

Pristine Forests and Vernacular Architecture.

Sustainable Development and Responsible Tourism in the *Three Parallel Rivers* Natural World Heritage Site

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ABSTRACT: Rural areas are undergoing dramatic changes due to pressures of urban development, abandonment, and marginalisation, resulting in the loss of traditional knowledge, and cultural and biological diversity. Yet, the critical role played by traditional villages and their vast surrounding environment is now acknowledged as a complementary counterpart to growing cities, acting as a provider of quality environmental services and leisure, and as a springboard for national and global values. The interest of urban inhabitants in rural landscapes, vernacular architectures, and traditional settlements is also rising, as evidenced by the rapid increase of tourism in rural scenic areas and the demand for high-quality food products grown on these lands.

The paper observes on-the-ground practices carried out by local communities and organisations in ethnic minority villages (Lisu, Yi, Pumi, Bai) inside the Three Parallel Rivers Natural World Heritage site in Yunnan (Yulong County, Lijiang City).

The case study highlights the role played by the natural environment and vernacular buildings to stimulate local development. In the framework of a strategy aiming to alleviate poverty and support rural livelihoods, eco-tourism and environmental education provide the financial resources needed for the protection of nature, the conservation of local culture, and the renovation of vernacular architecture.

KEY WORDS: sustainable development, environmental conservation, traditional villages, eco-tourism, UNESCO world heritage site

1. Introduction

Since the Chinese government has placed rural areas at the very top of the country's development agenda (Wang, 2019), programmes promoting the renovation of villages and vernacular architecture have propagated in China.

For millennia, the country has been an agri-

culture empire, marked by a dense network of rural settlements safeguarding its territory. Today, this legacy materialises in a multitude of vernacular buildings and traditional settlements that play a significant role in promoting China's ancient culture and redefining national identity within the global context.

Initiatives focusing on the charm of traditional

built heritage, intangible local customs, and pastoral contexts to offer tourists entertainment opportunities are considered particularly successful. The case study presented in this article provides an insight into a different experience.

A remote and impoverished village, located in a protected area with stringent development limits, bet on turning its potential drawbacks into opportunities and chose to focus on the deep understanding and communication of its forest wilderness and biodiversity – two outstanding elements that characterise the place – instead of falling back on easier, standard tourism strategies.

In this framework, the renovation of existing vernacular architecture is just part of a broader approach to the revitalisation of spaces and significances, aimed not only for visitors and travellers, but mostly for the local community. Architectural renovation followed the general principles of minimum intervention, original materials and techniques, and ecological priority. These criteria were not just an issue of style or nostalgia, they were instead the most suitable solution in terms of the appropriate use of available resources (including existing buildings), economic balance, and social benefits; in a word – I would say – in terms of sustainability.

2. The Three Parallel Rivers of Yunnan Protected Areas

The village of Liju, northwest of Lijiang City (Yulong County, Yunnan Province), is a fairly typical mountain village, with all the issues that it entails.

Running adjacent to the river, 13 clusters of ‘natural villages’ form the Liju administrative settlement. Buildings are mixed both in materials and style: some are built with adobe bricks and stones, like many traditional dwellings in Lijiang valley; others have a concrete skeleton, notably the school and a few main public structures; and most are in wood, consisting of a simple room with a dirt floor and a

slight hollow for a fire in the middle.

Liju lies within the *Three Parallel Rivers of Yunnan Protected Areas*, a natural World Heritage property comprising of 15 protected areas (1,700,000 ha), grouped into eight clusters of buffer zones (covering 1,730,700 ha). The site has a remarkable altitudinal gradient and an exceptional range of topographical features, due to the region being at the collision point of tectonic plates and including sections of the upper reaches of three of the great rivers of Asia – Yangtze, Mekong, and Salween – running from north to south.



Figure 1. Traditional wooden house in Liju village, July 2018 © The author.

Where the Yangtze River turns its first dramatic bend, a valley branches off towards the west. River and road proceed side by side for about 40 kilometres in a narrow valley. Liju village covers the final portion of this path. At 2,800 metres above sea level, the road stops near the last building, while the river enters the forest of Laojun mountain. This primeval rainforest is one of the most biologically diverse temperate regions on earth. It harbours 168 endangered species, including the snub-nosed monkey (known in Chinese as the *Yunnan golden monkey*) and more than 10% of the world rhododendrons (P.R. of China, 2003). Biological diversity concerns both species (animals, plants, and fungi) and landforms (karst and red sandstone), while the area boasts multiple climatic conditions (from extreme aridity to humidity) and ranging tem-

peratures (from day to night).

Despite this ecological wealth, most inhabitants of this area live below the poverty line.

Liju village consists of around 350 households, 1,357 people belonging to different ethnic groups such as Lisu, Pumi, Yi, Naxi and Han, and comprises 1,527 ha of forest (mainly virgin forest with some secondary growth).

and levees like in the past, the government commenced a series of programmes to facilitate the restoration of forest ecosystems (Gao, 2019). As a result, a logging ban was imposed on the region, greatly helping environment conservation but making local populations' livelihood more precarious.

To address this situation, the government



Figure 2. The first bend of the Yangtze River, Shigu town, August 2018 © The author.

Farming (potato, corn, buckwheat, cabbage, and white beans), fruit trees (walnut, green plum, and Sichuan pepper), and livestock (goats, cattle, sheep, and pigs) constitute the main subsistence activities. The local economy was largely based on timber and charcoal products, until 1998 when China launched the *Natural Forest Protection Project* (NFPP – 天然林资源保护工程). The project commenced after the destruction caused by large-scale floods in China's major watercourses and aimed to protect the environment in the upper and middle reaches of the Yangzi and the Yellow River (Zhang & al., 2011). Crucially, the NFPP project marked the beginning of a national shift towards what is now called the *Ecological Civilization* paradigm (生态文明). Environmental scientists demonstrated that over-grazing and deforestation affected the ecosystem and exacerbated the effects of the floods, thus, instead of building higher dams

launched a series of targeted poverty alleviation initiatives in the village, involving infrastructural improvement, educational development, and medical care. Welfare and services came together with direct assistance to the poorest families, not in the form of money, but via breeding sows and more profitable plants to grow such as: mushrooms (wood-ear mushrooms) and medical plants (*chonglou*, used in the Yunnan Baiyao medicine for its detoxification and analgesic effects, and *costus*, a species of thistle whose essential oils extracted from the root have been used in traditional medicine and perfumes since ancient times).

Six years ago, a new school was built in the village; it now has 96 students, 10 teachers, and covers seven grades of education. From Monday to Friday, children of the areas under the jurisdiction of the Liju committee reside at the school dormitory. Meals, accommodation, and books are free of charge, and a monthly subsidy of 100 Yuan is given to students from

low-income families. Outside the school, a long list of sheets reporting poverty alleviation funds hangs on the wall.

In front of the classrooms is a new four-bed clinic and a basketball playground between the two buildings; on the opposite side of the road, a post office and a small shop complete the core services of the village. Two doctors assist people with minor diseases and, most importantly, since a few years ago, all residents have access to affordable basic medical insurance.

In winter 2017-2018, the first paved road reached the village. With the road arrived changes, bringing opportunities in pair with threats.



Figure 3. A secondary branch of the paved road under construction, November 2018 © The author.

3. Laojunshan National Park

Laojunshan National Park covers the Liming area, located on the northern slope of Laojun Mountain. The south side of the mountain, where Liju sits, is included in the World Heritage core area, but it is not formally structured as a national park. This situation has a two-fold effect: funds for environmental protection struggle to get there, and so does mass tourism development.

National parks in China are not defined by national legislation. They were first introduced in Yunnan province, playing a demonstrative role for the rest of the country. There-

fore, the so-called ‘national parks’ are an experimental hybrid of two Chinese protected-area classifications: ‘nature reserves’, which safeguard natural resources and largely prohibit human activity, and ‘scenic areas’, which foster development and mass tourism (Ives, 2011). Since Laojunshan National Park opened in 2008, Liming’s development has been focused on promoting its natural environment for mass tourism: electric shuttle buses, cable cars, boardwalks, and luxury ecotour lodges cater to busloads of wealthy travellers. Similar plans were in store for its other famous scenic spot: the 99 Dragon Pools, a small alpine basin dotted with lakes and rhododendron forest. Rumours, based on preliminary development plans, foreshadowed a similar fate for the Liju area, suggesting that after the completion of the road, a tourist tram may follow.

Yet, in March 2018, *Xinhua*, the official state-run press agency, announced the national reform reorganising the Ministry of Ecological Environment (MEE) and establishing the new Ministry of Natural Resources (MNR). This rearrangement highlights the growing importance attributed to environmental issues in the country (Ma & Liu, 2018). It also assigns the new Ministry of Natural Resources with the task of delineating ‘ecological red lines’ to protect resources across the nation.

The *China Ecological Conservation Red Line* (国生态保护红线) is an initiative aiming to protect more than one-quarter of the Chinese mainland territory – 2.4 million square kilometres, the size of France, Spain, Turkey, Germany, and Italy combined – selected for its biodiversity, ecosystem services (including access to fresh water), or the environmental capacity to buffer natural disasters. According to one of its initiators, the project is designed to protect almost all rare and endangered species and their habitats in China. It draws stringent boundaries to safeguard these areas from industrialisation and urbanisation, and also aims to restore the ecologically fragile environment and protect human settlements

(Gao, 2019).

Hence, in early 2019, through an ineluctable decentralisation mechanism, the Yulong County Environment Bureau announced its 'ecological red line' on Laojun mountain. Since then, development plans were put on hold, the 99 Dragon Pools site was closed to the public, and the administration is now pondering how to proceed. The main issue for Chinese officials is the management of conflicts between biodiversity protection and rapid development, both unavoidable priorities in contemporary China.

In this regard, the *Three Parallel Rivers of Yunnan Protected Areas* faces unique economic pressures and land-use tensions. Although the area is a natural World Heritage site, more than one million people live within its boundaries, a number substantially higher than any other site inscribed on the World Heritage List. Many of these communities live below the poverty line and depend on natural resources for survival. Moreover, about 86.6 percent of the local population belong to ethnic minority groups.

Poverty eradication has always been regarded as an important historical mission of the Chinese Government and the Communist Party of China (CPC). The substantial reduction of people living in poverty is one of the most crucial national achievements: during the 40 years of reform and opening-up, 700 million people have been lifted out of poverty, accounting for more than 70 percent of poverty reduction worldwide (Tan, 2018). We are now experiencing the country's last strain in eradicating poverty. In October 2017, during the 19th National Congress of the Communist Party of China, President Xi Jinping clearly defined this goal: "We must ensure that by the year 2020, all rural residents living below the current poverty line have been lifted out of poverty, and poverty is eliminated in all poor counties and regions" of China (Xi, 2017).

4. Liju village

Despite the 1998 logging ban, threats to forest conservation in Liju village were not immediately overcome. Deprived of their primary source of income, many villagers turned to illegal hunting, timber cutting, and charcoal producing. Changes started only in 2003, when The Nature Conservancy (TNC), a Virginia-based, international non-profit organisation, came to Liju.

This NGO has been working in Yunnan for 20 years and holds an important role in the development of the 'national park pilot program' working as an advisory organisation for the 2003 nomination of the Three Parallel Rivers of Yunnan Protected Areas (Ives, 2011; P.R. of China, 2003).

The Nature Conservancy (TNC) and the Chinese NGO, the Alashan Society of Entrepreneurs and Ecology (SEE) Foundation (that later began to work in the area), have engaged and supported Liju inhabitants in wildlife conservation. Beekeeping was fostered as an additional source of income for the sake of nature conservation in the valley. Most importantly, two local teams (10 people in total) have been established to patrol the forest. The Laojunshan patrols (老君山巡护队) are assigned the tasks of preventing fires, and controlling poaching and illegal harvest of timber and other forest products. National and international experience shows that forest stewardship almost invariably employs residents of rural communities, because local people know the land and where poachers and timber harvesters are likely to go. Sometimes patrols even enlist former poachers who are willing to turn the knowledge gained from illegal activities into a resource for preserving the environment and earn a safe and regular salary.

Clad in green camouflage gear, patrols have to scout the forest, spending several days and nights in the woods. They watch signs of wildlife, monitor animals, plants, and people activities, keep track of the infrared-triggered cameras that take pictures when set off by animal body heat, and gather all information in their notebooks. Back in the office, they log

the data onto computers, and professional analysts process, analyse, and monitor the information (Zinda, 2019).



Figure 4. Laojunshan patrols, April 2019 © The author.

As a result of this enhanced supervision, illegal activities within the protected area have been greatly reduced.

In China, there are a total of 60,000 local patrol teams (Wang, 2016). They employ various methods and funding sources. Some use the ‘ecological benefit compensation’ (生态效益补偿) given to communities for maintaining forests for the public good (Zinda, 2019) and others are supported by individuals, businesses, governmental bureaus, or NGOs, like in the case of Liju. Yet, many programmes nationwide remain only in nominal existence, having been set up without sound funding mechanisms (Wang, 2016).

Liju benefits also from an additional project the village is undergoing. Once the paved road to Liju has been completed, tourism will emerge as a promising industry in this area. The arising challenge would be to protect biodiversity and ensure that tourism revenues benefit the local community. A group of small companies, engaged in environmental education and responsible eco-tourism, are trying to further encourage Laojunshan’s development towards a long-term sustainable direction. The project has been developed and implemented

through a long process of identification and outreach of stakeholders – comprising villagers, local committees, patrol teams, members of NGOs, small local tourist companies, concerned county bureaus, and other World Heritage local office and UNESCO related institutions – to involve everyone in achieving the common goal of environmental conservation and sustainable development.

A small loan from a local development fund made it possible to restore a cluster of houses at the end of the village, right where the road stops to make way for the forest. These existing buildings belong to local families who have been involved in the project since the very beginning. They have been transformed into a base camp rented out for travellers and student accommodation.

The structures, in wood and stone, have been restored with the help of the owners and local workforce. They have been provided with a small, new toilets and showers block, slightly detached from the main buildings, consisting of a dry wooden construction, easily removable and equipped with solar panels and a water turbine (there is no electric grid).

Edifices provide accommodation and rooms for meals, meetings, classes, presentations, projections, etc. The companies offer excursions and hikes in mountains, lectures, and environmental education camps for children and students. Visitors have the opportunity to learn about culture, nature, and sustainability, and to be actively involved in conservation projects contributing to local development. Village families contribute to the planning, organisation, and implementation of the activities, moreover, they provide accommodation, food, and guided tours in the forest, to gain an additional source of income.

This responsible form of eco-tourism and the environmental education courses are primarily seen as a financial resource for nature protection and as a strategy to support rural livelihoods. Each year, a percentage of the profits generated from these activities go to a Sustainable Action Fund to advance nature con-

ervation (enhancing equipment for wildlife monitoring, protection, and patrolling activities) and local community development (bee-keeping technology improvement and village infrastructure construction).



Figure 5-6. Liju village, main settlements (above) and a small cluster of buildings at the end of the road (below), November 2018 © The author.

Although tourism is a rapidly growing sector in China, eco-tourism, understood as a sustainable, nature-based tourism, is still in its infancy. There is no commonly agreed upon definition of eco-tourism, and this concept is often perceived differently in China and Western countries, as exemplified by the ‘national parks’ experience in Yunnan. Yet, the tourism market is rapidly changing, and China is now targeting sustainability and *eco-civilisation*, while mass tourism progressively loses

its appeal among well-educated Chinese travellers. Therefore, the market requests emerging for these kinds of experiences are promising, and Liju’s experimental approach offers a pioneer case study.

This project is also developing – with the collaboration of inhabitants, tourist companies, NGOs, and visitors – an inventory of local ethnic legends on nature conservation and know-hows (plant properties and specimen names in local languages). Although the Three Parallel Rivers is a natural World Heritage site, it has strong cultural values that are highly significant for the population living in the sites and for the safeguard of the natural environment. Similar to other countries in Asia, China sees nature and culture as inseparable elements. This is especially true here, where in the past Tibetan, Naxi, and Lisu’s religion-driven worship of nature promoted a fierce protectiveness of nature that explains the residents’ motivation for the conservation of natural resources. The linkage of their rich cultures to the land is expressed through religious beliefs, mythology, art, dance, music, poetry, and songs.

5. Conclusions

This comprehensive ‘renovation project’ has brought a sense of pride to local communities. Eco-tourism has built confidence, fostered the awareness of the importance of forest protection, brought to light ancient ethnic traditions and know-how, and gave a reason to maintain and restore vernacular existing buildings.

What is most interesting here, is that Liju is not a unique case, and the number of similar initiatives in China is rapidly growing (Wang, 2016; Zinda, 2019; Peng, 2019).

Liju village and other similar experiences, though very small-scale projects, gauge the effects of the central government’s decisions at the local scale, and act as indicators of the fundamental changes taking place in the country. Notably, these independent experiences

indicate both the effectiveness of governmental narrative and related policies in directing local innovation and the importance of small-scale experiences that can play a role, piloting and informing great national decisions. Liju's case shows that, at this moment, all around China bottom-up experiences and top-down policies seem to pursue the same common goal: the achievement of a more equal, sustainable, and diversified future, for the good of the Chinese people, and hopefully for the whole of humanity.

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