# A Study on Traditional Mountainous Settlements in Guizhou. Formation, Evolution and Challenges

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Abstract: In Guizhou, a mountainous province in the Southwest of China, various traditional settlements developed. Surviving from the harsh environment was considered the key factor to find the right way to locate and organize settlements at their formation. After centuries of evolution, the "mountain-river-farmland-wood-village" spacial structure was gradually formed. It is a precious human achievement that reflects the wisdom coexistence between men and nature. Nowadays, these settlements are facing various kinds of threats.

Keywords: mountainous settlements, human settlements, spatial morphology, Guizhou.

## *Introduction*

Guizhou Province is located in the Southwest of China (Fig.1); it covers an area of about 176,000 square kilometers and has a population of 35.02 million (2013). Located on the Eastern part of Yunan-Guizhou Plateau, the Guizhou Province has an average elevation of 1100 meters with three types of topographies: plateaus, hills and intermontane plains. The first two (plateaus and hills) correspond to the 92.5% of the land, so that Guizhou can be defined as a typical mountainous province. As one of the most ethnic provinces in China, Guizhou is inhabited by several ethnic minorities. For thousands of years, the ancestors of these minorities had been migrating from adjacent regions to Guizhou, where they used to be engaged in farming or semi-nomadic production. Gradually they settled down and developed in villages or tribes. Because of the diverse terrain, with mountains and rivers as barriers, as well as

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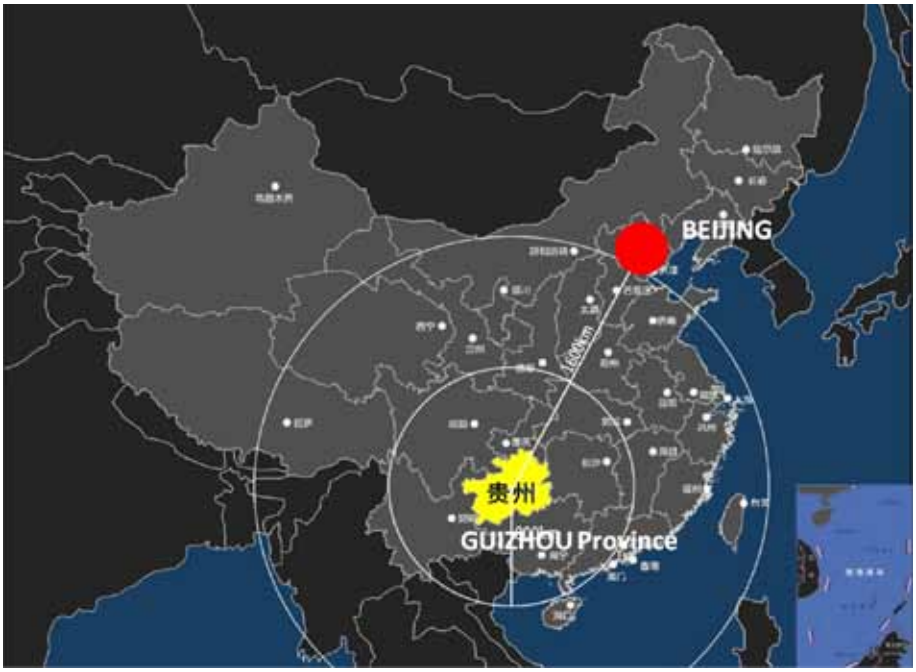


*Fig. 1. Location of Guizhou Province*

weak central administrative jurisdiction in their area (it wasn't regarded as a directly administrative region by the central government until the 15th century), the various ethnic groups developed a kind of spacial relationship in which they lived in small concentrated communities but shared a wider area with other groups. The unique culture of each minority has been retained and carried forward. Today in Guizhou there are 17 ethnic minorities including Miao, Dong, Buyi and others, making it a multi-cultural region.

The traditional mountain settlements in Guizhou are very different from those on the plains (Fig. 2). Three features stand out: 1) Facing a lot of pressure to survive in the early days, the residents developed the wisdom of site-choosing and effective construction; 2) The evolution of the settlements is full of experiences and methods for developing, adjusting and threat-responding; 3) The traditional mountain settlements follow the original pattern of the "mountain-river-farmland-wood-village" spacial structure.

However, the industrialization and urbanization processes have


*Fig. 2. Settlements of Minorities in Guizhou*

been changing the internal and external conditions of the current mountain settlements. These long-established human settlements are facing multiple risks and challenges.

*Formation of Guizhou Mountainous Settlements*

In 1930s, the British economic historian R.H. Tawney proposed an analogy in the study of rural China: «There are districts in which the position of the rural population is that of a man standing permanently up to the neck in water, so that even a ripple is sufficient to drown him».[2] After being quoted by J.C. Scott in his famous book *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia* in 1979, the pressure of survival which is "up to the neck in water" has been a famous comment to the status of peasants and agricultural production. When we discuss about the formation of the mountain

2. Tawney 1932.

settlements of ethnic minorities in Guizhou, we need to consider that the amount of cultivated land is a vital factor for survival. Therefore, the site searching and the layout settlements are based on these problems.

*Key Factors: lack of cultivable land and frequent geological disasters*

During the settlement construction process, especially the site selection and the preliminary layout stages, survival pressure is one of the first problem to be solved. Available land for farming is the basic living need for agricultural people. In lowland areas, peasants' needs for more cultivated land are easier to meet, and that explains the character of the earliest Chinese agricultural settlements on the Yellow River Plain and the Yangtze Plain. But for early migrants who just set foot on Guizhou, cultivable land was a key factor to survive.

Guizhou is the only inland mountainous province without plains. Its barren land is known as «eight for hills, one for river and one for farmland out of every ten pieces of land». Mountains and hills which accounts for 92.5% of the area. Rivers cut the land into small pieces of isolated scattered lands. The small amount of land that is suitable for farming usually appears in the intermontane basin, small-sized and disperse. According to the County Annals written in the 16th-19th century:

> «Guizhou is filled with mountains which stretch at least miles of land. Land is barren and covered with rock. The harsh environment causes hundred miles of land hardly seem any people living... Reclamation is extremely difficult.»[3] (...) «There's a huge difference while comparing to those places nearby the Yellow River downstream, which are the most fertile lands in China». [4]

From these documents we can see that the primary task during the settlement construction is to find enough cultivated land to be used. Pressure of survival also comes from the multiple geological disasters. Due to the mountainous and territorial structure frequent floods, landslides and other natural disasters can occur. The book *Qianji* (*Record of Guizhou Province*) written in 1608 recorded 136 natural disasters

3. Wu & Li 1697.
4. Ge 1943.

during the 153 years from AD 1449 to AD 1602.[5] Among them more than 30 floods and 4 large-scale landslides are reported. Geological disasters are able to cause major loss of property and human life, driving people displaced and homeless. Thus, this is another important factor threatening the survival of the local people.

*Site-selection:"mountain-river-farmland" spacial relationship*

For Guizhou mountain settlements' inhabitants the core principle is to get arable land and plough it properly to feed people, avoiding natural disasters as much as possible. Therefore, compared with human settlements in other regions, the most distinguished feature of Guizhou mountain settlements is how they extremely cherish farmland and thus develop the "mountain-river-farmland" spacial structure. Due to the absence of documentation, few villages of Guizhou ethnic minorities left visual materials about their settlements or construction. But fortunately, their histories were handed down orally from one generation to another in the form of folk songs or epics. In many of them various scenarios of how their ancestors managed to migrate into Guizhou were described. We can get a lot of information about Guizhou settlements from the lyrics. One of the ancient Miao folk epic "Crossing over mountains and rivers" chronicles the whole process of migration and site-selection of Miao inhabitants in the early days. We can see that the most important step is finding alluvial plain and examining soil conditions to see whether it's suitable for farming.

> *Reaching to the river and digging to the soil.*
> *The soil is black and soft, makes papa so delight.*
> *The river bank is good for farm, and the moutain brae is safe to live.*
> *We're gonna stop here and make a good living.*[6]

The Dong epic "Where our ancestors are from" recorded similar scenarios:

> *The land is fertile and the birds love woods.*
> *Mountain spread and the river surround.*

5. Guo 1608.
6. Tien 1993.

*The dam near brook filled with crops so thick like legs.*
*Vegetables are strong and huge in the land.*[7]

These epics confirm that farmland is the key factor for site-selection. First of all, there must be enough arable land to feed the population of a village. On this basis, further considerations are based on the environmental relationship between the mountain, the river and the farmland. Mountains divert storms and provide shelter for the area while letting the wood grow. Drinking and irrigating water is provided by the river. Floodplains create arable land. Finally, when all of these aspects and locations are considered together, the site for the village can be picked up.

On the other hand, looking for the stable characters of the mountain settlements' develpment, some original characteristics can be identified in the existing villages. A tribe in Baishui River Basin, in the middle of Guizhou, is shown in the picture (Fig.3). It reveals the same logic of how Buyi people choose their sites. The rule of «Floodplain for farm, mountain foot for living» has always played a dominant role.

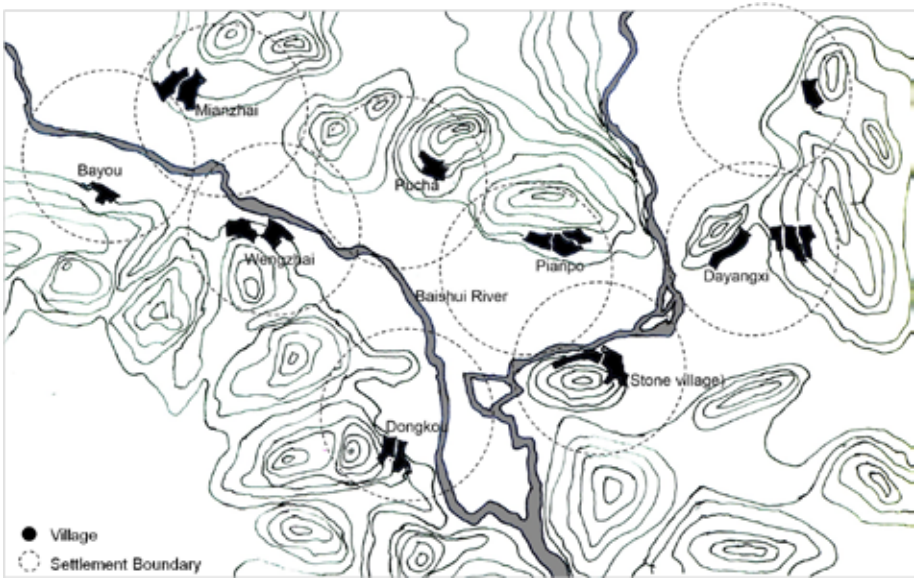


*Fig. 3. Settlements in Baishui River Basin*

7. IGFL 1981.

*Layout: the overall construction process of mountain settlements*

After selecting the site, the ancestors of ethnic minorities began to improve their overall living environment. They rebuilt the environment by adapting it to mountains and rivers, cultivating fields, planting trees, building houses and so on. Ultimately they developed solid conditions to their settlement survival. With the help of folk songs' analysis, for example the Miao *Groundbreaking Song*[8] wildly spread in Southeast Guizhou, and together with surveys and field trips in some existing villages, we can conclude the overall construction procedures as follow:

(1) Mountains and rivers jointly build a basic overall framework.

(2) Upland farming on Mountain slopes, reclamation on plains and irrigation from rivers; we can learn details from another Miao song "Ju Shi Lao":

> *The paddy fields are square and tidy leaning on the river.*
> *We ditch a ravine like bowel and let the stream go through.*
> *Fertilize our farmland and enrich our field*.[9]

(3) Trees need to be planted on the hills for soil and water conservation as well as wind shielding and rock consolidation. Wood is also very useful in villages.

(4) The village is built at the foot of the mountain. The principle is to occupy the hills and leave the farmland free. The village stands where it can be protected by the mountains and woods, but also to avoid floods and to be close to the farmlands.

(5) Through the above construction procedures, people can finally be able to survive and to reproduce. So the long-term development phase of the settlement starts (Fig.4).

*Evolution before middle 20th century*

These settlements developed over hundreds of years after their formation. Generally there are three evolutionary behaviours: growth, adjustment and response.

8. Wggfl 1981.
9. Wggfl 1981.


*Fig. 4. Typical Section of a Mountainous Settlement in Guizhou*

Growth

As the population increases, the settlement continues to grow. In different development stages and with different restrictions, three types of growth are present in Guizhou traditional mountain settlements.

(1) Natural growth of the original settlement. The population is still within the ecological capacity and there is still enough arable and construction land: the settlement follows the path of natural growth. The layout of the village remains unchanged while there are increasing houses and farmlands.

(2) Multiple communities appear and grow on the basis of the original settlement. Clusters of residence form a polycentric structure in the district. Arable land for farming is still available while construction land is in shortage. Normally two or more villages are developed in the same "mountain-river-farmland-wood" scheme in a defined area.

(3) The residents move out to build a new branch. This happens when available land in the settlement can no longer support the population growth in the tribe. People thus look for a new appropriate site to build another "mountain-river-farmland-wood-village" spacial structure.

One Dong settlement in Zhaoxing, Southeast Guizhou, is shown below as an example. Its evolution saw a spacial development from one single village to a larger settlement; it consists of five "residential groups" as the population kept increasing (Fig. 5).

Afterwards, the young branches began to migrate to surrounding

areas and build new villages, finally forming a "one major settlement with seven branches" system in the region (Fig. 6).

Adjustment

In human settlements' evolution, the usage of natural resources sometimes exceeded the geological capacity. The excessive deforestation can damage the ecosystem, the over-reclamation can cause soil erosion,

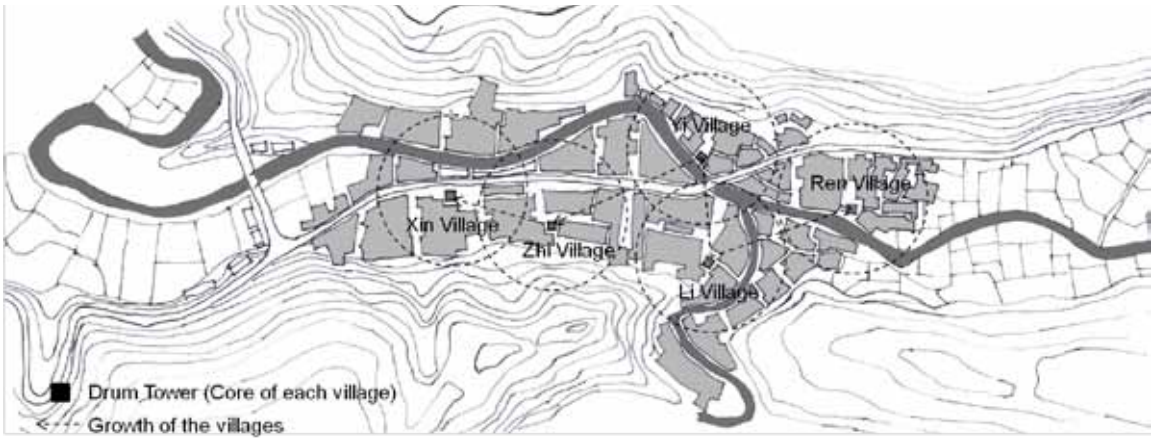


*Fig. 5. Growth of Zhaoxing Dong villages*

the illegal constructions reduce farmland and many other acts.

When people destroy nature, the nature will give punishment in return. This is evident in the long term evolutionary process. Communities adjust their behavior to become more suitable to the natural law. If you consider Langde, a Miao village located in Southeast of Guizhou, it is evident that they insist on planting several woods around and even worship them annually: «The wood can keep our stockade village from fire and keep our land from floods».[10]

10. Wu 2008.

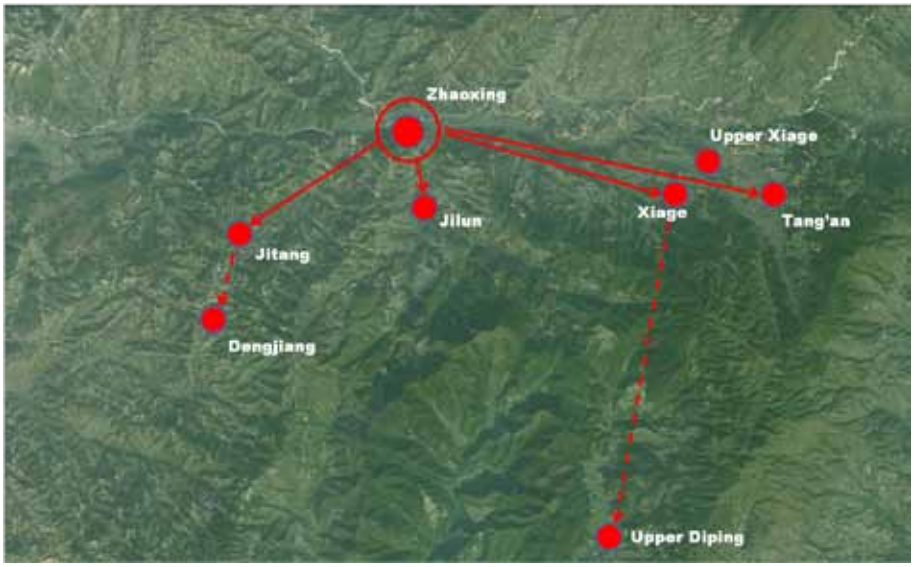


*Fig. 6. Settlements System around Zhaoxing*

Response

Within human settlement evolutionary process, sometimes you have to deal with impacts caused by war or unrest. This will usually reflect in the result of the settlement construction. Buyi, for example, whose people live in the middle part of Guizhou, went through chaos for more than a decade in the late Qing dynasty: huge deaths and lots of villages were ruined.[11] The survived community gathered and built up "TUN" (blockhouse) as a defensive measure. "TUN" buildings – usually cling to mountains to get better strategic terrain for defense – are valuable for villagers to hide and for fight. Inside TUN there is also food storage space. According to the historical records more than 120 TUNs were built in Zhenning county areas during chaotic historical phases. The photos in Figure 7 show one stone village in that region. The stone walls were built up during periods of war by three layers. Villagers would retreat behind the second wall when the war happened. Some stone walls and houses still remain nowadays.

11. Huang & Ren 1941.

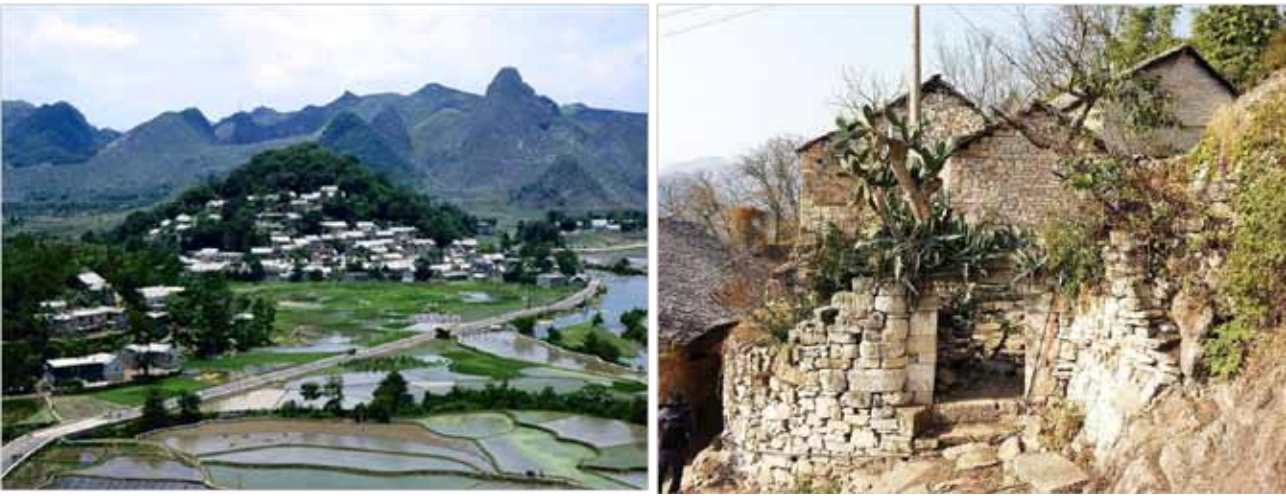

*Fig. 7. Stone village (left) and Wall of Its' "TUN" Remained (Right)*

*"Mountain-river-farmland-wood-village": an organic whole*

Following an evolutionary process, Guizhou settlements gradually became a "mountain-river-farmland-wood-village" pattern-system. The picture 8 shows the mountains around the sheltered village. The stream flushing the farmland is good for fertilizing and drinking. The farmland takes fully use of the plain in the valley, and the houses are clinging to the hill to save precious farming fields. The woods are all over the hills to maintain the ecological cycle (Fig.8).

Settlement

The formation of "mountain-river-farmland-wood-village" is a spacial concept developed and improved by generations of mountainous people. It is a simple but strong space concept on which ethnic people based their living habits. Investigating the "mountain-river-farmland-wood-village" spacial settlement formation in Guizhou provides an evidence of the ethics principle emerging under huge pressure of survival. Ethnic people restrained settlements construction being modest towards the nature. This ethical strategy helped people to survive from a harsh environment: embracing nature for survival. After decades this approach became a series of simple principles, the "survival ethics" worship of the residents in their community.


*Fig. 8. Pattern of "Mountain-River-Farmland-Wood-Village"*

Current Challenges

As the analysis above describes, a lot of colorful mountainous settlements have been settled during the rural age. They are rooted in the local enviroment, naturally adapted and cleverly solved the problem of people living under harsh survival situation. The way they built settlements shows a very important interest for human beings' needs. However, today, traditional mountain villages are facing severe challenges.

First of all, the pressure of survival caused by the shortage of cultivable land is no longer a vital factor affecting the construction of settlements. Currently, local farmers can survive by going out for working by other means: the farmland is no longer their only way to search food. Therefore, the entire "survival ethics" such as cherishing the land, protect the woods and others have been eroded. Some settlements appear as a barren land, several woods were destroyed, many hollow villages are present; the pattern of "mountain-river-farmland-wood-village" is seriously challenged.

Secondly, the disorderly urbanization process may bring the demise of traditional mountain settlements. In recent years, excessive and disorderly urbanization expansion constantly invaded rural land,

part of the traditional mountain villages are being demolished in order to become "urban". On the other hand, the process of urbanization is giving a huge impact on public understanding: the city is always the representative of advancement, while the rural is the reverse. Therefore, traditional mountain settlements features are disappearing, city-like villages instead emerged. It is a pathetic scenario when thousand villages look like the same.

For these challenges, we need to consider the following question: the way they deal with the relationship between man and nature is still a worth learning today? How can we learn? What the traditional mountain villages in Guizhou will be tomorrow? How they can be adapted to today's challenges if their features are maintained? The answers may be gradually finded out with further studies.

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