

The Deconstruction and Shaping of China's Rural Industrial Landscape from the International Perspective --Take Heilongjiang Province as an Example

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Abstract

In the context of global urban and rural planning, different countries adopt different development models of cities and villages according to their national conditions, which determines their own development paths and features. By comparing the urban and rural development models of different countries, this paper summarizes the characteristics and effects of rural development in different models. Industrial prosperity is the primary task in Rural Revitalization. Industrial development, as the foundation of rural construction, its development mode is also evolving, which is of great significance to the promotion of rural landscape construction. The specific industry development can form the corresponding landscape pattern, or some industries are developed in a certain landscape pattern, and there is a certain connection between the industry and landscape. Under the background of China's Rural Revitalization, this paper takes Heilongjiang Province as an example, according to the different rural industries, divides the rural areas into four types: agricultural production type, resource dependent type, industrial trade type and leisure tourism type. In this paper, through in-depth analysis, the author deconstructs and interprets the material landscape and cultural connotation characteristics of different types of rural industrial landscape, and puts forward countermeasures and implementation suggestions for the promotion of rural industrial landscape, in order to provide

reference for the construction of beautiful villages.

Key words

rural industrial landscape; landscape deconstruction; landscape shaping; Heilongjiang Province

1 Introduction

The process of globalization and rapid urbanization has a great impact on the development of rural areas and landscape shaping. Under different international urban and rural development models, rural development has different development directions. From the international perspective, the urban-rural development mode can be roughly divided into five types, including the isolated development mode of urban and rural, the priority development mode of urban independence, the development mode of urban and rural integration, the coordinated development mode of urban-rural differentiation, and the urban-rural amalgamation development mode. Five types of country representatives and development achievements are shown in Tab.1.

China's "urban-rural amalgamation development mode" is a development mode with Chinese characteristics and wisdom, which is based on the model of coordinated development of urban-rural differentiation of EU countries and China's national conditions. Under the background of the revitalization of the 19th National Congress of the Communist Party of China, China's countryside is undergoing a new development and transformation. The primary task of Rural Revitalization is industrial revitalization. In the face of a series of problems, such as the lack of landscape of the current

Table 1. Analysis of urban and rural development models in different countries

Urban and rural development model	Representative of typical countries	Development effectiveness
Isolated development mode of urban and rural	Former Soviet Union	It took 70 years to construct and ended in failure.
Priority development mode of urban independence	Argentina, Chile	Cities are becoming more crowded, small cities and rural areas are gradually shrinking.
Development mode of urban and rural integration	U.S.A	The land resources are relatively wasted, but the per capita cultivated land area is large.
Coordinated development mode of urban-rural differentiation	France, Germany, Netherlands	Urban and rural areas are complementary, harmonious and friendly, forming a complex of nature and economy.
Urban-rural amalgamation development mode	China	It emphasizes that rural landscape is different from urban landscape, that is, "reverse integration of villages", that rural landscape and urban landscape complement each other, and urban and rural areas are successfully connected through rural tourism.

Chinese rural landscape, the phenomenon of "thousands of villages look the same", and the weak industrial characteristics. [1] The main research direction of this paper is to construct the landscape pattern of rural areas according to different types and shape the industrial characteristics.

Industrial prosperity is the primary task in Rural Revitalization. Heilongjiang Province, as a major agricultural province in China, plays a leading role in the upgrading of rural industries and the revitalization of rural areas. Therefore, this paper takes Heilongjiang Province as the research object to carry out the research on the deconstruction and shaping of rural industrial landscape.

2 Overview of study area and research analysis

2.1 Overview of the study area

Heilongjiang is the province with the northernmost, easternmost, highest latitude and easternmost longitude in China. It is located at 43° 26' ~ 53° 33', 121° 11' ~ 135° 05'. It is 1120 km long from north to south, 930 km wide from east to west, covering an area of 473000 square kilometers. A location map of Heilongjiang is shown in Fig. 1. Heilongjiang is China's heavy industry base, with machinery, oil, coal, wood and food industries as the main industries, and it is rich of natural resources, including minerals, forestry, energy, land, animals, plants, water resources, etc. It is the largest grains production base in China. The strategic position is very important.



Figure 1. Location of Heilongjiang Province. Source: Author self-drawn.

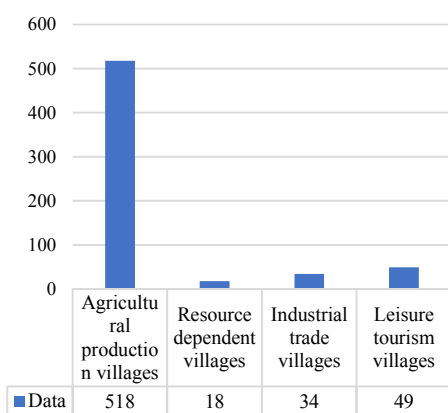
2.2 Research methods

In this paper, 619 villages in Heilongjiang Province were collected with the methods of field investigation, case analysis and questionnaire. Through on-the-spot investigation, the characteristics of different rural industries and industrial landscape are summarized. Through the analysis of excellent cases, this paper summarizes the planning countermeasures and key points of planning implementation, and enumerates excellent demonstration typical practice methods. Through the questionnaire of rural life satisfaction to the villagers, the author investigates people's real life experience, and puts forward countermeasures and methods of rural industrial landscape construction from the perspective of "from bottom to top" in the paper.

2.3 Analysis on the types and characteristics of rural industrial landscape in Heilongjiang Province

According to 619 survey data, the study found that according to the different types of leading industries, the villages in Heilongjiang Province are divided into four types, namely agricultural production type, resource dependent type, industrial trade type and leisure tourism type. Among them, the number of agricultural production villages is the largest, accounting for 84% of the total samples, followed by leisure tourism villages, accounting for 8% of the total samples, industrial trade villages, accounting for 5%, and resource dependent villages, accounting for 3%, which is fully reflecting the status of Heilongjiang Province as a major agricultural province in China. Detailed statistical data is shown in Tab. 2.

Table 2. Statistics of rural industrial landscape types in Heilongjiang



Industrial revitalization is the cornerstone of the development of rural revitalization, so rural industrial landscape shaping is of great significance for the construction and shaping of rural landscape. Rural industrial landscape, refers to the sum of the material landscape and the humanistic connotation created by the interaction between human and nature in different industrial rural area, in the process of production and transformation of natural environment resources.^[2] It is an important content of rural landscape. In this paper, the elements of rural industry landscape are deconstructed into two levels, namely, the material landscape elements and the cultural connotation elements. On this basis, further level division is made. The Details of the deconstruction of the specific landscape elements are shown in Fig. 2.

According to the four rural types of Heilongjiang Province and the elements of rural industrial landscape, this paper further clarifies and refines the rural industrial landscape. Tab.3 describes the characteristics of material and cultural elements of different types of industrial rural landscape after refinement.

3 Results and discussion

3.1 Divide industry types, determine the principles of rural industrial landscape shaping

In order to shape the rural industrial landscape, we should first refine the rural industrial features, adjust measures to local conditions, and determine the principles of industrial landscape by classification. For example, the agricultural production villages dominated by agriculture and forestry should be based on the principle of maintaining ecological environment and natural features. In the agricultural production villages dominated by animal husbandry, we should prevent the use of arable land and land pollution, and take the combination of farming and forestry as the principle. The principle of resource dependent villages is to protect natural resources and highlight the historical tradition and natural conditions of characteristic resources and products. In the industrial and trade villages, the principle should be to prevent the large-scale industrial "heterogeneity", to protect the ecology and to restore part of the first industry^[3]. The basic principles of leisure tourism villages are to promote leisure industry by agriculture, develop tourism by relying on tourism resources, keep the rural background, and coordinate the construction of tourism service facilities with the rural style.

3.2 Define leading industry, shaping rural industrial landscape by types

Different industry types have different strategies for shaping the industrial landscape. In shaping the rural industry landscape, we should base on the characteristics of the industry, define, excavate and utilize the leading industry, and promote the overall promotion of the village landscape and cultural connotation. For example, in the material landscape planning of agricultural production villages, the primary industries such as agriculture, forestry, animal husbandry and fishing should be taken as the main industries, focusing on the shaping of agricultural natural landscape, promoting the combined development of various natural

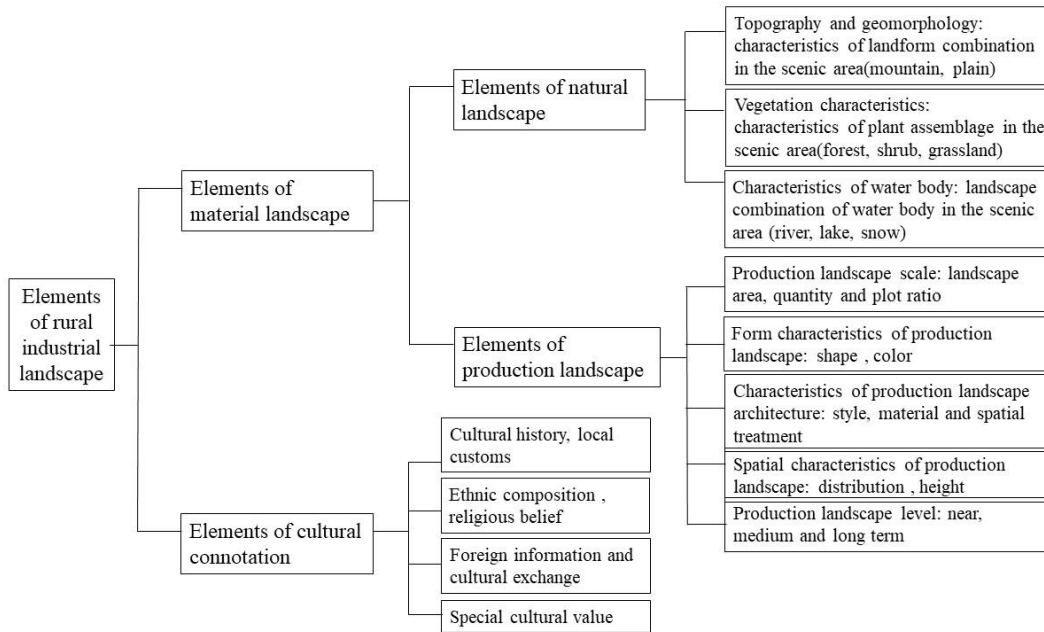


Figure 2. Deconstruction of the elements of rural industrial landscape. Source: Author self-drawn.

Table 3. Types and characteristics of rural industrial landscape in Heilongjiang Province, China

Village types	Types of industrial landscape	Characteristic of elements of industrial landscape
Agricultural production village	Planting Landscape	M: regular planting boundary, clear grid, pure color and rough texture C: farming culture, farming Festival
	Forestry landscape	M: undulating terrain, dense and delicate natural texture, seasonal color C: minority culture, cultural totem, cultural symbol in forest area
	Animal husbandry Landscape	M: flat terrain, endless grassland, high homogeneity, unity in the overall landscape pattern C: national animal husbandry culture, clothing and diet characteristics
	Fishery landscape	M: water landscape, winter ice and snow landscape C: winter capture culture, sacrificial culture, national characteristics
Resource dependent village	"Coal" resource rural landscape	M: mountains' large fluctuation and steep slope; mining, ground fissure, ground collapse, mining slope instability, landform landscape damage, land resources damage appearance C: revolution and entrepreneurship culture, reclamation culture
	"Oil" resource rural landscape	M: vast grassland and wetland as the natural environment background, high derrick and pumping unit increase the characteristics of oil field industry for the black land C: Iron Man Spirit, Daqing culture
	"Wood" resource rural landscape	M: wood processing area, green product base, forest tourism town landscape C: wood processing culture
	Landscape of rare mineral resources	M: excellent graphite resources, rare mine landscape C: mineral culture, special cultural value of new materials
Industrial and trade village	Industrial processing rural landscape	M: distinctive industrial spatial layout, the volume of industrial production equipment breaks through the original low and flat skyline of the rural boundary, the industrial landscape has clear spatial levels C: corporate culture
	Landscape of port trade	M: geographical location is relatively unique, focusing on the development of logistics and trade, import and export product processing and international tourism, and the landscape features of the integration of foreign cultures between China and Russia C: border customs, cultural integration between China and Russia
Leisure and tourism village	Landscape of Sightseeing agriculture	M: agricultural demonstration park, large agricultural landscape pattern, agricultural image landscape sketch C: modern agricultural culture, the spirit of agricultural cultivation of the Great Northern Wilderness

Landscape of natural landscape tourist area	M: super large special landform scenic spot, volcano site, ice snow landscape C: Geological culture, tourism culture, ice and snow culture
Landscape of Historical and cultural tourism	M: historical and cultural landscape, red memory memorial landscape, folk culture display, performance landscape C: historical culture, red memory, local customs

Notes: In Tab.3, “M” for Material landscape, “ C” for Cultural connotation.

landscapes and the comprehensive utilization of ecological resources. In terms of cultural connotation, we should pay attention to the implantation and embodiment of modern farming culture and national culture. The promotion and transformation of agricultural diversified development can not only promote the industrial upgrading, change the past situation of single rural landscape structure and weak function, but also improve the rural ecological pattern and enrich the hierarchical structure of landscape type and cultural connotation.

In the process of actual planning and construction, there are various types of industries in the rural areas. To some extent, the landscape shaping of leading industries cannot be applied to the whole countryside, but it determines the overall tone of the rural industrial landscape, which has important guiding significance.

3.3 Emphasis on public participation, promote the implementation of rural industrial landscape

The sequence and process of rural industrial landscape project is of great significance to the planning and implementation. In the context of deeply rooted vested interests, laws and regulations to be improved, and extensive planning programs, the planning should pay special attention to mobilizing the participation of various professional departments in the implementation process, and actively cultivate a good quality consensus that is popular among the villagers. The overall maintenance of rural industrial landscape depends on the spontaneous management of local residents and more perfect non-governmental organizations. In China, the development of rural non-governmental organizations is still in the initial stage, and the government is also required to increase the popularity of villagers in planning knowledge and style awareness, and appropriately organize villagers to participate in learning, so as to effectively promote the implementation of rural industrial landscape planning.

4 Conclusion

This paper analyzes the urban-rural development models of different countries from an international perspective. In the context of China's Rural Revitalization, taking Heilongjiang Province as an example, 619 villages in Heilongjiang Province are divided into four types according to the different industries, and different types of rural industrial material landscape and cultural connotation characteristics are deconstructed. Through in-depth analysis, this paper discusses the shaping and implementation strategies of rural industrial landscape under different industry types. Through the research, we strive to explore, refine and give full play to the industrial characteristics, cultural connotations and features of different villages, and promote the industrial prosperity and rural revitalization. Due to the limited space, the analysis on the influencing factors of different types of industrial landscape still needs further study.

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References

- [1] Li ZHANG, Lijuan WANG, Renxi LI. The dilemma causes and protection strategies of Chinese Rural Landscape: Based on several field investigations [J]. International urban planning, 2019,34 (05): 59-68.
- [2]Qing YUAN. Study on urban and rural landscape planning under the background of urban-rural integration[M]. Beijing: China Building Industry Press, 2012,12.
- [3]Dunjun QI, Meng ZHU, Zhi WANG. Research on Rural Landscape Design Based on Integration of Industrial Characteristics[J]. Journal of Anhui University of Architecture,2019,36 (04): 25-31.