areas, and indicated that this construction not only brings new challenges to regional economic development but also effectively promotes a reasonable division of tasks and harmonious regional development, achieve the transformation of the economic development pattern, optimize the economic development structure, improve the efficiency of resource consumption and create new conditions to further explore new development ideas. Ma, Zhu, and Qiu (2011) reconstructed the county planning system from political, economic, ecological, cultural and other aspects according to the differences of main function positioning, and established a targeted evaluation system of political achievement, tax sharing, stimulating and security mechanisms corresponding to specific situations to further promote the construction of main functional areas and to complete the planning objectives. Hu (2011) suggested taking compensatory finance and taxation policies for ecological restoration and maintenance, ecological migration and relocation, optimization of industrialization development and equalization of public services, so as to promote harmonious development of the restricted area under "Post Era of Three Gorges". Song (2013) presented schemes, such as the development of characteristic ecological agriculture, tourism, construction of basin hydropower and enhancement of the intensity of regional poverty alleviation and development, for promoting the economic development and increasing the selection of economic development routes according to the conditions of the "Zhenguanzi" restricted areas in Anshun City, Guizhou Province. Pu (2010) generally identified the middle and upper areas of the Jinsha River as forest ecological areas,

biodiversity protection areas, grassland and wetland ecological areas by classifying them according to regional practical situations. Starting with the development of bearable characteristic industries in restricted areas, he put forward to focus on developing ecological tourism, bio-industry and hydropower industry in these areas to accomplish harmony between the economy and the environment.

Cai (2011) states that it exists comprehensive struggling and leveraging relations between "restricted development" and "breakthrough development" at specific practices. Thus it is being necessary to establish a multi-level and overall benefit compensation mechanism, integrate the resources and industries within the region, extend the industry chain of leading industries and establish and improve the policy system of breakthrough development; these are the conditions to effectively solve the contradictions between "restricted development" and "breakthrough development" and further promote and complete the comprehensive, harmonious and sustainable development of the regional economy. According to Gao (2014) the patterns suitable for development of restricted areas in Ningxia include the agriculture industrialization pattern, the ecological economy pattern, the ecological migration pattern, the driving pattern of the leading industry and the new urbanization pattern.

Yang (2014) evaluated the ecological vulnerabilities (extremely vulnerable, highly vulnerable, moderately vulnerable and slightly vulnerable) of Ningxia restricted areas by using factors such as ecological stress, ecological sensitivity and ecological resiliency. She also presents the development patterns of Ningxia restricted areas, i.e. development pattern subject to ecological compensation, development pattern based on ecological migration, development pattern driven by infrastructure construction, development pattern in relation to ecological grass-animal industry and modern agriculture development pattern. According to the case study of the Pingyuan County of the Guangdong Province, Yan (2012) presents the following policy suggestions: vigorously construct an industry system based on the county characteristics, actively promote the development of food industry and ecological agriculture to be the county pillar industries, make the best out of the driving effect of pioneer industries, and promote the further development of modern traditional Chinese medicine industry to carry forward the advantages of local resources. Xu (2014) analyzed the restricted areas in

western minority areas and came to the conclusion that development pattern in these areas is relatively primary, primitive and extensive. In order to develop western minority areas, it is necessary to prevent the overuse of resources and environment, giving full play to the advantages of local industries and gradually improving the infrastructure construction to achieve effective transformation of the development pattern. Shan (2013) argues that restricted areas are always the ones with low economic development, so the central government shall pay more attention to the development of such areas. Local industries shall be vigorously developed and the national compensation mechanism shall be improved on the basis that resources and the environment are well protected, so as to guarantee the stability of their development and further narrow the development gap between restricted areas and main functional areas. Liu (2010) researched the Dashanbao Restricted Area of the Yunnan Province and advanced the idea of spatial harmony between economic development / social progress and natural resources, with development being pursued simultaneously with protection.

2.2 Economic Development Cases in Underdeveloped Areas

2.2.1 Economic Development Experience in Japan Underdeveloped Areas

Japan at a specific historical period (after the end of World War II) can be considered as a research case. According to the data obtained from the study of Yang (2013), the Japanese agricultural production index fell sharply during that period, down to only 57% of that in 1930, and the yield of all kinds of crops and agricultural products declined sharply so the income gap between workers and peasants widened a lot, resulting on an obvious dual economic structure. After the World War II, Japan's economy and people's livelihood suffered a lot because of long term of wars expense and no sufficient capital support to its state economic development. Japan can be identified as an underdeveloped area by then. The development strategies taken by Japan during this period include: policies and regulations, industrial diversification and rural industrialization, the development pattern of "One Village, One Product" and education equality.

(1) Policies and Regulations Support

Since the 1950s, the Japanese government issued a series of local development policies for the backward areas, such as the Promotion Law for Industrialization Development in Backward Areas. In addition, for some barren lands like islands and hills, Japanese government also issued corresponding development laws, such as the Island Revitalization Act. To perfect the legal system, the Japanese government formulated a series of targeted regional development policies according to different development objectives. Relevant government departments have also taken corresponding measures and developed a special development program according to the actual situation (Lv, 2009).

(2) Industrial Diversification and Rural Industrialization

Based on situations of discordant industry structure, abnormal development of industry and underdevelopment of agriculture, the Japanese government put forward an industrial diversification policy and implemented the corresponding rural industrialization in rural areas with the transference of industrial enterprises to the areas lacking industries, especially those underdeveloped. In 1971, the Japanese government issued the Promotion Law for Industry Introduction in Rural Areas. Since then, the government has put into practice a series of policies to promote the process of introducing industries in rural areas and poverty-stricken areas. Talents, capital, advanced technology, management experience and other advanced resources were introduced to underdeveloped areas, increasing employment opportunities in local areas, playing a positive role to the development of local economy.

(3) Economic Development Pattern of "One Village, One Product"

In 1979, Morihiko, the former governor of the Oita Prefecture in Japan, created the development pattern of "One Village, One Product". "One Product" can be a specialized product or a service product. This pattern advocates that governments at all levels shall make full use of local resource advantages to find or produce iconic and characteristic products of the region, as well as to establish representative local development projects, so as to improve local people well-being, and help the country to realize the great rejuvenation (Zi, 2009).

(4) Popularization of Education in Underdeveloped Areas to Achieve Education Equality

The Japanese government started setting up the system of compulsory education for the first time with the Meiji Restoration. This system attached great importance to promoting the transformation of education resources within underdeveloped area, thus to make sure the school-age children could get good education and achieve the education fairness. In 1952, the Japanese government reenacted the National Treasury Charge Law for Compulsory Education Funds, stipulating that expenses of teaching books should be paid by the central government. Besides the teaching books, the rural compulsory education shall be paid by the different and collective levels, central government, counties, and towns. In addition, the Japanese government has successively issued a series of laws and regulations to achieve the balanced development between urban and rural compulsory education, such as the National Treasury Charge Law for Facilities in Compulsory Education Schools.

2.2.2 Economic Growth Strategy Practice in the Chinese Minority Area of Xiangxi

The Tujia and Miao Autonomous Prefecture of Xiangxi belong to the Hunan Province and are located in the junction of Hunan, Hubei, Chongqing and Guizhou. This Prefecture is the only region among 14 prefectures in the Hunan Province that can be incorporated into the scope of China Western Development. It is not only the key area of development in western Hunan Province, but also the key object of poverty alleviation, according to the data available at the official website of the People's Government of Xiangxi Tujia and Miao Autonomous Prefecture. Concerning the economic developmental status of Xiangxi, Rao (2014) summarized that the tourist resources are abundant because of the existence of 36 national scenic spots within this province. Xiangxi is abundant in mountain resources, being dominated by mountainous topography. Moreover, Xiangxi owns rich mineral resources, being named the "Manganese and Vanadium Sea".

In 2014, Xiangxi achieved a GDP of RMB 46.94 billion, with an increase of 11.2% compared to the previous year (Statistic Bureau of the Hunan Province, 2015). Xiangxi's economic got well developed with multiple different patterns, then it has initially formed the cluster of industries which mainly relies on the minerals, food, biological pharmaceutical and tourism commodity processing industries. The infrastructure construction in Xiangxi has been

improved, e.g. the steady implementation of expressways and highways construction, rural road construction and the commencement of the airport extension (Rao, 2014).

The measures taken for economic development in Xiangxi can be summarized as follows.

2.2.2.1 Promoting the Transformation and Upgrade of the Mining Industry

According to the official website of the People's Government of Xiangxi Tujia and Miao Autonomous Prefecture, Xiangxi owns rich mineral resources with 63 kinds of minerals and 485 minerals mines being explored. To realize the sustainable development of the mining industry, Xiangxi has carried out integration and regulation measures to deal with problems such as disordered development of the industry, environmental pollution, and frequent safety accidents.

Following the strategy requirements of 358 Plan by the Bureau of Land and Resources and the need to "make a significant progress within three years, achieve a major breakthrough within five years and restore the mineral development pattern within eight years", the Xiangxi government actively carried out technical research and development and comprehensively implemented new geological prospecting mechanisms.

By improving the coordination and giving support to electricity price, credit, environment etc., and speeding up the implementation and expansion of projects of leading enterprises, Xiangxi takes the transformation development as the main direction of mining companies, and devotes to building world-class manganese zinc enterprises. Besides, to break impediments such as the insufficient production capacity, high production costs and weak competition assets, the Xiangxi government vigorously promoted systematic innovation to improve energy reserve capacity, enhance output efficiency and improve production patterns.

Moreover, Xiangxi also took measures to develop a sustainable economy. Xiangxi increased the investment on scientific research and strengthened the research on new processing technologies. It also reduced the tax burden on the mining recycling economy, and regulated that "enterprise with investment of more than RMB 1 million shall be exempted from 50% of resource compensation tax within 3 years, and enterprises with investment more than RMB 5 million shall be exempted from resource compensation tax within 3 years" (Liu,

2012).

2.2.2.2 Actively Developing the Local Agriculture

The development of agricultural industry in Xiangxi focuses on local industries. Equal attention is paid to the product quality improvement and the development of new products and technologies. At present, Xiangxi has initially designed a development pattern, based on tea industry, tobacco industry and other local pillar industries.

With the soil being rich in selenium, Xiangxi is one of the three natural selenium-rich belts. The main fruit types are rich on selenium component. More than ten departments jointly form the Citrus Fruit Bureau, with services specifically directed to orchard companies and being responsible for Xiangxi's coordination and management of production, processing and sales. Regarding brand design, Xiangxi citrus industry takes the ecological characteristics and the organic selenium component as the development path and adopts an unified standard to design the scale planting and sales process.

Strengthening the product quality is always the direction and goal of industrial development in Xiangxi. Meanwhile, the local government takes the construction of a new agriculture production system as the most important task. It devotes its main efforts to developing a scientific and safety new agricultural production system. In the process of industrialization, up to 2013, there were more than 600 factories related to agricultural production in local place with a total income of more than 5 billion, an increase of 50% over the same period last year. Besides, these factories allowed creating nearly 200 enterprises of related industries. For example, more than 4 million tourists have visited Xiangxi within only 1 year in 2012, bringing in a total income of nearly 500 million of investment in tourism projects, with an increase of 40% compared to the previous year in 2011.

New technology for the early planting of corns and new planting of rice, as well as scientific planting methods have been fully implemented in the autonomous prefecture. The new scientific management methods have been applied to the land with nearly 3500 km², and is now being used by most agricultural producers. More than 320 varieties of new agricultural products have been introduced, and local agricultural producers, involving more than 400 thousand related personnel, almost all apply the newly developed seeds. As a result, not only

the income of farmers has been increased, but also the knowledge and education of local people have been improved. Besides, from the management perspective, the Agricultural Product Quality and Safety Regulatory Agency and corresponding management mechanisms based on legal system have been established in related local places. Legislation, law enforcement and law abiding are indispensable. The implementation of good mechanisms obtains good resonance in local places and shows a good development prospect.

2.2.2.3 Strongly Developing the Tourism Industry

Xiangxi tourism industry started in the 1980s. During the following years, the Hunan Provincial Party Committee and the provincial government proposed to build and develop a Xiangxi tourism economic circle which takes tourism as the core of the total chain to promote the economic growth within the upstream and downstream. In recent years, based on the concept of "revitalization of the prefecture by cultural tourism", Xiangxi has defined the tourism industry as the strategic leading industry, devoted to drive the development of the regional economy, and has constructed a series of world famous ecological cultural parks and international tourist destinations so as to fully and comprehensively achieve the transformation and upgrade of the tourism industry.

Since the establishment of the Xiangxi Tourism Economy Cooperation Alliance in 2009, Xiangxi holds the annual conference on tourism economic cooperation zones. From March 2012, the Hunan provincial government has taken opportunities of development and combined current social needs to introduce the local cultural background and development prospect in exhibitions, investment promotion activities and creative development meetings. In 2014, Xiangxi totally received 28.11 million tourists, and tourism revenue reached RMB 17.45 billion in total. Xiangxi became one of China's top ten tourist hot spots.

2.2.2.4 Strengthening Ecological Protection and Constructing an Environmental Friendly Xiangxi

Xiangxi local government focus on the maintenance and construction of ecological environment, actively promoting the development and construction of an ecological Xiangxi and paying attention to coordinated development between urban and rural areas. To achieve a synergetic development of economy and ecology, the government of Xiangxi promoted the

implementation of a green project construction. The key construction factors mainly include returning farmland to forest, ecological public welfare forest, treatment of desertification as well as afforestation and beautification of cities and towns. At present the forest coverage rate in Xiangxi reached 70.24% of the total area.

To further promote regional cooperation, make better use of market functions of tourism industry in regional tourism cooperation, promote tourism enterprises cooperation in the area and build the tourism brand of Xiangxi, the Tourism Economic Cooperation Zone held a Meeting in September 2011 to close the cooperation between the tourism enterprises and officially released the slogan and logo of the Xiangxi Tourism Economic Cooperation Zone.

In the following period since Aug 2012, to comprehensively promote detailed construction of ecological civilization for avoiding the ecology destroy and enforcing it recovery even destroyed, the government has successively prepared and issued a series of important documents. This documents clearly stated that the ecological environment is the strategic capital and resource of economic development. Thus, the ecological resources should be well protected, then the series of ecological products can be cultivated, developed and utilized. To protect plant and animal resources and maintain the balance of ecological environment, the Xiangxi Prefecture officially stated that the special vegetation and other objects of natural protection in the natural conservation area shall not be damaged or hurt, and great effort shall be paid to the protection of original environment.

The project of returning farmland to forest started in 2011, and, during five years, the prefecture achieved the target of returning over 2700km² farmland to forest. This project proposed that 30% of the whole land should be ecological forest, multi-functional forest should be 50%, and economic forest should be 20%. The protection of local precious trees is taken as the main task together with the the joint development of ecosystem and economy. Returning farmland to forest promotes the reasonable use of land resources and improves the industrial structure of rural production. Thus, the original agriculture production pattern has been changed from a rough pattern to a reasonable and high-efficiency pattern. This policy also releases the rural labor force from the agricultural production activities to work for other non-agricultural industries. Thus, the free mobility of labor force is achieved, the efficiency of

labor force distribution is promoted and agricultural population well-being is improved.

The forest-planting project of Green Movement for Four Hundred Kilometers, allowed constructing multi-level and high-standard green belts and green galleries with reasonable structure, beautiful landscapes and ecological functions. In five years, a significant progress has been obtained in the afforestation project. More than 21.7 million saplings were planted, the green construction of more than 900 km roads was completed, more than 110 characteristic ecological landscapes were constructed, and afforestation of 9000 hectares was achieved (Xiang & Da, 2013).

The previous results are supposed to highly promote the development of small watershed management and soil and water loss management project. During five years, the transformation from traditional high-polluting and low-efficiency energy structure to environmentally friendly and high-efficiency energy structure was achieved in Xiangxi rural areas. More than 175,000 biogas digesters, 189,000 coal-saving stoves, 7 large and medium-sized biogas projects are constructed. The comprehensive implementation and successful construction of rural new energy projects in Xiangxi are inseparable from the support and investment of the country. In recent years, the central government has totally invested RMB 373 million in Xiangxi for the development of rural new energy sources, and it provides the energy resource for 30% of farmers for their life and production needs, the 65% of power network for the countryside is reconstructed, thus it has relegalized the transformation for the traditional energy to new energy. (Wu, 2012).

2.2.3 Case Summary and Experience Reference

The above-mentioned regions both at home and abroad developed in different periods and faced different environments, but they also have something in common. First, they belong to underdeveloped regions compared with other regions in its country. Second, they locate in remote and environmental sensitive regions. By analyzing the development tracks of them, we can find some successful experiences for reference, based on “Law and Planning Goes First” policies, on the principle of moderate development, on the promotion of education and on the matching of resource endowment with industry development.

(1) Law and Planning Goes First

The Japanese government pays much attention to legislation and planning in backward areas, has formulated the corresponding laws for both industrial diversification and universal education, and has made the corresponding plans based on these laws. In this way, development in Japan's backward areas can follow these laws at the very beginning and the functional advantages of relevant departments can be taken to full extent.

(2) Principle of Moderate Development

Mineral resources are the most important resources in Xiangxi. However, Xiangxi has undergone an extensive development stage at the cost of the environment. Extensive and unordered exploitation of mining resources has caused destruction to the ecological environment, with air and water pollution and devastation of the original ecosystem (Liu, 2009). Although Xiangxi has already been aware of the problem, and has taken many improvement measures, it still needs a long journey to recover and some damages, which have already been caused, are irretrievable.

Japan is a country poor in natural resources. Thus, the Japanese government attaches great importance to environmental resources. The Japanese government has adhered to the basic idea and policy of protecting resources and the natural environment. In March 1998, the Japanese Congress passed the fifth national comprehensive development plan putting forward a clear aim: small and medium-sized cities, villages and mountainous regions with rich resources shall be constructed to adapt to a new life style in a new century, making Japanese enjoy the environment and the convenience from modern high-technology, thus to create multi-natural living regions and realize the harmonious development between human beings and the nature (Lv, 2009).

Therefore, the principle of moderate development shall be implemented and the laws of nature shall be followed. Protection shall be carried out during development. Besides, the natural resources shall be rationally utilized, so as to maintain the ecological balance.

(3) Education Development

The development of local education is a priority for Japan with a series of measures,

greatly improving workers' quality of life in backward areas have been implemented. From a global perspective, China is one of the countries with most significant regional differences in education resources in the world. Education is the foundation for economic development. The development of balanced systems of pre-school education, compulsory education, higher education and vocational education in underdeveloped areas will play a long-term and important role in promoting the development of these areas.

(4) Matching Resource Endowment with Industrialization Development

Xiangxi has unique resource advantages in ecological and tourist cultural industries. The local government takes these industries as the pillar industries when choosing local economic development patterns. These resource advantages make a great contribution to the local economic development.

When designing the development strategies for restricted areas, a reasonable program must be based on regional resources, and must establish an overall and multi-level benefit compensation mechanism.

Chapter 3: Introduction to Kangding

3.1 Natural Environment

3.1.1 Geographical Conditions

Located at transitional zones between Qinghai-Tibet Plateau and the mountainous regions in western Sichuan Basin, Kangding has quite complicated geomorphological characteristics. Many mountains cut through the whole city from south to north. Most of the mountains are higher than 5,000m. The altitude within the territory of Kangding City varies considerably, ranging from 1390m to 7556m.

As the link between the inland and Tibet, the development of Ganzi Tibetan Autonomous Prefecture is crucial to multicultural communication (Figure 3-1).



Source: The People's Government of Sichuan (2008)

Figure 3-1 The Geographic Position of Ganzi Tibetan Autonomous Prefecture

Kangding as the key door in Sichuan Province to extend to west regions has been

incorporated into the bridgehead strategy of the Sichuan Province development scope. Besides, as the capital of the Ganzi Tibetan Autonomous Prefecture (Figure 3-2) and the regional hub city of the whole Sichuan Province, Kangding has grown into one of the development centers and an important raw material distributing center of Sichuan Province that links Tibet, Yunnan and Qinghai. Kangding has made the connection with counties all over the prefecture and the surrounding provinces and has evolved into a regional secondary transportation hub, with the construction of the Ya-Kang Expressway started in 2014 and to be completed in the end of 2018. So far, except for the road construction, the Kangding Airport has been built and put into operation and the railway construction is being launched gradually, so the traffic conditions of Kangding will be greatly improved and a three-modal transportation network across the whole county, province and even the country will be built.



Source: The People's Government of Ganzi (2008)

Figure 3-2 The Geographic Position of Kangding City in Ganzi Prefecture

3.1.2 Climatic Conditions

Kangding has a relatively humid climate. This region has annual rainfall of about 800~950mm and frost-free season of about 150~250 days. Meanwhile, the urban construction

cost is relatively high due to the limits of the mountainous terrain, and available land for construction in the city is restricted. Thus, it is difficult to expand the urban development space.

3.1.3 Resources Distribution

Kangding has rich natural resources. First, it has abundant water resources. In the prefecture, there are more than 140 rivers and mountain streams, with drainage areas varying from a few squared kilometers to thousands of squared kilometers. There are 184 large and small lakes with the total area of 11.78 square kilometers and the water storage of 250 million m³. Meanwhile, Kangding is praised as the "Hot-Spring city" due to the abundant geothermal resources. Second, it has rich mineral resources. Mines currently discovered in Kangding includes gold, silver, and lead. The potential value of mineral resources is more than RMB 100 billion. Third, Kangding has rich biological resources. Kangding has more than 300 species of wildlife, including more than 40 species of first and second grade protection animals, such as the panda and the white-lipped deer. Meanwhile, its unique climatic conditions are conducive to diversity of vegetation including endangered plants and some rare and valuable traditional Chinese medicinal plants.

3.2 Economic and Social Development Status

The Ganzi Tibetan Autonomous Prefecture (in short: Ganzi) is located at Western Sichuan and southeastern margin of Qinghai-Tibet Plateau with an area of 153,000 km², accounting for 31.48% of the total area of Sichuan Province. It is rich in mineral resources, water and geothermal resources. As an ethnic minority living area, Ganzi's development is restricted by geographical conditions, industrial structure and infrastructure. The economic development level of Ganzi is low. Under the new main function planning, the whole Ganzi is included into the restricted area. Its main functions are to maintain the biodiversity and supply ecological products. Under the new regional development guidance, the relevant central and local policies will be adjusted. Ecological construction, economic and social development pattern in the Ganzi Tibetan Autonomous Prefecture will be necessarily changed. By

improving the capacity to supply ecological products and developing economy with local characteristics, Ganzi will get new opportunities. Rational utilization of opportunities is the key task for Ganzi to realize economic development and growth. Meanwhile, Ganzi is correspondingly faced with great challenge for the relations and interregional coordination. First, ecological protection and supply of ecological products require that many regions shall carry out ecological migration according to requirements. Second, with new production development patterns, the government shall pay attention to service and guarantee, and the subject to supply ecological products shall mainly be the market-oriented enterprises. Third, establishment of a market economic system of ecological industries requires strong support from leading regions. Therefore, Ganzi requires a region with powerful economic forces as the representative or leader of other districts and counties, so as to maintain the benefits of ecological products in the market and lead the prefecture to healthily supply ecological products.

3.2.1 Economic Development

In 2015, the gross industrial output in Kangding was about RMB 1.639 billion, the gross domestic product (GDP) was about RMB 5.46 billion, urban per capita disposable income was RMB 26,953 and rural per capita disposable income was RMB 9,843 (Statistics Bureau of Kangding Municipality, 2016). The added value in the primary industry is RMB 452.59 Million with annual increase of 4.1% in 2015. According to the overall conditions of the primary industry, due to the poor cultivation conditions, the agricultural production in Kangding is greatly limited. Differences between urban and rural development are obvious, the farming areas develop slowly and the urban development cannot help the rural areas. Therefore, it is difficult to balance urban and rural development and narrow the gap between the rich and poor. The added value in the secondary industry is RMB 2,171 Million with annual increase of 0.7% in 2015. The secondary industry in Kangding focuses on resource development. But the development level is low. The attention on environmental protection and resource recycling are paid inadequately. The added value in the tertiary industry is RMB 2,422.5 Million with annual increase of 5.9% in 2015.

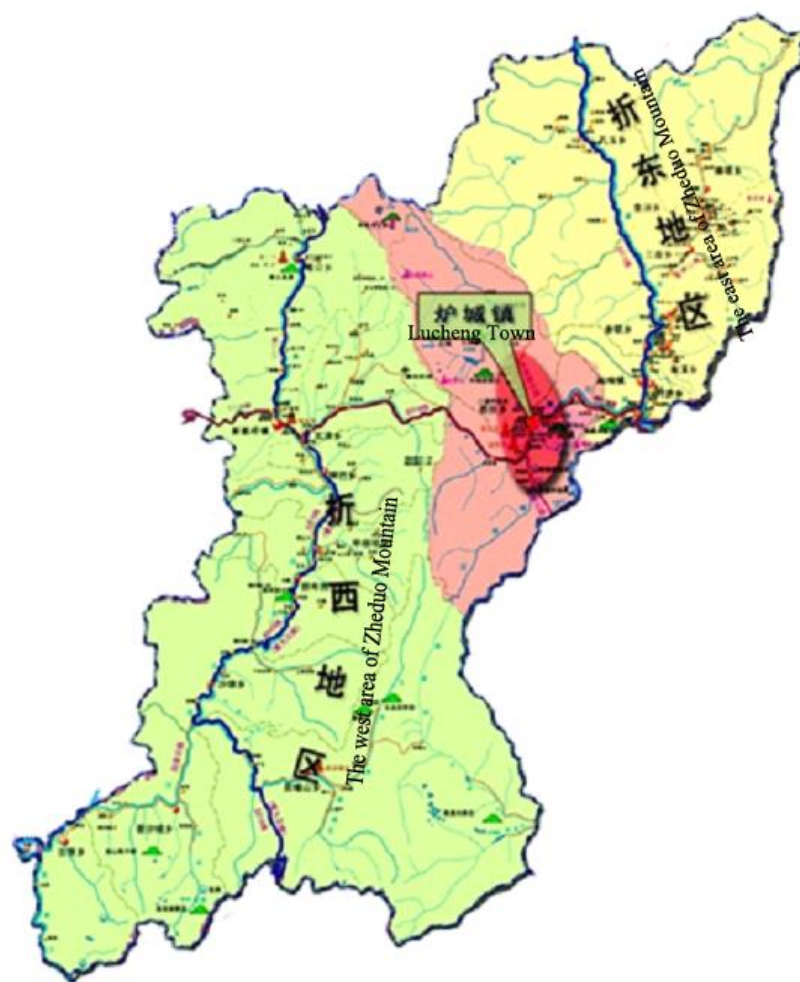
As the capital of the Ganzi Tibetan Autonomous Prefecture, Kangding is the economic, political and cultural center of the prefecture. However, on the one hand, most of the residents in the prefecture have a low per capita income and a restricted consuming capacity. On the other hand, infrastructure construction such as transportation and communication network in the prefecture lag behind. The marketization for the products and services is very poor, thus commodity demand and supply is difficult to be released and acquired. These two reasons prohibit the commercial and trade development potential of the city. Thus, the commercial and trade market is far from prosperity. In general, although Kangding has abundant natural resources, the degree of modernization of production and service marketization are still low. The conversion process from resource benefits to economic advantages is slow, the main industry production is in small scale and still at low quality level, thus its comprehensive competition has not any good advantage, resulting on a low overall economic level of Kangding.

The leading industries in Kangding includes mineral industry, tourism industry, agriculture and livestock husbandry. The mineral industry mainly focuses on resource development, including hydroelectric development and competitive mineral exploitation. Several distinctive industrial parks have been gradually developed. Tourism is mainly concentrated in the urban area and the west area of the Zheduo Mountain. The natural ecological landscape of Kangding is widely praised in China. Its diversified and characteristic folk cultures and customs also attract a large number of tourists. As an important part of the “western Sichuan tourism circle” which covers more than 20 hot tourism cities, Kangding has made remarkable achievements in building the Tibetan and Yi culture corridor, which is a region with Kangding as the center to the east and south where the Tibetan and Yi are distributed on both sides of the corridor (Fei, 1980). The agriculture and livestock husbandry mainly includes traditional agriculture and focuses on planting highland barley, etc.

3.2.2 Regional Development Layout

According to the natural geographical conditions, the resources carrying capacity, the development foundation and the distribution state of the five leading industries, Kangding has

made a plan for regional development as a whole. Thus, the strategic layout of "one core (Lucheng and Yala town) and two wings (the east and west areas of the Zheduo Mountain)" can promote harmonious development among different regions (The People's Government of Kangding, 2012). This strategic layout includes three different areas as shown in Figure 3-3.



Source: The People's Government of Ganzi (2012)

Figure 3-3 Regional Development Layout

1. One core region: it refers to urban areas including Lucheng and Yala town, and it is the city's political, economic and cultural center. Taking advantage of the regional traffic will lead to regional development. According to the standard of an international tourist city, it has the high level urban construction, improves the urban comprehensive service functions, catches opportunity to cultivate the "love song culture park" which is a theme park based on the famous traditional folk song "Kangding Love Song", accelerates the upgrade and promotion

of Kangding, promotes the interactive development of the cultural industry, tourism development and urban construction, accelerates the construction of a new Kangding, upgrades the facilities and service function of new area of Kangding. It persists in regarding scientific thoughts as the guiding ideology, tries to follow the pace of social modernization and builds a modernized service industry with an integration of economy, politics, culture and a modernized logistics service industry. In order to strengthen urban management and increase the intensity of urban brand marketing, Kangding can constantly optimize the environment of human settlements and building characteristics of a tourist city with international influences.

2. The east area of the Zheduo Mountain includes nine villages. As for this region, Kangding can continue promoting the hydropower development in the Dadu river, accelerate the construction of Jintang and Guza industrial parks, strengthen mineral and agricultural products transformation to raise the industrialization of raw products, construct an area of industrialization development, form a new industrialization development pattern, develop high-quality and high-efficiency agriculture sector, promote the commercialized and specialized agriculture base construction such as the medicinal herbs, fruits and vegetables. Relying on the core region it can develop services including commerce, education and medical treatment.

3. The west area of the Zheduo Mountain includes 10 villages and towns. Depending on main transport lines, it can focus on urban construction and tourism development to accelerate the development of tourism resources and build special tourism scenic spots famous for ecological sightseeing tourism and mountain sports, promote the tourism satellite city construction in the Xindu Bridge, promote the hydropower development in the Liqu and Yalong Rivers, orderly exploit mineral resources, transform the agricultural management mode and promote agriculture modernization, and focus on developing agriculture and animal husbandry with ecological characteristics. Relying on the the Xindu Bridge, Tagong and other key tourist towns, it will develop commerce and tourism services, improve the urbanization and its comprehensive capability, increase the herders' income and carry forward the herdsmen settlement project to have the collective inhabitation for living supply to be easily equipped and infrastructure with lower construction cost.

3.3 Ecological Orientations for the Economic and Social Development of Kangding

3.3.1 A Restricted Ecological Functional Zone

According to the National Main Function Area Planings (2010), devoted to the protection of the national ecological system, the Sichuan province functions as the intersection point connecting the Ruergai Grassland and Wetland Ecological Functional Zone. Significantly, the whole area of Kangding belongs to the Chuan Dian Forest and Biodiversity Ecological Functional Zone.

On the one hand, it is not difficult to find out that Kangding has been developed to become the center of regional development. To be more specific, although Kangding is marked as a limited development zone, has been exploring a new economic growth pattern and obtained great economic efficiency. Furthermore, it has improved the living conditions of the population. More significantly, this kind of healthy development mode has promoted the development of related cities, thus forming the newly emerging ecological functional cities. These accomplishments are all based on the fact that ecological industry still needs a powerful driving leader so as to form sustainable economic and social effects. Under the guidance of this objective, governments at each level can provide more supporting policies for economic development. Therefore, we can say that Kangding is in an open and positive policy environment for economic growth. In the newly proposed New-Typed Urbanization Plan by Sichuan Province Government (2014-2020), it is stated that with full consideration of the varied industrialization development levels, and resource and environment carrying capacities, different regions should choose harmonious development patterns. The Plan also mentions that it is important for a city to improve the developmental quality and promote its social status with transformation development. It is proposed in the Plan that for the urban agglomeration located in the northeast of Sichuan province, a space form of open network urban agglomeration should be established which means that connecting the cities with transportation or communication infrastructure network to construct urbanized and integrated urban group. However, for these urban agglomerations in the west part of county, a space

form with axial pattern should be built which focus on promoting the development of cities in the same economic belt with a certain growth pole. To match the ecological carrying capacity in the northwestern part of Sichuan province, it has been suggested that Kangding and Maerkang cities should become the development centers. The development strategies should be intensely associated with reality. Moreover, the plan has been specially pointed out that a new Tianfu area should be constructed, leading it to be an open economic highland and a demonstration area with overall balanced rural-urban development. Thus, from this plan, it is clear that Kangding has turned into an important city in the ecological economic area of the northeast Sichuan.

On the other hand, as the provincial capital of Ganzi Prefecture, Kangding is the political, economic and cultural center. It has got the most active economic expressiveness and most powerful economic growth potential. But at the same time, the urban development needs the support of the industry. Kangding county must mark out the key zones for development within this, guiding the whole prefecture step into an ecological economic development way. First, in case of the economic base, Kangding holds the leading position for the GDP in recent years among the 18 counties and cities of Ganzi, and years of resource-based industry development and hydroelectric development lay a leading industrial foundation for Kangding. Secondly, although there are certain differences between Kangding and the outside world, Kangding is a city with the most developed private economy in Ganzi. It has developed fields as the handicraft industry, cultural tourism and traditional Tibetan medicine industry. Third, in case of infrastructure, Kangding is located at the gateway to enter Tibet, so Kangding has favorable infrastructural conditions. The supply conditions for transports, logistics, electricity, etc. are acceptable. In addition, there are national and provincial support and assistance which has significantly improved infrastructures. Within the next five years, infrastructures in Kangding are expected to be improved greatly from the current poor fundamental. . Thus, Kangding will be more suitable for major development and for achieving breakthroughs of economic structure and forming a key industrial and commercial site covering the whole prefecture. In general, Kangding is the main economic and social development area of Ganzi. The key mission for Kangding to enter the ecological era is to continually take in ecological migration,

strengthen the ecological industry and form an ecological economic system, all under the main objective for Kangding of keeping economic growth.

3.3.2 A Minority Region Dominated by Agricultural Population

There are about 17 ethnic groups living in Kangding with the Tibetan being the most important one. In 2014, there were 113,414 registered residents living in Kangding. Among them, the Tibetans accounted for 69.85 percent of the population with 79,224 registered residents. Besides, Kangding is a city with a low urbanization rate: 65.07 percent of its registered residents are peasants and 73,800 people are engaged in farming activities. There are only 40 thousand people, about 34.93 percent of the population, belonging to the non-agricultural population.

3.3.3 An Economically Underdeveloped Area

Kangding is classified as a marginal, poor and underdeveloped area. When compared to inland China, the economic and social development in Kangding is comparatively low. It is classified as underdeveloped area even in the Sichuan province. From industry structure perspectives, the foundation of agriculture and industry is very weak. The income of most urban residents mainly comes from commerce and trade and agricultural production. In the case of industry, the situation is even more severe. The industrial structure depends more on natural resources while the degree of resource utilization is also low. Advanced factor conditions such as skilled human resources, science and technology, are in critical shortage. Kangding belongs to the minority areas with underdeveloped economy, insufficient education resources and backward social concepts. In addition, the agricultural population constitutes a large proportion. Especially, the large mobility of herdsman restricts the development of universal education. And it is difficult to carry out training on professional labor skills. Therefore, the whole society has a low level of education and lacks professional skills. It cannot adapt to the production and life patterns popular in the mainland. Regarding the infrastructure, Kangding has the most advanced infrastructure within the Ganzi Tibetan Autonomous Prefecture. In case of communication and transportation, the 318 National Road connects to the mainland, and Kangding Airport can satisfy the demands of emergency

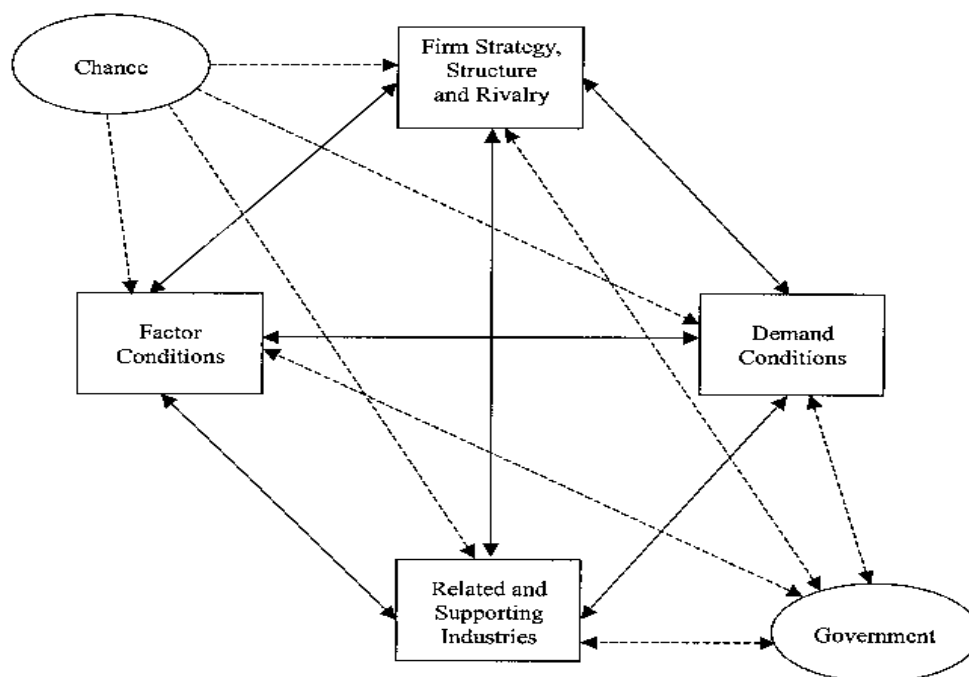
transport mission. Together with the highways and the Sichuan-Tibet Railway to be built soon, a three-modal transport network will be build.

Chapter 4: Methodology

4.1 Conceptual Model

The original Porter's Diamond Model is shown as Figure 4-1. It shows the four domestic factors which are the decisive elements for a certain industry's competitiveness, they are factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry. Additionally, there are two necessary external factors, government and chance.

Besides all these factors mentioned above, some influential factors cannot be ignored. They are the international influence of the country and whether this country has favorable competitiveness. If a company intends to develop rapidly and successively both at home and abroad, it needs competitive advantages and great development prospects (Liu, 2003). Moreover, it must rely on the integration of those above-mentioned factors.



Source: Porter (1998)

Figure 4-1 Porter's Diamond Model

This research will only focus on the study of Kangding and will take the competitive advantage theory as the conceptual framework. Specifically speaking, this research intends to establish a suitable framework to analyze the regional competitive advantages of Kangding and then use this analytical framework to propose measures and policies to achieve the development and improvement of this region. Based on field research and data analysis, this research picks out the industries with comparative development advantages in Kangding and analyzes them by using Porter's Diamond Model. In this process, the diamond model of regional competitiveness analysis will be adapted to conform to Kangding specific characteristics.

First, the government forces in the original model are changed to include a broader institutional environment. A good institutional environment can enhance the stability of economic development and provide an effective and incentive mechanism to reduce business risk. Second, in the new model, the relationship between institution environment and opportunities is more direct. Kangding will enjoy superiority from favorable policy as it is a minority region.. For instance, the country's western development policy will bring development opportunities to this city and governments at all levels also have specific preferential policies for ethnic areas.

The adapted diamond model (Figure 4-2) includes the following six dimensions: factor and demand conditions, related and supporting industries, industrial structure, strategy and rivalry, institutional environment and opportunities.

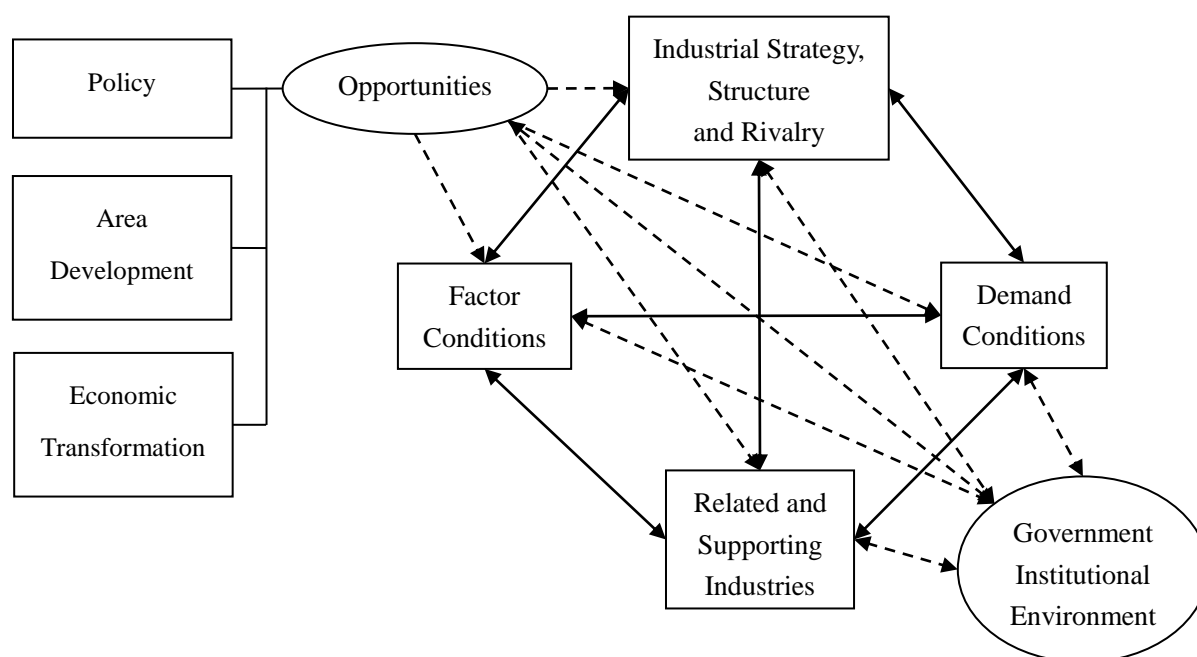


Figure 4-2 Adapted Regional Competitive Advantage Diamond Model

Factor conditions: These conditions include physical resources, geographical location, human resources, climatic conditions, knowledge resources, and capital resources and infrastructure construction. Meanwhile, these conditions can be divided into two categories, fundamental and high-leveled conditions. The former includes those conditions which can produce economic benefits through easy operation, convenient management and small investment, such as, natural resources, climatic conditions, skilled and semi-skilled labor force, geographic locations, etc. Compared with the fundamental factors, the high-leveled factors are scarce factors, and play an important role in the process of innovation. They are the basis to provide sustainable competitive advantages. Thus, their supply condition is very important for regional industries to obtain and maintain competitive advantage. Generally speaking, the fundamental elements provide a solid foundation for the local economic development. They decide the development road for its future advancement. Combined with the function of high-leveled elements, they can bring out more effective results. Thus, only if we constantly explore some new high-level elements and, at the same time, get them into use with the initial advantages, the sustainable development power can be produced in a specific region. And it can also provide permanent competitive motivations to resist the external

impact (Hu, 2005).

Demand conditions: Refers to the products or services needed and provided to the national market. On the one hand, the demand drives local companies to grow to be larger and stronger. Furthermore, it stimulates companies to enlarge its market by providing products and services into a larger market. Hence, these companies can grow to be the leading cross-regional enterprises which can deal with the cross-regional operations and competition. On the other hand, because the enterprises have a more sensitive reaction to the most nearby customers, local demand plays a vital role in shaping product characteristics, generating technological innovation and improving product quality. Higher demand from local clients or customers can always bring out economic benefits. High demand can encourage the local industries to quickly adjust their structures, improve their management system and operation model, and ensure the good function of the economic chain, thus maintaining their long-lasting operation characteristics and competitive advantage.

Related and supporting industries: These industries share similar operation modes and operation systems at some extent. As a result, integration and communication among these industries increase during their development process. Investment in advanced production factors by related and supportive industries will gradually spread, so as to help them to acquire regional competitive advantage (Fu, 2005). All industries and companies form an industrial chain to connect and support each other. Supportive industries, with lower investment, can provide local enterprises supplementary services and related support. Moreover, they can also encourage the downstream industry to be innovative through ongoing cooperation. At the same time, local industries are leading and driving the related companies to move forward.

Industrial structure, strategy and rivalry: Each company has its own operation and management model, and more or less unconsciously, it brings some effects on its surrounding companies during the development process. Reputation and competitive advantages can also promote development of the company. In addition, whether a company can get a bright development prospect depends on what type of management and development modes are chosen. Competition among enterprises can significantly enforce their creativity and maintain

their competitive advantage in a certain region.

Government institutional environment: This is the broader concept of the factor "Government" in Porter's diamond model. As for the function of government behavior, Porter stated that the government intervenes in the capital market with financial subsidy policies, government purchasing and so on. It focuses on centralizing the population and industries and public service. Furthermore, it accelerates the transformation and upgrading of aspects such as urban space, urban industry, urban ecosystem, urban management and urban models. At last, the government also attempts to construct a new development model for new urban zones, and expedites the urban functional facilities for industrial parks. This kind of statement is based on specific industries. However, when the analysis framework of regional competitive advantages is formed by multi-industries in the expanded region, the government policies for multiple specific industries are intertwined, thus forming the unique government institutional environment of the region which has an impact on the economy of the whole region. Similarly, the government institutional environment can have an impact on the possibility of obtaining competitive advantage, but in the absence of other favorable conditions, the government institutional environment lacks the power to create competitive advantage, so the government institutional environment is also subordinate.

Opportunities: It refers to the chances faced by regional economic development which includes policy opportunities, area development opportunities, and the transformation and upgrading opportunities. First, policy opportunities refer to favorable macro environment created by the state. Second, the location development opportunities refer to the construction of transportation hub which enhances location advantages and brings in development opportunities. Third, the transformation and upgrading opportunities are new economic growth potentialities which provide development opportunities for enterprises.

To sum up, with the guidance of the regional competitive advantages framework, through the analysis of the above six dimensions, this thesis will point out the special advantages that can be used to achieve local economic development and the implementation method to promote the development of leading industries.

4.2 Case Study Method

This thesis takes Kangding as research subject or case to be studied because Kangding is the provincial capital of Ganzi Tibetan Autonomous Prefecture and has the typical regional characteristics of a development restricted zone. Moreover, I also worked in Kangding and have the first-hand experience of Kangding's geographical location, natural conditions, local customs, and cultural heritage and so on. This experience makes it easier to summarize the development process of Kangding and discuss the influential factors of its economic development.

Yin (2010) defines the case study method as an empirical research on a contemporary phenomenon within its real life context, that uses multiple sources of evidence. For Thomas (2013) case study is about studying something in its completeness, looking at it from many different angles and trying to understand the interconnectedness of all the elements comprising it. The idea of researching the multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system, or in-depth exploration in a real life context is also present in Simons (2009) definition of the case study method. A different perspective is given by Stake (2005): "Case study is not a method in and of itself. Rather it is a design frame that may incorporate a number of methods and analytical frames. Choice of method, then, does not define the case study, analytical eclecticism is the key."

Case study research can use one or more cases from real life for research purposes, Cases can be of many types and there is no generally valid definition of a case; the most common type of case is a company or parts of a company, but it could also be any type of institution, a country or a region, Case study methodology includes all types of research methods: exploratory, descriptive, explanatory, theory-generating and theory-testing. The keyword in case studies is getting close to reality because it allows answering the need of understanding and explaining complex phenomena, in a more holistic perspective than cross-sectional or longitudinal approaches, It allows the meaningful exploration of real life events by looking at the complex interaction of many variables in few cases, rather than looking at a few variables

in a large number of cases (Ragin, 1999). So, case study methodology allows for rich, in-depth explanatory narrative emerging from a very restricted number of cases rather, but does not show the capacity for generalization of results that a large sample can offer (Gomm, Hammersley, & Foster, 2000). But this is not the only problem with this methodology. The lack of rigour and objectivity introduced by the supplier and/or the recipient of the information might introduce bias in the results, meaning that systematic error can be introduced in the research process due to conscious or unconscious views of the researcher. However, bias may be minimized if multiple sources of evidence are used.

As any other research methodology, case studies need to structure the literature review to 1) establish convincing propositions – definition of ideas, variables or concepts and the relationship between them – in order to construct a theoretical model and define the research hypotheses. 2) collect data and use the results to 3) test hypotheses and 4) draw conclusions. To collect data different sources can be used: official statistics and documents that provide secondary data; open-ended interviews, focus groups or surveys to provide primary data.

4.3 Data Collection

In order to answer the above questions and propose proper measures and policies, the development problems and plights of Kangding should be identified. And the following data collection is prerequisite for appropriate solutions toward these problems and difficulties, they are Kangding economic growth factors, the industrial structure, the current development status and problems of leading industries in Kangding. Based on the above dimensions, I conducted the fieldwork at Kangding from May to July 2014, and obtained relevant data and information. Data collection methods included in-depth interviews with managers of representative companies, group meetings and a symposium where participants from the following industries were present: hydropower, modern agriculture and animal husbandry, tourism, natural resource exploration (such as mineral resources) and Tibetan medicine.

4.3.1 In-depth interviews

In order to understand the status of the leading industries in Kangding, I selected the

representatives from three industrial regional enterprises, and conducted interviews from May 23rd to 28th, 2014. The three companies are the Datang Ganzi Company (hydropower), the Qinghai-Tibet Valley Food Co., Ltd., (agriculture industry) and Muya Holy Land Tourism Co., Ltd. (tourism).

a) Datang Ganzi Company

According to the proportion of investment, the hydropower industry has an important influence on Kangding economic development. The Datang Ganzi Company is the largest hydropower development enterprise in Kangding and the basic-level enterprise in Sichuan with 15 departments and 165 employees. Datang Corporation is one of the five major power generation companies in China. The sales revenue of this company's two-tier power station reaches 5 billion RMB per year after being put into operation. the following two questions were included in the interview guide:

1. Does large-scale hydropower development cause negative influence on the local resources and environment?
2. If so, is there any corresponding compensation mechanism?

The answers to these two questions replied by the general manager Xiongiong can be summarized as follows.

1. Long-term hydropower development does have some negative influence on local ecological environment. On the one hand, the hydropower station construction destroys the local ecosystem. The construction of hydropower stations has changed the regional geological structure. After the completion of the hydropower station, part of the cultivated land, woodland and other types of land near the hydropower station will be flooded, resulting in changes in the living environment of animals and plants. On the other hand, the development of hydropower in Kangding has seriously affected the river ecology. The water storage of the hydropower station causes the river flow to decelerate, the water body to become stagnant from flowing, and the exchange rate between the water body and the outside to be reduced. Hydropower stations block the river so that the fish seasonal return channel is blocked, thus the survival and reproduction of fish is threatened. Thirdly, the construction of hydropower stations results in resettlement of residents. Taking Datang Company as an example, the

company's two-level power station was constructed by occupying land area where residents located which resulted in more than 3,800 migrants. The resettlement housing construction not only resulted in a large area of abandoned land, but also increased the burden on the ecosystem.

2. The benefit sharing mechanism between the local people and the power plant itself has not been perfectly constructed. Effective ecological compensation mechanisms or ecological restoration mechanisms have not been established.

b) Qinghai-Tibet Valley Food Co., Ltd.

This is a food processing company which produces local products, including beef jerky and various mushroom products. The annual sales revenue of the company is about 30 million RMB. The following questions on the development situation of the ecological agriculture and animal husbandry in Kangding were addressed to the company's representative.

1. What are the basic conditions for the development of ecological agriculture and animal husbandry in Kangding?

2. What is the development level of ecological agriculture and animal husbandry in Kangding?

3. What are the constraints on ecological agriculture and animal husbandry development in Kangding?

The interview with the company's general manager YeMaokang as well as the visit to the company's own farms and production workshop got me with the following conclusions.

1. On the basic conditions for ecological agriculture and animal husbandry: Kangding has high-quality material resources with cattle, sheep and pig, and a national-level base of grains covering an area of 6.67km², and a Dadu River pollution-free vegetable base covering an area of 2km².

2. On the development level of the ecological agriculture and animal husbandry: the degree of commercialization is low. The crops are used for self-sufficiency and are usually sold as raw products. Companies in Kangding like Qinghai Tibet Valley Food Co., engaged in deep processing of agricultural and pastoral products, are rare.

3. On the constraints on ecological agriculture and animal husbandry: the first constraint is the transport infrastructure, Kangding being located far from the central cities such as Chengdu, it affects the flow of goods. Besides, professional and skilled professionals are required, there is a relative shortage of professionals skilled on modern agriculture and animal husbandry.

c) Muya Holy Land Tourism Co., Ltd.

It is a professional enterprise engaged in tourism development. It has 300 employees and its sales revenue is about 15 million RMB per year. The following questions were asked about the development situation of the tourism industry.

1. What is the expected number of tourists in Kangding in 2015?
2. What are the main problems concerning the tourism activities in Kangding?
3. Is eco-tourism development possible in Kangding?

The company's general manager Li HuaNeng replied as follows.

1. The number of annually tourists in Kangding is about 3 million.
2. The problems of tourism activities in Kangding include deficient infrastructure, lack of regulations for the local tourism market, and additionally, the specialized tourism resources such as hot springs and folk music are not fully developed.
3. The eco-tourism market in Kangding lacks regulations. Regular tourism companies and voluntary society organizations coexist in organizing some nature-based tourism projects. Because of the lack of relevant regulatory mechanisms and standardized safety measures, these spontaneously organized tourism activities cause some damage to the local environment and the safety of tourists themselves is not guaranteed.

4.3.2 Group meeting and seminar

In addition to the field-surveyed hydropower industry, modern agriculture and animal husbandry and tourism industry, natural resource exploration (such as mineral resources) and Chinese Tibetan medicine are other pillar industries in Kangding. Thus, in July 20, 2014 a symposium was held with participants from the above-mentioned industries. In order to

understand the industry development of Kangding from a macro perspective, we also invited the representatives from Kangding Economy and Informatization Bureau and Kangding Development and Reform Bureau.

According to the purpose of this study, the symposium mainly focused on three topics: 1) the development situation of the natural resources exploration and the Chinese-Tibetan medicine industry, 2) the possible contradiction between resources and environment in the development of these industries, 3) the role of these two industries in the economic development of Kangding.

Representatives from the mineral industry stated that mineral resources of Kangding are widely distributed. The Spodumene reserves accounts for about half of the country and Gypsum reserves rank the highest in Asia.

The main results from this symposium can be summarized as follows. Representatives from the Chinese and Tibetan medicine industry mentioned that Ganzi Prefecture is the birthplace of China's southern Tibetan medicine. The medicine was labelled as the "Ganzi Prefecture Southern Tibetan Medicine" in 2006 by the State Council and was listed as the first batch of national intangible cultural heritage. The requirement for growth environment of Tibetan medicine is very high. For example, some highly valuable herbs grow at a altitude of 3,000 meters or more. But this industry is still at the stage of extensive development. On the one hand, there is a lack of professionals on Tibetan medicine. On the other hand, many farmers and herdsmen in Kangding abusively pick up and dig herbs for sale.

Representatives of the Kangding Economy Bureau believe that, in general, the industry development based on natural resources did not bring social and economic benefits to Kangding. For example, the development of hydropower is investment-consuming. The economy has difficulty in prospering in the sparsely populated areas. Mineral resources are the advantages of Kangding, which, to a certain extent, can bring higher fiscal revenue and solve part of the employment problem, but the burden on the ecological environment caused by the mineral resources exploitation in Kangding is also increasing.

4.3.3 Secondary data collection

Secondary data from the Bureau of Statistics is necessary to understand the overall situation of economic development in Kangding. The data includes the city's GDP, its corresponding ranking in Ganzi in recent years, fixed assets investment, the proportion of agriculture, industry and service industry as well as the industry with top sales revenue in Kangding. The results are presented in Tables 4-1 and 4-2.

Table 4-1 The GDP of Kangding in recent years

Year	GDP (Million Yuan)	Ranking in Ganzi
2013	4810.35	1
2014	5030.27	1
2015	5046.11	1

Source: Bureau of Statistics in Kangding (2016)

Table 4-2 Industrial Structure of Kangding (Year 2015)

Industry	GDP (Million Yuan)	Proportion
Primary	484.74	8.8%
Secondary	2434.72	44.2%
Tertiary	2588.95	47%

Source: Bureau of Statistics in Kangding (2016)

Until December 2015, the fixed assets investment of Kangding is 10160.21 million RMB, of which investment on hydropower development amounts to 7945.29 million RMB, accounting for 78.2% of the city's total fixed assets investment and 21.7% of Kangding GDP.

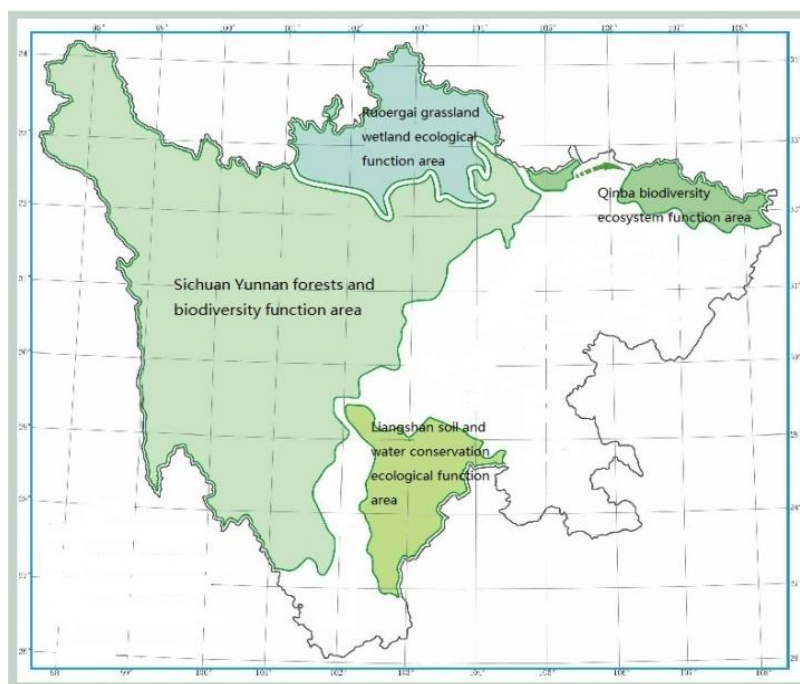
Chapter 5: Economic Growth Potential of Kangding

According to the diamond model, under the framework of competitive advantages, this chapter will analyze the situation of Kangding. The analysis of the economic development potential of Kangding presented in the first two sections will be based on two external conditions – the institutional environment and the economic development opportunities. The last section will discuss on the competitive advantage of the leading industries in Kangding.

5.1 Economic Growth and Institutional Environment of Kangding

In the National Main Functional Area Planning issued by the State Council, Sichuan has three regions listed as restricted ecological functional areas, including forest and biodiversity functional area in the Sichuan-Yunnan region, the biodiversity wetland ecological functional area on the Ruoergai Grassland, and the Qinba biodiversity ecological functional area (Deng, 2013). Meanwhile, in the Main Functional Area Planning of the Sichuan Province issued by the provincial government in 2013, big or small ecological functional areas for water and soil conservation in Liangshan are listed as provincial restricted ecological functional areas. Therefore, Sichuan has four ecological functional areas (Figure 5-1) to be developed and these areas take 65.4% of the total area in the province.

Economic Growth Pattern in Restricted Areas -The Case Study of Kangding City in Sichuan Province



Source: The People's Government of Sichuan (2013)

Figure 5-1 Picture of Ecological Functional Zone in the Sichuan Province

The Ganzi Tibetan Autonomous Prefecture (shorted as Ganzi) is located in the western part of Sichuan province adjoined to Tibet plateau with an area of 15.3 square km, accounting for 31.48 percent of Sichuan's total area. There are abundant mineral resource, water and geothermal resources. Ganzi, as areas inhabited by ethnic minorities is restricted by its geographical environment, industrial structure, infrastructures, etc. Its economic development is low compared with other regions in the Sichuan province. Under the new main functional area planning, the whole region of Ganzi is incorporated into the development-restricted zone in order to maintain its biological diversity and provides ecological products. With the guidance of the new regional development plan, the central and local policies are facing adjustments. The ecological construction and economic and social development strategies will be necessarily transformed. These new plans are going to improve its capacity to supply ecological products, and develop the ecological industries with local flavors. Furthermore, they also move forward to broaden the product output channel. By taking these new development methods, Ganzi will get new opportunities. And reasonable utilization of these opportunities will be the key factors in order to gain economic development and growth.

At the same time, all kinds of relations and interregional coordination in the Ganzi

province are also confronted with great challenges. Firstly, the Ganzi province has a vast territory and a sparse population and local people are scattered in the remote mountains. The household garbage cannot be disposed effectively and timely and production by a single residence is very limited. Thus, pollution problems in these ecological regions are serious and the production is not allowed on a large scale. In order to solve these problems, it is needed to carry out ecological migration actions in many regions. Secondly, under the new mode of production and development, the government is concentrated on service and security. To improve the supply capacity from such development direction, the supply entities have to change from scattered into market-oriented. Thirdly, the construction of an economic system of ecological industrial markets cannot be formed on its own. It is restricted and connected by the geographical environment, population distribution, educational condition and economic development situation. What it more, it also needs driving power coming from the leading regions. For the case in Ganzi, it mainly needs a relatively stronger region with great economic strength to be the representative or leader for the remaining regions. This leadership can safeguard the interests of ecological products in the whole Ganzi prefecture. The Kangding county, which is the political, economic and cultural center in Ganzi, needs to use its development energy to protect the environment, construct an ecosystem, offer ecological products, and construct other leading functions. Besides that, compared with other counties or towns, Kangding has a more active economy, a better geographical location, better infrastructures, and more convenient traffic conditions. Thus, it can be defined as an ecological migration destination, gathering places for ecological industries and the main trade center in ecological markets.

As the capital of the Ganzi Tibetan Autonomous Prefecture, Kangding has a vigorous economy and greatest economic growth potential. Firstly, from the economy factor, the GDP of Kangding between 2013 and 2015 is displayed as shown in Table 5-1.

Table 5-1 Kangding's GDP in Recent Years

Year	GDP of Kangding (10 Thousand RMB)	Ranking in Ganzi Autonomous Prefecture
2013	481,035	1
2014	503,027	1
2015	504,611	1

Source: Bureau of Statistics of Kangding (2016)

The relatively leading industrial base of Kangding is shaped by its sustainable resource-based industries and the development of the hydropower industry. Second, although there is a certain difference between Kangding and the other regions in China, Kangding is still a city with the most developed private economy in Ganzi. It has deeply developed such fields as the handicraft, the cultural tourism and the traditional Tibetan medicine industries. Besides, in terms of infrastructures, and the location between Sichuan and Tibet, allows Kangding to enjoy a relatively better infrastructure conditions and acceptable communications, logistics, electricity and other supply conditions. In the next five years, the infrastructure of Kangding is expected to achieve a significant improvement resulting from national and provincial support. Therefore, this city is suitable to be a key developer, to achieve an economic structure optimization and form the industrial and commercial heart of the Ganzi Tibetan Autonomous Prefecture radiating the whole prefecture. Lastly, although the Ganzi Tibetan Autonomous Prefecture is an ecological function-restricted zone, the latest New Urbanization Plan of Sichuan Province (2014-2020) proposed that this core tourism area should be regarded as a growth pole, and gradually enhance its accumulating and radiant effect. The plan also mentioned that through the connections to the tourism industry and under the influence of the radiant effect, we should achieve an axis-like development trend, connecting the dots to form planes and strings and gradually shape some tourism town clusters, town circles and town zones. The tourism town belt along the main traffic road should be developed to promote the tourism radiant effect to play a better role, which will contribute to the overall development of this region.

This operation model will be an important way for integration and exchanges among neighboring provinces, such as Sichuan, Gansu and Qinghai. The concepts and principles of ecological development need to be integrated into the whole process of urbanization, and actively explore a new type of ecological economic model with the characteristics of intensiveness, intelligence, green and low carbon emission. According to the Plan, Kangding is the key center of the ecological economic areas in the western and northern parts of the Sichuan province. The economic development of the city is supported by industry therefore,

Kangding should become the key development area in the ecological function region that is restricted so as to play a leading role in the whole Ganzi Prefecture in terms of the development of the ecological economy. In general, Kangding City has the most important position of economic and social development in the whole Prefecture. Kangding should also have the responsibility to keep economic sustainable growth, welcome ecological migrants, expand the ecological industry, and construct an ecologically economic system. The main aim of Kangding remains the sustainable growth of the economy.

5.2 Competitive Advantages of the Leading Industries in Kangding

This section does comprehensive discussions on six factors concerning the development of Kangding city, including demand conditions, supporting and related industries, the strategic structure and competition of industry, institutional environment and opportunities based on the model established upon the Porter Diamond Theory. The existing advantages and problems in energy resource, tourism resource, superior mineral resource, and Chinese and Tibetan medicine resource are discussed from the Diamond Theory according to the specific condition of Kangding city. And the constructive suggestions are put forward to the economic growth model of the restricted area.

5.2.1 Hydropower

5.2.1.1 Factor Conditions

Kangding has rich hydropower resources. And it has more than 140 rivers and mountain streams. The basin areas range from a few square kilometers to thousands of square kilometers. There are five rivers and each of them has basin area over 500 square kilometers. Moreover, there are 34 rivers which can be exploited in the city. And the city also owns 184 lakes and the total area of these lakes is 11.78 square kilometers, and the water storage capacity is 250 million cubic meters. Theoretically, the whole city has a capacity to reserve more than 18 million kilowatts hydropower energy, and more than 10 million kilowatts can be exploited and utilized.

5.2.1.2 Demand Conditions

The total electricity consumption in 2016 is 5919.8 billion kwh with an annual increase rate of 5.0% (Table 5-2) than that in 2015. It can be seen that the social electricity consumption is increased year by year. And the industrialization and urbanization process will increase the electricity consumption.

Table 5-2 Total electricity consumption data from 2012 to 2016

Year	Total electricity consumption (billion kw/h)	Annual growth rate (%)
2012	4959.1	5.5
2013	5322.3	7.5
2014	5523.3	3.8
2015	5550	0.5
2016	5919.8	5.0

Source: National Energy Bureau (2017)

In 2000, the former State Planning Commission held seminars over the West-East power transmission project. And the State Council proposed to accelerate the construction of this project. In the same year, the first batch of West-East power transmission project started construction in Guizhou and Yunnan marking the beginning of this national power transmission project. West-East power transmission project means the power resources of some western provinces are transformed to those eastern provinces which are short of power resources. This project brings a broad market to power resources in western areas.

5.2.1.3 Related and Supporting Industries

For the hydropower industry, its raw materials are significantly influenced by natural climate. The river runoff, rainfall, wind changes and other natural factors directly affect total power generation. The downstream of power generation companies is the grid company including the State Grid Corporation and China Southern Power Grid Corporation.

The grid industry belongs to the non-administrative natural monopoly industry. Due to the specific nature of the grid operation and the consideration of keeping national strategic security, the grid maintains a high monopoly nature.

Although the electricity price is determined by government, internet power supply mainly depends on grid adjustment institution. Compared with power generation enterprises,

power companies are in a superior position.

5.2.1.4 Industrial Structure, Strategy and Rivalry

Competitors of hydropower industry are other enterprises that can generate power by new energy. Guided by the national industrial policy, Sichuan Province is carrying out project of wind and photovoltaic power generation. The power generation capacity of this project is up to 12 million kilowatts which is far beyond the original power generation targets. If the project can be fully finished, it will challenge the limited transmission ability of the transmission channel.

5.2.1.5 Institutional Environment

At present, the electricity sales reform is a nationwide pilot. The main content of this reform is to realize the liberalization of electricity sales. This is the first time that changes have been occurred in electricity sales market. It also means that the grid purchase and marketing model are gradually transformed.

Until November of 2016, the national power system reform has covered 26 provinces. According to incomplete statistics, about 2,000 companies have been registered within the country.

Affected by this, the share of direct trade in electricity will gradually expand and the price will tend to be determined by market. Hydropower enterprises can obtain largest interest from the electricity market by depending on low cost, low price, high priority scheduling, and policy support.

5.2.1.6 Opportunities

First, policy opportunities, in the western development strategy, the development of western hydropower is an important strategic task. Sichuan Province has regarded the hydropower industry as the pillar industries in implementation of the western development strategy. In 2001, the CPC Sichuan Provincial Committee and the provincial government issued “views on accelerating Hydropower industry development “creating a favorable policy environment for hydropower resources development. Second, the market opportunities, "West-East power transmission project" brings a vast market to hydropower resources in

Kangding.

5.2.2 Tourism

5.2.2.1 Factor Conditions

Due to the complexity of terrain and climate, Kangding has been described by the proverb "one mountain with four-season sight, different weather within 10 km". The brilliant multi-culture of Kangding is established on conditions of varied terrain and climate which are the important support for the development of tourism and beautiful natural scenery which are described in Table 5-3.

Table 5-3 Overview of Kangding's Distinctive Culture

Name	Features	Meaning
Culture of Gesar Epic	Gesar Epic is cultural treasure generated and developed on the basis of the rich folk literature, such as ancient Tibetan myths, legends, poetry and proverbs. It tells the heroic feats of king Gesar. King Gesar floated down from the heaven to subdue demons and monsters as well as curb the violent and assist the weak. After he unified different tribes in Tibet, he went back to the heaven. This legendary epic is preserved and passed on in the form of teaching orally by folk artisan in Tibet.	It represents the highest achievement of ancient Tibetan culture, and at the same time, it is also a visualized ancient Tibetan history. Additionally, it is the melting pot of diversified ethic culture and it witnessed the sustainable development of multi-national region. It is the crystallization of nomadic culture and represents the highest achievement of oral narrative art in ancient Tibetan and Mongolian.
culture of ancient Tea Horse Road	Caravan was the main vehicle. Besides it was nongovernment international trade channel which bore the main task of economic and culture exchange in southwest China.	It is the tourism products line with the world's most spectacular natural scenery and mysterious culture, it contained cultural heritage that can be sustainably exploited.
Tibetan Buddhism culture	Refer to the incoming branch of Tibetan Buddhism, it belongs to the northern Buddhism deriving from Mahayana Buddhism, but the tantric tradition was its main feature. Tagong Temple was one of the famous temples of the Sakya Tibetan Buddhism.	Five denominations of Tibetan Buddhism including red, yellow, flower, black, white five sects distributed in the whole city. The temple architecture is famous for gorgeous. There are all kinds of religious festivals and religious activities such as "Zhuanshan Festival and Yuangen Deng Festival".
Kangba culture and love song	Kangba culture is many-azimuth and multi-ethnic culture, the compound Kangba culture has a unique personality,	Kangding is hometown of "the love song". A lyric and euphemistical love song

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culture	dignified religious color, abundant connotation and inside information. Kangba culture is obviously different from other Tibetan regional culture in language, dress, religion, folk custom and residential buildings.	expresses Kangding people's sincere emotion and also attracts more travelers who were addicted to love song culture.
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5.2.2.2 Demand Conditions

In 2015, more than 4 billion people traveled within the domestic China and the total tourism income was 4 trillion RMB. More than 120 million people had been travelled outside the China. The consumption of Chinese on travelling ranked first in the world. The development situation of tourism industry of Kangding from year 2011 to year 2015 is listed in table 5-4. It can be seen the average revenue growth rate is 15% annually from this period in 2011-2015 .

Table 5-4 The Tourism Development Situation of Kangding

Time	Tourist Trips (Thousand)	Tourist Income (Billion)
2011	1502	1.43
2012	1510	1.49
2013	2014	1.93
2014	2320	2.25
2015	2600	2

5.2.2.3 Related and Supporting Industries

In terms of the accommodation, Kangding city has 536 residential reception desk including 68 model points of reception desk with 8285 beds. Moreover, there are 507 Starred hotels including more than 50 model points of starred hotel with 12800 beds. Basically, the demand of tourism accommodation in the busiest tourism season can be satisfied.

As for external publicity, Kangding city made the search term of tourism, tourist maps and new direction of tourism. In Chengdu Jinli, Kuanzhai Alley and Chongqing, the local advertise Kangding scenic spots by issuing leaflet, special postcards and promotional video. At the same time, the WeChat platform is established, also the website and the app development has also been promoted.

5.2.2.4 Industrial Structure, Strategy and Rivalry

The main attractions in Kangding, such as MugeCuo, etc., are developed by a certain

tourism company. The franchise is monopolied. In addition, there are some small companies engaged in tourism industry in Kangding . And some unofficial voluntary organizations also engaged in outdoor tourism activities. Many of these groups do not have a business license. They attract tourists through the network. Due to lack of regular operation, the safety of tourists can not be guaranteed. And environment protection responsibility of the attractions can not be achieved. From the competitive point of view, there are certain homogenization in tourism resources in Sichuan and Tibetan areas. For example, they all have plateau characteristics of natural landscape and Tibetan cultural landscape. In contrast, compared with the international famous attractions, the brand effect of tourism in Kangding City is weaker. The advantage of tourism in Kangding is that traffic conditions are relatively convenient. With the construction of Sichuan-Tibet railway, this advantage will be more obvious.

5.2.2.5 Institutional Environment

Ganzi state has been the first to put up with a full-state tourism development plan. In order to promote the development of tourism, Kangding has made the following plans. One is to make full-state tourism plan and focus on developing full-state tourism. The second is to strengthen infrastructure construction in the country and the third is to promote investment. Driven by all levels of government, the basic elements of tourism in Kangding City will be further improved and other development elements such as capital will be collected and used efficiently.

5.2.2.6 Opportunities

Kangding is located in combine belt of Sichuan Basin and Qinghai-Tibet Plateau. And it is the important link and bridge of economic and cultural integration between Han and Tibetan, the leader who promotes the economy of Sichuan province to westward and a bridgehead which helps Kham Tibetan areas blend in Sichuan marketing. The main roads are China National Highway 318, provincial road 211 and 215. The express highway between Kangding and Chengdu was constructed and already put in use in end 2017, its distance is about 284 kilometers with 4.5 hours driving. In the aspect of air routes, Kangding has flights flying directly to Chengdu. The obvious location advantage as traffic hub of western Sichuan guaranteed tourism development of Kangding city. The gradually developed transportation

network, especially the railway construction, will bring more development opportunities to Kangding city. This is an important opportunity for Kangding to carry out culture dissemination.

5.2.3 Mineral Resources

5.2.3.1 Factor Conditions

Kangding has abundant mineral resources, the potential value of mineral resources is more than 100 billion Yuan. The proved mineral resources with strong exploitation values include these rare and precious metals of gold, silver, lithium, lead, zinc and etc, and the non-metals but with very large reserves of silicon, gyp, crystal, and etc. Its reserves of spodumene is accounted for half of total reserves of the country, and the reserves of gypsum is ranked at first position in Asia, therefore, it is known as "the second Ural" in China. It can be seen that the mineral resource reserves in Kangding are in a leading place. At the same time, because natural resources are the gift of nature, the accumulated competitive advantage resulted from abundant natural resources in the field is hard to surpass by other areas. That is why the resources industry is important in industrial system of Kangding city. The resource industry should become an important pillar industry for Kangding city to realize economic growth.

5.2.3.2 Demand Conditions

Table 5-5 Number of Minerals Import and Export in China in 2015

Name	Import Number (10 thousand tons)	Name	Export Number (10 thousand tons)
Iron ore and its concentrates	95272.29	Pig iron and Spiegel iron	16.94
Manganese ore and its concentrates	1575.74	Raw Manganese	29.51
Copper ore and its concentrates	1328.92	Raw copper and copper alloy	21.83
Luo and its concentrates	1039.27	-	-

Source: National Bureau of Statistics of China (2016)

China is a developing country with a large population and the population will be even

larger in the future. It is a period that China has to consume plenty of mineral resources in order to accumulate social wealth rapidly and continually improve people's quality of life and living standards.

As shown in Table 5-5, some of mineral resources need to be imported. This shows that some mineral resources in China are in short supply. We can conclude that the demand for mineral resource in domestic market is relatively huge.

5.2.3.3 Related and Supporting Industries

On mineral resources development, Kangding has created methods to enhance the industry added value. Firstly, exploration and protection of mineral resources is strengthened. Additionally, it has completed the exploration works of superior minerals and geothermal resources. Furthermore, comprehensive mineral resources utilization plan has been implemented. And the construction of superior mineral resource base is pushed forward in order. Currently, reforming and upgrading of mineral enterprises are advanced steadily. Finally, the local consumption of mineral resources is promoted. With preferential policies and high quality services, it has attracted several powerful and credible enterprises to be settled in Kangding.

5.2.3.4 Industrial Structure, Strategy and Rivalry

The resources development industry in Kangding comprises mainly small enterprises. The city has large number of enterprises with small scale and the product value is quite low. Industrial structure is not excellent. Real strategic competitive situation has not been formed.

5.2.3.5 Institutional Environment

Ganzi has regarded the mining industry as one of the six industries that need particularly development. Ganzi Tibetan Autonomous Prefecture People's Government specifically set up the development column for six leading industries of Ganzi (website <http://gzwqt.gov.cn/10000/10047/10049/index.shtml>). In 2013, Ganzi Prefecture introduced suggestions on collection and utilization of mineral resources development funds and mineral products price adjustment funds to improve the living standard of people near mining enterprises by encouraging the mining enterprises to process resources locally.

5.2.3.6 Opportunities

Ganzi has the world's largest reserves of spodumene. Over the years, through the survey of some survey institutions, the resource reserve has been proven to be 188.77 million tons. According to the professional analysis and evaluation, this number is expected to exceed 3 million tons. At present, 35.96 square kilometers of spodumene mining area has been named as a national integrated exploration area. In 2016, the state government proposed a goal of building "China spodumene city" which will bring opportunities for Kangding mining industry to achieve industrial structure optimization. The development environment will be optimized and the resources integration will be enhanced.

5.2.4 Ecological Agriculture and Husbandry

5.2.4.1 Factor Conditions

Across latitude 29°08' ~30°46', and longitude 101°02' ~ 102°30', Kangding, the western region of Sichuan province, is located between the Qinghai - Tibet Plateau and Sichuan basin. Kangding has high elevation. The eastern region of Kangding is alpine and gorge regions. This region belongs to subtropical climate and has rich resources. The western region is mountain plateau and belongs to plateau type continental climate. As the area is inhabited mainly by Tibetans, the Tibetan culture has profound impact.

From the above description of geographical environment and cultural tradition of Kangding, we know the area is suitable to develop the farming and animal husbandry. Due to high altitude and mountainous landscape, although the area has abundant water resources and suitable climate, it is not suitable for this region to plant rice or other food crops. However, this region can plant canola or vegetable crops. As for the animal husbandry, the region is adjacent to the Qinghai-Tibet plateau, and most residents are Tibetans. Hence it should focus on the development of animal husbandry.

If the market was the basis for the development of an industry, then human resource is a core element of industrialization development. Because, talents are proficient in a particular field of knowledge and can understand the production rule of a particular field. Back to the topic discussed in this thesis, this refers to they are familiar with growth habit and rules of

crops and they know product knowledge of animal husbandry very well, specifically the grass growing and cattle feeding. So, how are the agriculture talents reserves in Kangding and what is the training status of these talents?

In terms of investigating the regional talent cultivation condition, the first is to study the development situation of local education. Talent is bound to be together in the place with higher education level and full of universities. Second is to see the local investment for agriculture talents, put it into other words, it is to see whether agriculture and animal husbandry is key development projects of Kangding or not. Second is to check the local investment for agriculture talents. For this point, from the actual investigation, the education development of Kangding city still falls behind. First, compared with other regions, the compulsory education proportion is low. Then, the higher education falls backward, and the number of universities is small. Moreover, research institutions and researchers engaged in agriculture and animal husbandry are insufficient. The Above three reasons show that, efforts of Kangding city on the training of common talents and the talents of farming and animal husbandry are not enough. In the absence of internal training, we could compensate for it by absorbing external talents, but Kangding did not make great efforts in this area. The result of internal training shortage and ineffective external absorption is the shortage of the talented person in agriculture and animal husbandry.

5.2.4.2 Demand Conditions

In recent years, ecological and personalized consumer attitudes are accepted by more and more people. That is to say, agricultural products needed by consumers should not only meet basic requirement but also possess rich quality and nutrition. Therefore, these pollution-free products with regional feature are popular among consumers.

5.2.4.3 Related and Supporting Industries

Since 2008, Ganzi Prefecture and the Provincial Academy of Agricultural Sciences enhanced cooperation and promote the successful implementation of agricultural scientific research projects. With the help of agricultural achievements, Kangding ecological agriculture and animal husbandry can be optimized, for example, in April 2015, organized by the Provincial Department of Agriculture, Kangding high-yield land produced 508 kilograms

toadstool per mu on average creating a new record of human field cultivation of toadstool. In addition, the development of e-commerce, logistics and other industries creates conditions for agricultural and livestock products sales in Kangding.

5.2.4.4 Industrial Structure, Strategy and Rivalry

The main characteristic of agriculture and animal husbandry in Kangding is retail. Retail is also called the individuality refers to, as the unit, family produces agriculture and animal husbandry production. Compared with modern intensive production method, retail mode of producing has the following disadvantages. One is the low efficiency and second will be the lack of competitiveness. Without further processing, the product has low added value. A sound developed industry should have a certain scale in the first place, so that they can reduce cost and improve efficiency. Different from single enterprise of modern industry that can form a certain scale, only by association, the agriculture and animal husbandry can form the scale. Thus, intensive and mechanized production can be realized. This needs to break the traditional planting way taking family as the unit. May be due to the geography and humanities tradition or other reasons, modernized development of agriculture and animal husbandry in Kangding still lags behind. Moreover, retail plant takes a greater proportion of agriculture and animal husbandry. It has a great negative impact on the marketization and commercialization of agricultural products.

Agricultural and animal husbandry products in Kangding is mainly self-sufficient. Even the products sold in market are raw products. Market degree is still quite low.

5.2.4.5 Institutional Environment

In recent years, Kangding pays attention to transform development method of agriculture and animal husbandry, and regards farmers income increasement, agriculture and animal husbandry efficiency improvement as main task. Under the guidance of this strategy, Kangding agriculture and animal husbandry will embark on the transformation and upgrading road. Combined with the full-state tourism strategy, all these measures will enhance the added value of products and increase industrial efficiency.

5.2.4.6 Opportunities

The change of consumption concept shows the potential value of ecological agriculture development. People's living standards are improved continually. Green and healthy consumption concept is accepted by more and more people who are more concerned about the quality of the product. In this atmosphere, some high-quality agricultural products and local native products become a new choice for consumers. And the production of pollution-free agricultural products is also the inherent requirements of ecological agriculture development.

Government policy brings opportunities to the development of eco-agriculture and animal husbandry. In recent years, through the continuous adjustment of agricultural industry structure, Kangding accelerated the degree of agricultural industrialization. By the end of 2015, Kangding has cultivated 223 agricultural cooperatives (including: national demonstration cooperatives and provincial demonstration cooperatives), 114 large grain growers and vigorously promote the "enterprise (cooperatives) + base + farmers " development mode. Therefore, farmers directly, fully and continuously achieve benefit from such mode. At the same time, government helps to develop 12 leading enterprises including Qinghai-Tibet Valley company, three king drugs company and Yin Jie trade company.

5.2.5 Traditional Tibetan Medicine

5.2.5.1 Factor Conditions

After one thousand years of research and inheritance, traditional Tibetan medicine in our country has its unique theoretical system, clinical dialectical style, abundant medicine prescription, drug species, original clinical curative effect and the pure drug efficacy. It not only occupies a position in the domestic pharmaceutical industry, but also moves toward the world with its unique culture. According to the statistics, our country has 3000 kinds of Tibetan medicine at present.

The growth of the Tibetan medicine needs unique ecological environment. Tibetan medicine includes a variety of plants, different kinds of plants are adapted to different environment, and they have different geographic distribution. The growth environment of the Tibetan medicine grown in special geographical environment which means the environment

has high altitude, strong sunlight as well as wide temperature gap between day and night. Because of the particularity of Tibetan medicine growth environment, its artificial breeding is particularly difficult. As for the development of Tibetan medicine industry, medicine should be planted in special zone.

Kangding is located in the southeastern margin of the Qinghai-Tibet Plateau, as well as the eastern part of Ganzi Prefecture, which is transition zone of Yunnan-Guizhou plateau from Sichuan basin to the Qinghai-Tibet plateau and the Yunnan-Guizhou Plateau. Big Snow Mountain passes through Kangding from south to north, this mountain is one of the main mountain chains in Hengduan Mountains as well as the watershed between Dadu River and Ya-lung River. Its altitude ranges from 3000 meters to 5000 meters, and the altitude of the highest peak is 7556 meters. Kangding has been passed through by ZheDuo mountain chain which naturally divided this city into east and west region. These two regions have obvious difference in geology, geography, climate, soil and biological crops. The East area is alpine and canyon region transited from Western Sichuan Plateau to Sichuan Basin, this area is steep and Dadu River longitudinally flows through it. The West region is the edge of the Tibetan plateau, it belongs to hilly plateau area and Ya-lung River flows through its territory. The mountains alternate in Kangding. There are 416 mountains with altitude above 5000 meters, the number of peaks with altitude 6000 meters above is 19. Kangding has peculiar geographical environment including many hot springs, mountains and lakes, at the same time, there are Big Snow Mountain, glaciers, primeval forest, as well as wide variety of animal and plant resources. It is a city with unique geographical resources.

The climate of Kangding is similar to the climate of Qinghai-Tibet plateau, at the same time, it includes both continental plateau climate and mountain climate. The main climatic characteristics of this region can be summarized as various climate types, big temperature gap between day and night. Even in summer, the temperature in August morning can be as low as three degrees. At noon, the temperature will be up to 20 degrees, and in night it returns to low temperature. Kangding has abundant luminous energy. However, its annual rainfall and the heat are not as much as its luminous energy. Because of the climate condition, the disastrous weather is frequent, and appears alternately. This kind of weather has brought serious harm to

the local crops and tourism economy. In winter, the air in most areas of Kangding is dry, and the temperature is generally low. When the summer comes, the rainfall in Kangding will increase. However, the temperature is still low. In summer, Kangding has more thunder and hail. Throughout the year, the temperature of Kangding is low. Winter is longer, but the four seasons are not clear. Kangding in summer has good sunshine condition and the frost-free period is short.

Ganzi Tibetan Autonomous Prefecture is the birthplace of southern traditional Tibetan medicine in our country, and in 2006 it was given by the State Council "Southern Tibetan Medicine of Tibetan Autonomous Prefecture" enrolling in the first batch of national intangible cultural heritage.

5.2.5.2 Demand Conditions

Because of the nature of Tibetan medicine, it conforms to today's market trends that people advocate nature and pursuit ecological commodity. Its sales are very good and a vast number of consumers love it. Furthermore, the government has begun to pay attention to the study of Tibetan medicine in Japan, the United States and other countries.

The consumer market of Tibetan medicine is optimistic, short supply of traditional Tibetan medicine often appears. There are reasons for the short supply, they are short of specification in the development of traditional Tibetan medicine at present stage, some medicine cannot be harvested timely, some medicinal herbs were used in soup or stew, and part of medicinal materials was excavated predatorily. Now most of the enterprise is faced with situation of lacking raw materials, therefore the sustainable production of Tibetan medicine is challenged. According to the information, some medicinal material and resources are congenital scarce, some traditional Tibetan medicine is excavated improperly, and there is difficulty in artificial domestication of traditional Tibetan medicine. These are reasons of unsustainable development in medicine industry. However, in the market, the Tibetan medicine is in short supply. Nyima Cering, dean of Tibetan Medicine College, pointed out that, in the traditional distribution area of Tibetan drugs, ordinary people took tractors to excavate *rhodiola rosea* making a lot of *rhodiola rosea* disappeared in this region.

According to the market demand analysis of Tibetan medicine, we can see that its

demand is very optimistic in the market. If we can address the problem of sustainable development of Tibetan medicine, it will not only make the Chinese-Tibetan medicine industry develop, but also protect the integrity of the biological, which will form a win-win situation in Kangding City as a restricted zone.

5.2.5.3 Related and Supporting Industries

The development of tourism provides a market for the sale of Tibetan medicine. In Kangding urban area and its tourist attractions, herbs shops existed in everywhere. In such a tourism holy land, the arrival of tourists added a lot of vitality to the local market and it also promote the development of Tibetan medicine economy.

5.2.5.4 Industrial Structure, Strategy and Rivalry

Guided by leading industry, Tibetan medicine industry in Kangding has formed a certain shape. At the same time, it has also attracted investment from foreign companies. At present, the Chengdu Enwei Group invest a new planting project in Kangding, the project adopts a "company + base + peasant household" mode. The main content of this project is the company builds a research base of *Bulbus fritillariae cirrhosae*, which is responsible for research and development new seeds of *Bulbus fritillariae cirrhosae*, and also should cultivate *Bulbus fritillariae cirrhosae* for one year. After one year, the seeds have grown into needle-point leaf, it will be transformed to peasant household without charging any fees. Under the premise of voluntary, local farmers can grow the *Bulbus fritillariae cirrhosae*, and the company will arrange special personnel to teach farmers how to plant it. Then the company will recycle *Bulbus fritillariae cirrhosae* and pays farmers for supplying per kilogram of *Bulbus fritillariae cirrhosae*. Such a planting pattern not only can make good use of the local ecological resources but also can provide employment opportunities for local people. It drives local people to be rich.

In addition, Kangding city, as a high producing area of Tibetan medicine, there are still quite a few problems in its long-term development. The first is that the scientific research is not enough, the characteristics of different varieties less. First, the scientific research strength and special advantageous species are insufficient. Through medicine market research in Kangding, it is known that the shop sales mainly *Cordyceps sinensis*, *Corn Cervi*

Pantotrichum and so on. These are mainly raw materials and product development technology is in a severe shortage. The medicinal materials do not embody its special advantage, besides the craftsmanship of drugs is low. This is mainly due to weak scientific research strength, low research and development spending, medicine and the lack of special talents in medicine research. Second, it is difficult to introduce talents. It is an important problem for Kangding to introduce talents including management and research talents. Apart from a few locals, talents are hard to stay in this region. There are a lot of reasons why talent introduction is difficult. After investigation, the main reasons are, firstly, the ecological environment of Kangding city results in departure of most people. For example, many people shrink back at the sight of local high altitude environment. Because these people cannot adapt to the local living environment and the altitude sickness phenomenon appears quite often, most people want to leave. Second, local climate makes people want to leave. Annual temperature in Kangding is generally low, especially in the winter, Kangding is cold. Even in August, there is still someone wearing a quilted jacket. The four seasons are not clear. Therefore, the floating population won't be stay in here because they do not adapt to such temperature. Third, the poor infrastructure condition in Kangding city also makes people unwilling to stay in this city. In addition to work, people also need a good rest and they also aspire to the prosperous outside world. The traffic conditions in Kangding are poor, travel is inconvenient especially in the tourist season, roads within the city are repaired quite often making the traffic problem more serious. Finally, urban construction environment of Kangding is not very ideal either. For example, there is walk only one humble cinema in the city. Besides it is not convenient for shopping. These series of problems will affect people's requirements on quality of life, even if there is a higher salary, people still want to leave.

5.2.5.5 Institution Environment

Ganzi Provincial Committee and the state government attach great importance to the development of Tibetan medicine industry. It is regarded as one of the six leading industries in the state. The state also published the thirteen-five development plan for Tibetan medicine industry. According to this plan, the Tibetan industry transformed from single-produce and sale products to integrated pharmaceutical production. In this way, it achieved industrial

transformation and upgrading, and economic benefits will also be increased.

5.2.5.6 Opportunities

As an important part of our national medicine, Tibetan medicine has specific medical value. This kind of medical value is inseparable with the long history of Tibetan medicine, complete system theory, unique drug resources and diverse processing technology as well as those treasurable classic drugs. Nowadays, the modern high-tech is the support of the pharmaceutical industry. As traditional drug, Tibetan medicine can still be accepted by the market and become the sunrise industry with certain size. The unique value of Tibetan medicine and its endless vitality can be seen. This vitality derived from clinical practice accumulation. No matter in today or in the future, Tibetan medicine cannot be replaced by modern medicine and will play a unique role in many specific medical fields. The market trend of healthy drug and life created rare market opportunities for the development of modern Tibetan medicine industry.

From the above analysis of the leading industries in Kangding City, it can be seen that Kangding has abundant natural resources such as water and minerals, which has led to the rapid development of resource development industry and water utility industries such as hydropower. Kangding's beautiful natural scenery, on the other hand, it has brought itself a flourishing tourism. And Kangding's unique geographical advantages have spawned the production of Chinese-Tibetan medicine and ecological beef and mutton, which contribute to the thriving of Tibetan herbal medicine industry and local agriculture and stockbreeding industry. Therefore, under the influence of Kangding's basic economic elements, its leading industry shows strong dependence on local resources and is relatively lacking in other senior elements such as talents.

Combined with Porter's diamond theory, Government should accelerate infrastructure construction. Factors of production are sufficient. Enrichment-related support industries developed rapidly. Entering the industrial capital of Kangding City has played a positive role in promoting and cultivating local enterprises. All levels of government for the development of Kangding have a certain degree of support policies. In general, the development opportunities in Kangding City show a good momentum. However, as mentioned in this

section, from the current economic development of Kangding City, there are still many problems to be solved. The next chapter aims to discuss the advantages of Kangding City's economic development and exposure, as well as put forward some specific recommendations.

5.3 Economic Development Opportunities of Kangding

5.3.1 Policy Opportunities

Under the strategic pattern, Kangding, as ethnic minority region, is given priority in the overall strategy of national regional development and enjoys special policy support. In addition, since 2013, the State has proposed and implemented precision poverty reduction strategies. The content is to focus on resources collection, address poverty issues and pay attention to poor areas to improve the efficiency and quality of poverty alleviation. According to China's current standards, Kangding is the object of precision poverty alleviation. The Poverty Alleviation Strategy will bring resources, technology, talent and other resources to Kangding and will also enhance the supply of public services in Kangding. In addition, from the national and provincial levels, there are preferential policies for ethnic areas. For example, The Provisional Regulations on Enterprise Income Tax of the People's Republic of China stipulates that enterprises that need to be encouraged in national autonomous areas may be subject to periodic reduction or exemption from income tax with the approval of the provincial people's government. "Views on the promotion of ethnic areas development of Sichuan Provincial People's Government" (Sichuan Committee, 1995) approves giving the region credit loaning scale and credit funding supporting and increasing such help year by year.

5.3.2 Location Opportunities

From the geographical point of view, Kangding has an important geographical position in the history of China. It is the "Tibet-Yi national corridor" axis and known as "Sichuan-Tibet throat". Besides, it is regional secondary hub in the plan of constructing western Sichuan integrated transport hub. At present, both Sichuan-Tibet railway and express highway are

under construction. Once they are constructed in a few years, the traffic time between Kangding and Chengdu, will be greatly reduced. Kangding City will become important materials distribution center between Sichuan and Tibet. The location advantages of Kangding will be more apparent.

5.3.3 Transformation and Upgrading Opportunities

Accelerate the transformation of economic development is the main line of the "12th five-year plan" and the 13th five-year plan". Therefore, government of all levels should expand domestic demand, accelerate the consumption, actively adjust the industrial structure, vigorously develop the service industry and regard the tourism industry as the strategic pillar industries. All these measures provide a strong support for Kangding to speed up the development of tourism industry and the construction of international tourism city. At the same time, the government proposed "new normal" economic plan on economic restructuring and industrial upgrading, the whole society has a high-level demand for resources and energy. Although the existing resources development and hydropower construction in Kangding are mainly based on the original and low value-added production which is difficult to meet the changing demand structure in the society, However, due to the strong dependence of the resource industry on the regional resource endowment, other areas that lack of resources is difficult to catch up with Kangding in the short term. This situation provides enough time for Kangding to conduct resource-based industry transformation and upgrading. At the same time, resource endowment attracts more foreign investment and provides certain transformation and upgrading opportunities to resource-based industry.

Chapter 6: Discussion on Leading Industry Development in Kangding

In application of the diamond model, the thesis in the previous two chapters, had a macro-analysis on Kangding's potential for economic growth based on its competitive advantages, and from the perspective of specific industry, the thesis explored the six factors which determine the development of Kangding's leading industries.

Through the analysis, the leading industries, which rely heavily on basic natural resources, have limited positive effects on local economy, while a continually negative influence on resources and environment. Therefore, it's necessary for Kangding to guide the transformation and upgrading of its leading industries during economic development. While playing the leading role in boosting the economy, the leading industries should be directed to reduce the negative impacts on resources and environment. And It is also required to further optimize the industrial structure, support key enterprises and establish the regional products brand in order to attract senior elements such as talents. According to the analysis at above, specific improvement suggestions are proposed in this chapter in view of the existing problems in each leading industry.

6.1 Perfecting the Mechanism of Ecological Compensation

As a strategy for ecological conservation and development, ecological compensation mentioned here occurred when the participants improve the ecological system by paying, rewarding or compensating the ecological service the principle of free will and unanimity through consultation (Nie, 2014). For ecological compensation system, the participants and stakeholders at least should include the buyer and provider of ecological service, and the buyer pays it for the supply that is given by provider. As the sample to be studied in this section, ecological compensation in mineral resources development areas refers to funding

support, financial subsidies, tax deduction and exemption as well as preferential policies generated in seeking sustainable development opportunities, the treatment of ecological environment pollution and the recovery method of natural resources in mining area (Wen, 2014). The jurisprudential basis for ecological compensation on mineral resources include the right of regional development, environmental rights and autonomy of natural resources in national regions (Yang, 2015).

For Kangding, based on its specialty and main functionality, providing ecological products and services become very important for its development. Theoretically, the public attributes of ecological products cause that the values of ecological products cannot be realized automatically by market. Instead, the ecological compensation is necessary to compensate for market failure. However, lacking effective ecological compensation measures seriously hinder the social economy development and the growth of government fiscal revenue of Kangding. Thus, government forces are required and fiscal policies shall be used as main tools to establish long-lasting comprehensive ecological compensation mechanism, so as to provide motivations for production of ecological products in restricted areas and practically implement the main function construction in such areas.

In foreign countries, the ecological compensation has become an effective solution to adjust social public welfares. Countries such as Sweden, Denmark, Netherlands and Germany have successfully realized to get environmental harm tax into the tax system and began to impose environment taxes widely, typically including air pollution tax, solid waste tax and water pollution tax. Costa Rica calculated the total forestry carbon emissions permit trading of domestic public finance construction, and the additional carbon emissions permit was regarded as a national carbon emissions permit reserves which can be sold to foreign companies in due time, most of the income was compensated to master of forestry. Costa Rica had a great influence on the world in authentication of carbon emission permits and carbon emissions permit trading (Zhang & Gong, 2013). In addition, some countries have set up ecological insurance and bank loans. Ecological insurance is the ideal way to ensure the availability of ecological compensation fund, once the mining ecological environmental accidents occurs, the insurance company will settle claims timely, providing funding to

restore and govern ecological environment of mine, while ecological bank loans to environmental projects that commercial Banks refused to lend capital (Wang & Bai, 2015).

The advanced experience of western resources in development of resource and ecological compensation is important insight for our country to promote development and protection of resources industry under the strategy of main functional area. The 18th session of the national people's congress pointed out, "we will deepen reformation of the price and the cost of tax resource commodities innovation and build the system for the reconciliation on market supply and demand with restricted resources, and ecological value and intergenerational compensation mechanism of the paid utilization of resources and ecological compensation" (Niu, 2013). Thus, establishment of sustainable ecological compensation mechanism is particularly important for industry transformation and development of mineral resources in Kangding. The establishment of sustainable ecological compensation mechanism can be started from the following several aspects.

First is about establishment and completion of relevant law and regularity system for financial transfer payment of ecological compensation. It requires legal protection for stable implementation of environmental fiscal policy, successful construction of ecological projects and effective management of ecological environment. Thus, the legislative work of ecological compensation must be strengthened, responsibilities of ecological compensation and obligations of each ecological subject shall be defined by law to provide legal basis for standardized operation of ecological compensation mechanism. However, there is a lack of ecological compensation laws in our country currently, and legal provisions for ecological compensation are dispersed in different levels of laws and regulations. And there are no specific regulations on key problems such as basic principle, subject, standard, capital, etc. of ecological compensation. Therefore, the prerequisite for the future practical development of ecological compensation and implantation of financial transfer payment system of ecological compensation in our country is to strengthen the system construction for relevant laws and regulations on ecological compensation. By legislation, it provides legal basis for ecological compensation financial transfer payment practice and ensures that the laws are strictly observed, so as to define the legal responsibilities of government at each level and guarantee

that the practical operation process of ecological compensation financial transfer payment can be fair and open to avoid interference by human factors.

Second is about establishment and completion of financial system corresponding to ecological restoration responsibility of the government. The environment finance shall be an important part of public finance, so that ecological compensation shall be strengthened in financial transfer payment. The geographical unit of ecological restoration shall be divided by natural and ecological functions. The inconformity between the definition of scope and the division of administration is an inevitable phenomenon. That is to say, the ecological restoration will inevitably involve the cross-administrative divisions. Therefore, corresponding responsibilities of finance at each level shall be defined and the transfer payment system shall be completed. From the point of vertical system, the superior financial department shall mainly scientifically prepare a special transfer payment system to provide the subordinate financial department with fund guarantee for specific restoration projects. The central and provincial financial departments shall set up special funds for ecological environment construction and list the special funds into the peer financial budget for guarantee. From the point of horizontal system, the ability of regulation and control of superior governments shall be improved by "increasing one level" of responsibility, and system shall mainly support the underdeveloped areas including main ecological functional areas, headstream areas and natural conservation areas, financial support for regional and basin-wide pollution prevention, new techniques for pollution prevention, new process development and application shall be improved.

Third is to make innovation in horizontal payment mode and establish organic and integrated ecological compensation mechanism. In order to establish a complete investment and financing system for ecological compensation, it requires government's leading to increase the input of public finance to ecological compensation and also positive leading of participation of all social parts to explore various ecological compensation ways, expand the road of market-oriented and socialized operation of ecological compensation, so as to achieve simultaneous development by all social parts and promotion with resultant force. On one hand, it can actively make use of national debt capital, issue loans, and get loans or donations from

international organizations and foreign governments to form a multi capital structure. On the other hand, it can actively explore the inter-regional ecological compensation and create favorable conditions of system and policy to promote development of restricted areas in different places. Taking the "Enclave Economy" as the example, two regions constructs an "enclave park" together, so that ecological benefited areas can solve the financial burden and benefit from the development of the park, and ecological functional areas can adjust the local industrial structure, solve the problems of population transfer and employment and obtain finance prorata from park development by means of enclave, so as to establish a win-win economic development pattern between ecological preservation areas and benefited areas, between upstream and downstream. Such an innovative horizontal payment method shall be promoted and implemented after being summarized and perfected.

6.2 Exploration of the Ecological Compensation Mechanism of Hydropower Industry

Kangding is the most important area to develop hydropower in Ganzi Tibetan Autonomous Prefecture. Hydropower investment has become the city's most active economic investment areas. In view of the current situations that traffic and infrastructure are still under investment and construction, the corresponding upstream and downstream for the industries are not developed, then the comprehensive productivity is still very low, therefore, the hydropower industry investment is very active, but it has not brought any strong benefits to Kangding City. According to the selection of strategy for Kangding to implement the economic growth, this section mainly explores the benefit compensation mechanism in the hydropower resources development and its long-term supply, so as to release Kangding city's contribution factor to the local economic development in the process of hydropower exploration and promote economic and social progress of Kangding.

6.2.1 Negative Effects on Kangding Caused by the Exploitation of Hydropower Industry

The West-East Electricity Transmission Project is a win-win strategy for both regions as

supply provider and destination consumers. As the provider of resources, Kangding city enjoys natural advantages in water energy. However, under the immature background of current policies and regional distribution mechanisms, the benefits received for the west and the east is unequal. As the receiver, the developed east enjoys more benefits from the West-East Electricity Transmission Project, not only meeting the needs of electric power resources needed by economic development, but also reducing the environmental destruction caused by traditional energy such as thermal power, so as to achieve a relatively sustainable economic development model. However, the West, as the important provider of the resource, , receives less benefits because of the weak economic development foundation, bad supporting facilities and complicated subordinating relations, which discourage the initiatives of the West for West-East Electricity Transmission Project so that it is unable to effectively achieve the purpose of developing this project (Li, 2010). As a key area that Kangding outputs electric power, hydropower resources exploitation for many years in Kangding has significant impact on society, but it has also brought the burdens to Kangding relatively with two aspects from ecological cost and social cost.

The ecological environment mentioned in this thesis is a general term for all external conditions that have an impact on the survival and development of human being, including water resource, land resource, biological resource and the quantity and quality of the climate resources etc. (Wang, 2014). They are the ecological system for social stability and economic growth. Ecological environment problem refers to the destruction of nature and pollution issues caused by human being in the process of exploiting natural environment for their survival and progress and the further negative effects that influence the survival of human being (Che, 2012). Generally, hydropower development project is so high that requiring a great deal of human resources, material resources and financial resources, and usually it has a negative impact on the stability of regional ecological environment, which leads to ecological and environmental issues and trigger serious ecological security threat. Those are the ecological costs caused by water resources exploitation.

On the one hand, hydropower resources exploitation in Kangding has already had serious influence on land bio-environment. Hydropower station construction changes the structure of

regional geology and gravity. It may cause geological disasters such as earthquakes, landslides and so on. After the hydropower station was built and it started to store water, the water will flood the cultivated land, forest land and other types of land near the hydropower station. The original land will be changed into a water body or wetland, this will affect function of local climate and environment. Living environment of plants and animals is changed, meanwhile the growth, breeding of plants and animals is affected, thus destructs biodiversity. In general, hydropower station construction damages the local ecological system, affects the biodiversity as well as the geological stability and brings some hidden troubles to the ecological function. (Liu, 2002).

On the other hand, hydropower resources exploitation in Kangding had serious influence on the river ecosystem. The first is the change of water body. Hydropower station reservoir makes the river flow slow down and the water changes from flowing into stagnating. Water exchange rate with the outside world decreases and pollutant treatment ability is gradually become weak. Water ecological environment changed greatly affecting the survival of the water animals. Second is hydropower station blocks the river which causes the seasonal migration channels of fish are blocked causing threats to the fish breeding. Finally, the slow flow speed of water forced rivers to change their routes affecting the entire basin groundwater distribution, thus further affects the whole ecosystem in various ways.

Hydropower exploitation not only has effect on river basin ecosystem, but also affects the stability and progress of entire society through immigration, cultural and other factors. Thus, the whole society need pay for hydropower exploitation.

The construction process of hydropower project will inevitably drown large tracts of land, resulting in a large number of destruction of residential housing, farmland and other production and living materials, and further leading to migration phenomenon. The migration problem is not only an economic issue, but also a social problem. Moreover, the resettlement has become a political problem due to the facts that Kangding city is located in the ethnic minority areas. With the continuous transformation and development of China's economic structure, the migration problem is becoming increasingly complicated gradually. Under the market economy environment, the stakeholders have different views and values and thus they

have some controversy in scientific compensation such as land assets and physical assets etc. In addition, it is also a social impact of hydropower exploitation that cultural relics is swamped and disappeared. Moreover, after the completion of the water conservancy construction, the natural environment has been polluted and it is harmful for the local residents to live in the polluted natural environment. These constant social problems and rising costs of ecological protection have led to the decrease of the electricity price competitive in Kangding. The investment enthusiasm of enterprises in hydropower industry in Kangding has been dampened.

It is the tax income for the government to drive the government to support the development of the industry. However, hydropower industry has special contribution to the tax income for local government. First, in the construction period, local governments can get higher revenues by many kinds of taxes. Second, under the tax mechanism in China, most tax income in hydropower operation periods is obtained by center government. Only a small part is left to the local government. Although the center government has paid the tax income back to the local government by transfer payment, the effect was not very desirable in the long term. Local governments found it difficult to get enough compensation from transfer payments, therefore after construction climax, Kangding would be hard to gain more tax revenue from hydropower industry, besides the long-term operation of hydropower station need government fiscal support, it would cost the local government to supervise and balance the relationship between different parties. Finally, For the hydropower industry, usually the company which is involved in the operation is powerful enterprise groups or state-owned enterprises with out-of-town company headquarters, so their operation income and profits would return to the superior enterprises, relevant taxes would also pay in the headquarters. Hence, from one perspective, even a small part of the tax belonged to local government but cannot enter the finance in Kangding city which undoubtedly increased fiscal pressures to regulate and coordinate hydropower industry in Kangding city. From another perspective, the profit is submitted to upper level or its headquarter, so the economic benefits of hydropower development cannot be converted to private wealth of Kangding city. Thus, the leading role of the hydropower industry in promoting economic development of Kangding city would be

difficult to realize (Zhang, 2013).

In conclusion, the dual economic and environmental positive effect of hydropower exploitation in Kangding city were transferred to the eastern coastal developed provinces in China, and ecological and social negative effect had been left to Kangding city (Lang, 2005). The city had paid for a heavy burden. Additionally, because regulation and planning were inadequate, disorderly exploitation of hydropower resources among medium and small sized hydropower station still exists in Kangding city. Thus, it increased the negative environment effect of ecological problems and geological disasters. Under the national main body function planning, Kangding city faced bigger ecological protection pressure. The contradiction between protecting the environment and exploiting the hydropower need to be inspected and dealt with more efforts. The construction of hydropower project is helpful to the coordinated development of the transmission area and the receiving area, especially to the long-term stable development of Kangding city as the main transmission area. It will also help the power generation area to improve the energy condition, economic condition, social condition and environmental condition. We should make use of related compensation policies and the distribution system of water and power rents to construct sound environmental compensation system. Further innovation of tax system should also be synchronized with the environmental compensation system to make scientific fiscal and financial system in both field of water and power industries and adopt sound compensation ways to the output of power across regions. The benefits should be distributed scientifically for both regions, which have a great significance to ensure the development scale of waterpower in Kangding city and promote the sustainable and prosperous development of economy in Kangding (Li, 2010).

6.2.2 The Relevant Mechanism about Benefit Compensation

There are mature practice models for the benefit compensation mechanism of environment and ecology both in China and outside China.. This section will focus on compensation mechanism which produced significantly positive social effects on the healthy development of water and electricity industry in Kangding city such as carbon trade, long-term compensation of immigration, ecological compensation and fiscal measures.

Carbon Trading: The construction of China's carbon trading market starts relatively late, however, by the end of 2014, the total turnovers of carbon trading market in seven provinces and cities including Shenzhen, Beijing, Guangdong, Chongqing etc. which has amounts to RMB 1.26 billion, with over 2.867 million tons of carbon emissions trading volume.. In the facts that there are some installed capacity and power generation that will produce greenhouse gas in the grid, however, if they are replaced by hydropower projects, the greenhouse gas emissions can be reduced. Through the carbon trading market, the power that is delivered outward can be included into carbon emission trading so that the benefits compensation of carbon emission reduction that is caused by the supply of waterpower to the East can be quantified reasonably. Such compensation mechanism with quantifying carbon emission reduction by using the waterpower will bring social wealth to Kangding city, promoting the economic development of this city. At the same time, the long-term quantitative compensation obtained through the carbon sink trading will become the driving force for the sustainable development of the water and electricity industry in Kangding City, and form a virtuous circle in the development of this industry and society (Li, 2010).

The long-term compensation mechanism is created by comparable with “one time compensation” to be used for the general migration resettlement, and it is a creative development method based on land acquisition and migration resettlement methods. Long-term compensation refers to a compensation method that is adopted by a given project to compensate the owners or contractors of the land that is drowned according to some important indicators, such as the type of land, the size of the land and the verified annual output value in a certain period (Huang, 2013). Kangding city should take long-term compensation as a main migration compensation measures. On the one hand, long-term compensation takes the market price growth and other factors into consideration. The compensation can be paid annually and might be increased yearly with the market standard. To some extends, this requires the hydropower investment company has the strong capital and operating capability for the long running and sustainability. At the same time, long-term compensation tests the ability of hydropower station operation to earn profit. It, to a certain extent, restricted excessively construction of hydropower station in Kangding and promoted

the healthy development of the whole hydropower industry. Kangding, on the other hand, as the ecological function zone of restricted exploitation, most of the land in this zone would be mainly focused on ecological function. Thus, the cultivated land resources in Kangding city were relatively scarce. The traditional one time compensation model, which means the compensation of one-time payment in monetary for acquisition of occupied land did not conform to the main function orientation of Kangding. Long-term compensation mode does not need to develop more farmland during immigration process. Therefore, it reduces the damage to the environment and ecology alleviating the contradictory between human and land.

Financial compensation with the remedial measure is designed to ecological functional area that has already been destroyed. The supporting mechanism should be established between the rich and the poor areas. Environmental disruptions in main functional areas are always caused by overdevelopment of energy or environmental pollution, such as establishment of mining plant and hydropower station. Energy output in these areas leads to poverty and ecological damages, while "the outside world" enjoys the fruits at the cost of ecological damages and even enjoys affluence. Therefore, a mechanism for ecological compensation shall be established, so the rich areas can give support to the poor areas. We shall also pay attention to ecological compensation from the downstream regions to the upstream regions and compensation from the government to the ecological protection of humans. And a series of supportive mechanisms and policies shall be established to achieve harmonious development between economy and environment in main functional areas. RMB 0.5 billion compensation capitals have been allocated to the first pilot area of ecological compensation system across different provinces since 2011 leading by Ministry of Finance and Ministry of Environmental Protection. In order to further study ecological compensation system, pilot work is conducted continually in some regions, exploring and designing some measures which are coming into effect. Zhejiang province is the first province that implements the ecological compensation, publishing the documents including Suggestions for Further Perfecting the Ecological Compensation Mechanism, Interim Procedures for Provincial Special Financial Subsidies for Ecological Environmental Protection in Source

Area of Qiantang River and Interim Procedures for Financial Transfer Payment for Ecological Environmental Protection in Zhejiang Province. In the pilot project of ecological compensation across the provinces, RMB0.3 billion in total have been allocated to Anhui province by the Ministry of Finance to improve the water environment level along Xin'an River basin. One year later, the water quality of Xin'an River along the bordering area of Zhejiang province and Anhui province meets a certain indicator, Zhejiang province needs to provide RMB 0.1 billion compensation funds to Anhui province, otherwise Anhui province needs to provide RMB 0.1 billion compensation funds to Zhejiang province.

Fiscal Measures: At present, there are several approaches to realize interest compensation on the hydropower resources through fiscal measures. First, fiscal transfer payment of government financial department, local governments bear an important responsibility to protect the ecological environment, so the central government often provides ecological protection funds to local governments by means of transfer payments. Under main function region planning, as a key ecological and functional areas and the most important investors of ecological environmental protection, Kangding would receive further favor of fiscal transfer payment. At that time, the city would get more special fiscal funds used in the protection of ecological environment or used to subsidize ecological protectors. Second, the tax on ecological remedy compensation can be collected from hydropower owner in view of the volume of resource occupation and pollution emission. Third, beneficiaries in the hydropower resource exploitation should be charged. Based on the principle of "those who get benefits should compensate", charge beneficiaries in the hydropower resource exploitation through the way of marketization or legislative protection to form local compensation fund used to compensate the benefit suffering injury. Fourth, the government organizations can also accept subsidize from private organizations such as Foundation and Commonwealth Organization. From the perspective of nationwide, government fiscal transfer payment was still the main source of local compensation funds.

6.2.3 Benefit Compensation Mechanism of Hydropower Resource in Kangding

In the process of hydropower resources development, Kangding city should explore and

build benefit compensation mechanism of hydropower resources. On one hand, forming an atmosphere that industry drives the development and progress of society as a whole, and on the other hand, the compensation funds can be regarded as start-up capital to support the construct of the ecological function, to give strong back to the development of ecological industry, to speed up the creation of main body function, and to realize the long-term transition of leading industry.

First, is to explore resource pricing and paid development mechanism. According to the main principle of “market guides the distribution of resource” and “government-leading, market operation”, under the condition of summarizing practical experience of hydropower resources exploitation in small drainage basin, we will continue to study the paid exploitation mechanism of hydropower in these drainage basins. As for as the construction of power station, market operation will be adopted according to the standard that market should allocate resources. Thus, these advantage resources will become the dominant capital.

According to the water law and other relevant laws, the regulations and policies indicate to strengthen fee collection of water resources, deepen understanding of resources protection and saving and guarantee that there will be no waste of resources. In stage of hydropower development and construction, we must keep an important principle that the resource development and environmental protection should be at the same pace. Ecological damage cannot be a cost of developing and constructing the hydropower project. No matter what kind of companies, they all need implement the "Three Simultaneities" of environmental protection mechanism, which means the design, construction and operation of environmental protection facilities should be simultaneous with the main projects. It is not allowed to make damage to the natural environment for saving investment cost of production activity. Relevant departments should strengthen intensity of supervision and inspection work, promote the company to increase investment funds for environmental protection. The implementation of the orderly development activities must be based on environmental protection which means there must be a certain protection in the development stage of resources.

Second is about improving the long-term mechanism of hydropower development and resettlement which can take opportunity of hydropower exploitation, and combine the power

station construction, immigrant resettlement and the reservoir development to complete the constructing assignment of Zhanggu river dike, wild dam, Jiangzu, Niu Pengzi and Kongyu. In order to ensure higher-standard living of immigrant, it was essential to strengthen the supporting infrastructure construction of resettlement areas as well as the follow-up industry development and employment transfer support. It can also explore how to build a benefit sharing system among government, company and the masses and create a perfect ecological restoration system of hydropower development.

It is also recommended to improve the Long-term Mechanism of Hydropower Exploitation and Immigrant Resettlement. The immigrants Investment Company are often in the form of wholly state-owned capital. After these funds were used for investment activities, the investment enterprises must be start to do work of enterprise restructuring and management in accordance with certain stipulations. Investment companies operate independently, government and immigration will not be involved in the business activities of enterprises. According to the agreement, government agencies obtained their investment interests and they have the priority to allocate interest after taxes. The benchmark of investment income is net gross domestic product of cultivated land in the planning year. According to the area of cultivated land possessed by these immigrants, a certain interest should be paid to them.

Third is to bringing in the Ecological Compensation Mechanism, quite proportion of hydropower resources in Kangding city were developed by external companies, Kangding government and the local people as resource suppliers got low profit. The government should issue some measures to protect the interests of the region. For example, the external company that exploited hydropower resources in Kangding city should absorb certain proportion of local labor force except for key positions of management and technology. In addition, in the process of importation, Kangding city should pay attention to learn the advanced technology and management experience and enhance the independent innovation ability.

Forth is to introduce ecological compensation system. Its theoretical basis is the unfavorable consequences caused by activity that damage the ecological environment, and the internalization of positive externalities produced by ecological environment protection and

construction. Currently, negative externalities of hydropower development in Kangding city are reflected in the following aspects including economic negative externalities, social negative externalities, culture negative externalities, ecological negative externality, and so on. Ecological compensation mechanism of Hydropower project should be unfolded from the perspective of ecological system. The construction of the long-term system must meet the following two conditions. First, establishing rational, scientific and effective mechanism mainly including the mechanism of compensation raise, distribution, management and audit. Second, creating important motivations that keep the operation of the system. These motivations come from institutions and individuals driven by interest who constantly promote and supervise mechanism operation. These institutions and individuals are the central government and government agencies at all levels. Officers who respond for hydropower development should keep an eye on ecological compensation involved in the life cycle of project. In addition, the scientific ecological compensation originates in the continuous dynamic monitoring and evaluation of ecological environment. Kangding must construct a reasonable effect evaluation system to monitor and protect ecological environment. It is conducive to carry on ecological compensation work.

In the process of the water resources development, there may be certain influence on the local ecological environment. Therefore, we suggest introducing ecological compensation mechanism into the hydropower development. First of all, the body of the hydropower development and the beneficiary needs to pay the corresponding funds, which will be used to restore ecological damage caused by hydropower development. Second, Kangding city paid a high opportunity cost in the construction of ecological function. Therefore, Kangding city can seek compensation from superior government for its contribution to the ecology environment. On one hand, Kangding should have the priority on policy making and preferential treatment, and on the other hand, Kangding city can seek direct financial support such as financial transfer payment, tax deduction and exemption, subsidies and loan secured by credit so that both local residents and companies can benefit from this financial support. Finally, Kangding city should actively enter into the areas of the marketization compensation such as carbon emission trading and basin compensation to seek more opportunities and interest

compensation.

Fifth is to create innovation in targeted poverty alleviation of hydropower resource development. Combining with precise rules for poverty alleviation, it constantly carries out the hydropower development of poverty area and makes water resources in these poor areas, then it can be used for scientific development activities, hydropower will be powerful fulcrum for poverty alleviation. On the one hand, it takes advantage of hydropower project, builds and reconstructs the infrastructure in poor area, and improves the local production and living conditions. On the other hand, it encourages and guides local residents to take part in the hydropower development in the form of investment. These residents will obtain sustainable income to overcome poverty by hydropower development, and drive the development of social economy as a whole.

6.3 Speeding up the Development of Cultural Tourism Industry

Aiming at the existing problem of Kangding city cultural tourism industry, under the precondition of great progress in the existing cultural tourism industry, make the maximum use of cultural resources and geographical conditions; speed up the development of tourism culture resources; establish individualistic cultural tourism brand; make the tourism culture industry become strategic leading industry of the city's economic development; Kangding city should realize these targets from the following several aspects.

6.3.1 Optimizing Layout of Cultural Tourism Industry

Distribution of tourism resources in Kangding can be summarized as "one city, a town, four areas, two lines": "one city" is Kangding "ballad city"; "a town" refers to the touristic satellite town in Xindu bridge, "four areas" refers to the scenic areas of Gonggar Golden Mountain, Tagong grasslands, lotus flower lake and Muya Tibet village.; "two lines" refers to the two tourism links, they are the Tagong grasslands as journey of Tibetan Buddhism and Gonggar Golden mountain and Muya wood trip. Under this spatial pattern, urban area and the west area of Zheduo Mountain, as key tourist regions, should make suit measures to local conditions for tourism development. Specifically, these measures can be taken.

As urban area of Kangding, Lucheng city and Yala County should play the roles as the city's political, economic and culture centers. Moreover, they should take advantage of geographic location and traffic to develop the urban economy and to promote tourism and culture and perfect supporting facilities as well as the tourism service supply chain.

Making full use of resources in surrounding area drives the development of the west area of Zheduo Mountain. The creation of an international tourist city as the goal and vigorously is to promote urban culture spirit of "open, inclusive, harmonious, sincere, and righteous" by combining Gesar culture, the Ancient Tea Horse Road culture, Tibetan Buddhism culture with love song and Kangba culture. Further enhancement of Kangding love song culture brand as added value and collaboration of financing, logistics and trade advantage can help advance the tourism industry chain. It is important and recommended to create the first-line characteristic scenic spots of "Riding Horse Scenic Region-ErDaoQao Hot Spring-Muge Cuo scenic area", speed up the construction of tourism infrastructure and supporting facilities, standardize the operation of merchants in food, shelter and reception. Thus, development of the tourist can be helpful to build up economy of entertainment types and realize the integration of sightseeing, shopping and entertainment.

Muge Cuo: For this scenic area, the operation and management capability of the operating entity should be fully excavated for better service and profit. The actions can be taken, such as attracting tourists by setting differential pricing mode in tourist off-season and rush season and cultivate permanent visitors of long-term vacation, reducing operating costs of pleasure-boat to attract tourists, prohibiting vendors from entering into scenic spots and standardizing the operation in scenic spots, and introducing national handicraft industry to enrich content of scenic spots and profit of merchants in scenic spots.

ErDaoQiao Hot Spring: is closely combined with Muge Cuo scenic spot. Regularity of bus or taxi in passenger depot and flag stop can realize the interconnection between scenic spots and guide the flow of visitors in these scenic spots. Therefore, they will develop mutually. ErDaoQiao Hot Spring should also optimize environment through decorating and remoulding, create comfortable Relaxation Hot Spring Resorts and cultivate fixed visitors of long-term vacation. The surrounding areas should make full use of tourism resources to

develop resident-provided bedding and improve people's income as well as create more employment opportunities by the development of tourism.

Zhexi: The famous attractions of Zhexi area include Xinduqiao photography paradise - film base, Yajia ridge mountain climbing base, the town of Tacheng religious culture - tower grassland style experience tourist area, Gongga Jinshan mountain plateau ecological science and tourism Area, Lotus Lake Alpine Lake sightseeing and hot spring day bath tourist area Muya Tibetan village. The common characteristics of these attractions are, first, the unique natural environment creates magnificent natural scenery, and second, the region is the plateau region where there is no industrial pollution.

It is recommended to develop the economy in farm slack season. Villages should take advantage of farm slack season and draw on the wisdom of the masses to develop the national handicraft industry. We can fully excavate abundant folk handicraft technology and promote actively development for good production and sales of folk arts and crafts, so as to speed up integration of production elements and focus on nurturing, assisting and expanding national folk handicraft processing enterprises with a certain marketing scale. Especially, the focus could be put on producing and selling of ethnic jewelry, national costumes, sculpture, and Thangka paintings as well as gold and silver articles.

6.3.2 Accelerating Construction of Key Cultural Tourist Attractions

Kangding ballad is famous over the world, ballad culture as distinctive resource needs to be exploited and developed deeply. Focus on the ballad culture, Kangding can create core brand of "ballad home town". In addition, Muge Cuo and the Xindu Bridge, as the famous tourist destinations, have long enjoyed a good reputation. They can be used as a key scenic spot and their service quality can be further improved. Hot spring resources need key development to make up for shortage of leisure project in tourism product.

6.3.3 Perfecting the Industrial Supporting System of the Cultural Tourism Industry

In key scenic areas, some measures can be taken, such as establishing a fully functional tourist reception center, improving the accommodation around the scenic spots around, and

upgrading other supporting facilities of scenic road, parking lot, garbage treatment, environmental protection, logo signs, shelter tent and forest fire monitoring system. It is also necessary to formulate shopping stores in the scenic spot and create tourism souvenirs, and eventually it can lead the specific aspects of tourist industry to be optimized to the high service level.

6.3.4 Optimizing the Service Level of Tourism Industry

Tourism industry business and service mainly includes these aspects, they are food, accommodations, transportation, scenery viewing, entertainment and shopping. To solve above problems, this thesis puts forward suggestions from several aspects.

Food: Local food was introduced in various tourist attractions, but similar food styles should be avoided among different scenic spots, the standardization, regularity of differentiate and benign competition can not only keep the order of scenic spot but also propagandize national culture and attract more tourists.

Accommodation: It is proposed to make and provide accommodation with national cultural characteristics by taking advantage of the flexibility of home inn, set overnight stop within or around the scenic area and provide hot spring hotel which can charge at a higher price for geographical advantages and the supplying of characteristic service. It can also provide accommodation for long-term creation vacation to meet the needs of permanent visitors.

Transportation: It is suggested to make efforts to facilitate the construction of infrastructure, set up hardware facilities in roads, signs, gas station and bus station, pay attention to set up waste reclaim station in a fixed site and the related symbols of ecological environment protection along the path, plan and design completed tourism circle, and set up fixed shuttle bus between scenic spots reasonably to realize the hook-up between scenic spots.

Scenery viewing: The focus on advertising different characteristics of each scenic spot can embody unique attraction of each scenic spot. For example, Penglai Sacred Island-Lotus Lake, and a paradise for photographers-Xindu Bridge all reflect the characteristics of scenic spots. In addition, scenic spots have different views in each season, therefore, in order to

attract circular tourism of tourist, the advertisement can be made according to different seasons. Only in this way, tourists will visit these scenic spots again and again. Essentially, it is important to make excellent scenic spot in nature and compete the matched construction to give excellent tourism experience to tourists.

Shopping: It is suggested to build tourism shopping street and form crowded, standard and unified strip mall. Through combining culture product such as local ethnic arts and crafts with local food, it can satisfy the shopping demand of tourist as well as the demand of buying souvenir, and promote the spreading of the local culture.

Entertainment: All kinds of experiential programs are installed in the scenic area to improve sense satisfaction of tourists, let visitors spontaneously propagandize Kangding tourism brand, build up reputation for scenic spots and form a steady stream of tourists, make full use of popularity of the long song hometown as well as the characteristics of skilled Tibetan people in dancing and singing, and hold festival and activities such as Tibetan cultural festival, song and dance festival activities to attract tourists. In addition, it is also good to have cultivation of tourism talents, introduction local guide on local song and dance entertainment activities to arouse the enthusiasm of visitors, and attraction of social investment through a multi-perspective and multi-leveled propagandize.

6.4 Optimizing the Development of Mineral Industry

The guidance of The Third Plenary Session of the eighteen of CPC are indicated to implement system of use with compensation and the ecological compensation system, promote the establishment of the regional horizontal ecological compensation system through improving compensation mechanism and attract social capital investment to protect ecological environment (Wang & Bai, 2015). At the same time, according to the state council's Law on Regional Ethnic Autonomy, in clause No. 8 it stipulates that for the collected compensation fees by the center government, at its distribution the autonomous regions at origin should be considered at priority and amount of input and allocation should be increased as well year by year (Wu, 2009). Under the strategy of main functional area, mineral resources industry in

Kangding needs to follow the principle of "locally exploiting and comprehensively protecting", realize the transformation and upgrading on the method of operation and development. We should avoid that advantageous resources industry development fall into the strange circle called as "resource curse" which means a paradoxical situation where countries or regions with an abundance of non-renewable natural resources experience stagnant economic growth. And we need realize the adaption of resource development to main body function of Kangding, and make more effort to further promote the realization of the main function of Kangding by developing the mineral resources industry.

It is important to promote the transformation and upgrade traditional energy industry for optimizing the development of mineral industry. Kangding located in regions where ecological system is fragile, and it has relatively poor natural conditions. Therefore, it is faced with extremely serious economic development situation. Fortunately, rich mineral resources hid under the arid ecological appearance. At the same time, the eight rules of Law on Regional Ethnic Autonomy of PRC states that increase investment in national autonomous areas and give priority to the source area of regional national autonomy in the process of using mineral resources compensation fees collected by the center government. Under the strategy of main functional area, mineral resources industry in Kangding needs to follow the principle of "locally exploiting and comprehensively protecting", realize the transformation and upgrading on the method of operation and development. Not only the resources development should adapt to the established subjectivity function of Kangding but also the development of mineral resources industry should drive the realization of the subjectivity function of Kangding. Tax mineral resources ecologically which means collection of taxes should have ecological value.

First, gradually built in the 1980s, China's current tax that related to the mineral resources development includes resource tax, mineral resources compensation tax, mining royalty, usufruct outlay of exploration rights, cost of exploration rights and cost of mining right. These taxes did not deal with the damage to the ecological value caused by mining activities. Thus, it is necessary to put the concept of ecological compensation as the guiding idea to reform mine resource tax institution, to reposition the nature and function of mine

resource tax institution, and to change the exhausted compensation of mineral resources development to ecological damage compensation.

Second is about the development of new energy industry. This new energy, usually refers to build in new energy technology condition on use of energy, including solar energy, oceanic energy, wind energy, geothermal energy, biomass energy, hydrogen, etc (Ren, 2011). Kangding has the congenital advantage in developing new energy industry. First, Kangding located in plateau area, it has more than 1738 sunshine hours (Kangding Meteorological Bureau, 2015); And second, because the geothermal resource is rich, Kangding can be called “hot spring city”. Third, the annual average wind speed is 3.08 meters/seconds, therefore wind energy resources in Kangding are rich (Kangding Meteorological Bureau,2015). The new energy industry has already adapted to the historical trend of green and low carbon development. At the same time, in the long run, traditional resources of Kangding are in unsustainable state, new energy has become an important way to adjust the structure of traditional energy industry.

Third, paying attention to the driving function of technology innovation is required very much. Technology is an important driving factor to promote transformation and upgrading of traditional mineral resources industry. Kangding lack human resources and its technology innovation ability are weak. In the product cost breakdown, the percentage of resource costs is higher, and the product added value is quite low. Therefore, in the transformation of traditional resource industry in Kangding, technological innovation is critical. On the one hand, technology investment must be increased, to promote the application of new technology in traditional resource industry, such as energy conservation, emissions reduction, circle economy and clean production. On the other hand, it could take the companies as the main body to establish and perfect technology innovation system for promoting the transformation of scientific research achievements to the enterprise productivities.

6.5 Integrating and promoting Ecological Agriculture and Animal Husbandry

It is well known that agriculture and animal husbandry are different from other industries. They have a strong geographic dependence, and the regional humanistic and cultural traditions are important parts of agriculture and animal husbandry. Therefore, a brief overview of Kangding geographical environment and local cultural traditions is absolutely necessary before this section moves forward.

So, what is the present development situation of these crops and animal husbandry in Kangding? The obvious answer lies in the following analysis.

Modern economy is very market-oriented and converted physical benefits into monetary income. In short, it is to commercialize and monetize every commodity. Agriculture and animal husbandry products are not with any exceptions. The higher commercialization degree of regional farming crops shows that the region has a better economic development in farming and animal husbandry. When we measure agriculture development level by commercializing degree of farming and animal husbandry products, we can draw the conclusion that agricultural commercialization degree in Kangding is low.

First, Kangding is located in the southwest, there are the alpine valley around this city which makes the traffic network in Kangding is relatively backward, and the backward traffic network in Kangding affected the circulation of agricultural products. Secondly, Kangding has a low marketization degree. It is not only related to the geographical position but also related to the local people's culture and tradition. Most of the residents in Kangding city are Tibetans. Tibetan culture has strong traditional characteristics. Tibetan culture has great influence in local development on all aspects. Kangding city's economic development is relatively late. Moreover, the local government and the citizens' awareness of the market economy are relatively backward. Such as, crops are more self-sufficient, even the crops are sold on the market, they are also raw commodities. These are reasons that lead to slow development of economic marketization. This can be seen from administrative divisions of Kangding. In general, the higher the level of administrative division of a region is, the more developed the

market economy would be. Marketization degree of modern industry as well as traditional farming and animal husbandry in Kangding is quite low. Third, agriculture and animal husbandry of Kangding city lack of brand awareness. Brand is very important for economic development of an enterprise and a region. For instance, at the mere mention of northeast, we associate to the northeast rice, at the mere mention of Guizhou, we naturally think of Maotai. This is the intangible benefits brought by brand to the development of a region and an industry. Agriculture and animal husbandry products in Kangding city lack of brand. This is because the local government does not have sufficient consciousness of the market economy and brand.

From the above analysis, it is not hard to get that agricultural commercialization degree in Kangding is low. However, in modern society, it is difficult to get a good development if the industry lacks economic incentives. As long as an industry separates itself from the market, it will decline. Under the situation of lack of marketization, the status of agriculture development in Kangding city is becoming lower in the entire industry, and in the future, its development is either stagnated or on a declining curve.

Modern society has witness the rapidly development of technology and science. All fields have been upgraded to a higher level due to technical improvement. Any field that lost the support of science and technology or failed to keep up with the pace of the science and technology will inevitably experience decline. And currently, agriculture technology innovation of Kangding city is much lagging behind.

When it comes to agriculture and animal husbandry, the technology evolution refers to the modified species of crops, forage grass and cows, which can increase output, enhance the ability to adapt to the natural environment and enlarge the planting area. Kangding city is located in the southwest of Sichuan province. Its altitude is high. Although the vegetation is relatively flourish, ecological environment of the agriculture and animal husbandry region is fragile. Furthermore, the local people lack the consciousness of sustainable development, and overgrazing reduced pasture area. In order to change the status of agriculture and animal husbandry, Kangding should improve the species of crops through the introduction of new technology. However, the reality is not like this. No matter in species of crops or on the forage

grass and planting methods, Kangding has failed to keep up with the pace of the science and technology. New science and technology promotion is slow and the scope is narrow which can be seen from agriculture talents loss in Kangding. Talent and technology are inseparable.

Above this research made the brief analysis of agriculture and animal husbandry development from four aspects including the degree of marketization, talents, agriculture planting characteristics and technology. From the above analysis, we can see that agriculture development of Kangding is not ideal in various aspects, the reason includes both natural factors and human factors. As a traditional industry, the proportion of agriculture and animal husbandry in the economic declines inevitably in history, but this should not be used as an excuse to ignore the agriculture and animal husbandry. Instead, development situation of agriculture and animal husbandry drives the government and local organizations to change the development status of agriculture in Kangding. However, as characteristic and pillar industry of Kangding, the farming and animal husbandry needs to change the status quo.

6.5.1 Taking a Route of Marketization

Market economy is the trend of historical development which states any industry cannot have the sustainability without its sales marketing. But farming and animal husbandry in Kangding faced with such reality that marketization degree is generally low and the agriculture has its own characteristics. The agriculture marketization route of Kangding is quite different from the traditional market economy, it requires the government to have special attention and support to the enterprise and industry particularly at very early entrance stage. The first step of agriculture and animal husbandry marketization is the commercialization of the products. In short, the products were processed into the goods that can be sold from the original primary state of crop. Retail business is difficult to complete this process or even they finished this process, but its competitiveness is not strong. Besides, it lacks industry scale and the efficiency is low. In order to realize marketization, the agriculture and animal husbandry enterprises in Kangding city must cooperate each other. Enterprise is the main body of the modern market economy. However, enterprise seeks profit and profit maximization is its goal. Although Kangding has beautiful natural environment, it is located

in the inland and traffic facilities are not perfect, so there are not so many enterprises that want to advance to this city. Therefore, market channels of agricultural product in Kangding are reduced.

To break the deadlock, Kangding government can take measures from the following two aspects. One is Kangding government should actively promote investment and attract capital. Different from the general investment promotion and capital introduction (the general investment promotion and capital introduction means the introduction of modern high technology), Kangding city's investment promotion and capital introduction should have very strong purpose to develop local agriculture and animal husbandry. Therefore, it should introduce enterprises related to agricultural products processing, such as enterprises of dairy, grain and oil products. In practice of Porter's Diamond theory, only relying on Kangding government, investment promotion and capital importation cannot be realized, since the companies are independent and would not be changed according to government needs. If Kangding wants to promote investment and introduce the capital to develop agriculture and animal husbandry, this feature determines the government must give the enterprise some preferential policies such as loan concessions, tax deductions, simplified procedures, etc. It is necessary to make policies and regulations which are suitable for regional economic development. A sound legal escort for the development of economy, and it also makes the foundation for agriculture and animal husbandry in Kangding to cooperate with enterprises and realized the marketization.

In addition to the investment promotion and capital introduction, Kangding city government also should take measures to change the current station of agriculture and animal husbandry. In short, it changes the operation and management modes from the individual running to joint operation. For example, Kangding government may establish production cooperatives which have the same operation and management mode as company. In particular, the government guides the agriculture and animal husbandry owner to make a collective agreement, set up a company invested by all the members (now, it is not difficult to establish a company and there is no requirement of the registered capital). Shareholder is the collective members who invested the cooperative by dairy cattle or other production factors. The

cooperative can be managed by a man who knows enterprise management operations within the cooperative, and it can also be managed by employing professional managers. But unlike ordinary companies, the government must strengthen the supervision of this kind enterprise, and control the risk since this kind of collective economic enterprises usually involve a wider range of residents facing a greater probability of social stability risks.

If the investment promotion and capital introduction was exogenous road, forming management scale by integrating is endogenous road. But these measures are inseparable from the support and assistance of the government. This is the common characteristics in marketization road of inland city.

6.5.2 Vigorously Developing the Education and Training Professional

Education is the basis of training professionals, it is called teaching goes ahead of breeding. The shortage of agriculture talents in Kangding results from the backward education.

The backward education in Kangding is related to the loss of government's attention, and it is also associated with a series of social factors. One of the most important factors is the talents are rarely willing to go there. Since we already figure out the root cause, we should suit the remedy to the case.

Kangding should increase investment in education especially to build the long term and partner relationship with the institutions of higher education. Kangding should increase investment in education, especially for institution of higher education. Not only that, as for agriculture and animal husbandry talents, government should take subsidy scheme, or encourage and support these people to study abroad. Kangding, of course, can establish a team of agricultural scientific research with the advantages of many scientific research institutions in southwest China. The team can supply not only talents for agriculture and animal husbandry but also planning for the development of agriculture and animal husbandry.

During the construction of education and the training of talents, Kangding also needs to bring along talents. Combination of cultivating and introducing talents will effectively solve the restrictions on the industry for lacking agriculture talents, thus Kangding can go out of the

present dilemma.

6.5.3 Upgrading Existing Technology and Taking Road of Modern Agriculture

Science and technology innovations in the field of Agriculture are improvement of species by using science and technology, and it also means enhancement of the ability of agriculture to adapt to the natural environment. In this respect, Kangding city can conduct experiments of farming crops species or ask an expert to guide agriculture households to cultivate crops and grass scientifically and reasonably breed the cattle. We will find it is inseparable with the introduction of talents. Modern agriculture road is mechanized with intensive cultivation and production method. Agriculture in Kangding may be the restricted by the geographical environment, and the mechanical work is hard to achieve. But it is not the obstacle for animal husbandry. Therefore, for animal husbandry, Kangding can practice scale management to improve efficiency.

The innovation of science and technology can not only improve species but also protect the region's ecological environment. It realizes the unity of economic benefit and ecological benefit which is the precondition of agriculture and animal husbandry economization.

Table 6-1 Key Projects of Ecological Agriculture and Animal Husbandry

Agricultural base projects: 50000 Mu of high-level cropland, 2000 Mu potato base, 10000 Mu of common turnip base, 10000 Mu of highland barley base, 25000 Mu of pollution-free vegetable base, breeding base including ten thousand head of piglet, 15000 Mus of high quality medicinal material base, 20000 Mus of high-quality fruit bases, Dagang high-quality fruit demonstration garden.

Agricultural products processing projects: high-quality potato processing project includes annual output of 2000 tons of potato, common turnip processing projects includes annual output of 10000 tons of common turnip, highland barley wine project, Korean matsutake pickle project, Kangba lover company yak industrialization projects, project of Minya technology includes the annual output of 40000 tons of beverage and 50000 tons of milk.

Agricultural infrastructure projects: testing, formula and fertilize 100000 Mu of soil, construct and manage grassland of 60000 Mu, dry farming mechanized conservation tillage technology

promotion in 30000 acres, establish one second-level agricultural machinery repair outlets and twenty third-level or special farm machinery repair outlets.

Agricultural service system projects: construct agriculture and animal husbandry service system in county, township and village and develop animal disease prevention and control system.

6.6 Promoting the Inheritance of Tibetan Medicine Industry

6.6.1 Attaching Importance to Increasing Scientific Research Capability

Kangding, as the capital of Ganzi Tibetan Autonomous Prefecture, should highlight its advantages of southern traditional Tibetan medicine, pay attention to increase the scientific research capability, and actively take advantage of scientific research local advantages. Besides, the city should also integrate the scientific research advantages of some research and development institutions including provincial scientific research institutes of Tibetan medicine, Southwest University for Nationalities, Chengdu University of TCM and Sichuan University. Finally, the city also should strengthen its scientific research capability as well as increase investment in science and technology to study the traditional Tibetan medicine.

In the research and development process of traditional Tibetan medicinal materials, science and technology innovation, the important method, should be emphasized. This important method will produce organic achievement combining traditional Tibetan medicine, manufacturing technique, modern science and technology. And it will develop modern medicine which not only conforms to the modern medical standards but also has the characteristics of Tibetan medicine drugs. Science and technology can not only research and develop elaborate products but also improve product added value to enhance product competitiveness. At the same time, it accelerates the industrialization process of traditional Tibetan medicine to increase the market share and bring economic growth to the city.

6.6.2 Improving Infrastructure and Making Efforts to Bring along Talents

In order to improve the difficult situation of talent introduction in Kangding, the following problems should be solved with necessary solutions. The first solution is to improve

infrastructure. Along with the increasingly development of science and technology, talents have become a core symbol of comprehensive competitiveness of industry. The development of economy depends on talented person including not only research talents of traditional Tibetan medicine but also the administrative talents who create industrialization pattern of traditional Tibetan medicine. One of the biggest difficulties in Kangding is the infrastructure issue, which includes transportation, urban infrastructure, health care and so on. The government should focus on the reform of city service system so as to bring the real economic development to the city. In addition, the government should introduce policies to support the introduction and training of talents. Through combination of self-cultivation and importation it can help solve the problem of lacking specialized persons in the field of traditional Tibetan medicine. On one hand, the government should give great importance to the utility of the introduced talents. On the other hand, government can cooperate with universities in Sichuan province to establish a series of mechanism and cultivate specialized talents together. For example, the recruitment pattern of free teacher education students (free-education students do not need to pay all fees during the school period, and they have a certain amount of subsidy in every month. When these students were recruited, they need to sign the agreement and make the commitment that they will not get a master degree, besides, after graduating their education, they need return to the source place of themselves and engage in the basic teaching work for five to ten years). Those specialized talents cultivated by the city should go back to Kangding to work for this city.

6.6.3 Diversified Planting Pattern of Traditional Tibetan Medicine

Compared with the single, detailed and specialized cultivation pattern of traditional Tibetan medicine, the diversified planting pattern of traditional Tibetan medicine gives Tibetan medicine industry better development. First, as for the wild traditional Tibetan medicine, its picking should be restricted to prevent people from exhaustively exploiting and indiscriminately excavating which threat the sustainable development of Tibetan medicine. Second, artificial cultivation of traditional Tibetan medicine should adopt two patterns, namely "meticulous planting pattern" and "extensive planting form". Meticulous planting form means introducing the cultivation technology and occupying the land to grow a certain

kind of traditional Tibetan medicine specially needed by the market. For example, Enwei enterprise constructs research base in Kangding to plant *bulbus fritillariae cirrhosae*. Extensive planting form chooses the Tibetan medicine that resists insect. Besides, the management of such medicine is extensive and the growth cycle is short, so this kind of medicine is easy to live. For example, the planting of Paris polyphyllin in the forest land not only makes full use of land but also protects the local ecological environment and leads to the development of the local economy.

6.6.4 The Building of the Tibetan Medicine Industry Chain

Setting up the Tibetan medicine industry chain includes the planting, processing, marketing and advertising of traditional Tibetan medicine. Planting the traditional Tibetan medicine has been elaborated above, here mainly expounds Tibetan medicine processing, selling, and advertising.

As for the craftsmanship problem of traditional Tibetan medicine, Kangding lacks large pharmaceutical companies. The production technology of small company lags behind, and its equipment also falls behind which results in the low level of production, low-degree of processing and low additional value. The finished product has a larger gap with the standard of Good Manufacture Practice of Medical Products (Yang, 2014). Therefore, Kangding should improve the science and technology level of enterprises. Firstly, the government should give preferential policy to support the enterprises to be bigger and stronger. Such as funding support, efforts to strengthen the training of scientific research talents, improvement of the Tibetan medicine processing equipment. Besides, the government should encourage the enterprises to expand the scale of production and deepen the processing of Tibetan medicine to improve its added value.

In terms of sales, the government should focus on the construction of market to build special sales market of traditional Tibetan medicine. At the same time, give certain supervision to the market in order to firmly crack down the sales of counterfeit medicines and guarantee the authenticity of medicinal materials. This will bring a certain reputation to traditional Tibetan medicine in the city and further build geographical brand of traditional

Tibetan medicine in Kangding. In addition, in view of the marketing chain, the combination of the introduction of the electric commerce platform and the Internet is a commendable sales approach. Also the regional joint marketing mode can be established, through the connection with Qinghai and Yunnan, to promote the development of traditional Tibetan medicine industry in Kangding.

As for the publicity, in addition to the traditional website advertising pattern, Kangding should take its advantage as a tourist city to make postcards of traditional Tibetan medicine which will help the publicity of Kangding city. Moreover, some promotion channels by using mobile app and polyphonic ringtone can be associated with traditional Tibetan medicine, it will have a great publicity effect.

6.6.5 Upgrading the Industrial Structure Model and Making Combination of Tibetan Herbal Medicine Industry & Tourism.

In 2016, the State Council of the People's Republic of China issued "The Outline of the Strategic Planning for the Development of Traditional Chinese Medicine (TCM) (2016-2030)". It explicitly proposed that TCM health tourism should be developed with the theme of spreading and promoting the experience of TCM culture, and at the same time functions as a tool to integrate Chinese medical treatment, health preservation, cultural communication and tourism into a whole. Inspired by this, relying on its rich resources of Chinese and Tibetan medicine, Kangding can make Chinese-Tibetan health tourism products and develop tourist routes with regional characteristics. Furthermore, by establishing a complex of healthy tourism based on Chinese-Tibetan medicine in selected regions, Kangding can turn the Tibetan medicine planting bases into tourist spots & health care centers. Meanwhile, several experienced tourism formats can be introduced, such as the collection and recognition and cultural heritage visit of the Chinese-Tibetan medicine. And the tourism of TCM health-care experience, special medical treatment, recuperation and rehabilitation and medical knowledge learning as well.

Chapter 7: Conclusions

7.1 Conclusions

With the implementation of the main functional area strategy, the space of national land has been divided into optimized development areas, major development areas, restricted areas and prohibited development areas. Restricted areas refer to the regions with weak bearing capacity of resource and environment and at a certain small population, but with very strong connection between the economy agglomeration and the ecology security condition (Zhong, 2014). It is very important to get the reconciliation relations with both considering the protection of ecology and good development of economy. Therefore, Kangding needs to coordinate environmental protection in restricted areas with the economic development of areas. Based on this, the thesis researches the economic growth pattern of key ecological functional area in restricted areas. Taking Kangding as an example, the thesis puts forward the strategy selection of the regional economic growth pattern.

In view of surveys and interviews, drawing the economic development lessons of same type areas both in home and abroad, this thesis explores the motive force of economic growth in restricted areas as well as the related theory and method of regional endogenous development.

In order to achieve the research purpose, the following questions were previously asked:

Q1: The original industrial structure, which is dominated by hydropower and mineral resources, has created an investment-driven extension growth pattern, which will be difficult to sustain after the completion of resources exploitation in the future. Therefore, how to convert the original leading industries from the extensive growth pattern into an intensive one?

Q2: How to select and cultivate new leading industries to promote the regional competitiveness and improve the regional creation function?

Q3: How can a smooth institutional guarantee mechanism be established to assure the continuity and continuous effectiveness of the development in restricted areas?

Through data collection, analysis and discussion of Kangding's economic potential growth, this thesis discusses the specific countermeasures and suggestions in Chapter 6 and draws the following conclusions.

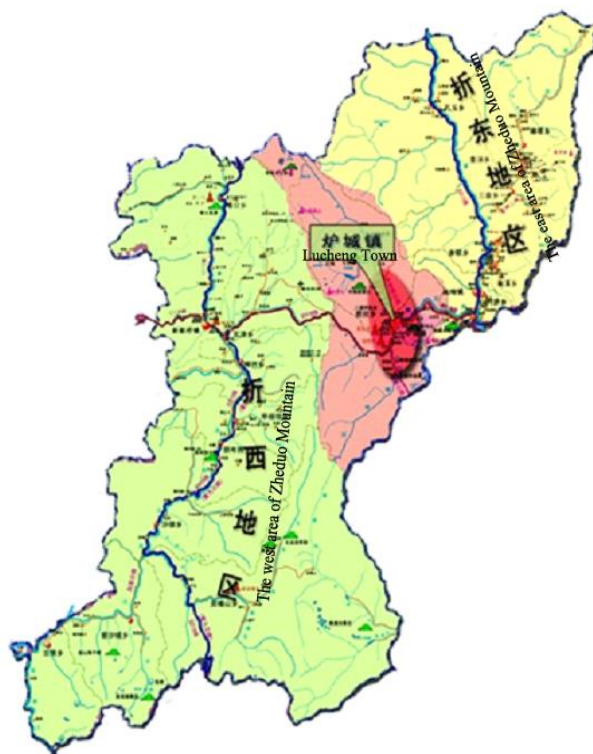
1. Restricted areas have big concerns on the security of agricultural products supply and ecological security. They contain two types of areas. The first type is the key ecological functional areas with low resource environment carrying capacity and fragile ecological environment. The primary task of this kind functional area at present and for future is to improve production capacity of ecological products. The other type is the main production districts of farm products with more cultivated land and better agricultural development condition. The primary task of this type is to improve the comprehensive agricultural production capacity. This thesis focuses on the key ecological functional area with principle of "locally exploiting and comprehensively protecting" and "the obligation of ecological protection belongs to the one who develops the resources and gains the profits". As a key ecological functional area, a large number of hydropower and energy development in Kangding will cause ecological damage, so the protection of the ecological environment in Kangding is particularly important. Therefore, the primary task of Kangding's development is to enhance the production strength of ecological products, increase the scientific and technological content, innovate channels, expand benefits, and establish ecological compensation mechanisms and benefit-sharing mechanism. For the ecological compensation mechanisms, a special fund can be provided by developers which government and inhabitants can use to organize the special ecological restoration. For the benefit-sharing mechanism, it is suitable for the developers to retain 1% to 2% of the annual profit as local industry development fund to support local development.

2. Restricted exploration does not mean that development is restricted. Restricted exploitation refers to the restriction of large-scale and high-density industrialization and urbanization. Not all exploitation is restricted. Further, it does not limit the development. On the premise of local resources and environment bearing capacity, key ecological functional

area should allow energy and mineral resources development to a certain extent and allow the industry development that has no influence on subject function position. The restricted areas are basically backward in transportation, poor in infrastructure, which are not suitable for large-scale and high-intensity industrialization and urbanization. Therefore, it is supposed to combine its own superiority resources and characteristic and overall plan development suits the local economy growth pattern.

3. As a special area, the establishment of the regional development model in restricted areas should not only comply with the general principle of constructing regional development mode, but also reflect the particularity of its ecological function. There are problems such as internalizing cost and benefit overflow when the ecological functional area supplies ecological products. Therefore, it is necessary to construct market operation mode of ecological products in ecotype. Based on Porter's Diamond Model and combining with Kangding's factual situations, this thesis builds a suitable model of Kangding's development, including six dimensions: factor conditions, demand conditions, related and supporting industries, industrial structure, strategy and rivalry, institutional environment and opportunities. Through the deep analysis of six essential dimensions of dominant industries including this thesis points out the special advantages that can be used to achieve local economic development and the implementation method to promote the development of leading industries.

4. Regional development pattern is rooted in the local society, and it is in line with the local natural resources, economic conditions, the level of productivity and historical tradition. Combined with the specific situation of Kangding, under the space layout of "One Core (Lucheng and Yala town) Driving Two Wings (the east and west areas of the Zheduo Mountain)" which can promote harmonious development among different regions (Figure 7-1), we can select the following paths, for example, developing city in an ecological way and achieving green development, supported by industry and driven by investment, advancing integrally and breakthrough the main points, and taking the people's livelihood as principle and developing harmoniously.



Source: The People's Government of Ganzi (2012)

Figure 7-1 Regional Development Layout

5. The economic development pattern of Kangding can be made from the following aspects: a) exploring the benefit compensation mechanism of hydropower and mineral resources, which includes exploring resource pricing and paid development mechanism, improving the long-term mechanism of hydropower development and resettlement, constructing the interest retention mechanism, bringing in the ecological compensation mechanism, and creating innovation in targeted poverty alleviation of hydropower resource development; b) accelerating the development of tourism and cultural industry, which includes optimizing layout of cultural tourism industry, accelerating construction of key cultural tourist attractions, perfecting the industrial supporting system of the cultural tourism industry, and optimizing the service level of tourism industry; c) promoting the transformation and upgrading of traditional energy industry, which includes reforming mineral resource tax ecologically, actively developing new energy industry, and paying attention to the driving function of technology innovation; d) consolidating and promoting ecological agriculture and animal husbandry, which means it should not only adhere to the road of marketization, but also innovate technology and take the road of modernization of agriculture and animal

husbandry; e) promoting the inheritance of the Tibetan medicine industry, which includes enhancing the scientific research force, realizing the diversification of the cultivation mode of Tibetan medicinal materials, establishing the chain of industrialization of Chinese and Tibetan medicine, and combining the Tibetan medicine industry with tourism; f) making great efforts to introduce talented human resources in short supply, which includes increasing investment in education, especially in institutions of higher education, actively introducing talents, giving preferential policies to high-quality professionals, and improving infrastructure such as transportation, urban facilities, medical conditions, etc.

7.2 Main Contributions

Innovations of this thesis are as below:

1. Research on the economic growth model of restricted areas taking Kangding as example to be used for reference in other regions.

At present, there are no standards or development models for the restricted areas to be used for reference. Taking Kangding as example, this thesis draws the economic growth model of restricted areas through survey, interview, data collection and analysis by Porter's Diamond Model. The economic development model of restricted areas obtained in this thesis can be used for reference by other regions and has certain practical significance. This is also an application contribution of this thesis.

2. Research on the regional competitive advantages model based on Porter's Diamond Model.

This thesis creatively use Porter's Diamond Model to analyze the regional competitive advantages. According to the characteristics and actual situation of Kangding City, this thesis reconstructs and establishes a suitable framework to analyze the regional competitive advantages of Kangding based on Porter's Diamond Model, as shown in Figure 7-2. Through the deep analysis of six essential dimensions of dominant industries including this thesis points out the special advantages that can be used to achieve local economic development and the implementation method to promote the development of leading industries. This is also the

theoretical contribution of this thesis to obtain the economic growth model of restricted areas.

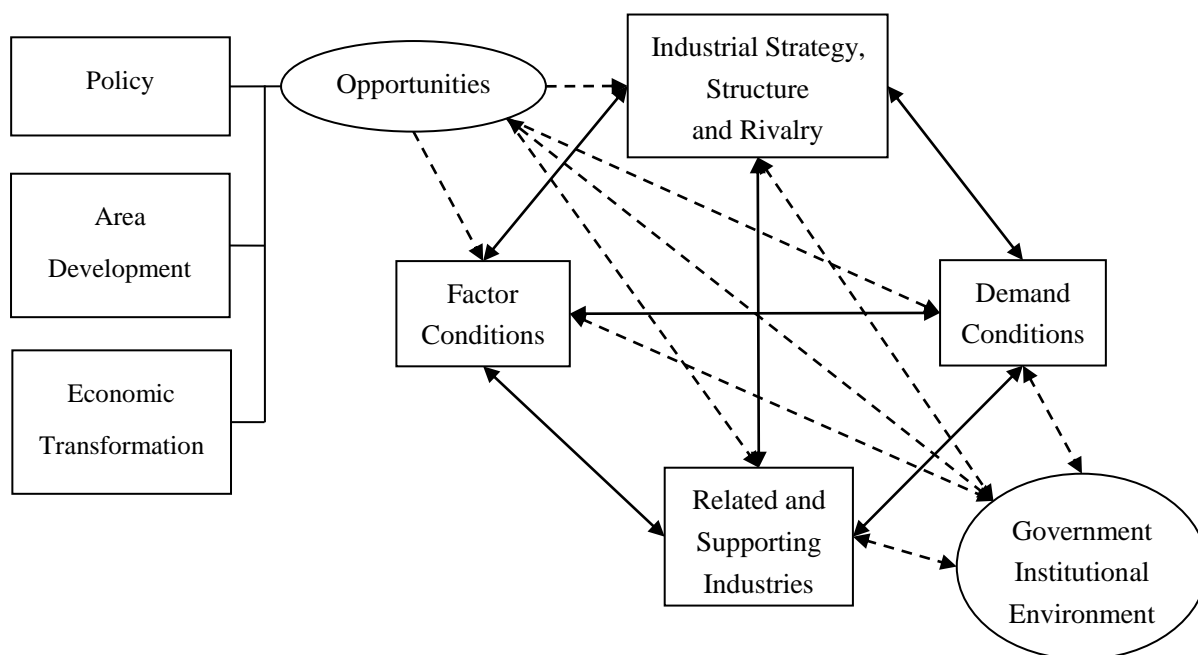


Figure 7-2 Adapted Regional Competitive Advantage Diamond Model

7.3 Research Limitations

Although this thesis has made contribution in enriching existing theories and drawing the economic growth pattern in restricted areas, it still contains a lot of shortcomings in research. The research limitations of this thesis are as follow.

First, as a region of minority nationalities, Kangding's economic development has always been restricted due to the harsh natural environment. And under the influence of the slow development of Kangding and the backwardness of local culture, the system and mechanism of government work are unsound. Therefore, a comprehensive and systematic statistical system of economic and social development has not yet been established: In the course of this research and during fieldwork, data has been collected about the economic and social development of Kangding, but still needs to be completed. Additional collection of data would allow a quantitative modeling approach to be carried out.

Second, on one hand, the economic development of Kangding City is relatively backward, and the number of enterprises above the scale is seriously insufficient. On the other hand, due to limitations of time and geographical factors, the cases of this research are only

the most representative enterprises in the leading industries. Therefore, the sample number is relatively short and not comprehensive enough. As well as the leading enterprises which can obtain more resources and preferential policies, the development of small and medium-sized enterprises in Kangding area is also very important for the optimization and upgrading of these industries.

Third, this article focuses on the study of Kangding's selection of economic growth model under the perspective of "a limited development for ecological protection purposes", and finally concludes that with the goal of building pillar industries for economic and social development, Kangding should give priority to the growth of the five industries with local characteristics and advantages. This is the result of a theoretical framework based on the diamond model combined with Kangding's specific economic, social and natural conditions. However, whether the suggested measures on these industries can be effectively applied and meet the theoretical requirements or not, it needs to be further verified in practice.

7.4 Areas For Future Research

Restricted ecological development areas are eco-fragile, poverty-striven regions and minority nationality regions, but they are related to national ecological strategy. Their development attracts the increasing attention. Although the thesis has researched the development mechanism and pattern of a restricted region, due to time limitations, comprehensive abilities and other constraints, there are many aspects in need to be researched and perfected for future study, such as:

1. Ecological compensation can adjust the relationship among stakeholders including government, companies and inhabitants in the process of ecological environment utilization, protection and construction. At the same time, it is also the way to improve ecosystem service as well as the important guarantee of the ecological function realization in restricted areas. For a long time, China took the means of project compensation guided by the government in the field of ecological compensation in order to protect the ecological environment. But it still has big gap to have the overall reconciliation mechanism with consideration of all aspects of

ecology protection, economy development and social environment. Therefore, research on ecological compensation mechanisms in restricted areas should be the key issue that need to focus on in the future.

2. According to the Twelfth Five-year Plan, China's renewable energy development will start a new stage. Ecological energy industry has moved into the blowout stage of sustainable development. The issues of Kangding on ecological energy can be sorted out for future study and the strategic development of eco-energy based on natural resources should as well be worked out accordingly.

3. Rooted in history, the specific cultural habits and customs have an important impact on regional development. Most of restricted areas in China are inhabited by ethnic groups. The people at these areas have special customs, life styles, thinking patterns and economic value orientation, so the study of the influence of the national culture on regional development can also be object of future research.

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