

# Livelihood Study of Yuehu Village in the Context of Water Environmental Changes

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**Abstract:** *The study of the relationship between ecological environment and human culture is one of the long-standing research topics in the field of ecological anthropology. Culture is a result of human adaptation to specific environment. Based on the first-hand data obtained in field investigation, the livelihood changes of Yuehu Village, a Sani village, was investigated in this paper, and ecological anthropology, ethnonymics and other related discipline theories were applied for analysis and discussion, so as to pry about the interactive relation between the local ecological environment and traditional national culture through the research of the village.*

**Keywords:** Yuehu Sani people; Livelihood practice; Ecological environment

## 1. Community and Field Background

Yuehu Village is located in Yi Autonomous County, Stone Forest in Yunnan. Due to the special karst landform, over 40 karst lakes have been gradually formed around the village, among which the crescent-shaped lake with an area of 4,460 square kilometers in the northeast corner of the village is the largest, and locally referred to as "Datangzi" and transliterated as "Gadianma" in Sani language. Hereinto, "Ga" means wheat, it is said that the present location of Gadianma was a place where wheat was grown, later the increased hydrops made the place what it is today. To this day, the elders in the village would say "Gadianma is Maiditang".

In 1585 during Ming Dynasty, Yuehu villagers Zhang Pushou and other 6 people advocated to excavate a tunnel of 20 zhang, build a stone sluice gate of 1.8 zhang high, and dig a ditch of 12.5 km for drainage, reclamation, ditching and launching water-control projects. "Traversing rock ridge of twelve feet, building a stone gate of eight feet high, irrigating thousands of hectares and spreading benefits to all people", then continuous strengthening and repair have been done. Yuehu has been famed as "Kangxi's pond and Qianlong's ancient gate". Yuehu cost a lot of material and financial resources in launching water-control projects, and the villagers used "a liter of money for a liter of rock ballast" to describe the considerable cost.

Seventeen years the Qing Dynasty, Chen Magistrate of Lunan County demolished half the ancient stone gates. In 15 years (1926), Yang Ganchen from Luliang County led soldiers of the Fifth District Mission and hundreds of civilian workers to demolish the ancient stone gates in Yuehu; in 16 years (1927), Purser Bi Kaike and other four people sued Yang Ganchen in Luliang County and carried the cause, the County Magistrate Xiong Congzhou awarded Datangzi to Yuehu Village. In 33 years (1943), Bi Jike and other 5 people proposed to repair the stone gate in the dewatering outlet. In 1956, a joint channel was built in Yuehu, with a total length of 21 km; at the end of 1966, the county hydraulic department organized specially-assigned

persons to carry out topographic survey and hydro-geological exploration, the water management substation was formally established, the management was strengthened, water source was constantly exploited, free flow gates, irrigation canals and ditches were increased, pumping stations were constructed and irrigated area was expanded. The free flow gates were rebuilt in 1969 into gravity dams, the water-gate hydraulic discharge was designed to be 5.9 square meters per second, the open channel was 208 meters long and the culvert was 32 meters long. In 1998, tap water was introduced into Yuehu Village and the irrigation canals and ditches underwent second modification, thus ending the history of collecting water by 20 minutes' walk.

## 2. Traditional Livelihood on Water

Ecological environment and human society coexist in one world and follow the law of matter and energy conservation, so the two will inevitably generate a mutual effect, not only the trajectory related to social and individual activities can be seen in ecological environment, but also the influence caused by ecological environment is bound to be seen in social structure. Livelihood practice is an effective bridge between social structure and ecological environment. Livelihood practice and ecological environment are interdependent. Only when livelihood practice is compatible with ecological environment, will it effectively protect the ecological environment from disruption. The livelihood knowledge based on local knowledge and traditional idea has become a specific custom handed down from age to age among groups in the form of culture. Livelihood practice is reflected as the mode of activity in which human beings obtain resources from nature.

### 2.1 Traditional agriculture dominated by rice cultivation

As everyone knows, to survive, all organisms must be satisfied with their basic living conditions and human beings are no exception. Malinowski believed that "when seeking food and fuel, building houses and sewing clothes to meet the needs, human beings are creating a new, secondary and

derivative environment for themselves, this environment is culture, and culture is a means to meet the needs"[1]. In other words, the reason why humans are different with other creatures in natural world lies in that culture is used as a medium by humans to adapt to the unpredictable environment, so as to solve the survival problem. In the ongoing process of human survival, culture plays a significant role. Stewart's theory of "using the interaction between various factors of the entire natural environment and social environment for human survival to study the law of cultural generation, development and variation"[2], is suitable to explain the interactive relation between culture and environment of human group like Yuehu Sani people who live in a special environment. Stewart's interrelated thesis contributed to this case study of the living environment, the traditional means of livelihood, the material life style and the formation of spiritual culture of Yuehu Sani people as well as the relationship between environmental evolution and cultural transition.

Rice can be divided into non-glutinous rice and glutinous rice according to the starch property and content, and Yuehu villagers generally adopt non-glutinous rice as the staple food, so the planting acreage of non-glutinous rice is far greater than that of glutinous rice, while glutinous rice is planted by only a few households. But in the village, glue puddings made of sticky rice powder is an essential dish every Lantern Festival for auspicious omen, and this custom has been reserved up to now.

## **2.2 Fishery: traditional fishing technology**

In 1465 during the Ming Dynasty, there's still a legend of "Gadianma" in the village as below. When Zhang Yushou got the land in that very year, there were still a lot of Black Yi living here, and they raised wheat in Gadianma, then Lunan properly relocated this group of people, and Zhang Yushou settled down there. Soon afterwards, a water outlet was discovered and would emit water when it rained, and a lot of underground fish would be brought out. Zhang Yushou guided the soldiers to block off the entrance to the outlet with a specially-made iron pan, since then, people there have been fishing for generations and Yuehu emerged from this. There are over 40 karst lakes of different sizes around Yuehu Village, with above 30 kinds of fishes inside the lakes, such as carp, grass carp, chub and crucian carp, and the number of crucian carp is the most. Yuehu villagers fished in the lakes from generation to generation, and created many fishing technologies and experience. We can learn from the villagers who fished for long term that, the fishing tools in Yuehu Village can be divided into three kinds, namely, fishing net, fishing pot and fishgig. Hereinto, the fishing net can be divided into hanging net, clamping net, trawlnet, purse net, falling net, pinching shrimp net, etc.; the fishing pot can be divided into hemi-head cage, long-closing cage and cover pot; the fishgig refers to the bullfrog fork and fish fork.

Only a small part of the daily gains of the villagers are used for their own consumption, and most of the captured fish are sold in Beida Village market or in Shilin County, and the

money gotten by the sales is used for daily expenses. Besides, the fish in Yuehu Village are mostly small carps (known locally as "Qike fish"), and thirty or forty of the fish can be caught in one time in the best case, and about three or four fish caught in the worst case. However, the caught fish must be sold out within three hours, otherwise, there is a risk of fish death, which is bound to affect the fishing income of the villagers. For Yuehu Village with many people and less land, mere grain planting is far from meeting the needs of the villagers, so the income from fish sales has been mostly spent on clothes, vegetables and other daily expenses. In the old days when fish resources were abundant, although the fish catches were considerable, the fish price on the market was low, with the gains by fishing, villagers could only live from hand to mouth. In addition to the purchase of daily necessities, the rest fishing income could only repair the fishing boats and retread the fishing nets. Although some fishes are high-priced, for instance, a black carp weighing 39 kg was priced half a silver dollar before 1949, but according to the villagers, since the black carp was caught, they never caught one later, so they deem that black carps in "Gadianma" became extinct.

## **3. The Evolution of Water Environment**

In all ages, the relationship between human beings and nature is a hot issue in academic world. As early as in the Warring States period, Confucius advocated "manifest destiny" and "respect the destiny" and "fear god's will"; Laozi advocated "nature and inaction"; Xunzi advocated "understanding the distinction between Heaven and Human" and put forward "adapting the law of heaven and making use of it" and "man can conquer nature". The debate on "relation between heaven and man" runs through the development of society[3]. Zhou Yunshui once pointed out that "the survival problem of a nation is mainly induced by the dramatic changes in the external environment and the insufficient adaption of the traditional culture"[4]. Obviously, Sani people appeared much inadaptation in the greatly changing environment, and corresponding rupture occurred in traditional culture.

In 1712, the related poems in Lunan County Annals compiled by Lunan Magistrate Jin Yanxian somewhat summarized the surrounding environment of Yuehu: "located over 20 li to east of the county, the water flows for several li and joins White Dragon Pool, then flows down south around the county. During the Wanli period of the Ming Dynasty, Zhang Pushou and other six people built a weir and opened a canal, thus the Southeast fields were rescued, and the grains all came from these fields. In the eighth day every spring, animal sacrifice would be done beside the pool and visitors gathered there. At night, the pool water was clean and the moon was bright, thus water and sky form delightful contrast".

Since the late 1990s, the water environment for Yuehu people has changed dramatically, and such changes became especially prominent after 2005. Water is the most precious natural resource of human beings. In stockaded villages built

facing the water like Yuehu, water is an indispensable part of the ecosystem, and the formation and evolution of these villages depend on changes in the quantity and quality of water resources. In other words, the development history of human society in these areas is a history of the development and utilization of water resources.

#### **4. Adaptation of Modern means of Livelihood**

Woods once said that transition usually happens with the changes in sociocultural environment or natural environment, when the change of the environment requires new thinking and behavior patterns, the necessary condition for social culture change appears [5]. After 1990s, the living environment of Sani people in Yuehu had dramatic changes, their natural ecological environment degraded, meanwhile, their sociocultural environment changed significantly. Therefore, with the changes in ecological environment, the first problem facing Sani people is how to adapt to the changed environment. The rapid evolution of natural ecological environment and sociocultural environment has led to invalidation of some traditional acculturation strategies of Sani people. On this occasion, they need to re adjust and re build the livelihood adaptation model.

The adaptation of Sani people to environmental changes is embodied in their production and life style, social relations, folk customs, views and values and other aspects. "Cultural adaptation refers to that a culture weeds out, transforms or newly adds some cultural elements by means of metabolism and through actual operation in the face of living environment changes, and gradually carries out reorganization and integration of cultural elements and the structure to form an emerging culture with more viability and stable continuity ability, so as to improve the utilizing efficiency of natural resources and enhance the techniques accumulated by members of culture ". When changes appear in social environment and natural environment, culture must adapt to the changes with certain flexibility. As mentioned above, the living environment of Sani people in Yuehu has had great changes since late 1980s, and such changes became more obvious after 2008. These changes have exerted a greater impact on the means of livelihood, which is a most important representation of the changes in human beings and the environment and reflects the efforts made by human beings in the process of exploring and transforming nature. Hence, to adapt to the environment changes, Sani people firstly made necessary adjustments to their traditional means of livelihood, changed the original rice cultivation related customs and abandoned hunting and fishing, which belong to their traditional means of livelihood. At the same time, they gradually created new means of livelihood, such as pseudo-ginseng planting, eucalyptus oil refining, migrant work and going into business.

Since the middle of 1990s, the living environment for Sani people in Yuehu has undergone dramatic changes. In addition to exhaustion of water sources, exsiccation of pistacia lentiscus, reclamation and deforestation and other changes in ecological environment, there are changes in

social environment such as the implementation of family-contract responsibility system and the investment promotion and land expropriation action of the government. In order to adapt to these changes, Sani people firstly made necessary adjustments on their means of livelihood, namely, stock farming, fishing and hunting. Secondly, they changed their agricultural crops and expanded the livelihood practice to adapt to the new environmental changes.

#### **5. Conclusion**

Things and their environment are constantly changing. Meanwhile, the environment humans survive on is closely related to the natural and social factors. Human beings change with the changing environment, and the two are interdependent. As mentioned above, since the 21st century, substantial changes have occurred in the living environment of Yuehu villagers, and such changes contain not only changes in the natural environment, but also those in the social environment. As anthropologist Donald emphasized, adaptation is a dynamic process, as both the organism and its environment are changing, new problems continuously emerge and solutions to them are continuously provided, thus new relations are constantly being built. Under this circumstance, cultural change is adapting to the development of environmental changes as the "running-in agent" of interaction between people and environment.

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