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Research on bio-cultural diversity in ethnic areas—based on the investigation of bio-culture in Jinxiu, Guangxi

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Abstract: The biological culture as a new cultural concept and form of expression, attaches great importance to the internal relation between culture and biological, enrich and perfect the traditional ecological culture elements such as concept, value orientation, and inspire modest grab in natural resources, respect nature, respect nature of cultural behavior, real-ize the harmonious development of man and nature. As stewards of local natural ecosystems, ethnic minorities main-tain biological diversity through their traditional cultures, such as living customs, religious beliefs and customary laws. As the material basis for its survival, biodiversity also enriches and develops cultural diversity. Biodiversity and cul-tural diversity interact and develop synergistically. Biological research ethnic areas - the formation and development of cultural diversity, biological and cultural interaction relations, the external factors of biological, cultural diversity and its future development trend of change, the influence of the understanding of the biological culture connotation and biological - synergy to protect cultural diversity has important theoretical and practical significance.

Keywords: cultural diversity; biodiversity; biological culture; Jinxiu county

Biodiversity conservation has become a hot issue in the international community in recent years. Although China has made some achievements in the field of biodiversity protection, the overall trend of biodiversity degradation has not been fundamentally curated. Current protection measures mainly include the control of laws and regulations and intervention of the administrative system. It is found that the regions with rich biological species are also relatively rich in language and culture, and the regions with rich cultural diversity are also rich in biodiversity. There is a positive correlation between cultural diversity and biodiversity [1]. Preserving traditional culture is an effective way to slow down the loss of biodiversity [2]. With the deepening of studies on biodiversity and cultural diversity, some scholars argue that from the cultural perspective, attention should be paid to traditional ecological views, religious beliefs and other cultural factors, and ecological thinking should be set up to properly seize natural resources, respect and respect nature, so as to realize the coordinated development of culture and biodiversity.

China's minority areas are rich in bio-culture diversity, which is an ideal region for bio-culture studies. Through combing the relevant theories and research progress of biological culture, combined with the field investigation of ethnic culture and biodiversity in Jinxiu Yao region of Guangxi, the author studied and analyzed the formation and development of cultural diversity and biodiversity, as well as the mutual influence and connection between them. To explain the positive and negative effects of national culture on biodiversity conservation and various external factors on biological culture, and to provide technical support for understanding the connotation

of biological culture and the protection of bio-cultural diversity.

1. Research background of bio-cultural diversity

1.1. The presentation of bio-cultural diversity

Biodiversity is the basis of sustainable economic and social development and an important part of ecological civilization construction. According to the Convention on Biological Diversity, biodiversity refers to living organisms from all sources, including intra-species, inter-species and ecosystem diversity. It is the sum of the ecological complex formed by living organisms and their environment and the various ecological processes related to it [3]. Scholars at home and abroad have different opinions on the understanding of biodiversity. Wilson believed that biodiversity is the diversity of life forms [4]; Sun Ruyong pointed out that biodiversity is all the variation of life on Earth [5]. Ma Keping proposed that biodiversity contains three meanings: biology, ecology and biogeography [6]. Culture is the product of social development under a specific geographical background, and the result of the interaction between natural environment and social environment. With the progress of human civilization, more and more cultural factors have been incorporated into the natural environment. It is because of these cultural characteristics that cultural diversity is constituted [7]. Cultural diversity is a basic feature of human society and an important driving force for the progress of human civilization. UNESCO defines “cultural diversity” as the many ways in which groups and societies express their cultures, including cultural group content and interactions between groups and the environment. The Belem Declaration proposed the interlink between biodiversity and cultural diversity and called for the joint protection of both. It was the first time that the unity of biology and culture existed in the international community. UNESCO put forward the term “Biocultural diversity” for the first time in its publication “Global Languages, Cultures and Biodiversity”, marking that the concept of Biocultural has become a global consensus.

1.2. Theoretical basis of the relationship between biology and culture

In his *Theory of Cultural Change: The Method of Multi-linear Change*, Steward proposed the concept of Cultural Ecology for the first time, and systematically expounded the relationship between culture and Ecology. He believed that any nation would inevitably form a complete Cultural Ecology entity through the interaction between culture and the ecosystem [8]. Rapoport et al. Studied the relationship between human beings and nature from the perspective of ecological anthropology, and studied the relationship between human beings, culture and ecological environment from the perspective of culture with anthropological theories and methods [9,10] Karl L. They took ethnic culture as the core social factor into the ecosystem, and put forward the theoretical framework of culture as the primary factor of the social system for the first time in terms of five indicators such as stability, productivity and resilience [11]. And elaborated the cultural contribution to ecological protection and the significance to ecological theory.

In the 1990s, Chinese scholars applied ethnobotany and ethnoecology to study the relationship between biology and culture. Xu Zaifu et al. Concluded that national culture plays a positive role in the protection of plant diversity through the study of the Dai nationality's leaf and Buddhist culture in Xishuangbanna [12]. Yang Tingshuo et al. Believe that there is a close relationship between the traditional culture of Dong people and biodiversity through the investigation of Dong villages in Qiandongnan [13]. Xue Dayuan et al. Proposed a classification system of traditional knowledge related to biodiversity for the first time in China based on the Convention on Biological Diversity through long-term investigation and research on biodiversity and ethnic culture in ethnic areas. He believes that the traditional knowledge related to biodiversity is the local knowledge, technological innovation and practical experience formed by the long-term combination of traditional ecological views, ethnic cultural customs, religion and social history and culture in the process of protecting and utilizing biological resources of the local community. Traditional culture and the maintenance and development of biodiversity are inseparable and complement each other [14,15]. Yang lixin et al. Discussed the relationship between naxi culture and biodiversity through the investigation of naxi religious belief and dongba culture, and believed that traditional ethnic culture promoted the protection of biodiversity [16]. Wang Yanjie et al., through the study of traditional knowledge of Dong people in Guizhou, pointed out that Nuohe culture and traditional medicine knowledge of Dong people are conducive to the protection of local biodiversity [17]. CAI Jizhuoma et al., through the study of Tibetan traditional culture and highland barley variety resources in Qinghai, believed that the change of traditional culture led to the loss of highland barley traditional variety resources, and it was necessary to strengthen the construction of genetic resources and related traditional knowledge acquisition and benefit sharing mechanism, so as to realize the synergistic protection of the two [18].

2. An empirical study on the culture and biodiversity of Yao nationality in Jinxiu

Yao is one of the most populous ethnic minorities in China, with a long history and colorful ethnic culture. Jinxiu Yao Autonomous County is located in Yao Mountain area in the eastern part of Guangxi. It is the earliest established Yao Autonomous county in China. Jinxiu is rich in ethnic culture. Mr. Fei Xiaotong thinks Jinxiu is the research center of Yao culture in the world. Jinxiu area is rich in biological resources, forest coverage rate of 87.2%. There ARE 2335 species of wild plants, accounting for 36% OF the PLANT species in Guangxi and 1226 species of vertebrates [19]. Early domestic and foreign scholars have conducted a lot of investigations on the Yao culture and biological resources in Jinxiu, but few studies have been conducted on the correlation between the two. The author based on the domestic related traditional knowledge classification system in terms of biodiversity, through empirical investigation, from the traditional production life style, religious belief and common law demonstrates the connection between traditional culture and biodiversity, this paper expounds the traditional culture of biodiversity conservation, and the influence of external factors on the biological - cultural diversity.

2.1. Traditional production and living customs and biodiversity protection

Most of the Yao people live in the deep mountains, and their production and life style are relatively backward. Moso bamboo in Jinxiu area is loved and widely used by local people. It is used to make everything from large bamboo buildings and beds to daily necessities such as pole and dustpan. After asking the local people, it is known that the growth cycle of bamboo is short, the reproduction speed is fast, and the local environment is very suitable for bamboo growth, more than a year can be cut down. The local Yao people made use of this sustainable and renewed plant resource according to local conditions, reducing the cutting of other rare woody plants. In addition, living customs and food culture also reflect the protection and sustainable use of biological resources. Most Yao people own their own ponds, which are often stocked with a variety of fish and ducks for daily consumption, reducing the fishing of the surrounding natural water bodies and protecting the local aquatic species. As an important local production tool, cattle are cherished by the Yao people. Out of respect for nature, animals such as snakes, frogs and birds are forbidden in Yao people's diet culture.

2.2. Religious belief and biodiversity protection

Religious belief is a cultural phenomenon in which a specific group of people standardize and constrain their own behavior by worshiping the sacred object of their belief. This special social ideology and cultural phenomenon implies the concept of respecting and protecting nature. The worship of natural deities is prevalent in the minority communities of China, and natural habitats such as "sacred mountain, sacred forest and sacred lake" have been formed. The formation of "Templar Hill" and "Templar Lake" is a typical representative of this kind of consciousness. These mountains and lakes are rich in biological resources and are protected as "holy sites" by local people. Most of the Yao villages retain an ancient forest, known as the "sacred forest" by the local people, in which no one is allowed to cut down and cultivate land at will. Some of the towering ancient trees in the sacred forest are considered local "sacred trees" and are strictly protected by red cloth and fences. "As our patron saint, the sacred tree will bring us good weather," said an elder of the Yao ethnic group. These ancient trees are a symbol of good luck in the village, and people have to worship them during important folk activities. In addition, as the initial form of religious belief, totem worship is to worship certain animals or plants as the ancestors of their race. Influenced by the thoughts of their ancestors, Jinxiu Yao people worship cattle, dogs, snakes, turtles and other animals as their totems and protect them.

2.3. Customary law and biodiversity conservation

In many ethnic minority areas in our country, in order to deal with and coordinate the relationship between internal members, some common rules have been gradually formed to restrain all the clan members and maintain order in the community. As the code of conduct of this kind of "unwritten law", the customary law plays an indispensable role in the community and has a high status of "law".

In the long-term production and living practice, the Yao people of Jinxiu have

formed various customary laws conducive to the protection and sustainable utilization of biological resources out of their simple ecological view, which is of great significance to the maintenance of local biodiversity. Through interviews and research, the author collected the village rules and regulations of 6 villages and villages of the Yao nationality in Jinxiu. Through collation, the content and quantity of clauses related to biodiversity protection and sustainable use were counted. The results are shown in the table below.

Table 1. Jinxiu 6 Yao village, village regulations and provisions statistics.

| | Six lane village | Triangle chariot | 18 families village | Ancient chencun | Six village | Daling village |
|---|------------------|------------------|---------------------|-----------------|-------------|----------------|
| General terms and conditions | 26 | 25 | 15 | 22 | 17 | 28 |
| Crop resources clause | 2 | 2 | 2 | 3 | 2 | 3 |
| Forest resource clause | 2 | 1 | 1 | 1 | 1 | 2 |
| Water source clause | 1 | 0 | 1 | 1 | 0 | 1 |
| Forest fire prevention clause | 2 | 1 | 0 | 2 | 1 | 2 |
| Wildlife, etc | 1 | 1 | 0 | 1 | 1 | 0 |
| Total biodiversity related terms | 8 | 5 | 4 | 8 | 5 | 6 |
| Percentage of biodiversity related articles | 30.7% | 20% | 26.7% | 36.4% | 29.4% | 21.4% |

From the above results, it can be seen that the protection of crop resources, forest resources, wild animals and plants, forest and lake ecosystems, forest fire protection and other aspects of the village regulations occupy an important position. Among the six villages in Jinxiu, provisions related to biodiversity protection accounted for more than 20 percent, with Liuxiang Village and Shangguchen Village accounting for the highest proportion of more than 30 percent.

2.4. Influences of external factors on bio-cultural diversity

Traditional culture plays a positive role in maintaining biodiversity. With the infiltration of foreign cultures, the local culture was weakened, leading to various difficulties in the maintenance of bio-cultural diversity in Jinxiu.

First, with the acceleration of modernization and increasingly frequent communication with the outside world, outsiders accelerated the development of various biological resources in Jinxiu. In Dayao Mountain of Jinxiu, the Papilionidae is close to extinction due to crazy overfishing. The species has been listed as data deficient by the International Union for Conservation of Nature (IUCN) in 2004 and is rated R (rare) by the International Committee for the Protection of Endangered Animals. In addition, Yao shan tuatara, taxus chinensis and other rare and protected species in Jinxiu have also been destroyed to varying degrees due to the development activities of outsiders.

Secondly, due to the interference of foreign culture, the biological cultural values of the Yao people in Jinxiu have also changed. Religious beliefs such as totems, taboos and nature worship are regarded as superstitions, and they are no longer shy about these things that were once full of mystery. The commercialization of folk customs

has gradually eroded traditional folk culture by modern tourism culture, and the traditional folk culture landscape has also been modified by modern ethnic tourism scenic spots. Some ethnic villages seem to have rich folk activities, but are actually full of commercial atmosphere and staged forms, which seriously distorts traditional culture. Young people of Yao ethnic group choose to go out for work instead of staying behind and inherits the traditional skills left by their ancestors. Moreover, the indifference of members in the community to traditional culture makes it extremely difficult to pass on some traditional culture.

Thirdly, the influence of modern medicine (western medicine) makes traditional medicine knowledge face the dilemma of marginalization and severe weakening. Young people in Jinxiu have rarely learned and used the “folk remedies” handed down by their grandparents, and the traditional national medicine knowledge is gradually fading out of the vision of the young generation. Secondly, influenced by the policy of promoting new varieties of agriculture, the traditional local varieties of crops and livestock are gradually being abandoned in favor of commercial varieties with high yield and rapid reproduction. Along with the local varieties of some traditional breeding techniques and traditional food culture are slowly losing. In addition, as carriers of biological culture, traditional handicrafts such as bamboo pole, basket and rice sieve are gradually disappearing due to low production efficiency, long time consuming and high cost.

3. The formation, development and trend of bio-cultural diversity in ethnic areas

3.1. Formation and expression of bio-cultural diversity

Biological culture is a kind of cultural form gradually formed by human beings in the process of understanding and transforming nature. Different historical stages of development, biological - the cultural diversity of the form is different also, mainly for people of all ethnic groups in the long-term production and life practice, formed the rich ecological concept, technical methods and practical experience, and in the protection and utilization of biological resources in the process of creating, including diet, living, religion, cultural practices and local rules, and other forms of culture.

The formation of bio-cultural diversity in ethnic minority areas is closely related to the culture of protecting and sustainable utilization of biological resources by local communities. Influenced by the concept of “the unity of man and nature” or religious beliefs and customary laws, they regarded their natural habitats and various precious biological resources as sacred gifts from heaven and took the initiative to protect them with some reverence. The traditional way of production and life originates from the reverence for life and the plain ecological ethics, which reflects the harmony between man and nature to some extent, and maintains the stability and persistence of local ecosystem functions intentionally or unintentionally. The protection of biodiversity contained in the township regulations is not an accidental coincidence, but a reflection of the simple view of nature of local community residents. Religious beliefs seem to be unscientific to some extent, but they reflect the ideology of the local community and objectively play a role in the protection of biodiversity. In view of the rapid decline

of biodiversity and the inability of national administrative regulations to effectively stop it, different biological cultural forms based on traditional production, living culture customs, religious beliefs and customary laws have played an effective role in stimulating people's spontaneous behaviors.

Because of the different production environment, development history and life style, different ethnic groups have different forms of biological culture. The evolving cultural consciousness and traditional beliefs have been gradually integrated into the natural social system, enabling all ethnic groups to establish the concept of respecting nature, living in harmony with nature, and protecting the diversity of life on which they depend for survival. Finally, diverse forms of bio-cultural diversity have been formed. In the continuous evolution of human society, a relatively complete system of biological culture is used to coordinate the relationship between man and nature. However, with the acceleration of modernization and the influence of external factors, the biological culture system chain that once lived in harmony with nature is also changing gradually.

3.2. Influences of external factors on bio-cultural diversity

Biological culture has different manifestations in different historical stages. The connotation of biological culture also evolves and develops with the change of time. Under the influence of modernization process, various complex external factors are constantly integrated into biological culture, which makes it face various challenges and opportunities.

First, the adverse impact of external factors. First of all, it is reflected in the change of traditional cultural values. In the process of modernization, conflicts and integration between cultures are inevitable. By instilling their values and ideologies, strong foreign cultures lead to the continuous invasion and infiltration of local national cultures, and the core of traditional cultures is constantly weakened, finally showing "assimilation", "marginalization" and "extinction". Secondly, changes in cultural values are accompanied by impacts on biodiversity. The implementation of a series of strategic measures, such as the development of the western region, has reversed the development gap between the eastern and western regions to some extent, but it may cause negative impacts on the social culture and the sustainable utilization of biological resources in the western ethnic areas [20]. Although the implementation of policies such as nature reserves and national parks may protect the uniqueness and integrity of some species or ecosystems, ecological migration measures in protected areas will inevitably affect the inherent community bio-culture within the region. With the promotion and implementation of urbanization process, some local governments do not hesitate to destroy historical sites at the cost of cultural loss. Under the influence of the new agricultural variety promotion policy, traditional crops and livestock and poultry varieties are gradually being abandoned, and the original agricultural diversification is turning to the single planting mode, which reduces the stability of the agricultural ecosystem and the ability of crops to resist pests and diseases.

Second, the influence of positive external factors. "Clear waters and lush mountains are mountains of gold and silver," and "respect and love nature to enrich the ecological culture nurtured by Chinese civilization.", explore the ideas and moral

norms contained in the fine traditional culture of the Chinese nation. Such bio-cultural thoughts reflect the country and nation's attention to biological and cultural diversity. These concepts have been deeply planted in the ecology and cultural soil of our ecological civilization construction. As a series of protection of traditional culture, ecological environment and biodiversity policies, such as the protection of minority language, non-material cultural heritage protection, TCM traditional knowledge protection and implementation of the programme of action for the protection of geographical indication products, for the development and our country's rich biological-cultural diversity has a positive significance. The construction of ecological civilization in the new era is related to the sustainable development of the country and nation. It respects, complies with and protects nature, draws wisdom and nutrients from traditional Chinese culture, promotes the co-evolution of biology and culture, and realizes the symbiosis and coexistence of cultural and biological diversity. These positive factors constantly enrich and expand the connotation and extension of biological culture.

3.3. Development trends and prospects of bio-cultural diversity

The adoption of the Convention on Biological Diversity and the Convention on the Protection and Promotion of Cultural Diversity indicates that biological diversity and cultural diversity are gradually recognized and valued by the international community. Countries will work together to promote the common protection of biology and culture under legal mechanisms, and organically integrate the sustainable development of human society with bio-cultural diversity. Article 8(j) of the Convention on Biological Diversity addresses the relationship between the traditional knowledge held by Indigenous and Local communities and biodiversity (ilcs). The real estate on which the Convention treats traditional knowledge as a special resource related to biological resources, it is believed that traditional knowledge exists with biological resources and is closely dependent on biological resources. It is necessary to strengthen the collaborative protection of biological diversity and cultural diversity, and the user should share the benefits generated from their utilization with the local community in a fair and equitable way.

The Indigenous and Local Knowledge Systems (ILK) Expert Group under the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), an intergovernmental body of the United Nations, focuses on the link between traditional knowledge and modern science related to biodiversity. According to IPBES, traditional knowledge is a comprehensive socio-ecological knowledge and practice related to living things (including human beings) and the environment, as well as the interface between biodiversity and cultural diversity. The direct causes of the current decline of biodiversity are human activities, and the indirect causes are population growth, social and cultural pressures, etc., among which cultural factors have been emphasized and valued for many times. IPBES pointed out that human beings need to seek a new balance between prioritizing the development of natural and cultural heritage protection. As a platform for promoting biodiversity conservation, IPBES is exploring the traditional knowledge related to biodiversity in my country, improving and expanding the ecological niche of traditional knowledge in the platform,

and realizing the “protection and encouragement of traditional culture according to the Convention on Biological Diversity”. management and in line with customary use of biological resources for conservation and sustainable use”. IPBES will complement and synergize with the Convention on Biological Diversity to jointly promote the development of biological-cultural diversity.

After the concept of bioculture received attention, a series of theories such as biocultural perspective and biocultural approach were gradually developed and formed. Although these theories have certain reference value in solving problems such as biodiversity loss, public participation and government decision-making lack corresponding influence. The future development trend is to continue to explore the protection mechanism of biological culture, enhance the sense of national cultural identity, and regard national culture as a special force, which not only adapts to local economic development, but also mobilizes the enthusiasm of the community to actively participate in biodiversity conservation. Secondly, it is necessary to fully tap, absorb and use the wisdom contained in traditional Chinese culture to solve real ecological problems, handle the relationship between the national culture and foreign culture, choose the best, be eclectic, and continuously enrich and develop traditional culture. This is not only conducive to the inheritance of culture, but also to the management of biological resources.

4. Conclusions

The reason why ethnic areas have become hot spots of biodiversity is inseparable from the diversity of local ethnic cultures. Biology and culture interact, promote and complement each other. Biodiversity provides the material basis for cultural diversity, and cultural diversity promotes the conservation and sustainable use of biodiversity. The cultural outlook in the new era takes cultural self-confidence as the core and pays attention to the construction of cultural soft power; the ecological outlook in the new era takes a good environment as the goal, and strives to realize the universal benefits of people’s livelihood and well-being. The realization of national unity and the construction of ecological civilization are inseparable from the prosperity and development of biological-cultural diversity. Only by deeply understanding the rich connotation of biological culture, constantly improving and enriching the implication of biological culture, so that it can absorb nutrients, innovate and develop continuously, can it reflect its profoundness.

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