

Research on Evolution Law of Adaptability of Rural Human Settlements in Chongqing

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Abstract: Under the background of the current national "ecological livable" Rural Revitalization Strategy, based on the division of historical development stages of rural human settlements in Chongqing, this paper combs the time development law of ecological adaptability of rural human settlements and the wisdom of traditional ecological construction. By using the methods of architecture and typology, aiming at the three main stages of "ancient times: simple habitation adaptation", "feudal period: harmonious natural concept" and "contemporary period: awakening ecological consciousness", this paper analyzes the ecological connotation and main characteristics of rural human settlements in Chongqing, and tries to establish the cognitive path of Ecological Adaptability Evolution Law of rural human settlements in Chongqing.

Keywords: Chongqing; Rural Living Environment; Ecological Adaptability; Evolution Law

1. Research Background

The city creates civilization, while the countryside is the foundation of all civilization. China's thousands of years of agricultural civilization has created the unique material landscape and cultural mood of the countryside, but compared with the city, our understanding of the countryside is still very shallow, especially in-depth investigation and systematic research. (Wu Liangyong, 2013) taking the traditional residential environment in rural areas of Chongqing as an example, both settlements and rural houses have relatively rich spatial forms, which also reflect the adaptability to the natural ecological environment to a certain extent. With the development of the times and the improvement of social productivity, the space construction technology of rural residential environment is constantly improved, which not only conflicts with the ecological environment, but also reflects a certain adaptive tendency in the long-term coordination process.

Therefore, the ecological adaptability of rural living environment in Chongqing is not only the product of modern civilization, but also a unified process of ecological harmony law and adaptive wisdom in the long history. In the long-term adaptation process of Chongqing rural traditional human settlements to the natural environment, the concept of ecological adaptation has naturally formed in the aspects of settlement layout, rural house shape, technology and materials, which contains the wisdom of local ecological construction, which needs to be further explored under the research idea of "looking back on the tradition, looking for characteristics and obtaining enlightenment".

Therefore, it is necessary to recognize the traditional development and evolution process of ecological adaptation of rural human settlements from the theoretical level. Based on the division of historical development stages of rural human settlements in Chongqing, this paper puts forward the ecological connotation and main characteristics of rural construction in the main stages, and tries to establish the cognitive path of the traditional evolution law of ecological adaptability of rural human settlements in Chongqing.

2. Analysis on the Traditional Evolution Law of Ecological Adaptability of Rural Human Settlements

2.1 Ancient Times: Simple Adaptation of Choosing Residence

In ancient times, human productivity was very limited, and the understanding of the natural environment was hazy and submissive. Therefore, the settlement of ancestors was closely related to the

natural environment. The living environment in this period has the characteristics of simple adaptability. On the one hand, it is mainly manifested in the continuous adaptation of the living style to the topography and climate environment, and the evolution is completed through the construction method. On the other hand, it is manifested in the simple yearning and pursuit of a good indoor and outdoor living environment.

(1) Adaptation and evolution of living style

Ancient ancestors in the middle of the choice need to consider security, hunting and defending the territory. Chongqing's ancient residents were "Ba people". Their living forms were from nest dwelling, tree dwelling, and then to building and dam dwelling. They gradually formed the settlement mode of choosing dam and the prototype of dry fence architecture, and completed the process of adaptation and evolution, so as to meet the needs, pursue advantages and avoid disadvantages.

Nest house: the climate in Chongqing is hot and humid, there are many poisonous insects and snakes, and they are troubled by the flood at that time. Therefore, the ancestors adopted "nest dwelling" to keep away from the ground miasma, insects and beasts and avoid floods. As the "five beetles" said: "in ancient times, people were unable to compete with animals, insects and snakes. There were saints who built wood as nests to avoid group harm." "Customs Tong · mountain forest and swamps" also records: "Yao was flooded, all the people are mountain nest to avoid its harm."

Tree house: the ancient Ba hieroglyphs of the Ba nationality were found in the archaeological work in Chongqing. The ancient Ba people built the house with the human roof on the branches between the big trees, and the walls also had round windows, which indicated that the nests gradually developed into the "tree house" which had more human consciousness. (Figure 1)



Figure 1: Evolution of nest house, tree house and stilt house building (Chart source: the author collates and redraws according to relevant data)

Building: the tree house is inconvenient in transportation, construction and other aspects. With the further development of the construction technology of the ancestors, the building residence is formed. People choose the alluvial plain or swamp land in the riverside and other waterfront areas. They use the original log or processed wood as the pile, and weave the thin wall with branches and bamboo, and coat the inside and outside with soil. The roof is also made of branches and bamboo rods. The building is of great significance, which means that the ancestors of Ba people adapted to the ground environment through technical means, and gradually formed the original type of dry fence architecture "which can only sprout in tropical swamps and river valleys"^①.

Mountain barrage house: in the process of summing up the natural laws and experience accumulation, Ba people further actively choose to live in relatively high and flat areas which are conducive to production and cultivation, but also resistant to natural disasters. This process is called "Ba Ju", which realizes the harmony and unity of ancient Chongqing residents and living environment. As Xu Zhongshu said, "the original meaning of Ba is dam."^② "At the same time, the column style architecture has further developed and finalized, and the form of "taking off the shoes in the ascending hall and taking off the socks on the seat" has continued. The mature development of mountain bar houses and dry fence dwellings fully reflects the ancient Ba people's ability to adapt to the harsh natural environment.

(2) Pursuit and harmony of indoor and outdoor good living environment

With the development of productivity and the improvement of various demands, the way of living

^① Zhang Lianggao. Sanba seeks five emperors, Baiyue holds three emperors [J]. Theory monthly, 1997 (4): 34-36.

^② Xu Zhongshu. A continuation of Bashu culture [J]. Journal of Sichuan University (PHILOSOPHY AND SOCIAL SCIENCES), 1960 (1): 75-117.

of the ancestors changed from mobile to settled, and began to build fixed houses. As the book of changes says, "in ancient times, the cave dwells in the wild, and the sages of later generations use palaces, upper buildings and lower buildings to wait for the wind and rain." The ancestors have realized the harmonious relationship formed after human being adapted to the natural environment, and formed the regular living standards: built on the mountain, it can keep out the wind and rain and resist the wild animals; living on the water is convenient for people's life; the elevation of the foundation can ensure the safety and the vision is bright; the house facing south can make use of the sunshine and ventilation; the environment is quiet and can enjoy the life.

At the same time, in addition to meeting the basic living needs of the indoor environment, the ancestors began to pursue a good outdoor natural landscape environment. Records of the Book of Songs, Xiaoya, Caiwei: "When I left here, willows shed tear. I come back now; snow bends the bough". And the Book of Songs, Koh t'an also records that "How the dolichos spread itself out, extending to the middle of the valley! Its leaves were luxuriant; the yellow birds flew about, and collected on the thickly growing trees, their pleasant notes resounding far. A large number of plant descriptions and settlement greening records in the Book of Songs are the embodiment of the simple and natural pastoral ecological environment and the formation of beautiful scenery^①, which reflects that the ancient ancestors began to seek the harmony between the artificial living environment and the natural ecological landscape environment.

2.2 Feudal Period -- Harmonious Natural Concept

(1) The natural ecological view of the masses in the feudal agricultural society

The western classic ecological theory originates from people's introspection of many vicious environmental problems induced by the industrial revolution, and it is "returning to nature" after learning from bitter experience. The traditional oriental ecological thought originates from agricultural civilization, and its source is the exploration of the benign relationship between human beings and the world under the background of thousands of years of farming culture, which is the "original nature" of tranquility. Agriculture and countryside are the "roots" of Chinese ecological thought. Therefore, in the long-term agricultural production activities, people naturally formed the ecological concept and environmental adaptation consciousness, mainly including the compliance with the laws of the weather and the protection of natural resources such as land, water, animals and plants.

The law of time and day: It is the farmers' summary of the relationship between climate change and agricultural activities, so as to promote agricultural production activities by using the laws of nature. The most successful one is 24 solar terms. People use natural laws to guide agricultural practice. As the Classics of Yao of the Ancient Documents said, "therefore, he instructed Xihe to keep a close eye on the cycle of time, measure the operation law of the sun, moon and stars, and work out a calendar for calculating time".

Resource protection: It is the farmers' attention and protection of agricultural production resources such as land, water, animals and plants. Land is the basic condition of agricultural activities. "Shangshu · Hongfan" pointed out: "the earth, into all things." People tried to classify the soil for rational use in agricultural production, and then further discussed the types of land, soil composition, fertility, suitable plants and so on. Water is a necessary condition for agricultural activities. Flood prevention and control, water conservancy facilities layout, farmland irrigation, drainage organization and so on were the key work of officials and people in the feudal period. Animals and plants are the material conditions for agricultural activities. People attach importance to the protection and sustainable utilization of animal and plant resources, and formed a series of early environmental protection laws and regulations and protection institutions. In "Yi Zhou Shu", it said that, "In March of spring, we should not go into the mountains and forests with axes, let the plants grow naturally, do not take nets to the rivers and lakes to catch fish, so that the fish and turtles can grow well". It is an important animal and plant protection ordinance. In the Zhou Dynasty, "Shanyu", which controlled mountain species, "Zeyu", which managed River Fisheries, and "Linheng", which mastered forest vegetation, were the earliest and effective animal and plant protection institutions in historical records. (Du Yanting, 2011)

(2) Ecological adaptation tendency of intellectuals in feudal society

^① Wei Na. Research on the construction strategy of rural external environment in western mountainous areas [D]. Doctoral dissertation of Xi'an University of architecture and technology, 2012.

Chinese traditional intellectuals, represented by Taoism and Confucianism, respect life and nature, and embody the tendency of adapting to the environment in their thoughts. On the one hand, they are awed and convinced of the things they can't grasp; on the other hand, they are aware of the importance of the natural environment to people's life.

Both Taoism and Confucianism believe in "the unity of heaven and man", but they have different understanding. In the aspect of the relationship between heaven and man, Taoism holds that the equality between man and nature is derived from the transcendence of "Tao", and exists under its operation and function. It is necessary to recognize and follow the natural law of the circulation of heaven and earth (i.e. Tao), and the adaptation to nature is the basis of human survival. This is a kind of ecological traditional philosophy of Oriental cultural spirit, and western academic circles also admit that the concept of conforming to nature in Taoist philosophy has guided the formation and development of contemporary deep ecology^①.

From the Taoist thought, we can find a vein with the development tendency of ecological adaptation. First of all, "equality of all things" can be regarded as the premise for human beings to truly respect the ecological environment. Secondly, "governing by inaction" reminds us that excessive or misplaced actions will bring about various problems including environmental contradictions. Thirdly, "knowing and knowing constant" points out the development direction of cognition and conforming to the laws of nature. Finally, "contentment" explains the sustainable way to make good use of resources and control desire at the specific behavior level.

Table 1: Ecological adaptation tendency in Taoism and Confucianism

Ecological adaptation tendency in Taoism	All things are equal	Zhuangzi's "autumn water chapter" puts forward that "if we look at the difference, because it is big and big, then everything is big; because it is small and small, everything is not small." All things, big or small, are equal and harmonious, which is an important ecological philosophy and Enlightenment of Taoism, such as the status of various elements in the ecological system in the process of harmony.
	Governing by Noninterference	Inaction is not inaction, it is "do something, but don't ask for it." (Chapter 2 of Laozi), that is to say, we should not commit all manner of evil. Man's disorderly "doing" brings too much trouble and burden to the natural environment. How to "Inaction" in the development is an urgent problem to be considered.
	Following the law of nature	"To understand the principle of harmony and balance is called "Chang", and to know how to deal with it without losing is called "Ming"". All things in heaven and earth are born in Yin and Yang, and a dynamic balance is achieved in the harmony of yin and Yang. We should understand and comply with this law, balance and protect this relationship.
	Abstinent contentment	Lao Tzu put forward that "If you know contentment, you will not be humiliated; if you know moderation, you will not encounter danger." This point of view simply and far-reaching exposition of the relationship between man and nature, rational use of resources, maintain ecological balance, maintain a virtuous circle, is the way of sustainable development.
Ecological adaptation tendency in Confucianism	"Push yourself to others, from people to things"	Different from the Taoist concept of equality, the ecological thought of Confucianism is based on human beings and gradually expands to the outer things.
	Practice the way of heaven with humanity	In the doctrine of the mean, "if we can do our best in human nature, then we can make full use of the nature of things; if we can make full use of the nature of things, we can praise the cultivation of heaven and earth; if we can praise the cultivation of heaven and earth, we can participate with heaven and earth." ^② This paper defines the relationship between heaven and man from the perspective of man, and humanizes the way of heaven with humanity. Man is a natural man, and nature is a humanized nature. This is an attempt to give full play to the subjective initiative of human beings and to achieve a harmonious unity with heaven and earth.
	Sustainable agricultural activities	"Mencius ·King Hui of Liang" put forward that "five acres of house, with mulberry trees, 50 people can be clothed with silk; chickens, pigs and dogs cut off livestock, no loss of time, 70 people can eat meat; a hundred acres of land, do not seize the time, a few people cannot be hungry." It can be seen that Mencius paid attention to the harmonious relationship between sustainable agricultural activities and natural laws.
	Utilization of rural settlement resources	"Xunzi ·king system" put forward that "the system of the holy king, when the vegetation is prosperous and prosperous, then the axe and Jin will not enter the mountains and forests, will not die, and will continue to grow. It is not lost in time to cut down and raise, so the mountains and forests are not young, and the people have surplus materials. "This shows that the rural settlement construction activities in the feudal period always paid attention to the rational use of natural resources and tried to avoid over exploitation, which proved that the rural construction activities in the feudal period had realized the problem of ecological balance ^③ .

Compared with the pursuit of Taoism ecology, Confucian ecological view is more human, more specific, realistic and more acceptable to most people. If we do not respect the natural environment, human beings will struggle and even have no meat. This will certainly attract the great attention of the

^① Cao Mengqin. Human nature and nature: Reflection on the philosophical basis of ecological ethics [M]. Nanjing: Nanjing Normal University Press, 2004: 56-61.

^② Lin Jian. Ecological wisdom in Chinese traditional culture [J]. Journal of Liaoning University of Technology (SOCIAL SCIENCE EDITION), 2009 (5): 49-54.

^③ Du Yanting. Ancient Chinese ecological thought and construction of contemporary environmental ethics [D]. Master's thesis of Qinghai Normal University, 2011

rulers. This thought of “living in peace and thinking about danger” coincides with the modern ecological concept of “sustainable development for the normal continuation of future generations” in the West.

Different from the Taoist thought of equality of all things, Confucianism stresses the close and distant relationship. Things and people are not in the same order of magnitude. However, for the sake of human beings, we should love things, cherish nature, and we must have sustainable development. Therefore, Confucianism also contains a profound ecological adaptation tendency. First of all, its starting point is “push oneself to others, from people to things”, which is a kind of human based point and spread from it, forming a harmonious relationship with the environment. Secondly, “the way of heaven with humanity” means that man is a natural man, and nature is a humanized nature. From a certain point of view, this shows that human's subjective initiative can be brought into full play and the harmony between heaven and earth can be achieved. Thirdly, the suggestions of sustainable agricultural activities in “Mencius · King Hui of Liang” and the assumption of effective utilization of rural settlement resources in “Xunzi · king system” all showed the specific ecological adaptation tendency suitable for the agricultural environment and productivity at that time. (Table 1)

(3) Ecological adaptation law in the construction environment of feudal agricultural society

1) The guiding ideology of the unity of man and nature

The unity of man and nature is the guiding ideology of ecological adaptation in rural construction activities in feudal agricultural society.

Under the condition of limited productive forces, rural construction activities always follow the idea of "harmony of man and nature". Farmers respect and comply with the natural environment, and thus get the benign feedback of nature. Finally, they form a harmonious relationship, which is the embodiment of the unity of man and nature. Further speaking, only by complying with and choosing the appropriate natural environment and understanding and grasping the natural laws can people obtain their own survival and development, otherwise they will be punished by nature. This traditional environmental view of the unity of man and nature is the guiding ideology for the sustainable and development of feudal agricultural society. People pursue the mutual relationship between themselves and nature, pay attention to the integration of construction environment and natural ecological environment, so as to achieve the highest level of unity through mutual adaptation between man and nature.

2) The cognitive basis of the order of Yin and Yang

The order of Yin and Yang is the cognitive basis of realizing ecological adaptation in rural construction activities in feudal agricultural society.

Through "Yin and Yang", a group of elements that transform and fuse with each other in opposition, people establish an orderly environmental view of yin and Yang, and form a deep understanding of spatial environmental elements and their relationship. In the environment view of yin and Yang order, people have different psychological feelings about heaven, earth and human beings. The sky is the object of the universe in the physical state, while it is the heaven that can be perceived with human beings in the psychological feeling. The earth is the natural material environment in the physical state, and the state and nature in the psychological feeling. In physical state, human beings are physiological existence, while in psychological feeling, they are humanity and ups and downs of fortune. The understanding of the order of yin and Yang makes residents, natural environment, artificial environment and other elements transform and integrate in the initial state of opposition, so people pursue the harmonious relationship between environmental elements in the process of rural settlement construction.

3) The construction principle of the unity of the thing and the self

It is the principle of ecological adaptation in rural construction activities in feudal agricultural society.

"Heaven and earth move by nature, sages use nature", "nature, Tao" and so on all embody the concept of unity of things and I. The unity of man and nature is regarded as equality, and the subjective and objective world are unified, and the gap between subject and object is bridged. Both the subjective human being and the objective nature have obtained a kind of emotional observation and affirmation, which will reflect man's adaptation to nature in a state of forgetting both things and myself. For example, when people prune trees in landscape construction, people's behavior is originally to change

the original nature of nature, but because of following the natural laws in pruning, the trees after pruning do not show artificial traces, and respect the characteristics of the environment itself. This process is adapted to the nature and is also an integration of the object and the self. Similarly, in the construction of villages in feudal agricultural society, the process of site selection and construction followed the original appearance of the surrounding natural environment, making the artificial construction and the nature harmonious and unified. It was also the construction mode of the integration of material and self, that is, the construction principle of "although made by man, just like the open sky" pursued by the ancients.

4) Specific strategies of geomantic omen

Geomantic omen is a specific strategy to realize ecological adaptation in rural construction activities in feudal agricultural society.

The theory of geomantic omen had a great influence on the construction of agricultural feudal society. Geomantic omen and geomantic omen are the same concept, which refers to the guidance of construction according to the changes of terrain. Removing the dross of feudal superstition in geomantic omen theory, we can see that its essence is the respect and adaptation of residents' construction activities to the ecological environment, and the pursuit of the combination of artificial environment and natural environment, which embodies in the space construction of rural settlements, traditional houses, ancestral temples, and cemetery layout. "Ten books of Yangzhai" and other geomantic works emphasize the environmental construction mode of five and four spirits.^① This pattern, which has water source guarantee, convenient transportation and sewage discharge, is undoubtedly beneficial to the physical and mental health of rural residents. If the artificial environment adapts to the natural environment, it will naturally reflect the positive role and promote the physical and mental health and healthy development of residents. (Fig. 2)

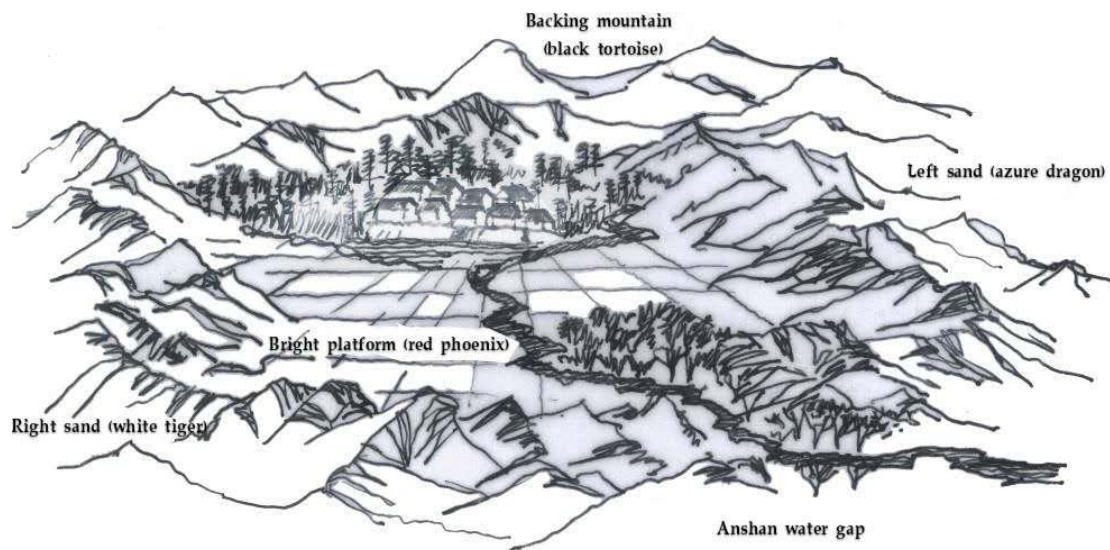


Figure 2: Environmental construction mode of five four spirits in geomantic omen (Chart source: the author collates and redraws according to relevant data)

2.3 Contemporary Period: Awakening Ecological Consciousness

(1) The main development stages of rural areas in Chongqing

The rural areas of Chongqing have experienced four stages of development in contemporary times: first, before 1949, the rural social improvement activities initiated by intellectuals under the private ownership of land. 2. From 1949 to 1977, that is, from the founding of new China to the reform and opening up, the land was from private ownership to collective ownership. 3. From 1978 to 1990's, after the reform and opening up, the rural breakthrough development stage, land contract to household and

^① The "ten classics of Yangzhai" and "the burial Sutra" all put forward the concept of geomantic omen of "five four spirits". The five spirits are in the East, West, North and south, and the four spirits are azure dragon in the left, the white tiger in the right, in front is the red phoenix and in back is the black tortoise. Among the four spirits, azure dragon is the river on the left side of the house, the white tiger is the road on the right side of the house, the red phoenix is the pool in front of the house, and the black tortoise is the hillside behind the house.

household contract responsibility system broke through the original backward system, township enterprises developed vigorously, and broke through the urban-rural dual structure. 4. Since the end of the 20th century, Chongqing has actively responded to and participated in the activities of building a new socialist countryside, building a beautiful countryside, and revitalizing rural areas initiated by the state to resolve the deep-seated contradictions between urban and rural areas and the bottleneck of rural development. At this stage, the attention to rural issues is not limited to the traditional aspects such as economy and society^①, in the planning and construction work, the awareness of ecological and environmental protection has gradually awakened and paid more and more attention.

(2) The basic background of rural ecological consciousness awakening in Chongqing

There are great differences between rural settlements and cities in Chongqing, mainly in the relationship between man and nature and between man and man. In the aspect of human and nature, the traditional rural settlements rely on mountains and water. The degree of integration between human and nature is high, and the symbiosis between villages and natural environment is strong. In addition, the rural economic situation is relatively simple, with a simple concept of energy reuse, forming a relatively simple closed cycle ecosystem for a long time. In terms of the relationship between people, the traditional rural areas in Chongqing have strong consanguinity concept, basically consistent values and relatively isolated from the outside world, which is a self-sufficient closed system.

Nowadays, Chongqing's rural settlements are facing the background of urbanization and agricultural modernization. The economic, social, ecological and spatial patterns of traditional rural settlements have changed greatly. With the improvement of productivity and economic level, traditional villages began to develop in an uncontrolled and predatory way. The impact of urbanization makes the rural gradually give up the local traditional experience, and the original simple closed ecological cycle system is destroyed. In rural residential environment, it is mainly manifested in various ecological problems and contradictions caused by the construction of rural material level, the decline of rich rural settlement level and public communication space formed with the evolution of natural state in the past, and the broken state of rural overall spatial form due to disordered movement and loss of main nodes, under the multiple influences of urban culture and other foreign cultures, the rural landscape gradually loses its own diversity and local characteristics.

Under the impact of urbanization, rural ecological problems gradually appear. The rural areas in Chongqing gradually lose their internal vitality and development power, and the ecological characteristics of traditional rural settlements are destroyed, and all kinds of variations are produced in this bad state. Therefore, people began to explore the common ecological problems in rural areas from a more flexible perspective, trying to solve the ecological contradictions in the aspects of village morphology, environmental protection and infrastructure, and to study the relationship between ecological environment, rural development and village spatial form from a more macro perspective and more meta-analysis, all these represent the awakening of ecological consciousness of contemporary rural planning in Chongqing.

(3) The main content of ecological consciousness awakening in Chongqing rural planning

The basic background of the awakening of ecological consciousness in contemporary Chongqing rural planning mainly comes from the integration of village and town planning and the attempt of local rural ecological planning. Its main content is to take the village as the development area, take the administrative village as the main unit, take the improvement of the rural human settlement ecological environment as the basic goal, showing a limited intervention state.

In this limited intervention state, the policy is mainly to support and introduce certain external forces, while the internal public, market and social institutions are partial participation. At the environmental level, the ecological restoration of land, water source and biodiversity should be carried out. In the aspect of energy system, the application of renewable energy technologies such as biogas and solar energy will be partially promoted. In the aspect of water treatment system, it is mainly factory treatment, with less biological purification technology. In the aspect of rural ecological construction technology, some modern materials and technologies have been applied, but they have not reached the level of wide application of ecological appropriate technology, showing a relatively simple trend. At the cultural level, it mainly focuses on the continuation of national, regional and clan traditions, the protection of traditional beliefs, and the construction of traditional temples and ancestral halls.

^① Zhang Wei. Research on the historical evolution and overall design of ecological villages abroad [D]. Doctoral dissertation of Tianjin University, 2011.

(4) The realistic representation of ecological consciousness awakening in Chongqing rural planning

Eco Village building activities: Since the 1990s, China has begun to carry out the relevant planning and construction activities of ecological villages, which mainly focus on the rural ecological agriculture, urban and rural ecological integration and so on. Since 2009, China eco Cultural Association has organized the activity of "eco cultural village", which selects a number of villages with good rural ecological environment every year. Up to now, 19 villages have been selected in Chongqing. Among them, goat village in Banxi town in Youyang District, Liyuan Village in Cizhu town in Yubei District, and Kaibao village in Zhongling Town, Xiushan County are the most distinctive villages ^①. (Fig. 3)

Research on Rural Ecological Planning: Since the 21st century, relevant research has been carried out around the rural spatial planning of Chongqing. At the level of village planning, we should change from paying attention to the layout structure of land use and industrial development, and the research on construction land layout and land use performance with obvious economic orientation to the study of village ecological planning with ecological tendency. In addition, for the new rural community planning, rural ecological infrastructure research, and ecological planning and design of rural construction environment, gradually carry out research work, and gradually systematically explore the rural settlement form and sustainable development.

Research on rural housing in rural areas: In recent ten years, more work has been carried out, including field investigation and induction research on traditional rural houses in Chongqing, relevant research on rural energy-saving housing, compilation and research of standardized Atlas of rural residential buildings in Southeast and Northeast Chongqing. At the same time, the protection and development, traditional adaptation strategies, renewable energy and other aspects of rural housing in Chongqing are also discussed. Further research work is needed in specific ecological planning and design guidance.

The rural revitalization strategy: Under the background of the country vigorously advocating the construction of rural ecological civilization, the planning, construction and development of rural areas in Chongqing gradually consider ecological problems, and accumulated a lot of experience and rich achievements from the depth (such as quantitative research) and breadth (ecological environment protection, ecological technology, ecological consciousness, ecological planning, etc.). In 2017, the 19th National Congress of the Communist Party of China clearly put forward the Rural Revitalization strategies such as "ecological livable", while Chongqing established a sound urban-rural integration development mechanism with the Rural Revitalization strategic action plan as the general starting point. The specific measures include "the first secretary in the village", "rural planners" and other ways to guide the social advantage resources to "go up the mountain to the countryside", and actively build ecological livable villages by renovating the rural living environment and strengthening the renovation of dilapidated houses.



Figure 3: Left: goat village in Banxi Town, Youyang Right: Liyuan Village, Cizhu Town, Yubei District (Source: the author collates the data according to relevant data)

3. Conclusion and Prospect

This paper sorts out and summarizes the evolution law of rural human settlements ecological adaptation to traditional concepts in Chongqing. Due to the vast area, complex terrain and various

^① Data from Chongqing channel of people's network: <http://cq.people.com.cn>.

villages in Chongqing rural areas, there are some differences in the spatial construction characteristics and ecological evolution law of rural human settlements in different regions, such as Southeast Chongqing, Northeast Chongqing, Western Chongqing, and the suburbs of the main city. In this paper, due to the limited energy, it is difficult to cover the vast area. In the future, we can carry out the in-depth analysis of the sub regional division of each major region in Chongqing, so as to further strengthen the regionalism and pertinence of rural research in Chongqing.

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