

**World Heritage Nomination
Natural Heritage: China**

FANJINGSHAN MANAGEMENT PLAN

**Ministry of Housing and Urban-Rural Development
People's Republic of China**

2016

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1 | General Principles of Planning





1 General Principles of Planning

1.1 Planning and Implementation

In accordance with the requirements of the *Convention concerning the Protection of the World Cultural and Natural Heritage*, *Operational Guidelines for the Implementation of the World Heritage Convention* and *Regulations on Nature Reserves of the People's Republic of China*, the *Management Plan for Fanjingshan World Natural Heritage Nominated Property* (hereinafter referred to as "the plan") follows the concept of ecological civilization through principles of respecting, complying with and protecting nature, tries to protect the Outstanding Universal Value of the nominated property, aims to maintain its integrity and authenticity, and strictly protects the unique mountain ecological processes and biological diversity of the Fanjingshan World Natural Heritage nominated property (hereinafter referred to as "the nominated property"). The management plan adheres to the principles of "scientific planning, unified management, strict protection, sustainable utilization", coordinates the relationship of tourism development, production development and resources and environment protection, and guides the nominated property to promote regional economic development with scientific planning and to promote the substantive protection with the regional economic development, so as to form a positive ecological development mechanism for the protection of the whole nominated property.

A master plan of the nominated property has been made previously. This plan pays more attention to protection, management and maintenance of the Outstanding Universal Value and integrity of the property while coordinating with the relevant plans. The plan was made after the new work of field survey and value demonstration, consultation of the stakeholders such as local government officials, managers and residents, analysis of the problems and challenges, planning and designing of the objectives, policies and measures and so on. In principle, this plan represents the basic wishes and demands of the administrative agencies and different stakeholders in the nominated property.

The plan will be implemented under the cooperation and management of the Ministry of Housing and Urban-Rural Development, the People's Government of Guizhou Province, the World Heritage Management Office of the Department Housing and Urban-Rural Development of Guizhou Province and Guizhou Provincial Forestry Department. Actions under the plan will be executed by Office of the Leading Group for World Heritage Application of Tongren City, Administration of Guizhou Fanjingshan National Nature Reserve (hereinafter referred to as "Fanjingshan Nature Reserve Administration") and

Administration of Guizhou Yinjiang Yangxi Provincial Nature Reserve (hereinafter referred to as “Yangxi Nature Reserve Administration”).

1.2 Planning Scope

The plan covers the entire area of the nominated property and the buffer zone of Fanjingshan, with a total area of 77,514 ha including the nominated property of 40,275 ha and the buffer zone of 37,239 ha respectively.

1.3 Implementation Period

The planning implementation period of the plan is 15 years (2016~2030), which can be divided into two stages:

Short-Term Period: From 2016 to 2020, the first Five-Year of the plan implementation, the same with the period of the Thirteenth Five-Year Plan for the National Economic and Social Development of the People's Republic of China.

Long-Term Period: From 2021 to 2030, ten years after achieving the short-term objectives, the same with the periods of the Fourteenth and Fifteenth Five-Year Plans for the National Economic and Social Development of the People's Republic of China.

1.4 International, Legislative, Statutory or Other Requirements

1.4.1 International Conventions and Guidelines

Convention concerning the Protection of the World Cultural and Natural Heritage, UNESCO, 1972

Convention on International Trade in Endangered Species of Wild Fauna and Flora, IUCN, 1973

Convention on Biological Diversity, UNEP, 1992

Guidelines for Management Planning of Protected Area, IUCN, 2003

Manual for Preparing World Heritage Nominations, UNESCO, 2011

World Natural Heritage Management, UNESCO, 2012

Management Planning for Natural World Heritage Properties, IUCN/WCPA, 2008

Operational Guidelines for the Implementation of the World Heritage Convention, UNESCO, 2015





1.4.2 National Laws and Regulations of China

Constitution of the People's Republic of China (Revision), National People's Congress, the People's Republic of China, 2004

Criminal Law of the People's Republic of China (Revision 8), The Standing Committee of the People's Congress, the People's Republic of China, 2011

Law of the People's Republic of China on Environmental Protection, The Standing Committee of the People's Congress, 2014

Forestry Law of the People's Republic of China, The Standing Committee of the People's Congress, the People's Republic of China, 1984

Water Law of the People's Republic of China, The Standing Committee of the People's Congress, the People's Republic of China, 2002

Regulations of the People's Republic of China on Nature Reserves, The State Council, the People's Republic of China, 1994

Regulations of the People's Republic of China on the Wild Plants Protection, The State Council, the People's Republic of China, 1996

Regulations of the People's Republic of China on the Implementation of Terrestrial Wildlife Protection, State Forestry Administration, the People's Republic of China, 2016

Regulations Concerning Forestry of Guizhou Province, The Standing Committee of the People's Congress of Guizhou Province, the People's Republic of China, 2000

Regulations Concerning Environmental Protection of Guizhou Province, The Standing Committee of the People's Congress of Guizhou Province, the People's Republic of China, 2009

Measures for the Management of Natural Reserve Areas of Forest and Wildlife, State Forestry Administration, the People's Republic of China, 1985

Measures for the management of National Non-Commercial Forest, State Forestry Administration and Ministry of Finance, 2013

1.4.3 Other Plans Associated with the Management Plan

Master Plan of Guizhou Fanjingshan National Nature Reserve (2014~2023), the Planning and Design Institute of Forest Products Industry Planning, 2013

Master Plan of Guizhou Yinjiang Yangxi Provincial Nature Reserve (2015~2024), Academy of Forestry Science, Guizhou Province, 2014

Master Plan of the Eco-tourism Development of the Guizhou Fanjingshan National Nature Reserve (2014~2023), the Planning and Design Institute of Forest Products Industry Planning, 2013

Conservation Plan of the World's Only Son Rhinopithecus brelichi (2015~2025), Guizhou Fanjingshan National Nature Reserve, 2014

Biodiversity Conservation Strategy and Action Plan of China (2011~2030), 2010

Twenty-first Century Agenda of China-Forestry Action Plan, 1995

Overall Planning for the National Wildlife Protection and Nature Reserve Establishment Programme (2010~2050), 2000

Development Planning of National Forestry Nature Reserve (2006~2030), 2005

Plan of the Forest Land Protection and Utilization of China (2010~2020), 2010

Plan of Forest Conservation and Utilization of Guizhou Province (2010~2020), 2010

Master Plan of Guizhou Fanjingshan National Nature Reserve (2014~2023), the Planning and Design Institute of Forest Products Industry Planning, 2013

The Detailed Planning of the Eco-tourism Areas of Guizhou Fanjingshan National Nature Reserve(2007~2022), Hainan Yake urban planning and design co., LTD, 2013

Master Plan of the Fanjingshan – Taipinghe River Provincial Park (2011~2030), People's Government of Jiangkou County, Tonghe Limited Company on Planning and Design Consulting in Guizhou, 2015

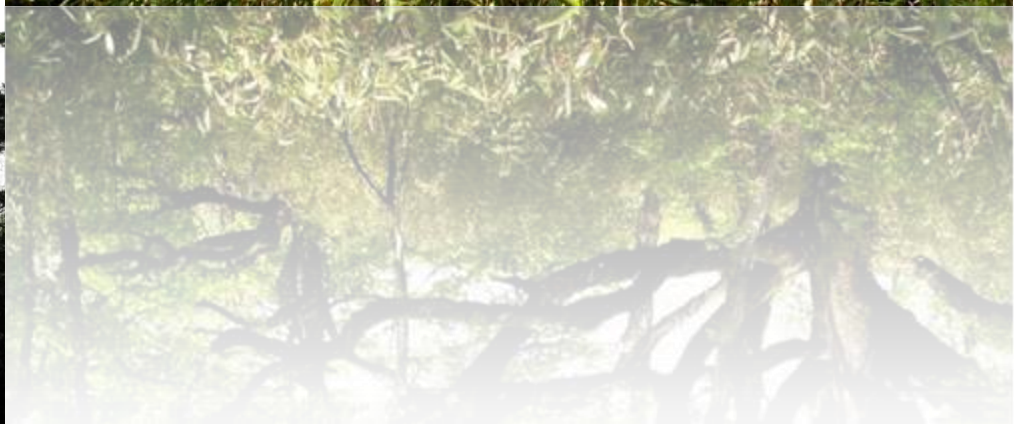
Master Plan of the Yinjiang Muhuang Provincial Park (2012~2030), Institute of Urban and Rural Planning and Design in Guizhou, 2012

Master Plan of Jiangkou National Wetland Park in Guizhou (2014~2020), Reconnaissance Design Institute of State Forestry Bureau in Kunming, 2013

1.4.4 Documents of World Natural Heritage Nomination

Nomination Document of the Fanjingshan World Natural Heritage Nominated Property and its appendixes, the Ministry of Housing and Urban-rural Development, the People's Republic of China, 2016





2 | The Nominated Property and Values





2 The Nominated Property and Values

2.1 Location and Scope

The nominated property, including Guizhou Fanjingshan National Nature Reserve (hereinafter referred to as “Fanjingshan National Nature Reserve”), the Chayuan area of Guizhou Yinjiang Yangxi Provincial Nature Reserve (hereinafter referred to as “Yangxi Provincial Nature Reserve”) and a small area of National Non-Commercial Forest in the northeast, lies in the junction of Jiangkou County, Yinjiang Tujia and Miao Autonomous County and Songtao Miao Autonomous County in Tongren City, Guizhou. There are Fanjingshan-Taipinghe Provincial Park and Yinjiang Mu Huang Provincial Park within the World Heritage buffer zone (attached Maps 1 and 2). The coordinate of the central point of the property is N27°53'44", E108°40'48" (Figure 2.1).



Figure 2.1 Location of the nominated property of Fanjingshan in China

2.2 Description of the Nominated Property

2.2.1 Physical Geography

The nominated property of Fanjingshan is located in the mountain slope zone which is transits from the eastern Yunnan-Guizhou Plateau to the Western Hunan Hills, namely the transitional zone between the second step and third step of the physical terrain of China, and is located in the southwest end of the range, and at the junction of Jiangkou, Yinjiang and Songtao Counties in the northeast Guizhou Province. The geographical coordinates are N27°45'07"-28°03'10", E108°30'41"-108°47'51".

Geological background: Fanjingshan nominated property is located in the southwest margin of the Jiangnan Orogenic Belt; and it is a rift basin in Proterozoic Eon (Wang, 1990; Wang et al., 2012). The formation of Fanjingshan experienced 4 remarkable geological events and tectonic movements including Fanjing-Wuling, Xuefeng, Yanshan and Himalayan Movements, and it was especially related to the tectonic movement and the latter uplifting in Late Mesozoic. Its natural landscapes such as the mountain topography and geomorphology, forest ecosystem, soil, climate and water are closely related to the geological environment and basic geological characteristics (He, et al., 1990). The Presinian strata are widely distributed in Fanjingshan region, which is an important window to study the geological tectonic evolution of Precambrian in South China. The Precambrian strata outcropped in the early Paleozoic strata in the form of "core complex" in the two different structural units: Fanjingshan Group and Banxi Group, which are separated by angular unconformity surface (Dai, 2010; Wang et al., 2012). Banxi Group mainly distributes in mountain front and the dome structure centre like Fenghuangshan Peak, Jinding Peak, Doupengshan and Niutoushan with metamorphic conglomerate, palimpsest sandstone and phyllite. Fanjing Group all distributes in the core part of the mountain dome, and typical basite and ultrabasite igneous rocks can be seen. The strata sequence of Fanjingshan is the key to understand early evolution of sedimentary basin in neoproterozoic. Fanjing Group is divided into seven rock groups with a total thickness of more than 9,400 m, forming an intact sedimentary record (Gao, et al., 2014). According to isotope geological age data of the oldest stratigraphy (Fanjing Group), its age may be between 1,000 Ma.B.P and 1,400 Ma.B.P and older than Xiaya Group of Shennongjia, the oldest stratigraphy of Shennongjia in western Hubei Province in China (Deng, 1986). Thus, a complete stratigraphic framework can be sufficiently established in Fanjingshan through the low degree of rock strata metamorphism, perfectly preserved primary structure; clear





fold structure style exhibited by distribution of stratigraphic unit; moderate tectonic transposition in stratum deformation and completely reserved intrusive contact relationships of intrusive rock.

Geomorphological features: The metamorphic rocks in the Fanjingshan were formed during the Fanjing-Wuling orogeny, approximately 1 billion years ago. From 1000 Ma (Million years ago) to 227 Ma, the northward oceanic plate suffered from subduction northward, transgression and regression on the block alternately, and the carbonate deposits were formed around the rock block. From 227 Ma to 205 Ma, the land of Fanjingshan area and the karst area around it were formed during the Indo-China orogeny. From 205 Ma to 96 Ma, under the impact of the Yanshan orogeny, the Jinding-Fenghuangshan, and low hills round basin as a band of ladder and the dome shape of blocked mountain were then formed. Until 96 Ma, under the impact of the Himalayan movement, the karst stratum around Fanjingshan were gradually denuded, the metamorphic rocks exposed, fornix metamorphic rock island and radial rivers formed eventually. Since 2.6 Ma, the Neotectonics has made Fanjingshan a non-karst faulted dome mountain which is higher than its surrounding karst areas, and it is still suffering from intense erosion now. There is an obvious difference between its core and surroundings, as well as the upper and lower mountain. It is the main feature of the nominated property of Fanjingshan in macro perspective (the Group for the Scientific Survey of the Fanjingshan, 1986). The main part of Fanjingshan was affected by the weathering conditions and hydrothermal function in Tertiary and frost weathering in the Ice Age of Quaternary (Deng, 1986), then unique erosional-tectonic landform types formed, such as unique canyons, gorge landforms, and paleoclimatic landforms such as nivation swales and horn peaks. There are karst landforms and fluvial landforms in the surrounding areas, dolines, shafts, blind valleys, depressions, karst springs and underground rivers, for instance. Geomorphological implication to Neo-tectonics of the nominated property of Fanjingshan is featured by synchronous ring-layered knick point, the unique landform of canyon-in-gorge, the obviously different longitudinal profile gradients from different elevations, the different terrain ratios which reflect the geomorphological development of valley, differences on river terrace between the upper-mountain and lower-mountain, and the metamorphic planation surface, and so on (Yang, 1986). So it has an important scientific value to study the neo-tectonics in the non-karst region of southwest China.

Climate Type: The Fanjingshan nominated property is located in the East Asian monsoon climate zone. It is obviously affected by monsoon from south-eastern sea in summer, but little by cold wave in winter. Its mean annual temperature varies from 5.0 to 17.0°C, usually decreasing with the height increase. The vertical decrease degree of annual average temperature is 0.50~0.56°C/100 m. With obvious vertical climate differentiation, there is an obvious vertical climate belt score according to heat; the wind power turns greater and the cloud quantity increases with the terrain rising. The annual precipitation varies from 1,100 to 2,600 mm, which makes it the region with the most rainfall in Guizhou Province and even one of the high-rainfall regions in China. Its mean annual relative humidity is beyond 80%. Its mean annual relative humidity is beyond 80%. Fanjingshan represents typical mid-subtropical monsoon humid mountainous climate of China. And it is advantageous to the survival, reproduction, growth and development of the animals and plants with the water and heat resources are abundant. Because of the angle relationship between mountain ridge direction (NE-SW) and monsoon, difference on water and heat conditions in both sides of the mountain and climate in different slope is significant, which is reflected by the differentiation on the distribution and composition of vegetation. In the condition of appropriate weather, there will appear colourful glory in the Jinding and Lanchading peaks which is similar to “Emei Baoguang” and whose diameter can be 3-5 m. According to the present explanation, this is formed by diffraction effect of sunlight when it goes through the little hole among water drops in cloud or mist which is in the opposite direction to the sun (The Group for the Scientific Survey of the Fanjingshan, 1986).

Hydrology and Drainage: The Fanjingshan nominated property lies in the upper reaches of the main rivers, and is on the divide of Wujiang and Yuanjiang river systems. With numerous gullies, lots of surface rivers developed as a fine drain condition, and its drainage system is typically radial in distribution. In the system, Heiwanhe, Panxi, Waxihe, Macaohe, Huangnigou, Liaojianghe, Kaituhe and Niuweihe rivers are in Jiangkou County; Xiaojahe, Yujiagou, Taojinhe and Yangxihe rivers are in Yinjiang County; Yuquangou and Luanshihe are in Songtao County (Figure 2.2). Due to the intense retrogressive erosion, the rivers have these characteristics like large gradients, plentiful rapid flows, dangerous beaches, hydraulic drops and waterfalls. The total length of these perennial rivers is more than 200 km, with a mean annual discharge of 12.37 m³/s, and without broken flow throughout the year. These rivers are radially distributed, cutting the mountains radially. Therefore, the mountains are also in radial distribution with thin ridges, usually knife-like, centred by new Jinding, old Jinding and Fenghuangshan. Their altitude drops from the





centre to the surroundings. As a result, the mountain was described as a landscape with “Rivers Originating from New Jinding, Ranges Originating from Thousands of Book-like Rock” (Yang, 1986).

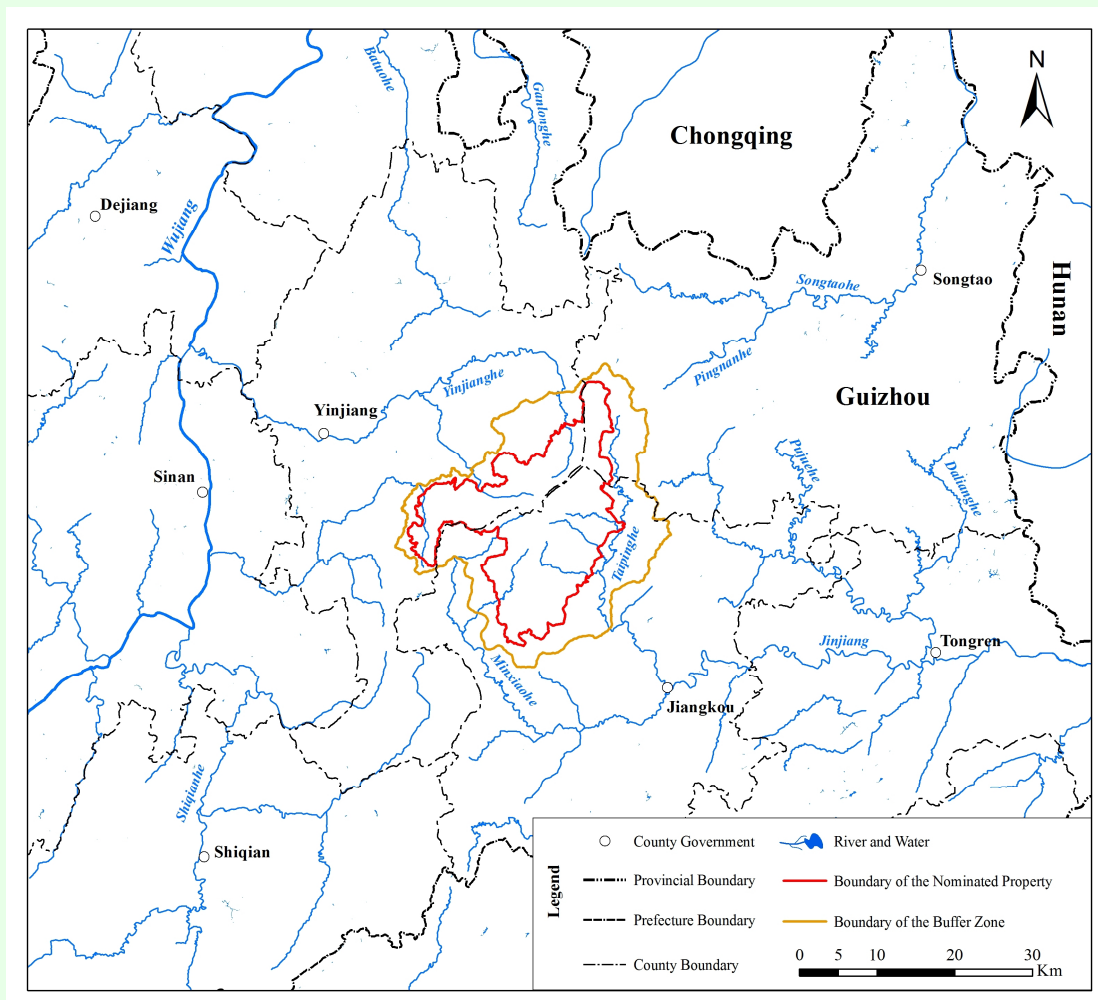


Figure 2.2 Drainage of Fanjingshan

Soil and Biology: With the difference of biological and climatic condition caused by terrain rise, vertical distribution of soil types also shows an obvious regularity: mountain yellow red soil, mountain yellow soil, mountain yellow brown soil, mountain dark elfin forest soil and mountain meadow soil appearing from the bottom to the top of the mountain successively (He, et al., 1990). The mountain yellow soils and dark yellow-brown soils have the largest distribution in scale, next for mountain yellow red soil, and the mountain dark elfin forest soil and mountain meadow soil are in the smallest distribution scale, which are all forest soil. Residual deposit and slope wash from weathering metamorphic rocks of Banxi Group of Proterozoic are the main soil parent materials. The source rocks are palimpsest siltstone, palimpsest quartz sandstone,

sericite slate, phyllite, palimpsest tuff and metamorphic spilite keratophyre. In terms of quality, the organic matter layer of soil is generally thicker and its content is higher; the content of N, P is higher, but the available nutrient content is lower. In terms of the soil mechanical composition, the content of sand and silt grains is higher, but that of clay particles is lower; and the soil erosion resistance is weaker (The Group for the Scientific Survey of the Fanjingshan, 1986). The nominated property is a representative of the subtropical humid areas of the mountain ecosystem, with a distinct boundary at mid-subtropical latitude, which is among the most intact montane ecosystems, and harbours many rare and endangered and endemic species and typical vegetation altitudinal zonality. Based on the elevation gradient and long-standing nature, the nominated property presents the ecology and biology on-going process of mid-subtropical and the dome-shaped mountain of Oriental Deciduous Forest biogeographic province in time and space. There are plentiful plant species and rare and endangered plant species. There are 4,394 species of wild plants, 230 species of rare and endangered wild plants, 46 species endemic in the area and 1,010 species endemic to China. The fauna is ancient. There are 450 species of vertebrates, including *Rhinopithecus brelichi*, 2,317 species of invertebrates, 115 species of rare and endangered vertebrates and 249 species of endemic animals.

2.2.2 Human Geography

Community population: The nominated property and its buffer zone are related to 3 counties – Jiangkou County, Yinjiang Tujia and Miao Autonomous County and Songtao Miao Autonomous County, 7 townships (towns), 22 villages, among which Kuaichang Village stretches across the nominated property and its buffer zone. There are 5,692 households with 21,905 persons; among them, 718 households with 2,637 people are in the nominated property (Table 2.1). Apart from Han residents, the nominated property and its buffer zone are inhabited by ethnic groups including the residents of minorities such as Tujia, Miao, Dong, Hui, Zhuang, Yi, Gelao, etc.

Table 2.1 Population in the nominated property and the buffer zone of Fanjingshan

	County	Township (Town)	Village	Subscriber Number (Household)	Population (People)
The nominated property	Yinjiang	Ziwei	Tuanlong	199	832
			Dayuanzhi	122	447
		Luochang	Dianchang	101	332
			Lingfeng	184	564
	Jiangkou	Taiping	Kuaichang	112	462
	Total	3	5	718	2,637
	Population Density (persons/km ²)			7	





The buffer zone	Jiangkou	Taiping	Kuaichang	253	1,113	
			Kaiwen	320	1,345	
			Fanjingshan	933	3,672	
			Zhaibao	534	2,086	
		Dewang	Bamei	515	2,087	
	Yinjiang	Ziwei	Doucoulun	128	463	
			Damianpo	82	343	
			Yuanjialin	75	295	
			Zhangjiaba	241	839	
		Muhuang	Furong	363	1,425	
			Pingsuo	159	718	
			Jinchang	110	418	
			Jinxing	128	552	
			Julong	147	520	
			Chanxi	Lengshuixi	251	907
		Luochang	Chayuan	169	539	
		Songtao	Wuluo	Taohuayuan	385	1,268
				Banpotai	181	678
	Total	7	18	4,974	19,268	
	Population Density (persons/km ²)			51		

Traditional Culture As one of the five largest Buddhist Mountains in China, Fanjingshan is as famous as Mount Wutai in Shanxi, Mount Putuo in Zhejiang, Mount Emei in Sichuan and Mount Jiuhua in Anhui. The Buddhist culture is prosperous as a Guanyin ~Maitreya Temple on account of a large number of local and peripheral people worshipping Buddha every 19th February, 19th June, or 19th September on the Lunar Calendar, and the Fanjingshan Buddhist Culture Sub-Forum in Guiyang Eco Forum Global Annual Conference in recent years. The nominated property, its buffer zone and its surrounding areas are mainly inhabited by ten or more ethnic minorities including Tujia, Miao, Dong and Qiang which have grand traditional festivals and abundant ethnic culture, and their traditional culture plays an important role in protecting and managing the nominated property because of its special binding force on people's behaviour.

Economic profile According to the community interview survey in August 2016 in the nominated property and its buffer zone, and the basic social-economic data of Fanjingshan and Yangxi Nature Reserves provided by the governments of Jiangkou County, Songtao Miao Autonomous County and Yinjiang Tujia and Miao Autonomous County, each household has 3~4 people with 1~2 children on average or 3 children at most in the villages in the nominated property and its buffer zone. The average income per capita of the existing households is about 5788 Yuan (Figure 2.3). The quantity of the labour force accounts for 65.05% of the total population; that of the migrant workers

accounts for 40.73% and that of the tourism practitioner accounts for 5.25%. Out-migrating work is an important part for the income of the villagers in the nominated property and its buffer zone. The main sources of income are aquaculture and farming industries including tea, tobacco, fruit, vegetable, cattle, sheep, special farming etc. The net income per capita of Fanjingshan Village which is near Nanshanmen of Fanjingshan is close to the national mean line over the same period, while that of the Zhaibao Village, Lengshuixi Village are close to or higher than the mean line of Guizhou Province over the same period. Yet still, more than half of the villages around Fanjingshan are below the mean line over the same period, indicating that the income level of the village farmers around Fanjingshan is low. This may bring challenges on protecting the bio-ecological resources in Fanjingshan.

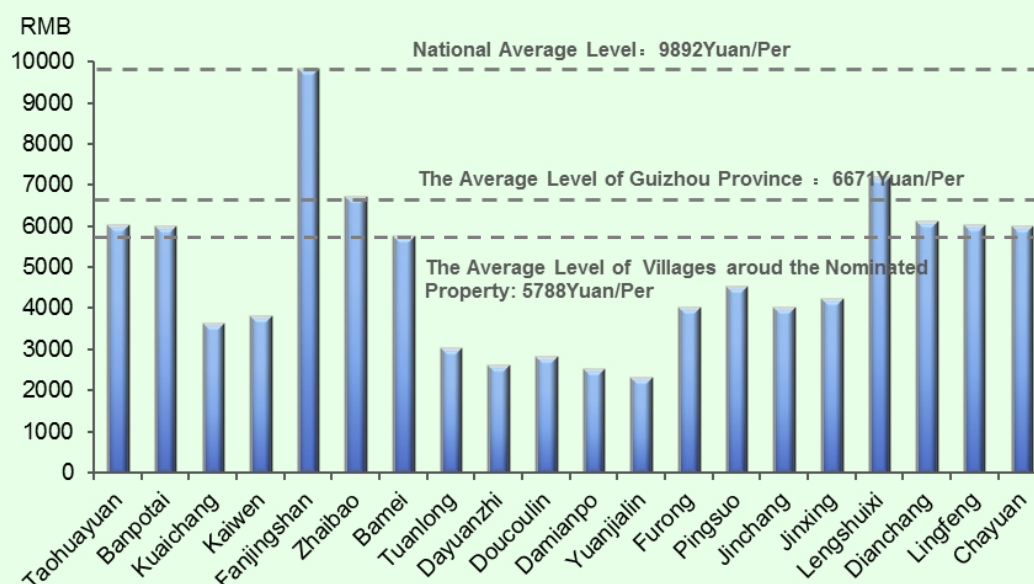


Figure 2.3 Per capita incomes of rural farmers around the nominated property of Fanjingshan

2.3 Integrity

According to the requirements of *Operational Guidelines for the Implementation of the World Heritage Convention (2015)*, the nominated property of Fanjingshan and its buffer zone can fully meet the requirements of integrity.

2.3.1 Includes all elements necessary to express its Outstanding Universal Value

The demarcation of the boundary of nominated property and its buffer zone follows the following principles: 1) include all elements necessary to express the Outstanding Universal Value of the nominated property; 2) be of adequate size to ensure the complete representation of the features and processes which convey the significance of the





property (Outstanding Universal Value); 3) in accordance with the topography and physical boundaries such as a mountain ridge, valley, river, forest line, topography unit, as much as catchment area to make the boundary easy to recognize and manage; 4) avoid human activities that may affect the heritage value such as large town, and quarry, etc.; 5) have protective designations to ensure the component parts have legal protective status; 6) be of adequate size to cover the all habitats of endemic species *Rhinopithecus brelichi*; 7) the nominated property should be surrounded by a buffer zone that provides further buffer action and protection if it is necessary.

(1) Boundary of the nominated property

The boundary of the nominated property of Fanjingshan is between point N27°45'06"~28°03'10" and E108°30'41"~108°47'51", and is defined to include the whole of the aesthetic importance, the forest ecosystem, and the spatial extent of the habitats of rare and endangered species (Attached Table 1, Attached Map 2).

The nominated property is inside Fanjingshan and Yangxi Nature Reserves, as well as National Non-Commercial Forest; the north boundary of the nominated property overlaps with the divide of upstream basin of Taipinghe, which is also the boundary of Yinjiang and Songtao Counties. The north coordinate point is N28°03'10", E108°45'25".

The eastern boundary starts from the Banpotai Village in Songtao County, running southward though Niujiadong and then coincides with the intermediate protection zone boundary of Fanjingshan National Reserve. Then it goes along the west of Taipinghe through Lengjiaba to Kuaichang Village in Jiangkou County. The east coordinate point is N27°53'13", E108°47'51".

The southern boundary extends southward and coincides with the boundary of the intermediate protection zone of Fanjingshan National Reserve through Kuaichang Village and the confluence reaches of Macaohe and Taipinghe, passing though the upstream basin of Minxiaohe River in Gaofeng Village. The boundary turns to north along the intermediate protection zone of Fanjingshan National Reserve after reaching the south end, and arrives at Bamei Village in Dewang Town. The south coordinate point is N27°45'06", E108°39'32".

The western boundary of the nominated property overlaps with the boundary of Fanjingshan National Reserve and connects with the northern boundary of core zone of Yangxi Provincial Nature Reserve. After reaching Dianchang Village of Luochang Town, the boundary passes through Yuanjialin Village, Damianpo and Doucoulin in Ziwei Town

and connects with the intermediate protection zone boundary of Fanjingshan National Reserve again. The west coordinate point is N27°53'28", E108°30'41".

(2) Boundary of the World Heritage buffer zone

A World Heritage buffer zone is defined as an area surrounding the nominated property which has complementary legal or customary restrictions on its use and development to give an added layer of protection to the property. Moreover, the buffer zone of the nominated property provides habitat connectivity for wildlife and improves the resilience for species occupying the nominated area. The boundary of the World Heritage buffer zone is between N27°43'37"~N28°04'23" and E108°29'42"~E108°51'29" (Attached Table 2, Attached Map 3).

The northern boundary of buffer zone starts from Hetaowan in Yinjiang County, goes along the ridges of mountain, passes through Cajihe River and Jinhe River to Fengyong village in Songtao County, then continues eastward to Sitang, and the north coordinate point is N28°04'23", E108°46'48".

The eastern boundary goes along mountain ridges to south after passing through Sitang, and turns into Jiangkou County to the south of Suzhai village, and the east coordinate point is N27°52'23", E108°51'29".

The southern boundary goes along the ridge line from Zhaisu village and crosses the Taipinghe River to the Bangou after passing through Zhangjiatun. The south coordinate point is N27°43'37", E108°40'19".

The Western boundary overlaps with the boundary of Yangxi Nature Reserve, and goes along the ridge line of Jinhuding to Hetaowan after passing through Hejiaping, Zhoujiawan, Chayuantuo, Zhuyuanba. The west coordinate point is N27°52'16", E108°29'42".

2.3.2 The property is of adequate size to ensure the complete representation of the features and processes which convey the property's significance

The property is of adequate size to ensure the complete representation of the features and processes which convey the property's significance. The nominated property covers an area of 40,275ha and its buffer zone covers an area of 37,239ha, respectively. There is of adequate size to ensure the complete representation of the features and processes which convey the property's significance including the integrity of the on-going ecological and biological processes, biological diversity and the aesthetic importance. As noted





elsewhere, Fanjingshan acts as a virtual metamorphic island within a sea of karst. The boundaries reflect this naturally geologically bounded system that has and continue to function as a self-sustaining ecological unit. The scope of the nominated property also covers the natural ecological habitat of diversified biota in the area, including ancient rare animals and plants from the Tertiary and Quaternary 70 million years to 2 million years ago. Different habitats such as plant communities, cliffs, caves, slopes and water bodies provide the sites for biological evolution of wild species. Simultaneously, the nominated property not only contains the outstanding universal value of natural elements, but also the aesthetic importance of geomorphologic and ecological landscape features and phenomena exhibited in this area.

2.3.3 The property is well managed to counter the negative impacts of adjacent development

The nominated property is affected or threatened to some extent by impacts of tourism development, and the buffer zone and surrounding areas are affected or threatened by agriculture, tourism development and by some geologic hazards such as landslides. However, with effective measures taken by the relevant administrative agencies to reduce the negative influences mentioned above, the influence scope and intensity of these threats are limited and have little influence on the Outstanding Universal Value maintaining the exceptional natural state of the ecosystem.

The nominated property and part of the buffer zone all enjoy protective legal designations. In the nominated property, Fanjingshan National Nature Reserve was approved by the State Council as one of the first seventeen National Nature Reserves in 1986, and admitted to be a member of the UNSECO Man and Biosphere Reserve Network. The northeast of nominated property is not part of the nature reserve, but it was designated as National Non-Commercial Forest. Yangxi Wildlife Nature Reserve was founded in 2000, and was been upgraded to be a Provincial Nature Reserve in 2016. In the buffer zone, the eastern part starting from Hetaoping and going southward along Taipinghe belongs to Fanjingshan-Taipinghe Provincial Park, and north Jinchang Village in the northern buffer zone belongs to Muhuang Provincial Park. Thus the above regions are all protected by national laws and regulations. They also have stable financial resources.

2.4 Outstanding Universal Value

2.4.1 The Proposed Criteria of the Property

In accordance with *Operational Guidelines for the Implementation of the World Heritage Convention (2015)*, UNESCO, the nominated property is included in the World Heritage List based on:

Criterion (vii): To contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

Criterion (ix): To be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

Criterion (x): To contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation.

2.4.2 Outstanding Universal Value of the Property

(1) Aesthetic value

The nominated property of Fanjingshan boasts the magnificent altitudinal zonality series of subtropical landscape. The mountain landscape, water landscape, biology landscape and climate landscape of the nominated property represent a series of main types of the mountain and forest ecosystem, it has rich and extremely beautiful landscape units, which does not only display the anima of biology and ecology landscape and the peculiar rock landscape, but also shows the elegance of isolated peak landscape and valley landscape, as well as the mystery and change of the climatic landscape. The nominated property of Fanjingshan boasts an excellent ecological environment, and is also a model of harmony between people and land in subtropical mountain areas. It is a typical subtropical vault mountain forest ecosystem, forming numerous unique species, and is also a natural habitat of many rare animals and plants which together enrich the aesthetic characteristics of the nominated property's landscape. In addition, it has a long history of Buddhist cultural landscape and ethnic cultural landscape with deep-rooted cultural deposits.





Photo 2.1 Unique natural beauty

(2) Biological and ecological process Value

Fanjingshan is located in the central area of subtropical zone and eastern deciduous forest of biogeographic province by Udvardy biogeographic region. Due to its towering and relatively independent nature in the surrounding mountains Fanjingshan is a unique mountain ecosystem. It is extremely rare in the subtropical mountain ecosystems that the Fanjingshan ecosystem can maintain its integrity and original nature. Fanjingshan keeps its forest vegetation coverage rate of more than 90%. It has abundant ecosystem types, such as zonal evergreen broad-leaf forest, warm coniferous forest, temperate broad-leaf forest and dark coniferous forest, etc. Thus, this area is not only a significant intersection region which connects the plants of South China and Central China, the West, Central and East China, but also a transitional zone which changes the vegetation from subtropical to temperate. Evergreen broad-leaved forest and evergreen and deciduous broad-leaf mixed forest are main forest types of the nomination, and meanwhile, special vegetation cases of eastern deciduous forest region of biogeographical province. *Fagus* as the main components of the evergreen deciduous broad-leaf forest and deciduous broad-leaf forest and *Abies fanjingshanensis* forests as the main composition of the subalpine coniferous forest are unique in the global vegetation perpendicular band spectrum. The inheritance and development of the ancient vegetation by Fanjingshan modern vegetation of spore pollen record, considerable ancient relic plants retention, succession of marsh vegetation from terrestrial vegetation and centralized differentiation

of endemic plant, etc., synthetically reflect that the global humid subtropical monsoon climate zone subalpine mountain ecosystems is under a biological ecology evolution process. This is an important process which reveals the evolution of paleoclimate, ancient geography, ancient ecological environment and palaeovegetation.



Photo 2.2 Deciduous broad-leaved mixed forest ecosystem

(3) Biodiversity and natural habitats

Records of terrestrial life in Fanjingshan originate from the Tertiary Period or earlier. Due to its unique location, and slightly influenced by the Quaternary glaciation, a great number of ancient organisms were retained, but a number of other species and colonizers show differentiation and spread after warmer climate predominates. Therefore, rich biological species have been contained in this relatively small area and Fanjingshan has become one of the relatively richest biological diversity areas in the Oriental Deciduous Forest





biogeographic province. Up until now, an astonishing 7,161 species of wild animals and plants, including 4,394 kinds of plants and 2,767 types of animals have been recorded in the nominated property. Fanjingshan has the largest *Fagus* forest in the subtropical region, and it is the most important preservation area globally for the Chinese species of *Fagus*. What is more, Fanjingshan is the only habitat on the planet for the keystone Guizhou Snub-nosed monkeys *Rhinopithecus brelichi*, a rare, endangered and endemic animal. Its survival and reproduction is closely related to the concentrated and extensive distribution of *Fagus* forest in the nomination area. The Guizhou Snub-nosed monkey and its habitat thus attract great attention from the international scientific community. In addition, Fanjingshan is one of the world's richest habitats for conifer diversity including being the only home of the endemic and endangered fir tree *Abies fanjingshanensis*, whose existence here contributes significantly to the acknowledged richness of China's flora; and provides a precious gene pool for global conservation, and an important base for scientific inquiry. Fanjingshan is an important habitat for the differentiation and development of many endemic species, such as the endemic persimmon *Diospyros fanjingshanica*, endemic kiwi fruit *Actinidia fanjingshanensis*, endemic deer *Muntiacus reevesi* subsp. *jiangkouensis* and endemic beetle *Carabus fanjingsensis*, etc. Moreover, Fanjingshan is not only a significant differentiation center of many endemic bryophytes such as *Distichophyllum oblongum* var. *fanjingensis*, *Kurzia sinensis* and *Scabridens sinensis* etc, but also the habitat of a variety of rare and endangered species and a major refuge for ancient relict plants. With its unique physiology, isolation, geographical position, biological richness, narrow range endemism and continuing evolution, Fanjingshan is an outstanding key place for the in-situ conservation of biological diversity.

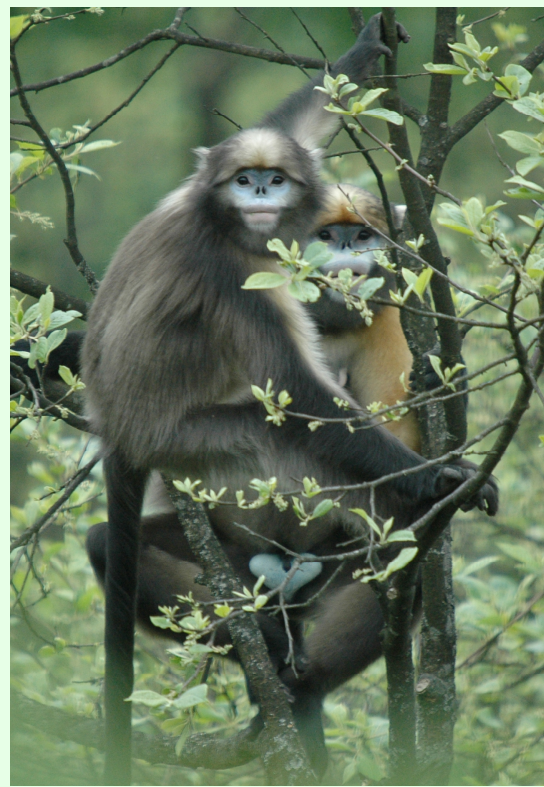


Photo 2.3 *Rhinopithecus brelichi*



Photo 2.4 *Abies fanjingshanensis*





3 | Conservation and Management Status





3 Conservation and Management Status

3.1 History of Conservation and Management

Fanjingshan has a long history of conscious and government protection. The well preserved primary vegetation in the nominated property is closely bound up with the environmental cognition and distinctive cultural beliefs of indigenous people which does not only create Fanjingshan National Nature Reserve, but also exerts a great effect on the consciousness of ecological environmental protection of indigenous people, leaving a huge ecological wealth to future generations. From the conscious protection period when people had the consciousness of simple respect for nature to the period of protection through laws and regulations made by the government, the protection level is promoted; the protection efforts is gradually increased and the protection agencies become more and more complete.

(1) The active protection of the consciousness of indigenous people

In the nominated property and buffer zone no less than 10 different ethnic minorities have lived for many centuries. All of these have developed cultural conservation behavior towards preserving the forest. The indigenous people were kindhearted and practiced animism and worship of ghosts. They considered the forest vegetation of the mountains as playing an important role as a water source and in soil conservation. They also believed that the wild animals were the good spirits of the mountain. So they protected and respected these resources. They were in awe and had great respect for nature, resulting in them never taking too much from nature. As is shown by the inscriptions which remain, the indigenous people in the nominated property have simple dialectic thoughts, and were well aware of the co-existence between water and trees and the dependency-relationship between people and trees (Xing and Ma, 2004). With historical changes, the traditional practices of indigenous people to protect the ecological environment and natural resources have so far been preserved, and still play an important role. Slogans, such as “Forest Reservation”, “No Quarrying”, “No Felling”, “No Fishing”, etc., can be seen everywhere in the nominated property and its surrounding villages, and the clause about protection of trees, such as no clearing of the forest by fire and no destroying young trees, can be found in most local rules and regulations valid for the whole village. Cutting was recognized as “unlucky” leading to landslides and the dying of water sources. Most minorities actually define and protect “Fengshui” forests to ensure healthy environment and good luck. Indeed we find the largest and oldest trees of *Cinnamomum* and conifers revered in such Fengshui forests, these old trees provide

growth ring data that record the changing climate conditions for the last one thousand years and are especially revered, protected and used as shrines for prayers and offerings to the spirits of nature. Today, with the active protection of the consciousness of indigenous people, the nominated property has the most primary forest ecological system at equivalent latitude than anywhere on earth.

The conservation of the nominated property is also closely related to the history of Buddhist development in southeastern Guizhou Province. Buddhist activities in the nominated property generally began in the Tang Dynasty, developed during the Song Dynasty, and flourished in the Ming Dynasty. Since the Ming and Qing Dynasties when religious activities were popular, the forest in the nominated property has been treasured by the ancients. Jing Wen, a magistrate of Shiqian County in the Qing Dynasty, wrote in the *Fanjingshan Forbidden Tree Inscription*: “the essence of mountains and rivers is vegetation, the bones of a county are mountains and rivers”, and proposed that the forest of Fanjingshan should be “always protected from cutting” and “never be burned for charcoal”. It’s the duty of feudal local government officers to protect the forest in the nominated property. Therefore, the forest in the nominated property has been preserved in relation with the traditional protection of indigenous people.

(2) Protection and management of present government

As noted above the nominated property has a long history of protection. Traditional stewardship practices through until more recent Government legal protection have together ensured increasingly effective protection for Fanjingshan's resources. The following milestones trace the more recent Government protection of the nominated property:

In 1956, Fanjingshan was designated as a non-deforestation area of a natural forest (a nature reserve) by the Ministry of Forestry of China.

In 1978, according to Document Qiantongzi (78) No.113, Fanjingshan Nature Reserve was founded and a special management agency was set up.

In 1981, under the leadership of the higher authorities, the scope and boundaries of the Fanjingshan Nature Reserve were delimited by the Fanjingshan administration together with three counties.

In 1986, Fanjingshan Nature Reserve became one of the first 17 national nature reserves approved by State Council (86) File No. 75. In the same year, it was admitted to be a member of UNESCO Man and Biosphere Reserve, and became the Fourth International Biosphere Reserve in China.





In 1989, according to Guizhou Government (89) File No. 13, the original Fanjingshan Nature Reserve in Tongren was renamed “Guizhou Fanjingshan National Nature Reserve” by the People's Government of Guizhou, and became the affiliated institution of the Forestry Department of Guizhou Province definitely.

In 1990, work analyzing forest rights was completed as were the scope, boundaries and area of the State-owned forest in Fanjingshan National Nature Reserve.

In 1991, Tongren, commissioned by the People's Government of Guizhou Province, issued a State-owned forest right certificate to Fanjingshan National Nature Reserve Administration (formerly Management Office), and divided the administration of the reserve, and carried work on protection, scientific research and development.

In 2000, Yangxi Wildlife Nature Reserves was established in Yinjiang County.

In 2014, *Master Plan on Guizhou Fanjingshan National Nature Reserve (2014~2023)*, was compiled by the Planning and Design Institute of Forest Products Industry and was approved by provincial experts and awaits approval from State Forestry Administration.

In 2015, *Master Plan of the Yinjiang Yangxi Provincial Nature Reserve in Guizhou (2015~2024)*, compiled by the Guizhou Academy of Forestry Science, has been approved by county-level experts. It means that various activities on planning and declaring the construction of Yingjiang Yangxi Provincial Nature Reserve by Yinjiang Tujia and Miao Autonomous County have been officially launched.

In 2016, according to Guizhou Government (2016) File No.173, Yangxi Wildlife Nature Reserve became a Provincial Nature Reserve authorized by the Government of Guizhou Province.

In addition, the northeast of the nominated property, which belongs to the National Non-Commercial Forest, is out of the two nature reserves. The Forestry Bureau and Forest Public Security Bureau of Tongren are responsible for its inspection, protection and management under the guidance of the Guizhou Provincial Forestry Department.

3.2 Current State of Conservation

3.2.1 Belief System and Environmental Cognition of the Indigenous People

Community residents in the nominated property and the World Heritage buffer zone have been living with the environment harmoniously for long periods and they have inherited and developed some traditional ways to protect nature, and maintain harmony between village and environment. The China Man and Biosphere committee have organized various studies of this valuable ethnobotanical knowledge.

The protective effect of the worship for mountain spirit on ecology: Totem worship of Tujia, Miao, Dong, Gelao people has been practiced for the worship for animals and plants in Fanjingshan, so both totems of fauna and flora and Fanjingshan spirits merged (Zhang, 1997). Miao people said, any behavior causing damage to the mountain and forests are irreverent to the gods, and no such villager can be tolerated (Xing & Ma, 2004). Such worship for Mountain Spirits and totems ensured that the animal resources remain well preserved and intact in ethnic minority regions for centuries. Sacred forest patches were preserved for use as cemeteries, offerings and to ensure “Fengshui” luck.

The protective effect of the Buddhist cultural beliefs on ecology: The nominated property is the “Brahma and Sukhavati” that everyone is yearning for. “Tianqingsi Temple Monument”, “Tongrenfu Mansion Records” and other existing precious inscriptions and historical literature recorded and revealed the magnificence of Buddhism in the property. People in the nominated property are worshippers and they won’t kill large numbers of wildlife or destroy the mountain aura by deforestation. There are defined ranges for every temple. For example, “excavation is prohibited for Chu people in the range and it’s harmful to temple sacrifice” and Chu businessmen were prohibited from “digging gold dust personally in the mountain field”. Buddhist ecological theory such as “According to the positive choice”, “Gather and live together”, “Men were created equally” and “Mercy and fraternity” play an important role in maintaining the ecology of the nominated property.

The protective effect of the lifestyle of indigenous people on ecology: Monument inscriptions such as “Monument Record of Fanjingshan Deforestation Prohibited”, “Monument of Name Spread over the Years” and “Leshichui Monument”, etc. reveal that the indigenous people have possessed simple dialectic thought, and that they have appreciated the symbiotic relation between water and trees and dependence relation between man and forest, so the local people strongly protect the living environment. Miao and Tujia people who live in Wuling Mountain area particularly cherish natural forests generation after generation, and they have formulated “village regulations and folk laws” of Miao and Tujia People Folk Culture Village in Fanjingshan. The regulations and laws provide that expropriation of land, unauthorized construction, forest and antiques destruction, discharge, concrete pouring and painting out of order are all prohibited to residents. There are articles and provisions of protecting trees in other village regulations and folk laws. For example, setting fire on mountains, stripping tree bark and testing swords or sickles on young trees are all prohibited” (Xing & Ma, 2004). The man who violates these articles will be dealt with by strict sanctions. The sanctions include two aspects, being fined or forced to plant trees in material and being cursed in spiritual





aspect. The local Tujia people also formulated an “Afforestation Convention” (Zhang, 1997) and they built steles to express the afforestation.

Unique cultural belief systems and the environmental awareness of indigenous people which formed over a long history, have a positive effect on promoting the protection of the Outstanding Universal Value of the nominated property. Both enhancing the nature conservation awareness of villagers by village regulations and folk laws and improving community management ability and self-discipline play a positive role in the effective management of the local ecological environment, ecological system and natural resources, etc. thus leaving a great ecological wealth to future generations.



Photo 3.1 The tablet about prohibiting to excavate gold erected by Qing Government (Left) and the terms and conditions about protecting the environment made by indigenous people (Right)

3.2.2 Management Status and Achievements of Local Government

3.2.2.1 Related National Laws and Regulations for the Protection of the Nominated Property

The nominated property, mainly located in Guizhou Fanjingshan National Nature Reserve and the adjacent Chayuan area in the core area of north Yinjiang Provincial Nature Reserve, together with a small area of National Non-Commercial Forest in the northeast. In addition to the property, parts of the World Heritage buffer zone also have certain protective designations. The eastern part of the World Heritage buffer zone from Hetaoping along the Taipinghe to the south belongs to the Fanjingshan-Taipinghe Provincial Park, and parts of the north of Jinchang in the World Heritage buffer zone of Fanjingshan belongs to Muhuang Provincial Park; both of them have protection designations (Attached Map 5). The nominated property and the buffer zone are protected by relevant laws, regulations and provisions, including *Constitution of the People's Republic of China*, *Forestry Law of the People's Republic of China*, *Environmental Conservation Law of the People's Republic of China*, *Law of the People's Republic of China on Wildlife Protection*, *Regulations on Nature Reserves of the People's Republic of*

China, Regulations on the Protection of Wildlife of the People's Republic of China, Regulations on the Protection of Wild Plants of the People's Republic of China, Measures for the Management of Natural Reserve Areas of Forest and Wildlife, Measures for the management of National Non-Commercial Forest , etc.

3.2.2.2 Management Agencies of the Nominated Property

Management Agencies of the Nominated Property: Administration of Fanjingshan Nature Reserve, Yinjiang Yangxi Provincial Nature Reserve and Forestry Department of Guizhou Province are the main management agencies of the nominated property. Administration of Fanjingshan National Nature Reserve within the nominated property is a department-level government-affiliated institution and Forestry Department is a directly affiliated unit of Guizhou Province with full appropriation, it has 86 established staff now, including 13 administration staff, 12 researchers, 29 forest law enforcement officers, 26 public security officers and 6 workers. There are 28 people who have professional titles, including 1 researcher, 5 senior engineers, 7 engineers and 15 people with primary title. The nominated property uses three-level management system including administration bureau, administration branch bureau (former management master station) and control house (former management station). There are nine departments in Administration of Fanjingshan National Nature Reserve, including office, personnel office, finance section, forestry department, scientific education section, legal department, prevention and forest fire prevention office, community coordination department, forest public security sub-bureau, etc. There are three protection and management branch bureaus (Heiwan Management Branch Bureau, Minxiao Management Branch Bureau and Yinjiang Management Branch Bureau) and Panxi Testing Field under Administration of Fanjingshan National Nature Reserve. Under the branch bureaus, there are 9 control houses (Jinchang, Furong, Zhangjiaba, Baxi, Xujiagou, Gaofeng, Pingding, Hekou and Lengjiaba), 3 police stations (Yinjiang, Minxiao, Heiwanhe) and an animal checkpoint. Panxi testing field has 1 wildlife rescue center and 1 testing field (Figure 3.1).

The nominated property includes the Chayuan area of Yinjiang Provincial Nature Reserve, and Chayuan station of Administration of Yinjiang Nature Reserve is in charge of the daily management work. The Chayuan station has 1 station head and 4 staff, among whom, one has the title of engineer and four have the title of assistant engineer (Figure 3.2).



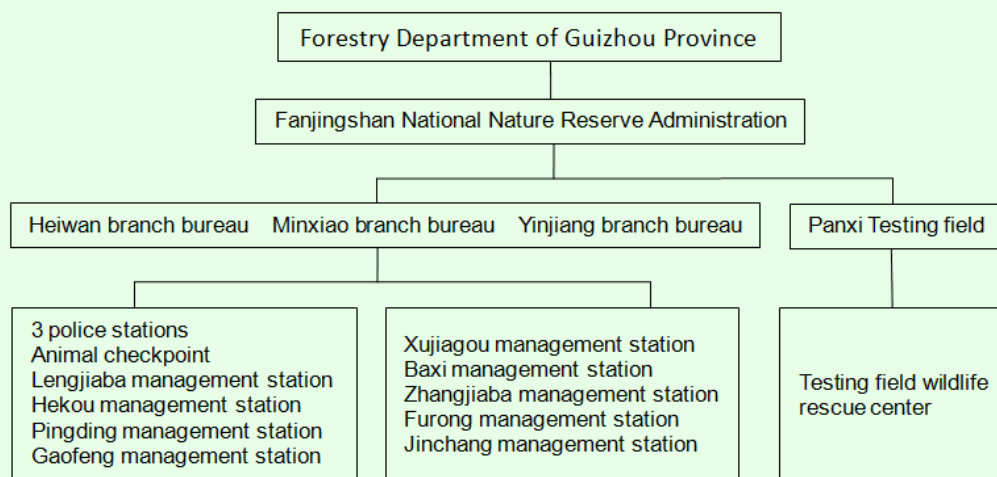


Figure 3.1 Management organization of Fanjingshan National Nature Reserve

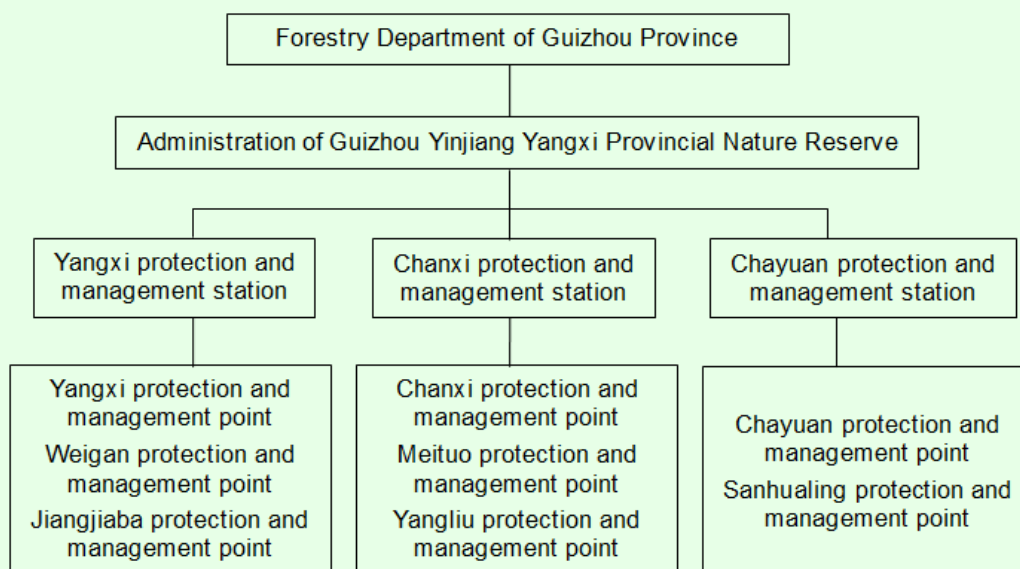


Figure 3.2 Management organization of Yinjiang Yangxi Provincial Nature Reserve

3.2.2.3 Plans and Corresponding Monitoring System

The nominated property has established a series of overall plans and management plans based on the aesthetic value, primary forest ecosystem, biological and ecological processes and biodiversity, as well as the protection of endangered wildlife and their habitats. All the plans have distinct content and objects, but they are all inferior to *Master Plan on Guizhou Fanjingshan National Nature Reserve (2014~2023)*, it has precedence as it is approved by the State Council and is legally binding. Fanjingshan Management Plan has compiled after declaration of World Nature Heritage was launched, it further makes the objectives clear and detail based on the superior plan. Other compiled plans include *Master Plan of the Guizhou Yinjiang Yangxi Provincial Nature Reserve*

(2015~2024), *Master Plan of Eco-tourism Development of the Guizhou Fanjingshan National Nature Reserve (2014~2023)*, *Conservation Plan on the World's Only Son Rhinopithecus brelichi (2015~2025)* and so on. The management departments of the nominated property have established monitoring indicators system according to the resource type, protection status and heritage management requirements and fully monitored geological remains, ecological environment, tourism activities, etc.

3.3 Influence Factors and Countermeasures of Protection and Management

Due to being affected by various forms of human activities, the aesthetic landscape, ecological environment and biodiversity are under constant pressure. However, with the supervision and management power by administration of the nominated property in recent years, a series of strong measures were taken which reduced the adverse effects of human activities to some extent.

3.3.1 Main Threats and Challenges of the Nominated Property

Threatening factors existing in the protection work of the nominated property are mainly from two aspects, namely, natural disasters and human activities:

(1) Nature Disaster

The main natural disasters affecting the nominated property are geological disasters (such as collapse, landslide, and debris flow) and extreme weather. In allusion to the possible natural disasters in the nominated property, the management department has formulated effective measures.

Implement the national natural forest protection project, afforestation, and closed forest project to protect the original forest system and ease the soil erosion. Establish a geological disaster warning system to reinforce the monitoring and prevention of disasters in key areas. Make detailed and effective prevention measures, define the organizations that monitor and prevent geological disaster and the responsibility system. Besides, enhance the comprehensive command leading ability in case of urgent geological disaster, increase the emergency rescue and reaction speed and coordination level to minimize the loss of personnel, possessions and damage caused by geological disaster.

Strengthen the daily meteorological monitoring work, further complete the disaster prevention system of “the government leading, department linkage, the social





participation”, establish the information data sharing system about meteorological disasters, and improve the meteorological disaster prevention linkage mechanism. At the same time, take certain measures to protect the rare and endangered trees from cold, increase the capacity of vegetation to ice storms, and comprehensively enhance the integrated management level and emergency response capabilities to cope with ice storms to minimize or avoid the losses caused by disasters.

Changing climate is monitored but not yet shown much threat to the site apart from some drying apparent in alpine wetlands. This potential problem will continue to be monitored

(2) Human Activities

The mainly human factors that can affect the Outstanding Universal Value are as follows: environmental pressures, tourism development pressures, community development and urbanization.

Environmental Pressures: The former impacts of gold mining in the NW sector of the site have been controlled and all mining closed. The low level treatment of sewage and pollutants from residents' life and some tourism activities in the nominated property brings certain threats to water environment and atmospheric environment, and may influence the stability of ecological system in the nominated property. However, after the establishment of Fanjingshan National Nature Reserve and Ecological Construction Demonstration Area, the local people have adhered to a series of environmental protection measures, such as forest closing, energy saving, ecological conserving forest construction, afforestation, and the household of natural gas etc. All of them have been effectively taken; the water pollution and air pollution in the property are effectively controlled and the overall quality of water and air is high.

Tourism Development Pressures: The development of the tourism industry in the nominated property and its buffer zone has brought a certain pressure to the protection of the natural resources and ecological environment. Currently, the core area of the National Nature Reserve restricts the access of the tourists, and the current quantity of tourists is much lower than appropriate environment capacity. However the growth in the number of tourists still results in potential pressures on the nominated property. With subtropical climate, the seasonal tourism resources lead to tourists' tour behaviour with a high seasonal concentration; accordingly, the nominated property will suffer seasonal saturation and overload environmental issues. Tourism reception facilities and

entertainment facilities such as cable car, sightseeing car will bring a certain threat to the naturalness of Fanjingshan. However, to prevent the irreversible harm, compared with the highway, the cable car has reduced the impact of human activities on the original forest and it plays a positive role in heritage demonstration, much attention should be paid to maintaining the existing scale.

Unordered Pervasion of Community and Urbanization: The nominated property and the buffer zone have a long history of human habitation. Relatively intense human activities concentrate along Taiping, and a large number of dwellings and villages distribute in and around there. They tend to earn a living by producing grain, or collecting non-forest products, poaching or grazing inside the reserves to increase the extra economic income. In order to develop local tourism and improve living conditions, the government and community have built some infrastructures, roads and residences. Especially the constructions of country roads and reservoirs around the World Heritage buffer zone put pressures on the ecosystem of the nominated property (Figure 3.3). These constructions and maintenance will separate surrounding plants from their habitats; the country roads make the nominated property more accessible, increase the population pressures, and will affect the wildlife and environment. We need to rationally coordinate the relation between protection and development, build up the general situation consciousness, adhere to prior protection, and strictly plan the urbanization infrastructure construction, eventually make sure the Outstanding Universal Value of the nominated property protected well.



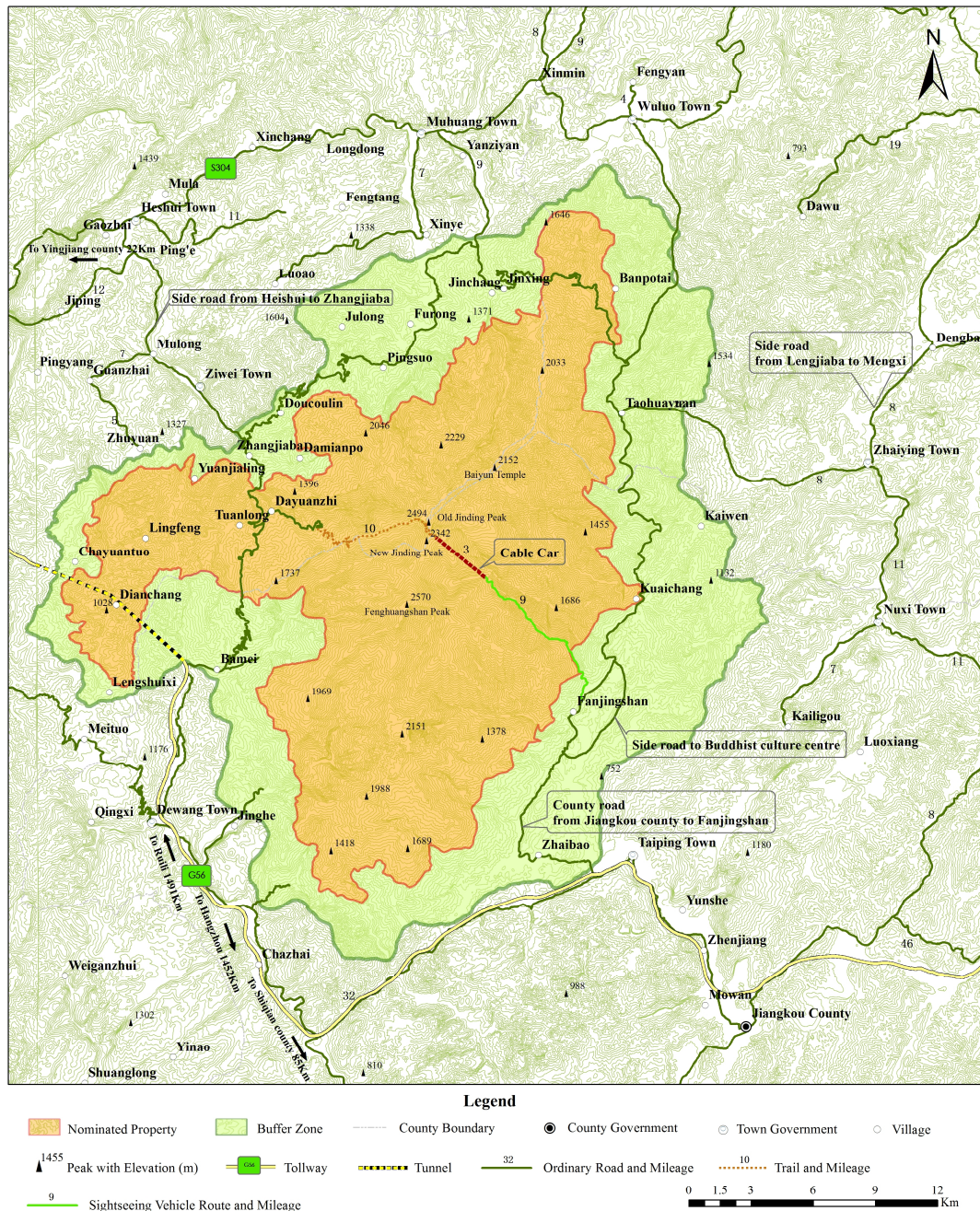


Figure 3.3 Access system map and distribution of human activities in the nominated property

3.3.2 Management Problems and its Countermeasures

(1) Financing Gap

The expenses for the protection and management of the nominated property are restricted by the local government' financial status, while the resource protection, scientific research, the construction of protection facilities and monitoring system all need a lot of money. Although the management organization of the nominated property is trying to get

financial support from all levels, there is still a gap for the funds required for the better resource protection. The nominated property can make long-term plans about the guaranteed expenses for the protection and management, and advocate a way of combining the government investment, donations and tourism income. Acceptance as a WH site would open up new domestic funding sources and accelerate the improved management of this important site.

(2) Technological Level

Due to lack of the professionals; poor working conditions, shortage of wild field equipment; and lack of research facilities and information exchanges, the nominated property should increase the cultivation and introduction of professional talents, and the input in the facilities for field monitoring and patrol.

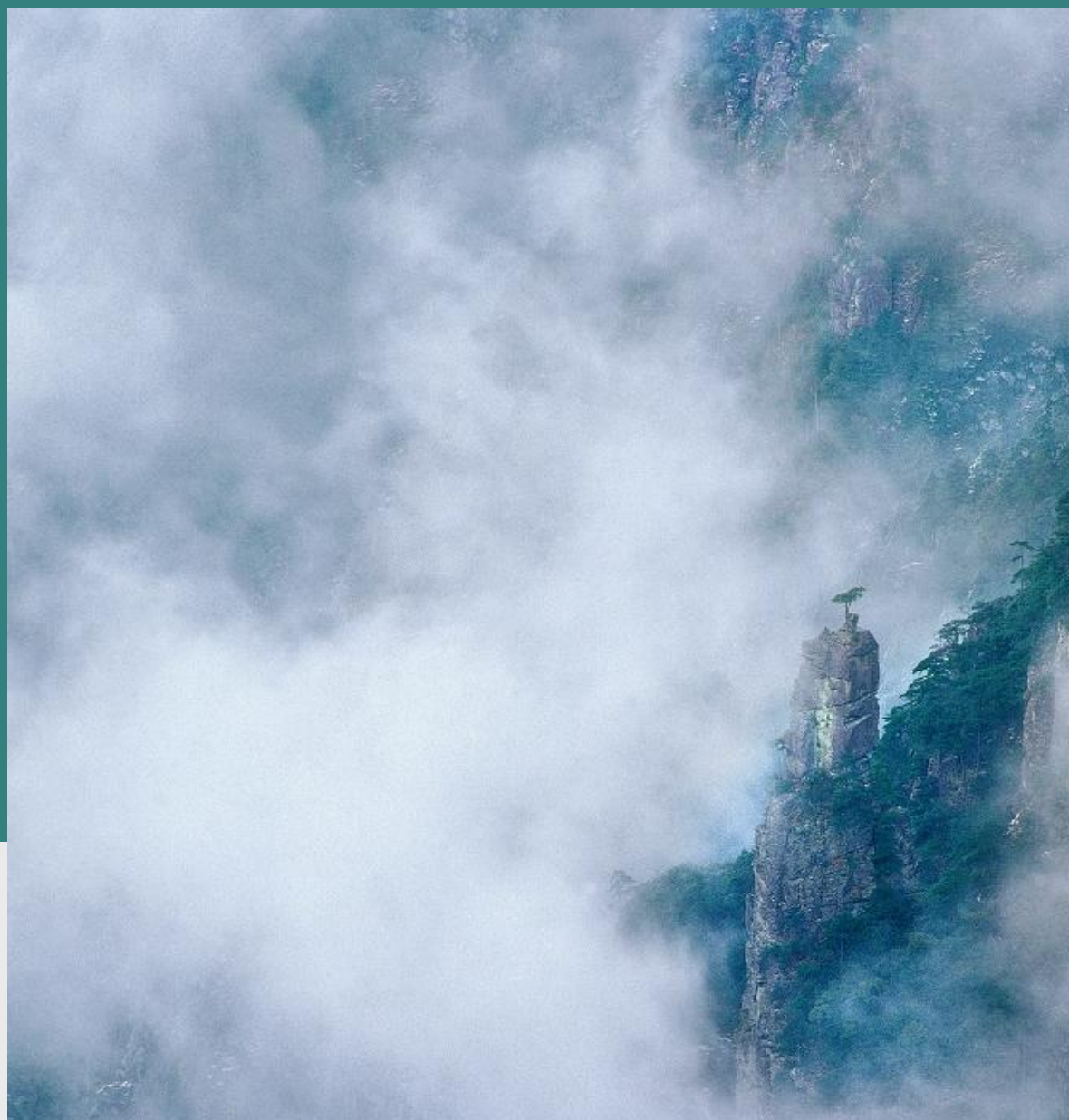
(3)The Balance of Interests

The balanced distribution of benefits among the nominated property, local companies, community residents and relevant institutions is significant for the protection and management of the nominated property. So the demands of stakeholders in the nominated property should be taken seriously, and the mechanism of balance of interests should be set up. Current contractual relations with Sante tourism management company remains under regular review.

(4) Management Policies

Complete the protection and management mechanism including the World Heritage buffer zone; improve the availability of management in the nominated property, and based on the international conventions and relevant national laws, establish the uniform management standards of the nominated property and the professional team.







4

Ambitions and Strategies of Protection and Management



4 Ambitions and Strategies of Protection and Management

4.1 Visions and Objectives

In accordance with the requirements of *Convention concerning the Protection of the World Cultural and Natural Heritage*, and the principles of “scientific planning, unified management, strict protection, and sustainable utilization”, the biological and ecological resources dominated by rare and endangered animals and plants such as *Rhinopithecus brelichi*, *Fagus longipetiolata*, *Abies fanjingshanensis* etc., should be protected effectively to enhance the natural ecological system function and to promote the natural abilities of adjustment and development. The relationship between the regional development and the resources and environmental protection must be coordinated; and the rational use and permanent protection of the resources should be integrated to form a positive development mechanism in the nominated property. The integrity of ecological system and biological diversity should be strictly protected to make sure of the permanent utilization of the landscape resources. By means of the capital investment, technical support, laws and regulations formulation, the nominated property will be effectively managed to construct a typical area of excellent resource protection, beautiful eco-environment, scientific management, significant benefit, harmonious development between human beings and nature, to become an excellent example of the global ecological system and biological diversity in resources protection and management.

General vision (2016~2030)

According to the requirements of *the Convention concerning the Protection of the World Cultural and Natural Heritage*, the *Convention of Biological Diversity* and the relevant laws and regulations of China, the general vision of the nominated property protection and management are determined as below:

To propose an overall protection and management framework of the nominated property and form a coordinated and smooth management mechanism.

To protect the Outstanding Universal Value of the nominated property efficiently and provide ideal conditions for the natural growth and reproduction of the wild animals and plants.

To constitute the system of scientific research monitoring and publicity and education for ecosystem of rare and endangered animals and plants such as *Rhinopithecus brelichi*, *Fagus longipetiolata*, *Abies fanjingshanensis* and their habitats in the nominated property.

To build a model of the sustainable development of the community, promote the value conservation and community economic development of the nominated property, and finally achieve the overall goal of the harmonious development of man and nature.

Short-term targets (2016~2020)

To complete the management system, constitute the laws and regulations system and the management organizations, perfect the heritage presentation and social residential system construction, and enhance the construction of scientific monitoring system.

To complete the investigation of the ecological resources of the nominated property, and carry out the publicity and education of biodiversity protection.

To complete the environmental remediation work, and ensure the coordination and unity of the natural landscape and the relevant building facilities in the nominated property.

To carry out the universal training for community residents about knowledge of World Heritage, and promote the work of community management.

To establish the resource database covering the nominated property, and carry out the construction of resource protection digitization and research monitoring information.

To hold academic seminars, strengthen the cooperation with scientific research institutions, colleges, and develop and perfect platforms for foreign exchange and cooperation.

To complete the integrated tourism presentation planning of the nominated property.

To complete an official website (multi-language) of the nominated property with appropriate use of modern app appliances.

Long-term objectives (2021~2030)

To make various agencies and local governments work together for cooperative management of long-term working mechanism to achieve a kind of highly uniform, standard and coordinated management in the nominated property.

To make the vegetation further protected and repaired, and the ecological environment well-protected within the nominated property and its buffer zone.

To perfect environmental protection facilities and effectively control the pollution to different degrees within the nominated property and its buffer zone.

To construct a reasonable and effective feedback mechanism for the inheritance, steadily improve the local people's living standards, and help with cooperative development of the community and the relevant management agencies.





To make the value of ecosystem and biodiversity of the nominated property well protected and preserved and make it become a model for the unique ecological processes and gene pool of biodiversity of the subtropical monsoon climate zone in the world.

To protect and multiply the *Rhinopithecus brelichi*, to effectively relieve the survival pressure, increase the population, and effectively monitor and research the population and activities of *Rhinopithecus brelichi* in the nominated property.

To reduce the extent of the adverse effect of human activities, manage and control involved basin system of the nominated property.

To make the nominated property get a scientific and reasonable presentation, scientifically regulate the amount, seasonal distribution and activities of tourists, and establish the dynamic balance system of coordinated development among society, economy, population and natural heritage in the nominated property.

4.2 Actions and Tasks

4.2.1 Action Strategies

Fully rely on the existing management system: Consisting of the National Nature Reserve and Provincial Nature Reserve, the nominated property should fully rely on the existing management system and regime, which is not only conducive to coordinating the relation of planning and management of the overlap areas, but also conducive to maximizing the legal effectiveness of the protection work.

Establish an integrated and coordinated management mechanism: A competent department of the World Natural Heritage should be established; and the coordination and management committee consisting of the governments of Tongren City, Yinjiang County, Songtao County, Jiangkou County and relevant management agencies, should be established to conduct the unified management, publicity, research, communication, training in the nominated property.

Adhere to the policy of strict protection within property and sustainable utilization in buffer: This plan adheres to the concept of conservation priority, and to coordinating the relationship between tourism development, production development and resource environment protection, and to guiding the regional economic development by scientific development and then promoting substantial protection, so as to form a sound ecologic development mechanism. At the same time, the goal of permanent protection and sustainable development of the nominated property should be considered while appropriate development of ecological sightseeing tourism, Buddhism and national culture are supported.

Implement strict zoning management: In consideration of the protection requirements of the original protection attributes, based on designating the nominated property and its buffer zone, the strict hierarchical protection and zoning protection and management should be made according to the requirements of the heritage values, importance, sensitivity, endangerment, heritage presentation and community utilization of the protected object.

Strengthen scientific research and cooperation: Relying on scientific research institutes and colleges, the nominated property should establish a scientific research organization management and scientific research achievements database to accelerate the construction of scientific research team, and increase the investigation of biological resources, strengthen the improvement and renewal of existing specimens, and further research and excavate the scientific value. Furthermore, the nominated property should establish an extensive communication platform, build a bilateral and multilateral cooperation mechanism, invite international and domestic well-known experts to study and give protection management advice to further improve the popularity of the nominated property in academic field.

Promote the harmonious development between man and nature: Change the closed status of the nominated property, let the community know and understand nature, give full play to multiple functions of the existing protection system of the nominated property and its buffer zone, to prevent the fragmentation and isolation of natural ecosystem and wildlife habitat to conserve a beautiful home with blue sky, green land and clear water for next generations and promote harmonious, unified and sustainable development between man and nature.

4.2.2 Main Tasks

In order to complete the objectives of protection and management, to achieve the protection and management work in standard and scientific ways, the major engineering tasks are planned as below.

Capacity development: This includes improving the three-level management system of Yinjiang Yangxi Provincial Nature Reserve, by constructing signboards, patrolling roads, maintaining the infrastructures of the administration, administration branch (former management master station) and management institute (former administrative substation), equipping the fresh patrols with necessary field patrol equipment, building professional fire brigade, increasing professional forest fire prevention devices and fireproofing warning signs, perfecting the forest fires' monitoring and prediction system, comprehensively digitizing the data about resources conservation, environmental conservation, tourist management, scientific research monitoring, publicity and education, community





development and participation, and organizational management in the nominated property, and realizing the management modernization and information sharing of historical, real-time and dynamic data.

Ecological protection: This includes banning anyone from hunting, trapping and poisoning wild animals, constructing and maintaining first-aid stations, cages for animals, absolutely banning collecting vegetative components in the nominated property, strictly controlling vegetative components in World Heritage buffer zone, carrying out technical research on extended reproduction and natural conservation of the key species such as *Abies fanjingshanensis* and *Davidia involucrata*, constructing experimental bases to breed rare plants and collect the genes of rare, endangered and unique plants, creating resources conservation repositories in different places; constructing biological migration corridor of *Rhinopithecus brelichi*, providing living space for *Rhinopithecus brelichi* and relieving their survival pressure, carrying out ecological restoration projects of roads and slopes adopting the economic and effective treatment schemes to adjust to the surrounding environment so as to effectively reduce geological disasters.

Environmental restoration: This includes integrated planning of community and tourism infrastructure construction, remediation of buildings that are not in coordination with the nominated property's overall style, improvement of the living conditions to ensure that protection and management work goes on normally, establishment of waste collection and treatment system, construction of refuse transfer stations in the places where tourists concentrate, establishment of tourism sites, residential water treatment management system and collection and treatment system, development of biological invasion regulation project, establishment of alien species access system, building of pest early warning and control station to enhance the degree of biological control.

Community sustainable development: This includes promotion of firewood-saving stove and electromagnetic furnace to reduce forest resources' consumption and protect the natural environment, organization of training green agriculture technology, formulation of support programs of community economic development projects such as the demonstrative bases of economic fruit forests and improved varieties of medicinal herbs to promote the community residents' income, improvement of community management mechanism, optimization of the structure of the community industry model, active guidance of the export of labour services, reduction of resource pressure, promotion of the coordinated development between heritage protection and communities, instruction of community health institute to meet medical care for community residents, definition of residents' environmental health behaviour to build a beautiful community, development of tourism scenic area management project of the resident's participation, perfection of existing tourism infrastructures and service facilities with primitive ecological environment

and culture as the basic object, planning of traveling lines reasonably and strict control of tourist capacity to lead community residents to benefit from the heritage's performance and ensure that the ecological tourism resources can be used sustainably .

Scientific research and monitoring system construction: This includes co-construction of scientific research and monitoring workstations with each control house in the scope of the nominated property, allocation of necessary scientific research and monitoring equipment, construction of meteorological environment monitoring stations to monitor tourists and the influence of related construction on environment and resource, construction of centre site of tourist monitoring to make accurate statistics of total number of the tourists and other basic information in the ecological tourist area on the same day or in a period, development of special investigation of background resources, key protection of wild plant resources and forest resources monitoring, perfection of *Rhinopithecus brelichi* and key protected wild animals and plants resources monitoring, improvement of the quality of scientific research personnel, enhancement of overall strength for scientific research team, establishment of the rules and regulations and incentive mechanism related to publication of scientific research results.

Presentation, publicity and education construction: This includes perfection of presentation system, expansion of original tourist centre function, construction of a public popular science and education centre and heritage tourist presentation centre, and rich in presentation content, improvement of publicity and education facilities, setup of field missions to help tourists understand wild animals and plants and other natural protection knowledge, assistance for local government to arrange and organize staff to carry out educational and technical training, improvement of staff's explanation and reception levels, improvement of teaching and scientific practice bases to strengthen cooperation with Guizhou University, Guizhou Normal University, Chinese Academy of Sciences, China Academy of Forestry Sciences for a long-term scientific support, cooperation with local or surrounding Education Commission, holding of the youth science and technology summer camp or setup of counselling courses about the heritage protection and ecological education and holiday field study activities, etc., production of promotional materials, including nominated property logo, souvenir medals, postcards, illustrated handbooks, production and exhibition of animal and plant specimens, demonstration and explanation of whole process of the specimen collection, production, preservation etc., to strengthen the recognition of the public in regards to animal and plant specimens and biological diversity.





Protection and Management of Aesthetic Value

5 |





5 Protection and Management of the Values

5.1 Protection and Management of Aesthetic Value

5.1.1 Conservation Object and Situation

Fanjingshan is a large area with a significant elevation range of more than 2,000m. The valleys and gorges are distributed alternating with the mountains, which resemble knife-edge ridges. Based on the outcropping metamorphic detrital rocks, Fanjingshan has developed spectacular cliffs, peaks, and column landscapes, because of the horizontal rock formation, the vertical splitting and the steep angles of joint surfaces. Some of the peaks' bodies are broken, resembling broccoli, and some have collapsed, only leaving a lonely isolated peak, which is quite strange and steep. The rivers of Fanjingshan radiate from mountain peaks, which were called "99 rivers", there are numerous rushing rivers and streams, cascades, rapids, tall pencil waterfalls. The waterfalls are located at three elevations, 23 waterfalls of which are above 15m high. Also there are spectacular and amazing weather landscapes, especially the sea of clouds, rainbows, mirages and the strange "Buddha light". The seasonal and weather landscapes changing irregularly in the mountains are beautiful and magnificent.

Besides its physical glory Fanjingshan's wealth of beautiful and fascinating biodiversity adds much to the enchanting scene: the endemic Guizhou Snub-nosed monkeys and other endangered species, such as stunning pheasants, spectacular hillsides of flowering azaleas *Rhododendron*, fluttering white bracts of the Chinese dove tree *Davidia*, dainty Chinese little leaf box *Buxus*, stately *Abies*, *Tsuga chinensis*, *Juniperus squamata* and many more.

The natural beauty of Fanjingshan depends on its abundance and the endless changes in the landscapes, which reflected the obvious vertical differences, also the obvious temporal changes, including seasonal changes and the instantaneous changes in weather conditions. The landscapes are very different from top to bottom of the mountain due to the elevation range and terrain. There are many valleys shaded by evergreen forests in the foothills, while there are particular stone peaks at the top of the mountain giving great views of the spectacular landscapes and other distant and steep mountains. The green Fanjingshan has a wonderful ecological environment; the forest landscape consists of the different beautiful plant groups, such as orchids, ferns, dove trees, firs, and azaleas. Fanjingshan's forest landscape changes obviously with the season, because of the subtropical monsoon climate zone, where rain and high temperatures appear in the same period. Flowers of all sorts are blooming in a riot of colour in spring; and the mountain has

a luxuriant growth of vegetation in summer; it is gorgeous in the golden fall; and it is magically snow-coated in the winter. The sudden weather changes are another reason for the natural beauty of Fanjingshan, especially in spring and summer when there is much more cloud. Sometimes the clouds darken the sky, just seconds later, they vanish at the top of the mountains; or the cloud just appears at one side of the mountain ridge, the sun shines at the another side, the clouds flutter through the peaks, which creates a particularly mysterious experience. As the base of the symbolic landscape of Fanjingshan, the metamorphic detrital rocks make the landscape so unique among the famous granite or basalt mountains.

Compared with other famous mountains, the nominated property of Fanjingshan is far away from Central China with little human influence, which means it has been impacted less by human activities and therefore maintains its natural beauty. And the nominated property, located in Fanjingshan National Nature Reserve, Yinjiang Yangxi Provincial Nature Reserve and the National Non-Commercial Forest, was strictly protected by relevant laws and regulations. A series of tourism plans has compiled for the nominated property, *Master Plan of the Ecological Tourism of Guizhou Fanjingshan National Nature Reserve (2014~2023)*, *Master Plan of Scenic Spot in Fanjingshan (2013~2030)*, for instance. These plans are premised on the ecological protection and landscape protection, strictly follow the boundary of the Nature Reserve, and protect the important scenic units by zoning protection. In addition, the surrounding environment and human activities should also follow the protection requirements and limitations. Therefore, the natural beauty of the nominated property is protected well by original protective designations and strict control measures of the relevant plans.

5.1.2 Problems, Threats and Challenges

In general the nominated property is in an excellent state of conservation. Management has traditionally focused on the protection of ecological diversity, significant landscape features and the cultural landscape. Nevertheless there are some past, current and potential threats and opportunities which will require strong protection measures to ensure the aesthetic values of Fanjingshan remain intact. Issues include:

The development of tourism, which is still in its infancy, brings some pressures to the aesthetic value presentation of the nominated property; especially during the peak use period of “Golden Week”, when some of the scenic spots have visitor overload problems.





Indigenous ethnic people has been influenced by other cultures; original houses have in some cases been expanded or rebuilt with the construction materials and decorative materials that may not harmonize well with the natural environment.

The Buddhism architecture has aesthetic value in the nominated property, it has combined the features of ancient buildings and local buildings. However, due to natural weathering and human damage, some temples are losing their original architectural beauty.

Littering from household refuse and visitor generated rubbish occurs frequently in some communities of the nominated property and the buffer zone, which can impact the environment of the nominated property.

There are many landscape features which characterize the nominated property, but the iconic geoheritage which demonstrates the aesthetic outstanding universal value needs to be more clearly identified and further researched.

Some small areas of the nominated property in the northwest have a legacy of impact from past gold and copper mining activity.

5.1.3 Basic Goals and Missions

Protect the original nature of the aesthetic landscapes of the nominated property perfectly.

Make the overall landscape and aesthetic landscape of the nominated property coordinated.

Repair the damaged vegetation landscape and traditional temple building in the nominated property.

Make the number of tourists effectively controlled in the nominated property, optimize tourists' time, spatial distribution, and guide tourists to tour in heritage presentation area.

5.1.4 Policies and Actions

To identify the maximal carrying capacity for the nominated property and ensure that tourist receipts comply with the environmental carrying capacity of the property; study the timing of tourist behavior, and patterns of spatial distribution; optimize the tour route organization, try to avoid the peak hour/season of visitor flows in the key scenic spots on different tour routes to avert excessive environmental stresses in some localities; release the information of tourist arrivals to the public and adopt means of tour reservation to guide the spatial movement behaviors of tourists; monitor the *status quo* of areas with potential tour congestion, and establish and improve early-warning systems to avoid

sudden visitor overloads beyond the environmental carrying capacity. Implementation period: 2016~2030.

Any original buildings with values for the environment should be maintained. The buildings with cultural relic's values must be strictly protected. Residential sites, villages and indigenous buildings (and their surroundings) with distinct features need to be strictly protected; the tourism facilities, residential housing construction in the nominated property should be planned in a unified manner; local materials should be used as much as possible to keep the specifications, body mass and overall style in harmony with the natural landscape; existing buildings which are incompatible with the environment in nominated property or the buffer zone should be renovated or removed; all kinds of buildings which have a negative impact on the landscape should be removed to restore the harmonious visual landscape. Implementation period: 2016~2020.

A more detailed plan specifying landscape conservation and regulations concerning construction and management shall be formulated. A geographic information system of the nominated property and the buffer zone should be established. The approval systems for construction projects in the nominated property and the buffer zone should be improved and tightened. Construction management should be strengthened through specialized protective law enforcement and inappropriate construction projects should be nipped in the bud. Multi-level, real-time monitoring should be undertaken. Implementation period: 2016~2020.

Detailed study of the temple ruins in Fanjingshan should be made. On the premise of retaining its authenticity, the damaged temples should be repaired and reconstructed to restore its authentic traditional style and architectural beauty. Implementation period: 2016~2030.

Strengthen the environmental management and control in the nominated property and surrounding communities, improve the residents' environmental awareness, and prevent the natural beauty of the nominated property to be affected by environmental problems. Implementation period: 2016~2030.

Strengthen the research on the nominated property's geological history, geological evolution and geomorphogenesis, explore and protect the property to reflect the geological characteristics. Implementation period: 2016~2030.

All such illegal mining activities was terminated in 2006, mine shafts were filled and damaged vegetation was allowed to recolonize the sites Implementation period: 2016~2020.





5.2 Protection and Management of Biological and Ecological Process Value

5.2.1 Conservation Object and Situations

Fanjingshan exhibits a unique geological origin and evolution as an ecological green “island” on a metamorphic dome emerging from a vast ocean of karst landscape. The geological history and uplifting and eroding processes are well studied and documented and the mountain still rises today.

Having emerged as a contrasting habitat “island” the patterns of species occurrence and distribution trace a complex history. The nominated property reflects colonization, extinction, local evolution of endemism due to isolation and responses to changing climates over the long term. In Central China, Fanjingshan is thought to be the first dry land to emerge from the sea, with the longest history of colonization by terrestrial species. Today 75% of the flora in Fanjingshan truly behaves like an island.

Paleo-spore pollen records are contained in the alpine wetlands that trace changes in tree communities since the Holocene whilst tree ring cores from ancient trees preserved in the village “Fengshui” (sacred forests) can give a detailed history of changing climate over the past thousand years.

In summary, Fanjingshan is a magnificent representative of subtropical mountain deciduous forest and an unusual example within the Oriental Deciduous Forest biogeographic province. It is a naturally functioning ecological island that was formed millions of years ago, a scenario which has given birth to a unique ecosystem of outstanding diversity. This relatively compact ecosystem has been in the process of species evolution since the beginning of Quaternary and continues to evolve today.

The nominated property has several protective designations. In 1986, Fanjingshan became a member of the UNESCO Man and Biosphere Reserve Network, and was listed as a class-A reserve of global significance. It was listed as a National Nature Reserve at the same year, with a series of high-level protection by the national laws and regulations. The nominated property also belongs to Southeast China-Hainan Moist Forest of the Terrestrial Global 200 priority eco-region and Yangtze River & Lake of Freshwater Global 200 priority eco-region. Coupled with low population density and poor transportation, the native vegetation and ecosystem in the nominated property are well-protected and rarely disturbed by human activities.

5.2.2 Problems, Threats and Challenges

The nominated property is an outstanding representative of ecosystems in mid-subtropical humid mountain areas of Central Asia, with complicated forest formations and extensive endemic vegetation. It has received good supervision and protection, but the inevitable natural hazards and the increasing tourist activities lead to some problems, threats and challenges including:

The occurrence of natural disasters, such as, geological disasters and meteorological disasters, etc. will potentially affect the habitats and communities in the nominated property.

Along with the development of tourism, the construction of tourism facilities including a cable car, and tourism access infrastructure inevitably have some impact on the ecosystem, bringing various types of solid, air and noise pollution and threatening ecological circulation and biological activities.

There is an abundant river ecosystem in this nominated property, and it flows through the residential area, so the waste water from residents may threaten part of the river ecosystem of the nominated property and its buffer zone.

Some residents around the nominated property are engaged in farming activities, and the extensive management of livestock which can be illegally grazed inside the property, will result in some potential influence on the habitat and pollution of streams.

The possible entrance of the alien species will put pressure on endemic species and their habitats.

Habitats and species are affected by climate change, but relevant study and monitoring are still inadequate to fully understand the impacts.

5.2.3 Basic Goals and Missions

Effectively promote the residents' consciousness of biological protection and their legal awareness.

Protect the native vegetation and ecosystem well in the nominated property, and effectively promote the positive succession of the secondary vegetation.

Scientifically protect the biological and ecological process and comprehensively display these values by strengthening scientific research and supervision.





5.2.4 Policies and Actions

Strengthen the early warning systems for prevention and treatment of natural disasters in the nominated property, carry out real-time monitoring of natural disasters and take effective measures to mitigate impacts. Implementation period: 2016~2020.

Regulate the behaviour of visitors (including reducing noise levels), control the quantity of tourists, and reduce unnecessary construction of tourism facilities. When selecting the site of tourist facilities in the future, work to avoid communities of the rare species and their habitats. Strictly carry out ecological restoration on the basis of environmental impact assessment, to prevent irreversible damages to the resources and their habitats from construction. Natural recovery of damaged vegetation is the preferred option for restoration rather than replanting. Implementation period: 2016~2030.

Strengthen the environmental education of the residents living around the nominated property, and the control of rivers; avoid any threat to the river ecosystem from industry and domestic sewage and other garbage. Implementation period: 2016~2030.

Forbid feeding wildlife in the nominated property, raise awareness on wildlife feeding impacts with residents, and implement appropriate ecological restoration of any disturbed vegetation. Implementation period: 2016~2020.

Establish a state of the art climatic monitoring system and an early warning system, and take *in situ* conservation measures against species reduction caused by the climate change. Implementation period: 2016~2030.

5.3 Protection and Management of Biodiversity Value

5.3.1 Conservation Object and Situations

Due to the relatively isolated and rugged mountain landform, the nominated area exhibits unique climatic advantages differing both from the south subtropics and the northern subtropics, is rich in different habitats and hence supports flourishing resident species. The nominated property has preserved a quantity of ancient, relict, rare and endangered species and also differentiated several endemic species with global representative significance. This indicates the nominated area is such an important habitat for endangered species and outstandingly valuable for science and conservation. At present, 7,161 wild species have been discovered in Fanjingshan, including 4,394 species of plant and 2,767 species of animals, among which there are 99 species of freshwater algae 452 species of macrofungi, 119 species of lichen, 3,724 species of high plants (including 791 species of bryophyte, 349 species of pteridophyta, 36 species of

Gymnospermae, 2,548 species of Angiospermae), 450 species of vertebrate, 2,076 species of insect, 215 species of arachnida, 26 species of Oligochaeta. These are very large numbers considering the relatively small area of the site.

Fanjingshan provides vital habitat for 230 species of rare and endangered plants and 115 species of rare and endangered animals, such as *Paulownia kawakamii* (CR), *Bretschneidera sinensis* (EN), *Andrias davidianus* (CR), *Moschus berezovskii* (EN) and so on. The nominated property also provides essential habitat for 46 species of site endemic plants, 3 species of endemic vertebrates and 245 species of endemic invertebrates. There are 36 species of Gymnosperm and 791 species of Bryophyte in Fanjingshan. The nominated property has one of the richest concentrations of gymnosperm flora in the world. It is also the area of richest bryophytes in the Oriental Deciduous Forest biogeographic province.

Fanjingshan is the only natural habitat and therefore the most important in-situ conservation site for the globally endangered Guizhou Snub-nosed monkeys *Rhinopithecus brelichi* and the Fanjingshan fir (*Abies fanjingshanensis*). *Rhinopithecus brelichi* has a key position in understanding the evolution of primate species. Fossils and reference records reveal that *Rhinopithecus brelichi* used to be distributed more widely in eastern and northern Guizhou Province, but today remains only in Fanjingshan. The recent monitoring data show only a maximum of 750 individuals surviving in total, which indicates that *Rhinopithecus brelichi* is the smallest population among four *Rhinopithecus* species in China and is a remarkably precious and irreplaceable gene bank for global species. *Abies fanjingshanensis* is one of the four *Abies* species located in the subtropical zone and is listed on the IUCN Red List as an endangered (EN) species. The nominated property preserves the only *Abies* dark coniferous forest type in the subtropical zone.

Fanjingshan retains a large area of more than 15,600 ha of original beech (*Fagus*) forest which is considered the most important site for protection of *Fagus* forest as it contains the world's biggest and most contiguous primeval beech forest in the subtropical region. Fanjingshan's beech forest possess outstanding conservation importance and scientific interest value as it serves as a globally precious gene bank and provides insights into how its suitable environment through subtropics evolved into temperate zone.

The nominated property is protected by National/Provincial Nature Reserve and National Non-Commercial Forest. Fanjingshan is also protected as a part of the UNESCO Man and Biosphere Reserve Network, Endemic Bird Areas, China Important Bird Areas and an important region of the Convention on Biological Diversity-China Biodiversity





Conservation Action Plan and of the China Biodiversity Conservation Strategy and Action Plan. Thus the biodiversity within the nominated property has been concerned and well protected. Particularly, after the establishment of the Nature Reserve, the management institution has formulated some plans like *Master Plan of Guizhou Fanjingshan National Nature Reserve (2014~2023)*, *Master Plan of Guizhou Yinjiang Yangxi Provincial Nature Reserve (2015~2024)* and *Conservation Plan on the World's Only Son Rhinopithecus brelichi (2015~2025)*, etc. and performed fully the duties of protecting forests and wild animals. On the basis of these strict protection measures, the rare and endangered species, relic plants and endemic species in the nominated property are well protected.

5.3.2 Problems, Threats and Challenges

At present, the biodiversity and habitats in the nominated property have been well protected. However, the nominated property has suffered from threats from human activities and natural disasters of different types and at different levels, so the protection of the biodiversity is faced with some potential threats and challenges including: Further infrastructure construction in the nominated property and the buffer zone, could directly destroy habitats of wildlife, reduce their ranges, limit their foraging, mating and hiding ranges and even increase species competition.

The population of *Rhinopithecus brelichi* is very small and slow in growth with restricted habitats. Human activities may have an impact on their living space, food resources, reproduction, and health. Researches about the habitat dynamics are too poor to provide a full basis for protection and management.

Extreme climate events, such as icy snow calamity, drought and flood, etc. may threaten the survival and reproduction of rare and endangered species.

Abies fanjingshanensis is narrow in distribution and poor in natural regeneration, so the natural disasters and human activities may have an impact on its species and habitats.

The construction of tourism infrastructure, hotels and farmhouses in the buffer zone, tourism activities and the bad behavior of the tourists, who drop litter, pick plants, and make a noise etc. in the nominated property, may threaten wild plants and animals and their habitats.

Research knowledge about the habitat dynamics is too poor to provide a full basis for protection and management.

5.3.3 Basic goals and missions

Protect the biodiversity resources of the nominated property to guarantee the authenticity and integrity of the biodiversity and habitats.

Improve the resources background survey of animals and plants in the nominated property, and strengthen the original protection of rare and endangered wildlife habitats, *Rhinopithecus brelichi*, *Abies fanjingshanensis*, for instance.

Finish the survey of the rare animal and plant resources in the nominated property, set up in situ protection facilities and protection programs.

Effectively promote the residents' consciousness of biological and ecological protection and their legal awareness.

Effectively ban the behaviours that may destruct plant and animal resources, such as poaching and cutting of trees.

5.3.4 Policies and Actions

Reduce unnecessary human activities within the living area of the rare and endangered animals in order not to disturb or destroy the normal lifecycles and activities of wild animals. Implementation period: 2016~2030.

Ecological management and restoration should be conducted in infrastructure construction area, such as setting up some culverts to ensure animals pass through the road, remove all fences and relieve barrier effect of the infrastructure construction. Implementation period: 2016~2030.

Plan and encourage natural restoration of wildlife corridor to allow wider migration, breeding and stable food of *Rhinopithecus brelichi* access. Improve monitoring of wild population including use of remote thermal imagery from drone at night. Revise the studbook and planning an efficient breeding program (Table 5.1) (IUCN, 1999). Conduct feasibility studies to identify secondary release sites where a new population could be established (Figure 5.1) (IUCN, 1999). Implement period: 2016~2030.

Table 5.1 Guizhou Snub-nosed monkeys studbook (*Rhinopithecus brelichi*)

Stud#	Sex	Birth Date	Sire	Dam	Location	Date	Local ID	Event
G001	F	-1985	WILD	WILD	FANJING	-1 Apr 1993	UNK	Capture
G004	M	-1985	WILD	WILD	FANJING	-1 May 1993	UNK	Capture
G005	M	-1985	WILD	WILD	FANJING	-1 Jun 1993	UNK	Capture
G010	F	-1980	WILD	WILD	FANJING	-1 Apr 1993	UNK	Capture
						-1 Jul 1997		Death
G011	F	-1985	WILD	WILD	FANJING	-1 Apr 1993	UNK	Capture





G012	M	-1993	WILD	G011	FANJING	-1 Apr 1993	UNK	Capture
G014	M	-1985	WILD	WILD	FANJING	-1 Sep 1993	UNK	Capture
G015	M	-1990	WILD	WILD	FANJING	-1 Oct 1993	UNK	Capture
						-1 Nov 1993		Death
G016	F	-1985	WILD	WILD	FANJING	-1 Oct 1993	UNK	Capture
G017	F	-1985	WILD	WILD	FANJING	-1 Apr 1994	UNK	Capture
G019	F	18 Apr 1995	G005	G001	FANJING	-18 Apr 1995	UNK	Birth
G020	F	11 Apr 1996	G014	G016	FANJING	-11 Apr 1994	UNK	Birth
G021	M	7 Apr 1996	G004	G016	FANJING	-7 Apr 1996	UNK	Birth
G022	M	7 Apr 1996	G004	G017	FANJING	-7 Apr 1997	UNK	Birth
G023	F	16 Apr 1999	G005	G001	FANJING	-16 Apr 1999	UNK	Birth
G9501	F	19 Mar 1995	G014	G016	FANJING	-19 Mar 1995	UNK	Birth
						-19 Mar 1995		Death
G9801	F	20 Apr 1998	G005	G001	FANJING	-20 Apr 1998	UNK	Birth
						-20 Apr 1995		Death

Totals: 7.10.0(17)



Figure 5.1 Possible sites for translocation

Reduce impacts from and contact with local communities and tourists. Increased tourism numbers should proceed only very cautiously based on careful monitoring of impacts on the Guizhou Snub-nosed monkeys population (numbers, reproductive success, ranging patterns, diet changes, general behavior, and health). Implement period: 2016~2030.

Strengthen the exchanges and cooperation with relevant international and domestic units, invite colleges and biological research institutions to establish a species diversity research base, develop comprehensive research of the *Rhinopithecus brelichi* and improve the

investigation and monitoring of biodiversity in the property. Implementation period: 2016~2020.

Enhance exchanges at home and abroad, develop some researches on how the global warming impacts the rare and endangered species like *Abies fanjingshanensis*, *Fagus longipetiolata* etc. and explore appropriate climate change related conservation measures. Implementation period: 2016~2030.

Studies on the survival and reproduction of *Abies fanjingshanensis* should be further carried out. Make a breakthrough in its breeding to expand the population and adopt some technical measures to promote the continuation and development of the population. Implement period: 2016~2030.

The management agency should formulate a detailed tourism master plan for the nominated property, to renovate the tourism facilities which influence the biodiversity and habitats in the nominated property; strengthen the publicity and education of the tourists, set the marking signs and warning billboards and prohibit the damage to biodiversity and habitat. Implementation period: 2016~2020.

In order to improve the residents' abilities of recognizing and protecting the rare animal and plant resources in the nominated property, knowledge training about biology and ecology should be carried out every 2 years, and legal education should be strengthened to avoid the destruction of rare biological resources by residents' production and living activities. More residents should benefit from the ecotourism potential through development of household based visitor accommodation and cultural interests in the buffer zone. Implementation period: 2016~2020.

Improve the investigation and monitoring of biodiversity and wildlife; arrange some fixed monitoring sample plots and routine monitoring patrols using standard recording of sightings, use of transects, automatic camera grids etc. to monitor the animals and plants in the property. Implementation period: 2016~2020.

5.4 Zoning Protection and Management

The nominated property of Fanjingshan has both national and local reserve designations, including National Nature Reserve, Provincial Nature Reserve and National Non-Commercial Forest. The nominated property is well managed under the existing relevant laws, regulations, plans, and professional codes in China. Based on *Convention concerning the Protection of World Cultural and Natural Heritage* and *Convention on Biological Diversity*, the nominated property and the buffer zone have been zoned into





areas which are graded as different protection and management degrees. Zoning is differentiated according to the heritage values, significance, sensitivity, protection degrees needed for endangered species, and demands for heritage presentation and communities utilization etc. We put a priority on the protection of endangered species, representative species, ecosystem, biological evolution environment, hydrological system, natural landscape, and reduce human activities to ensure the aesthetic beauty and integrity of the nominated property. At the same time, combined with the relationship between the nominated property and Nature Reserves, according to the laws and professional codes of the state and regulations for Nature Reserve, appropriate utilization and management activities are allowed to make full use of comprehensive values of the nominated property.

5.4.1 The Relationship with Existing Protected Area

Most of the nominated property and the World Heritage buffer zone are situated inside Fanjingshan National Nature Reserve. The nominated property covers the core zone, buffer zone, part of experimental zone of Fanjingshan National Nature Reserve, Chayuan area (a part of Yangxi Provincial Nature Reserve) and a small extension of National Non-Commercial Forest in northeast. The World Heritage buffer zone covers most parts of the experimental zone of Fanjingshan National Nature Reserve, among which some parts fall in the First to Third grade protection zone of Fanjingshan-Taipinghe Provincial Park (The People's Government of Jiangkou County, 2010), while some parts fall in the First to Third grade protection zone of Yinjiang Muhuang Provincial Park and part of the buffer zone of Yangxi Provincial Nature Reserve (Attached Map 4).

5.4.2 Zoning of the Nominated Property

5.4.2.1 Goals of Zoning Protection Management

To zone the nominated property for protection into grades based on the significance, sensitivity, degrees of endangered property values, and demands of presentation and community use. Take measures for protection and management ranges of development and utilization of zones based on the coordination between protection and utilization.

To zone it according to different degrees of sensitivity of resources, suitability characteristics, intensity of human activities and the way that the human uses to carry out facilities construction and control and manage the human activities.

To establish reasonable distribution of management stations and delimitation boundaries to form integral management and protection systems based on transportation conditions,

extent of implementation, and the principle of coordination with the scope of the relevant administrative regions.

For each management zone, to determine the protection range, content and management duties by zoning for management and grading for protection, to control and manage the zone in different grades and human activities.

The ultimate goal is to maintain and strengthen the Outstanding Universal Value of the nominated property and conserve their authenticity and integrity.

5.4.2.2 Policies of Zoning Protection Management

The zoning of the nominated property is based on the value importance of protected object, the necessity of presentation need and community utilization. The nominated property is divided into different areas to manage the relationships of cultivation, development utilization and operation on different zones, so to choose the rational measures. The nominated property is divided into conservation zone, presentation zone and community preservation zone.

Conservation Zone: An area with high ecological, biological, aesthetic values, as well as values in science and education which reflects the Outstanding Universal Value of the nominated property; it should be protected on the whole. The natural state of the ecological system and natural landscapes must be maintained and protected under the strictest conservation regulations.

Presentation Zone: An area with Outstanding Universal Values in science, natural landscape, ecology and biology, of which the sufficient mature condition is to allow development of facilities for tourist use of the heritage site, science education and tourism. And it is the place for scientific research, science education and tourism, where the activities must be consistent with ecological and resource conservation and meet the demand of heritage presentation zone.

Community Preservation Zone: A zone with villages inadvisable to relocate around the service areas. Considering the development of community and demand of indigenous residents, production, infrastructures and tourist service facilities in the community preservation zone are allowed when production activities are in coordination with the environment.





5.4.2.3 Result of Zoning Protection Management

Conservation zone: This zone mainly covers the core zone of Fanjingshan National Nature Reserve and the core zone of Chayuan Part of Yangxi Provincial Nature Reserve (the area of the community preservation zone and presentation zone is not included). Conservation zone is the part of the nominated property with the most outstanding natural values and significant biological and ecological values, which includes the majority of precious species and many species of vegetation zones. It is also the zone for preserving plants growing and *Rhinopithecus brelichi* living and mainly focuses on presenting the Outstanding Universal Value of the nominated property (Table 5.1).

Table 5.1 Protection zone composition in the nominated property of Fanjingshan

No.	Categories	Area (ha)	Percentage (%)
1	Conservation zone	39,064	96.79
2	Presentation zone	768	2.11
3	Community preservation zone	443	1.10
Total		40,275	100%

Presentation zone: The zone includes the line of Heiwanhekou- Huixiangping - Jinding - Huguo temple - Zhangjiaba. Tourism activities with complete tourism service facilities have already been carried out and presentation about the beauty and value of biology and ecology have been given to tourists. Through presenting the nominated property, it imparts World Heritage knowledge to the tourists, promotes the protection awareness of tourists and make sure the nominated property is well protected and managed.

Community preservation zone: The zone mainly covers Banpotai and Changganling zone which are situated on the north of the nominated property, and Tuanlong, Chenjiaba and Yuanjialing zone that are situated on the west of the nominated property and Zhonglingfeng and Dianchang zone in the Yangxi Provincial Nature Reserve that are situated on the east of the nominated property. It is the main area for the indigenous residents to live in and produce.

5.4.3 Zoning Management for the Nominated Property

5.4.3.1 Measures of Zoning Management for the Nominated Property

Conservation zone: The conservation zone overlaps with the core and buffer zone of Fanjingshan National Nature Reserve and can be protected and managed according to the existing management regulations of the reserve. It mainly ensures that the rare vegetation of the reserve is not damaged and the wild animal breeding grounds, habitats and activity area are not affected by human disturbance and destruction. The scale of settlement should be reasonably controlled and the large-scale urbanization and the

industrial production and construction activities should be restricted to ensure the diversity and integrity of the ecological system. Only the setup of necessary monitoring facilities and safety facilities is allowed and no irrelevant staffs are allowed to enter. An application and an activity planning should be submitted to relevant institutions to get the approval before carrying out scientific research and investigating activities if necessary.

Presentation zone: Conduct protection and management according to the regulations about ecological tourism area in the existing management regulations of Nature Reserve, control the scale of tourism activities rationally and develop tourism activities to make sure it is consistent with protection of the nominated property. Tourist service facilities construction should be avoided to destroy the natural landscape and ecological environment. Tourism activities development and tourist service facilities construction should be away from the rare animals and plants ecosphere and cannot bring negative effects on their habitats. Necessary travel service facilities, transportation facilities, monitoring facilities, signs and protective installations can be set up in the zone. It is forbidden to carry out the visit and tourism activities that are not consistent with the management plan. It is not allowed to construct the production and service facilities for environment pollution and resources or landscape destruction.

Community preservation zone: In the place where residents relatively distribute intensely, the indigenous residents are allowed to keep their traditional agriculture and they are encouraged to undertake ecological agriculture, excluding cutting down trees and changing the use of land. The waste treatment station and sewage treatment facilities can be set up to ensure the natural ecological environment in the property can be effectively protected. Also sufficient knowledge publicity of World Heritage in the community should be made to promote the awareness of protection and participation. Any activity that destroys ecological environment and biological resources is not allowed like cutting down trees, picking up firewood, gathering herbs excessively and hunting wild animals. On the basis of relative laws, the activities destructing the precious wild animals and plants should be cracked down and given severe punishment. Industrial activities such as mining and wood processing must be forbidden. The water quality monitoring should be enhanced to ensure the hydrological environment is preserved effectively. Rational activities like scientific experience, teaching activities, visiting, taming wild animals, cultivating endangered plants and other using activities are allowed to be carried out.

5.4.3.2 Control and management of facilities for the nominated property

Construction of necessary facilities is needed to meet the demands of protection, management and property presentation. Facilities can be divided into seven categories to be controlled and managed, including monitoring facilities, presentation facilities,





transportation facilities, tourist service facilities, management facilities, infrastructures and other facilities (Table 5.2).

Table 5.2 Zoning management policies-facilities

Zoning Types		Conservation Zone	Presentation Zone	Community Preservation Zone
Types of Facilities				
1. Monitoring facilities	Biodiversity and ecology monitoring facilities	○	○	○
	Environment monitoring facilities	●	●	●
	Fire monitoring facilities	●	●	●
	Geological disaster monitoring facilities	●	●	○
	Visitor monitoring facilities	○	●	×
2. Presentation facilities	Interpretation facilities	×	●	○
	Information center	×	○	△
	Museums and exhibition center	×	○	△
3. Transportation facilities	Original mountain pass	×	△	○
	Tracks without pavement	△	○	○
	Pedestrian walk	×	○	○
	Motorized road and parking lot	×	△	△
	Motorized road and parking lot	×	△	△
	Tram rail	×	○	○
4. Tourism service facilities	Visitor center	×	△	○
	Accommodation	×	△	○
	Shopping	×	○	○
	Public health	×	○	○
5. Management facilities	Management stations and points	×	●	●
	Management facilities	×	●	●
6. Infrastructure	Power	×	△	○
	Postal service	×	○	○
	Telecommunications	×	△	○
	Water supply	×	●	●
	Drainage	×	●	●
	Environment sanitation	×	●	●
	Fire fighting	×	●	●
	Disaster relief	×	●	○
7. Other facilities	R&d lab facilities	△	○	○
	Reservoir	×	×	×
	Hydropower station	×	×	×
	Signal tower	×	△	○

Note: ● means must, ○ means allowed, △ means forbidden in principle, environment impact evaluation is required when necessary, × means forbidden

5.4.3.3 Control and management of human activities for the nominated property

Unreasonable tourist activities and living and production activities carried out by community residents are the main factor that most threaten the heritage values of the

nominated property. In order to reduce the negative impact on the heritage values by human activities, the existing human activities and possible activities are divided into four categories to be controlled and managed respectively, including tourist activities, social and economic activities, research activities and management activities (Table 5.3).

Table 5.3 Zoning management policies-human activities

Human Activities		Zoning types	Conservation Zone	Presentation Zone	Community Preservation Zone
1.Tourist activities	Photography and video	×	○	○	
	Mountain adventure	×	×	×	
	Camping	×	△	○	
	Mountain biking	×	△	○	
	Self-driving	×	△	○	
	Buddhist rituals	×	△	△	
	Worship	×	○	○	
	Fishing	×	△	△	
	Boating and drifting	×	△	△	
	Rock climbing	×	△	△	
	Barbecue	×	△	×	
	Spelunking	×	△	×	
	Folk festivals	×	○	○	
	Farming experience	×	○	△	
2.Social and economic activities	Lumbering	×	×	×	
	Collection	×	×	×	
	Hunting	×	×	×	
	Graze	×	×	×	
	Livestock and farming	×	△	○	
	Catching fish	×	×	○	
	Quarrying and mining	×	×	×	
	Groundwater withdrawal	×	×	×	
	Barrages building	×	×	×	
3.Research activities	Research investigation	○	○	○	
	Resource survey	●	●	●	
	Biological monitoring	●	●	●	
	Ecological monitoring	×	●	●	
	Collect specimen	×	△	△	
	Cultivation	×	△	△	
	Photography and video for science and education	△	○	○	
4.Managem ent activities	Boundary post	●	●	●	
	Ecological rehabilitation	●	●	●	
	Disaster prevention	●	●	●	
	Monitoring	●	●	●	
	Interpretation activities	×	○	○	

Note: ● means encouraged, ○ means allowed, △ means conditionally allowed, × means forbidden





5.4.4 Protection and Management for the World Heritage Buffer Zone

5.4.4.1 Function and delineation of the World Heritage buffer zone

The World Heritage buffer zone is the peripheral protective area delineated to protect Outstanding Universal Value of the nominated property, and also a protective area to prevent external interference. The purpose of doing this is to protect the natural resources within the nominated property from the disturbance of unreasonable human activities or malicious intrusion, and provide adequate peripheral ecological environment of habitat space for growth and reproduction of animals and plants; and it is also a transitional or peripheral isolation zone of natural ecological protection. As a region which combines protection with moderate development, the World Heritage buffer zone gives the resources and environmental protection with a multilayer gradient, making different levels of resources protected to varying degrees.

5.4.4.2 Current protected condition of the World Heritage buffer zone

The buffer zone of the nominated property includes most parts of experiment zone of Fanjingshan National Nature Reserve, some parts of the first to third grade conservation zone of Fanjingshan-Taipinghe Provincial Park, some parts of the first to third grade conservation zone of Yinjiang Muhuang Provincial Park and at the same time it also includes a part of the buffer zone of Yinjiang Yangxi Provincial Nature Reserve and other parts around the nominated property. At present, most parts of the World Heritage buffer zone have been strictly protected by national laws and regulations related to its protection. In order to achieve the protection goal and make the World Heritage buffer zone become a "green barrier" of the nominated property, numerous measures should be taken as follows: the nominated property should enhance the management of the natural resources and meet the needs of residents for natural resources, improve energy utilizing mode of the local residents and production mode and possibly alleviate the pressure on the ecological environment, strengthen publicity of community development knowledge and skills training, change the production mode, adjust the industrial structure and reduce the community residents' dependence on natural resources, control and optimize the World Heritage buffer zone's ecological condition, and provide more habitat space for the wild animals. According to the actual situation of the World Heritage buffer zone, requirements should be made for construction of infrastructure, management and controlling of human activities. (Table 5.4, 5.5 and 5.6).

Table 5.4 Population in the World Heritage buffer zone

Item	Area (ha)	Population Size (person)	Population Density (persons/km ²)
World Heritage buffer zone	40,275	18,371	49

Table 5.5 Management and control of policies-facilities

Types of Facilities	Facilities	Buffer Zone
1. Monitoring facilities	Biodiversity and ecology monitoring facilities	●
	Environment monitoring facilities	●
	Fire monitoring facilities	●
	Geological disaster monitoring facilities	○
	Visitor monitoring facilities	●
2. Presentation facilities	Interpretation facilities	○
	Information center	○
	Museums and exhibition center	○
3. Transportation facilities	Original mountain pass	○
	Tracks without pavement	○
	Pedestrian walk	○
	Motorized road and parking lot	△
	Tram rail	△
	Plank path	△
4. Tourism service facilities	Visitor center	○
	Accommodation	○
	Shopping	○
	Public health	○
5. Management facilities	Management stations and points	●
	Management facilities	●
6. Infrastructure	Power	○
	Postal service	○
	Telecommunications	○
	Water supply	○
	Drainage	○
	Environment sanitation	×
	Fire fighting	●
	Disaster relief	●
7. Other facilities	R&D lab facilities	△
	Reservoir	△
	Hydropower station	×
	TV tower	△

Note: ● means must, ○ means allowed, △ means forbidden in principle, environment impact evaluation is required in case of necessary, × means forbidden





Table 5.6 Management and control of human activities

Types of Facilities	Facilities	Buffer Zone
1. Tourist activities	Photography and video	○
	Mountaineering adventure	○
	Camping	○
	Mountain biking	○
	Self-driving	○
	Buddhist rituals	△
	Worship	○
	Boating and drifting	○
	Fishing	○
	Rock climbing	○
	Barbecue	△
	Spelunking	△
	Folk festivals	○
	Farming experience	○
2. Social and economic activities	Lumbering	△
	Collection	×
	Hunting	×
	Graze	△
	Livestock and farming	○
	Catching fish	△
	Quarrying and mining	×
	Groundwater withdrawal	×
	Barrages building	×
3. Research activities	Research investigation	○
	Resource survey	●
	Biological monitoring	●
	Ecological monitoring	●
	Collect specimen	△
	Cultivation	○
	Photography and video for science and education	○
4. Management activities	Boundary post	●
	Ecological rehabilitation	●
	Disaster prevention	●
	Monitoring	○

Note: ● means encouraged, ○ means allowed, △ means conditionally allowed, × means forbidden

5.4.4.3 Management measures of World Heritage buffer zone

Any part of the World Heritage buffer zone should be protected strictly if it is defined as clear protection destinations. The western part is the buffer zone of Yangxi Provincial Nature Reserve should be managed according to *Regulations of the People's Republic of China on Nature Reserves*, where only scientific monitoring activity is permitted. The southeastern part covers the Fanjingshan-Taipinghe Provincial Park and the northern part covers part of Muhuang Provincial Park from Jinchang Village to Xiping Village council. Those areas should be managed according to *Regulations of Scenic Spots*. None should build any kind of constructive area, hotel, guesthouse, training centre, sanatorium and other facilities against the regulations. Activities including cutting into mountain, quarrying, mining, reclaiming and building the tomb that have a negative effect on natural landscape and geography must be stopped. It is forbidden to build and store dangerous facilities such as explosive, inflammable, radioactive, toxic and corrosive facilities. Activities like destroying forest and wild animals also should be prohibited. Building sewerage treatment plant in the high-density people distribution area should be advocated. The resident's activities must be based on the environmental protection; activities like quarrying and mining must be forbidden, except necessary agriculture. Rational activities like scientific experience, teaching activities, visiting, investigation, taming wild animals and ecological agriculture are allowed; in the meantime, some tourism facilities may be built properly to reduce the pressure of tourism from the presentation zone.

5.4.5 Management stations

5.4.5.1 Construction of management stations

Based on the distribution of the existing management stations, the construction of management stations and points is mainly based on the management zoning and the level of protection, as well as the land use and traffic conditions. The construction of protection and management stations and points should also be combined with the layout of tourism service facilities.

The management stations are mainly responsible for protecting the integrity and authenticity of regional resources and environment. They can monitor, inspect, maintain and manage the facilities and so on, and carry out different protective measures which are established by management mechanisms of the nominated property. And they are also





responsible for guiding and supervising the protection and management of the management points.

The management points are located throughout the protective zones. They are mainly responsible for fire prevention, theft prevention, poaching prevention, and mining prevention. They are observation points for biological resource monitoring, ecological monitoring, environmental monitoring, natural disaster monitoring and tourism monitoring. In the meanwhile, they are often used as the supply and rescuing sites for field patrolling personnel. The task of protection and management is usually done by management points which should be done by the management stations together (Table 5.7).

Table 5.7 Management stations and points

Management Institution	Administration Branch	Management Station
Administration of Fanjingshan National Nature Reserve	Heiwan Branch	Jinchang Station
		Furong Station
		Zhangjiaba Station
	Minxiao Branch	Baxi Station
		Xujiagou Station
		Gaofeng Station
	Yinjiang Branch	Pingding Station
		Hekou Station
		Lengjiaba Station
		Animals Checkpoint
	Panxi Branch	Wildlife Rescue Center
		Experiment Spot
Administration of Yangxi Provincial Nature Reserve		Chayuan Station

5.4.5.2 Management measures

The nominated property should take cooperative protective form to realize the department protection and regional protection. It should form cooperative protective modes among different departments, including forestry, public security, districts (towns), villages etc., and establish some protective mechanisms. The function of distributing comprehensive checkpoints throughout the area (including animals and plants quarantine, pests controlling, forest fire prevention and timber inspection) should be extended to the whole World Heritage buffer zone. They should periodically carry out some cooperative protection activities among different departments and regions. Under the power of the parties, they could eliminate the unsafe factors for natural resources outside the World Heritage buffer zone and form the mechanism by department participation and regional cooperation to meet cooperated protection.

Community participation: Make full use of the cable televisions, the internet, newspapers, posters, billboards and other forms to conduct publicity and education for residents and tourists about the awareness of protection within the World Heritage buffer zone, and to improve the social protection consciousness and the sense of responsibility. Improve the village regulations and give full play to their role, organize the indigenous residents to participate in the nominated property's protection and put an end to the field burning, illegal collection of landscape plants and hunting activities.

Appropriate task of cultivating wild animals and plants to enhance species quantity, especially in the endangered and precious species should be carried out. In order to maintain the diversity of the nominated property and its buffer zones, some measures should be taken like strengthening the degree of preventing and controlling the plants diseases and pests, regularly monitoring the biological species and preventing the invasion of alien species.

Strengthen the forests cultivation and water conservation in the World Heritage buffer zone, implement the project of returning farmland to forest and reforestation, construct the residential points, roads, paddy fields and greening belts of waters, and gradually restore the natural landscapes in the World Heritage buffer zone. Strengthen the degree of preventing and controlling the diseases of the plants and pests, maintain the biological diversity of the nominated property and its buffer zone. Through the residents' social control and the construction of new socialist countryside, improve the situation of backward rural poverty, reduce the destruction of human activities on the natural environment, restore the capacity of the environment and improve the overall quality of the environment in the World Heritage buffer zone, and achieve the harmonious development between human beings and environment.







6 |

Environmental Management





6 Environmental Management

The current situation of the water environment, air environment, noise pollution and solid waste etc. in the nominated property was analysed and evaluated. Threats were identified; challenges were addressed from different perspectives, and corresponding protection management goals were set up, and finally, specific actions on environmental protection issues were proposed. Water and air, in particular, play a special role in ecological process, biodiversity value and landscape aesthetic value of the nominated property. In order to protect the unique ecological environment and ensure the authenticity and integrity of the Outstanding Universal Value of the nominated property, this chapter pays much attention to the water and air environment management. And the chapter also analyses and fully explains noise and solid waste management, all of which also affect the aesthetic and ecological value of the nominated property.

6.1 Water Environment Management

6.1.1 Current Situations

The problem of water environment in the nominated property has attracted much attention. The water quality and amount will have an important effect on the eco-environment of the property. Therefore, water environment management is a significant part of the whole management of nominated property.

The nominated property is on the divide between the Wujiang and Yuanjiang river systems, many surface rivers, which originated in Fanjingshan, develop a fine and radiating drainage pattern. The surrounding environment is less threat to its water environment. The potential impact only the sewage from travel activities and a small amount of residents production and living in the nominated property. For the potential threats, the nominated property has been stressing the closing hillsides to facilitate natural reforestations and construction of ecological conservation forest.. Meanwhile, the measures of source reduction, process control and terminal management are taken. Sewage discharge and disposal are managed scientifically. The sewage from the functional buildings, such as the visitor centre and ecological science education centre, has been disposed up to *Sewage Comprehensive Discharge Standard* (GB8978~1996). There are currently 10 environmental public toilets, 3 of which are microbial degradation toilets. Heiwanhe sewage disposal project has been started and sewage collection pipe network has been built, surrounding Fanjingshan Nature Reserve in triangular shape.

There are 453 inspection man-holes and 1 sewage pumping station. The main pipe network has come into service. Regularize the residents' behaviour and keep rubbish from entering the rivers through village rules based on the principle of appendage management. The responsibility system of "river chief and section chief" is carried out. Regularize the behaviours of swimming, fishing and barbecue in and along rivers. There are 6 water resource management points in the nominated property, 8 points in the World Heritage buffer zone. Through the measures above, the water pollution is managed and controlled effectively. The water is of high quality generally.

6.1.2 Problems, Threats and Challenges

The sewage is mainly from residents and tourists, and less improved sewage disposal system, and there is still a small quantity of old toilets in some villages, which dispose the excreta in the way of composting. All of these might cause some pollution to the water environment of the nominated property and its buffer zone.

The planning for water environment protection, management and enforcement of sewage disposal mechanism, and the monitoring over the water environment are not carried out well. The monitoring system for surface and underground water is not improved, so the dynamic change of water quality and amount cannot be accurately controlled.

6.1.3 Goals, Protection and Management Measures

6.1.3.1 Goals of Water Environment Control

The standard of surface water environmental quality is controlled up to standard I of GB3838~2002.

Build the sewage disposal management system for tourism sites and resident points; Establish perfect sewage collection-disposal system up to class III and sewage disposal up to standard I of GB8978~1996. The sewage centralized treatment rate reaches 100%, avoiding affecting water system, biodiversity and Outstanding Universal Value of the nominated property.

6.1.3.2 Management Countermeasures and Protection Measures

Enhance the work force of returning the grain plots to forestry and ecological conservation forest of the nominated property. The river management and water source rehabilitation





should be carried out to conserve water and improve water quality. Implementation period: 2016~2030.

Ban the construction of water conservancy facilities and other projects affecting water system. The construction of water conservancy facilities in the World Heritage buffer zone and peripheral zone should fully allow for the hydrological system to minimize the effect on water resource. Implementation period: 2016~2030.

Pay much attention to the sewage discharge and disposal in the nominated property. Improve the ecological tourism sewage disposal system. Meanwhile, upgrade the old toilets; formulate the regulations for the discharge of domestic sewage and gradually improve the sewage treatment facilities of community residents. Implementation period: 2016~2020.

Build underground sewage disposal device in Dongshanmen, Xishanmen and Jinding where the buildings are concentrated. In some areas with small amount of water use, sewage biochemical treatment pool should be planned. The restaurant sewage should go through the oil separation process. The feces sewage should be disposed in digestion tank first and then discharged into pipes and treatment devices. The disposed sewage up to standard I of GB8978~1996 can be used for greening and is banned being poured into rivers. Implementation period: 2016~2020.

Add the hydrological monitoring points and facilities for surface and subterranean water to some busy river sections to form a perfect monitoring system. Then we can know the information of water amount and pollution in time. Implementation period: 2016~2020.

Establish the supervision team to supervise the sewage disposal facilities, discharge points and repair the broken facilities. Punish the illegal units and individuals to let them make corrections. Implementation period: 2016~2030.

6.2 Air Environment Management

6.2.1 Current Situations

The air quality is good in the property. The maximum amount of negative oxygen ion content is up to 120-160 thousand/m³, so the property is called natural oxygen bar. The air management in the property has started. The projects of desulfuration and denitration of Jinding cement plant, rural biogas and the ongoing natural gas home-entry project have started. After the establishment of the Nature Reserve, the air management has been

enhanced. The air environment quality should be protected through increasing the residents' environmental awareness, popularizing biogas and setting up energy demonstration villages.

6.2.2 Problems, Threats and Challenges

The country roads of Fanjingshan mainly lie in World Heritage buffer zone, few in the nominated property. They are lying around mountain foot, and become the main lines of communication. The harmful substance from automobile exhaust increases the threats to the property.

The household energy in the property mainly relies on fuel woods. It will have some impact on the air environment of the nominated property, if the energy structure is not changed and firewood and coal are used for a long term.

6.2.3 Goals, Measures and Countermeasures

6.2.3.1 Goals

To meet GB3095~2012 class I air quality standards on 99% of the monitoring days in the nominated property and its buffer zone; to meet GB3095~2012 class II air quality standards on 95% of the monitoring days.

To achieve a standard that 95% of clean energy is used in all energy consumption within the nominated property.

6.2.3.2 Countermeasures and Protection Measures

Control the vehicle flow rate on the country roads of Fanjingshan. Make the strict vehicle emission index. The tour service vehicle in the property should be environment-friendly and energy-saving. Implementation period: 2016~2030.

Change the rural household energy structure, guide residents to save energy. Adjust the household energy structure in the nominated property and the buffer zone to hydroelectricity and natural gas whilst develop biogas vigorously. Implementation period: 2016~2030.

Set up the air quality monitoring points in some busy country roads of Fanjingshan, residential districts and tour areas. Purchase the air quality and anion monitoring devices to improve the air monitoring system. Implementation period: 2016~2020.





6.3 Waste Control

6.3.1 Current Situations

The waste disposal system of collection-transport-transfer-harmless has been built in the property and the buffer zone. There are 247 wooden dustbins, and the waste is cleaned every day in Fanjingshan scenic spot. And all the waste has been carried to the down stop by freight container of cable car, and then transported to the waste transfer station at the spot gate at Heiwanhe, at last, timely removed by the local departments of environmental sanitation. The dustbins and waste disposal pools have been built in most villages. The rural environment management projects have started in Tuanlong Village of Ziwei Town and Pingsuo Village of Mu Huang Town. Meanwhile, the publicity and environment volunteer activity is strengthened. Burning the waste on river bank is banned and the phenomenon of free discharging waste is controlled.



Photo 6.1 Community dustbin and community residents cleaning river

6.3.2 Problems, Threats and Challenges

The solid waste is brought by tourists and produced by community residents; and the collection-transfer-disposal facilities and the mechanism are not perfect. It may cause some pollution to the river and the air in the nominated property, and thus probably affects the overall ecological environment.

The solid waste, produced by some scientific research and patrol activities, is residue in less travelled area where the waste cannot be cleared up in time. It may cause some pollution to the hinterland of the nominated property.

6.3.3 Goal, Countermeasures and Measures

6.3.3.1 Control Goals

The solid waste should be disposed harmlessly, reductively and resourcefully with a harmless disposal rate up to 98%. The utilization rate of solid waste should reach 75% or above.

Build a perfect solid waste collection-transfer-disposal mechanism and supervision department.

6.3.3.2 Management Countermeasures and Protection Measures

Improve the waste classified recycling system. Set the classified dustbins that coordinate with the environment on both sides of passages and cliff roads every 300m. Optimized the solid waste collection system, add over 30 waste collection spots to make sure that there will be a waste collection spot every 5m from service area to the tour area. At the entrances to Heiwanhe, Zhangjiaba and Jinding, set a waste transfer station for each one. Add over 5 trucks to transport the waste to the transfer station from the nominated property and the buffer zone. Implementation period: 2016~2020.

Strengthen the scientific management of collection-transfer-disposal and establish the supervision and inspection mechanism, and formulate the work regulations for dustmen, all of these aiming to ensure the solid waste is removed and disposed in time. Implementation period: 2016~2020.

The solid waste should be packed away and thrown into the trash when the scientific research and patrol activities in the hinterland of the nominated property end. Among them, part of the professional research exhaust equipment, chemicals and its packaging bags etc. shall be taken away by the researchers outside the nominated property for professional treatment. Implementation period: 2016~2020.

Add the dustbins and pools according to the quantity of community residents and production amount of solid waste. Build a strict regular cleaning mechanism, and manage and supervise the behaviours of throwing waste to rivers. Implementation period: 2016~2020.





6.4 Noise Control

6.4.1 Current Situations

Due to the dense vegetation around the highway and community in the nominated property and its buffer zone, the tour activities are divided into different areas. There are signs of no loud noise in *Rhinopithecus brelichi*'s activity areas and habitats of other rare wildlife. The wide-angle lens and no honking signs have been placed in some road curves to ensure there is no serious noise pollution.

6.4.2 Problems, Threats and Challenges

The quiet natural environment is to some extent destroyed by tourists who loudly communicate and scream and some of the tour guides who use loudspeakers, so there are some potential threats to the habitats of animals.

Because of many sharp turns and mist weather, the sudden noise from cars will influence the wildlife and cause some noise pollution.

6.4.3 Goals, Countermeasures and Measures

6.4.3.1 Control Goals

Classify three acoustic environmental functional zones in the nominated property and its buffer zone following the *Noise Environment Standard* (GB3096~2008). Manage the nominated property as class-0 zone, below 50dB in daytime and 40dB at night; manage the World Heritage buffer zone as class-1 zone, below 55dB in daytime and 45dB at night; manage the busy traffic zone as class-4a zone, below 70dB in daytime and 55dB at night; the maximum sudden noise in all environmental functional zones at night should be below 15dB.

Improve the noise warning signs and layout of monitoring system.

6.4.3.2 Management Countermeasures and Control Measures

Control the number of tourists. Set up the signs of "No Noise and Loud Speaker" in northeast and *Rhinopithecus brelichi*'s activity areas and habitats of other rare wildlife. The guide should remind the tourists to keep silent. The intensive and loud activities should be banned in the property. Implementation period: 2016~2030.

Control the vehicle flow-rate in the buffer zone and strengthen the traffic law enforcement. Set up the signs of “No Tooting and Slowing down” in *Rhinopithecus brelichi*'s activity areas and habitats of other rare wildlife. Build vegetation isolation strips on both sides of country roads. Install the wide-angle lens in sharp turns to reduce unnecessary toots. Implementation period: 2016~2020.

Set up the noise monitoring points in some busy sections. Install the monitoring devices. Improve the layout of monitoring devices in northern part and eastern part of the nominated property and *Rhinopithecus brelichi*'s activity area of World Heritage buffer zone, such as Lengjiaba. Implementation period: 2016~2020.







7 | Tourism Management



7 Tourism Management

7.1 Tourism Development Status

The current tourist activities are mainly distributed along the route of Heiwanhekou - Huixiangping - Jinding - Huguo temple - Zhangjiaba, as well as the visitor center and specimen museum. The patterns of use are mainly climbing along the forest boardwalk and tourist trails or via the cable car to visit the vegetation, sea of clouds and other natural landscapes.

There are no professional interpreters in the nominated property, and the audio interpretation machines installed on cable cars play a role of interpretation for a long time. Moreover, the inspectors and other staff are also act as temporary interpreters. The interpretation mainly covers natural beautiful scenery, biodiversity, wildlife protection, protection and management status and so on.

The current presentation and education facilities include visitor center and specimen museum. In addition, there are 1,454 information signs on both sides of the forest boardwalk and tourist trails at mountaintop and country roads in the nominated property, which play an important role in the publicizing the protection of the nominated property's natural values.

Aimed at reducing potential tourist pressure, tourists have been restricted to enter only some scenic spots of the nominated property and the visitors entering the nominated property per day is strictly limited to 8,000 persons. The tourist quantity and impacts are closely monitored and if it draws close to saturation that day, no more scenic spot tickets will be sold. Moreover, measures have been taken at individual scenic spots such as opening in different time periods with all the human activities carried out during the daytime to reduce the influence of human activities on the habitat environments of the plants and animals. Signage is being displayed to reduce noise by tourists. A series of ecotourism plans have been formulated and implemented, and related national laws provide the legal basis for protection and management. Through the measures above, the eco-environmental pressures have been relieved.

7.2 Management of Tourist and Tourism Environment

7.2.1 Tourist Quantity Forecast

A small amount of general tourism, as well as some adventure tourism, scientific investigation, and patrol activities exists in the nominated property. The number of visitors is increasing year by year with the tourism development of the nominated property, which increased from about 180,000 person-times in 2010 to more than 360,000 person-times in 2014. And the seasonal distribution of visitors is uneven: more visitors come to the nominated property during April to October, while fewer visitors come during November to next March. Carrying capacity of the nominated property is based on the ranging behavior

and reproductive success of *Rhinopithecus brelichi*. The majority of the nominated property is the core area of Nature Reserve, where is strictly forbidden to enter according to the *National Nature Reserve Management Regulations*. Based on the *Management Plan*, the presentation zone accounts for only 2.11% of the total area of the nominated property, only a small part of which overlaps with *Rhinopithecus brelichi* range and potential range (Figure 7.1). The administration is planning for gradual growth of tourism numbers but will monitor their impacts very closely. When tourist numbers start to damage the OUV, it is time to stop growth and reduce to sustainable levels.

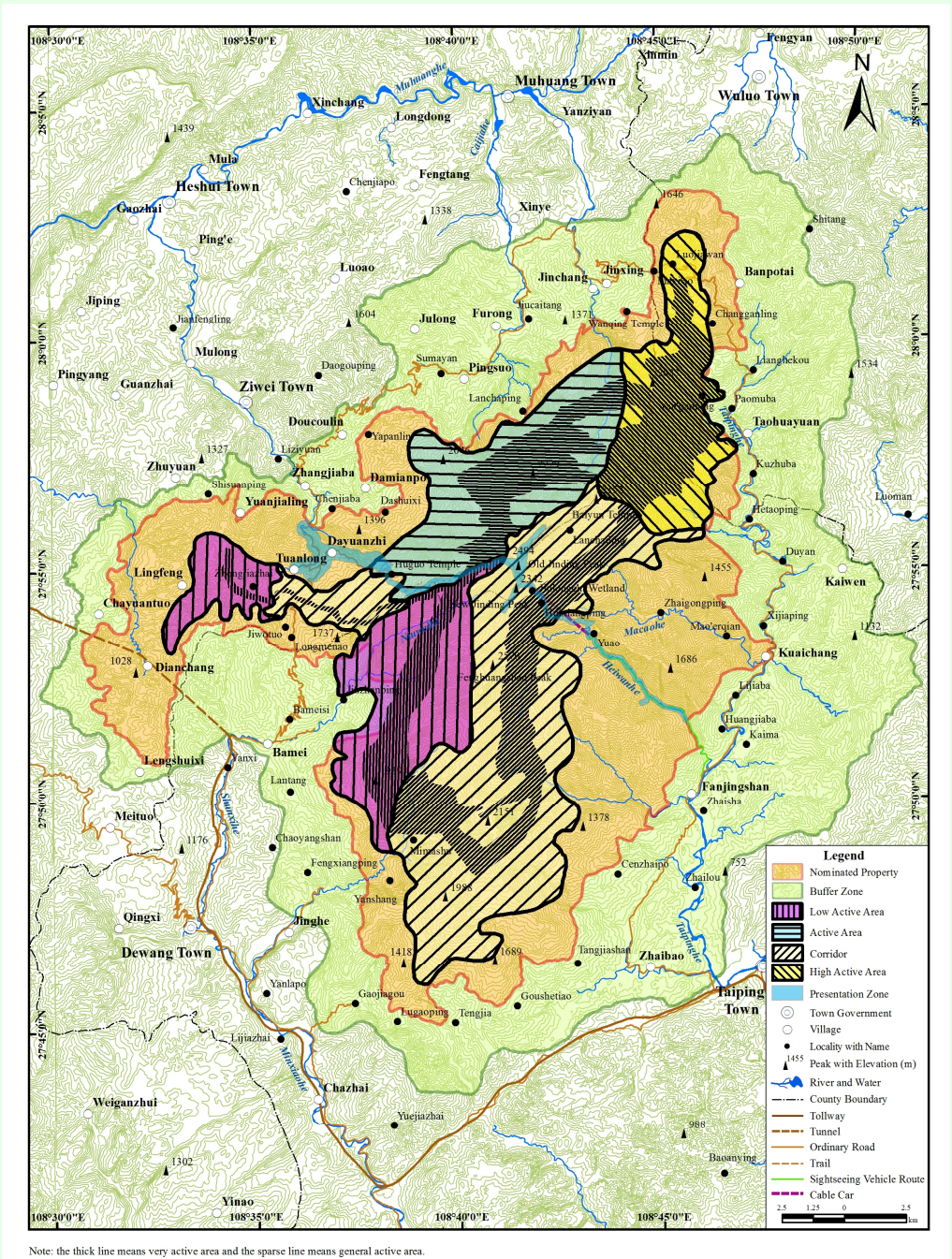


Figure 7.1 Relationship between presentation zone and *Rhinopithecus brelichi* active area





7.2.2 Tourist Quantity Control

Site managers need to be very cautious in allowing tourist numbers to become a threat. Increases should be gradual in line with close monitoring of impacts on the wildlife and vegetation and especially the shy Guizhou Snub-nosed monkeys (numbers, reproductive success, ranging patterns, diet changes, general behavior, health). Implementation period: 2016~2020.

Study the spatial behavior of tourists to better understand the changes of time and space of visitor number in the nominated property and its buffer zone to make a more accurate pre-arranged plan for the management of tourists according to different seasons and spaces. Scenic areas of the nominated property have designed new tourism projects and travel routes outside the nominated property are designed to alleviate local overload and reduce the impact of tourist activities on the nominated property. Implementation period: 2016~2020.

Impacts from growing tourism numbers can be reduced if tourists are directed spatially to areas not used by Guizhou Snub-nosed monkeys in the buffer zone and very restricted display zones of the nomination area. Tourists are educated to remain quiet and not leave designated walkways or footpaths. Vehicles reduce speed and noise. Domestic animals are prohibited from nomination area. Implementation period: 2016~2020.

Monkeys first. Wild troops of Guizhou Snub-nosed monkeys should be regularly monitored. In the event of a group seemingly wanting to migrate beneath the cable car, the operation of the car should be closed until the monkey group has successfully passed underneath or retreat back away from the cable car sector. Implementation period: 2016~2020.

Safe tourism capacity should be carefully monitored and may vary at different times of the year. It is a good idea to give more information about the nominated property to visitors by networks, newspapers, phone apps or other ways to guide the spatial choices and behavior of visitors. Plan the tourist routes scientifically and systematically to coordinate tourism numbers within the safe capacity of different tourist routes. According to the monitoring and evaluation of tourism number, limit the number of visitors and visiting time to avoid overloading. Implementation period: 2016~2020.

Changing the price of tourism in different seasons can both encourage some visitors to come in off season periods and also allow numbers to be reduced without loss of total earnings at busy seasons. Implementation period: 2016~2020.

7.2.3 Management of Tourist Security

The site includes steep climbs, moderate altitude, slippery conditions in rain or ice, exposure to severe weather, lightning, loose rock surfaces etc. There are risks to visitors of falls or health concerns. To ensure the tourist security and prevent accidents, the nominated property has to establish and improve its rescue system, security monitoring,

regularly check safety of steps, walkways and platforms, intensify security administration with the increase of security check points. In addition, to ensure the personal and property safety of tourists, it is necessary to establish a Safety Supervision Brigade in charge the personal and property safety of tourists. Implementation period: 2016~2020.

Through compiling and issuing a security manual, bulletin boards, signage and other ways, publicize and educate safety knowledge to visitors to avoid the safety problems caused by lack of safety awareness. The safety education in the nominated property is mainly given through notice boards with various safety signs set up beside steep slopes, areas where *Rhinopithecus brelichi* often appears, trees on the road, important fire protection places and other important places. Implementation period: 2016~2020.

Segregate dangerous areas with guardrails to avoid possible dangers and improve safety facilities on the tourism route in the nominated property. Implementation period: 2016~2020.

Publicize the assistance phone number for emergencies in conspicuous places in the nominated property. Geographical markers should be regularly placed so any visitor in trouble can relay exact location accurately and facilitate speedy rescue. Implementation period: 2016~2020.

7.2.4 Management of Tour Environment

Buildings affecting the environment and the integrity of the landscape have been demolished or renovated, and a series of ecological restoration projects have been implemented. The tourism development mode and its infrastructure construction have been rationally planned and arranged to avoid threats to Outstanding Universal Value of the property. Implementation period: 2016~2020.

Make regulations for the tourist facilities construction in the nominated property, propose clear requirements for buildings volume, shape, color, texture, harmony with the surrounding environment and other aspects, and issue the regulations to enterprise and nearby residents simultaneously. Implementation period: 2016~2020.

Monitor the number of tourists and the environmental impact of the tourism, and adjust the protection management measures according to the results of monitoring, limit the scale of tourism activities, avoid interference to the ecological system and disturbance of animals or animal nests. Implementation period: 2016~2020.

Arrange the dustbins along tour routes, ensuring a full coverage of garbage collection device in the nominated property. The exterior decoration of the garbage cans should be harmonized with the surrounding environment. The number of dustbins and refuse transfer vehicles should be increased and workers should be employed to clean up the waste in the periods when tourist number increases or the area where tourists gather, to ensure the quality of the environmental health in the nominated property and visitor appreciation. Implementation period: 2016~2020.





Dispose of toilet wastes, clean up and transport the non-biodegradable waste to the waste transfer station in good time. Build new tourism eco-toilets, and gradually replace the original old toilets, reduce the pollution of toilet waste in the nominated property. Implementation period: 2016~2020.

7.3 Management of Tour Facilities

The tourism service facilities of the nominated property and the buffer zone are divided into five levels, tourism cities, followed by the tourism towns, the tourism villages, the tourism spots, the tourism service departments.

Tourism service facilities include eight categories, such as travel, sightseeing, catering, accommodation, shopping, entertainment and health care. The specific quantity and gradation of the tourism service facilities shall be determined according to the different conditions, but shall meet the requirements in Table 7.1.

Table 7.1 Hierarchical configuration of tourism facilities

Category	Planning Functions	Tourism Spots	Tourism Villages	Tourism Towns	Tourism Cities	Projects of Service Facilities
Transportation facilities	Non-motorized traffic	▲	▲	▲	▲	Trails, walkways, packways, cycle tracks, parking services, repairs
	Communication	△	▲	▲	▲	Telephone booths, post offices
	Motor vehicle and powerboat	△	△	▲	▲	Stations, parking services, wharfs, petrol stations, track sections
	Railway station	×	×	×	△	External traffic
	Airport	×	×	×	×	External traffic
Sightseeing facilities	Sign system	▲	▲	▲	▲	Marks, signs, bulletin boards, pictures
	Rest and shelter	▲	▲	▲	▲	Seats and tables, pavilions, shelters, collector-distributor points
	Environmental health	▲	▲	▲	▲	Dustbins, public toilets, rubbish stations
	Promotion and consultation	△	▲	▲	▲	Promotion facilities, models, movies and tourist centre
	Public security facilities	△	△	▲	▲	Police stations, Public Security Bureau (PSB), fire stations and policemen
Catering facilities	Snack bar	▲	▲	▲	▲	Cold and hot beverage, gifts, breads, pastries and candies
	Eatery	▲	▲	▲	▲	Including fast food and snacks

	General restaurant	△	△	▲	▲	Restaurants, eating house, canteen
	Intermediate restaurant	×	△	△	▲	Restaurants with parking spaces
	High-class restaurant	×	△	△	▲	Restaurants with parking spaces
Accommodation facilities	Simple hostel	▲	▲	▲	▲	Including camping and public toilets
	General hotel	△	▲	▲	▲	Inn, family hotel
	Intermediate hotel	×	△	▲	▲	Guesthouse, hotels not reaching three-star
	High-grade hotel	×	×	△	▲	Three-star hotels
	Luxurious hotel	×	×	×	△	Four-star and higher level hotels
Shopping facilities	Retail department, kiosk	▲	▲	▲	▲	
	Concession Stand, pedlars' market	△	△	▲	▲	
	Store	×	△	▲	▲	Various stores, supermarkets
	Bank, finance	×	△	▲	▲	Savings banks, banks
	Large-scale integrated store	×	×	△	▲	
Recreational facilities	Museum and exhibition	△	△	▲	▲	Culture, books, museum, science and technology exhibition Hall, etc.
	Artistic performance	△	△	▲	▲	Movie theatres, odeums, acrobatic grounds, performance venues
	Entertainment	×	△	△	▲	Kursaal, ballroom, club, activity centre
	Physical activities	×	×	△	▲	Fitness and competition centre of various physical exercise indoor and outdoor
	Other entertainment activities	×	×	×	△	Other bases for entertainment activities and group training
Health care facilities	Clinic	△	▲	▲	▲	Health stations, with no beds
	Hospital	×	△	▲	▲	With equipment and beds
	Casualty station	×	△	△	▲	With emergency equipment
	Recuperation and vacation	×	×	△	▲	With beds
Others	Aesthetic appreciation	▲	▲	▲	▲	Attractions, appreciation, landscape sketch facilities

Note: × means prohibitive facilities; △ means allowable facilities; ▲ means recommended facilities.







8

Community Participation and Development



8 Community Participation and Development

8.1 Community Status

The nominated property of Fanjingshan, with an area of 40,275 hectares, covers the three counties of Jiangkou, Yinjiang and Songtao. The population distributes in five villages, including Tuanlong, Dayuanzhi, Dianchang, Lingfeng and Kuaichang in the four towns of Ziwei, Chanxi, Luochang and Taiping Town, with a total population of 2,637 in 718 households and the population density of 7 persons/km² (Table 8.1). Among them, the villages of Tuanlong, Dayuanzhi, Dianchang, Lingfeng are located in western part of the nominated property, and the population distribution is relatively concentrated. With the development of urbanization, some residents have autonomously moved out of the nominated property in pursuit of convenient infrastructure and development opportunities. To better protect and manage the nominated property, some residents choose voluntary and compensated migration and relocation under the guidance of government. At present, the number of residents there is in decreasing trend. In order to protect the living standard of villagers after relocation, the relocation of residents can get some grants from government, and the administration of the nomination property has organized research panel to survey the livelihood of relocated residents. Detailed relocation plan and aid policy have been developed.

Table 8.1 Population distribution (2016)

	Area (ha)	Villages	Households	Population (person)	Population Density (person/km ²)
The nominated property	40,275	5	718	2,637	7
The buffer zone of the nominated property	37,239	18	4,974	19,268	51
Total	77,514	22	5,692	21,905	Average population density 28

Note: The Kuaichang Village spans across the nominated property and the buffer zone.

The buffer zone of the nominated property covers the three counties including Jiangkou, Yinjiang and Songtao with an area of 37,239 hectares. The population distributes in sixteen villages including Kuaichang, Kaiwen, Fanjingshan, Zhaibao, Bamei, Doucoulin, Damianpo, Yuanjialin, Zhangjiaba, Furong, Pinsuo, Jinchang, Jinxing, Julong, Lengshuixi, Chayuan, Taohuayuan and Banpotai in the seven towns including Taiping Town, Dewang Country, Ziwei Town, Muhuang Town, Chanxi Town, Luochang Country and Wuluo Town, with a total population of 19,268 in 4,974 households. The population density is 51 persons/km² and most of them concentrate in Taiping Town in the south-east, Wuluo

Town in the north-east, Muhuang Town in the north, and Dewang Country in the south-west.

There are minorities of Tujia, Miao, Dong, Hui, Zhuang, Yi, Gelao etc. in the nominated property and the buffer zone with strong minority customs.

8.1.1 Current situation of community participation

Through the implementation of natural forest protective project, the community co-management committee and the community nature forest protective network organization have been established in the nominated property; hence the facilities and equipment have been improved.



Photo 8.1 The management plan of community resource, Fanjingshan villagers reading guidebook and community meeting of coordinated development and village co-management committee

The nominated property of Fanjingshan relies on its GEF project to vigorously carry out community co-management activities. Alternative community economic industries have been developed; the energy resources have been protected; resource pressure has been reduced and the combination of resource protection and community development is





realized. The publishing of several guidebooks, including “*The Management Plan of Nature Reserve*”, “*The Management Plan of Community Resource*” and “*Fanjingshan Villagers Reading Guidebook*”, have improved the management capability of the nominated property’s communities.

Communities have participated in forest fire prevention work, and have set up the first rural compulsory fire brigade of Fanjingshan. In addition, the villages have also organized 7-people forest duty patrol unit and selected rangers from villagers. Community residents have participated in the promotion, supervision and management on the forest fire prevention, illegal picking of edible and medicinal plants and illegal logging.

However, the participation in environment protection and management of residents in the nominated property and the buffer zone of the nominated property has not been fully mobilized and full participation is not yet achieved. The community co-management mechanism should be further improved to promote the sustainable development between the nominated property and communities.

8.1.2 Community development situation

In order to further understand the current situation of the community development in Fanjingshan, the research group visited the surrounding villages repeatedly during the planning process, and conducted a social economic sampling survey of the indigenous people in the nominated property and buffer zone, 200 effective samples were received eventually. The result of sample analysis shows that the economy development level in Fanjingshan is low, even the economic income of the villages in the nominated property and buffer zone has an obvious territorial differentiation. The living condition of the villages in the nominated property is the worst, followed by the marginal World Heritage buffer zone, while the best one is the tourist area. And the main economic sources of indigenous people are employment work, ecological tourism, forestry management, traditional planting and breeding, transferability income and loan income (Figure 8.1). Among them, employment work income is the predominant source of family cash income. The protection of the nominated property has greatly restricted the natural resource use of the community residents, while the tourism develops actively in the villages of the southeast World Heritage buffer zone. Among them, Fanjingshan Village is the representative. The figures show that the economic income of residents in the nominated property (about 4,068 Yuan/year) is significantly lower than the World Heritage buffer zone (about 6,041 Yuan/year). However, the average residential income also shows a great gap even in the buffer zone. At present, the village of Fanjingshan has the highest

income, around 9,800 Yuan/year, followed by the villages of Lengshuixi, Zhaibao, Taohuayuan, Lingfeng, Dianchang, etc., and the villages of Yuanjialing, Damianpo, Dayuanzhi and Doucoulin in the lower tier, around 2,580 Yuan/year.



Photo 8.2 Interview of village cadres in community of the nominated property and buffer zone



Photo 8.3 Questionnaire survey of farmers in community of the nominated property and buffer zone

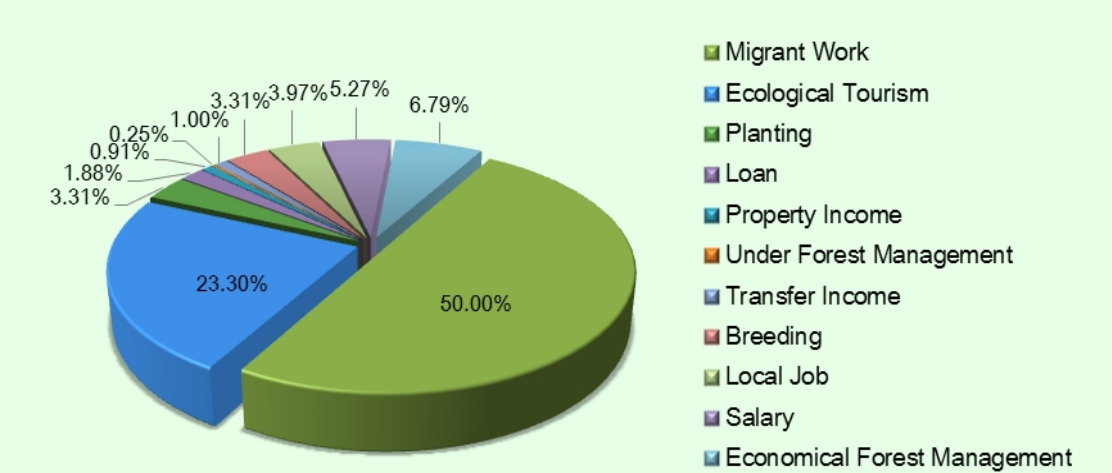


Figure 8.1 Income structure of the community in nominated property and buffer zone





Communities around Fanjingshan have rich forest resource, and its forest area per capita reaches 0.27hm². But the forestry income is low, mainly from Mao bamboo (*Phyllostachys pubescens*) industry, tea industry and public welfare forest compensation. The *Phyllostachys pubescens* resource is unevenly distributed in the World Heritage buffer zone, and concentrated in the northeast. The forest by-products income is bee honey, mushroom etc., which counts for a much smaller proportion of household income.

Within the scope of the nominated property, the *per capita* arable land area is nearly 0.07 hm². Traditional planting is still one of the main modes of operation for the indigenous people. Crop species is single there, mainly includes rice, corn, sweet potatoes, tobacco, etc., Meanwhile, the yield is low and unstable. Worse still, the villages located in the surrounding area of the Nature Reserve, their production activities are seriously damaged by wild boar. Breeding is one of the main production activities for the forest-edged community residents. What's more, the animal husbandry has developed rapidly in recent years, but its development differs greatly in various regions. At present, most of the farmers take family farming as the main business, and they basically stay in the state of self-sufficiency. Only a few farmers carry out the large-scale aquaculture industry. The breeding poultry and livestock of the farmers mainly include pig, cattle, chicken and duck. Mostly adoptive way of breeding is captive breeding, using villager-planted corn, sweet potatoes, potatoes and other vegetables.

The 22 villages in the nominated property and the buffer zone has a total of 160 km of water supply and drainage work, more than 150 waste collection pools and 14 water treatment stations. 7 villages have built community energy supply system; 4 villages have built pilot community education centre. Except Fanjingshan (Heiwanhe Branch of Taiping hospital, Jiangkou Red Cross Hospital Branch) and Furong and other individual administrative villages have the health centre and clinic. There are fewer community medical facilities, and it is still difficult to seek medical and ask the medicine for the residents. So the existing infrastructure and the medical service cannot meet the demand of the community residents' production and living.

8.2 Basic Goals of Community Participation and Development

Develop ethnic tourism and eco-tourism on the basis of environmental protection; insist on the sustainable development of the nominated property in order to build a better community.

Explore new avenues for scientific and sustainable use of natural resources; promote, develop and industrialize local agricultural products and local artisan brands.

Set up a dialogue mechanism between the local communities and the management institutions of the nominated property to better collaborate on protection of the nominated property, make the community residents to become the “protectors” of the nominated property. Decrease resource dependence and increase property-community collaboration through improved co-management mechanism.

8.3 Construction and Management of Community Development

8.3.1 Residential Zones Administration

Government of all levels should do a good related work of the family planning and prepotency. Decrease the number of residential areas in the nominated property by reducing permanent population. Implementation period: 2016~2030.

Strictly control the expansion, modification of residential zones; in the five villages of Tuanlong, Dayuanzhi, Lingfeng, Dianchang and Kuaichang within the nominated property, land approval for constructions must be strict and new lands for rural housing shall not be approved. Provide tourism-related jobs to the local residents. At the same time, incentivize relocation and promote working outside of the nominated property. Implementation period: 2016~2030.

Restrict the development of residential areas in the buffer zone of the nominated property. Control the extension scale; and the construction activity cannot threaten the ecological process, biological diversity and aesthetic values of the nominated property. Adjust agricultural structure, encourage efficient and precise farming development to promote the highly efficient land usage. Proactively increase employment channels and opportunities; increase residential income; guide out-migration of residents. Implementation period: 2016~2030.

Confirm the type of residential area as developing zones in the peripheral region. Appropriately increase the construction land for tourism infrastructure, and create a tourism activities distributing centre where restaurants, shopping centers, accommodation areas, folklore art and amorous feeling shows with the local characteristics gather. At the same time, encourage residents to participate in tourism activities, such as tourism development, tourism commodity production, sales and reception, etc., and provide more employment opportunities for residents in the nominated property and the buffer zone. Implementation period: 2016~2030.





8.3.2 Green industries Support

To some extent, the protection attributes of the nominated property and the buffer zone changed the traditional production mode of local residents, decreased income resource of residents and limited the development of indigenous people based on local natural resources. However, it is relying on good ecological environment to promote the villages to engage in tourism services, improving the industrial chain and making a strong tourism commodity processing industry with a development strategy that develops an excellent tourism industry, making the sightseeing farming beautiful, and makes the cultural industry more vital and the formation of diversified industrial models of tertiary industry as the leading industry. Meanwhile, the planning of eco-farming with the mode of efficient infrastructure, local health food specialty and tourism sightseeing is underway in order to improve the economic level of residents. It should be able to absorb the employment needs of local residents in the nominated property and the buffer zone. Besides, the location, quantity, size and the nature of the industrial development should be controlled. Industrial activities that threaten the heritage values should be forbidden. Implementation period: 2016~2030.

Tea Cultivation: Based on the unique geographical advantages and full use of the preferential policies for the development of tea industry in Guizhou Province to further promote the production, supply, marketing integration development of Fanjingshan tribute tea. It should focus on developing the planting bases of Tuanlong tribute tea and Bamei. Implementation period: 2016~2030.

Economic Fruit Plantation: Enhance the added value of agro forestry industry. It should add the planting of economic fruit which adapt to the climate and soil conditions in the World Heritage buffer zone, forming the planting belts of Zhaibao, Taohuayuan, Jinchanghe River and Furonghe River. Implementation period: 2016~2020.

Chinese Herb Medicine Cultivation: Profit from the opportunity of the health care industry development in Guizhou Province and combine with the Chinese medicine culture of ethnical minorities to develop the Chinese herbal medicine, including formation of four major planting areas of Kaiwen-Kuaichang, Taohuayuan-Zhaiying, Tiechang-Houhe, Shiqian-Yuanjialin. Implementation period: 2016~2020.

Edible Fungi Cultivation: Develop a highly efficient plantation zone with healthy edible fungus cultivation and key construction of the modern efficient agricultural garden in the Mu Huang Town. Implementation period: 2016~2030.

Agricultural Byproducts Processing: At present, only a small scaled agricultural byproducts in the buffer zone now. It is planning to develop the initial processing industry of agricultural byproducts in Muhuang Town. Implementation period: 2016~2030.

Artifacts and souvenirs production: Rely on the construction of Tujia minority Culture Street in the town of Ziwei to develop the artifacts production, including Tujia costumes and batik. In the same way, it relies on the town of Wuluo to develop the artifacts production of Miao minority, including Miao costumes, silver jewellery and batik cloth. Implementation period: 2016~2030.

Tourism Services Homestead based mountain leisure vacation industry as the core driving force to bring along the development of tourism service industry, including mountain sports, Buddha pilgrimage, health care industry, entertainment, business exhibition, ecological food and educational activities; and a system of remarkable tourism service industry should be constructed. Implementation period: 2016~2020.

8.3.3 Infrastructure Construction

The nominated property and the buffer zone are far from towns, and the community infrastructure construction is mainly aimed at the rural areas.

Minimize agricultural activities in the nominated property. For the World Heritage buffer zone, reasonably plan the agricultural development bases, construct the supporting irrigation and drainage works, set up agricultural information dissemination platform, regularly publish information on agricultural structure adjustments and market information, do a good job of agricultural product market monitoring and early warning and provide timely and effective information services for residents. Implementation period: 2016~2020.

According to the situation of the village population, lay out the water pipe lines; strengthen the safety monitoring system of water quality; ensure the safety of drinking water. Encourage the communities to build biogas digesters and use clean energy resources, including biogas and electric energy; reduce the use of carbon. Through reasonable planning, reduce the threats of the country roads in the World Heritage buffer zone to the environment of the nominated property. Implementation period: 2016~2020.

Strengthen the further construction of community health facilities and improve the network of medical community to protect the health of residents. Implementation period: 2016~2020.





8.3.4 Guidance on Community Architectural Style

The style of housing construction should be coordinated with the surrounding landscape and environment, including residential renovation and the construction of Yunshe, Zhaisha and Kaiwen within the nominated property and the buffer zone. Strengthen the control on the building architectural style, housing façade requirements and building height requirements; promote the use of local materials to maintain the style of traditional dwellings. Maintain all the original buildings and its surrounding environment; strictly protect the cultural relics; maintain the ancient, natural and traditional residential characteristics. Depending on the characteristics of the community, promote sanitation habits to regulate the behaviour of villagers and guide the residents to jointly maintain cleanness and tidiness of the villages. Implementation period: 2016~2020.

Improve the transparency of village public affairs, focus on community affairs, financial revenue and expenditure and on affairs that the residents are concerned, about and make the community work fully transparent; promote standardization and diversification to protect the interests of the local people. Furthermore, promote the community spiritual culture based on recreational activities. In particular, organize the traditional minority festivals and activities, preserve the original minority traditional culture and customs and construct minority culture villages. Implementation period: 2016~2030.

8.4 Community Participation

8.4.1 Participation in the Inscription of Fanjingshan

The inscription of the World Heritage Site of Fanjingshan relates to the interests of community residents. Therefore, in the whole process of inscription, the community residents should be encouraged to participate in the community situation research and the township forum and so on. At the same time, improve the heritage values recognition and environmental awareness of the residents. Consult different parties before the actual planning in order to set up an administration basis for the participation of the local communities. Implementation period: 2016~2020.

8.4.2 Perfecting Co-management Mechanism

The management departments of the nominated property and the community co-management committee (or village committee) shall sign the Resource Co-management Agreement; then the community co-management committee (or village committee) shall sign the Co-management Agreement with community residents by guiding and assisting the local community to form these agreements and demanding the

inclusion of relevant articles to be included in the agreements. Furthermore, Site managers can help villagers to brand and get better prices for their sustainable and pollution free products. Strengthen the cooperation among the residents of surrounding communities, share and promote the experience of the community co-management. Furthermore, perfect the community co-management negotiation mechanism, hold yearly meetings and strengthen contact with the relevant departments to get the policy and financial support. Implementation period: 2016~2030.

8.4.3 Participation in the Management

Encourage the residents to organize patrols by themselves for the protection and management of the nominated property and the buffer zone. In addition, recruit volunteers to become rangers to supervise the conditions of the damaged property and environment and monitor the distribution and activities of rare and endangered animals, including *Rhinopithecus brelichi*. Meanwhile, ensure personnel expenses and carry out regular training as well as improve the technical level of protection and management to the nominated property. Besides, encourage self-governance and active participation in publicity, supervision and reporting. It should provide more suitable jobs for residents, and employ local residents in priority and allow residents to benefit from the tourism industry. Implementation period: 2016~2020.

8.4.4 Cultural Participation

There is a strong atmosphere of minority culture, and it is very important for the protection of the natural ecological environment of the nominated property. Make full use of the positive effect of folklore culture in protecting the heritage value, such as the totem worship, Fengshui woods cultivation, tree and stones worship etc., which came from the minorities of Tujia, Miao, Dong and Gelao. The Buddhist culture is heavily present in the nominated property and the main ideas of Buddhist eco-ethics play an important role in the environmental protection. These ideas include oneness, symbiosis, universal equality and universal love. Buddhist eco-ethics should be fully tapped and be used in the protection and management of the nominated property. It is important to ensure that presentation of culture is done in an authentic way and does not create new cultural spectacles solely to amuse visitors. Implementation period: 2016~2030.







9 | Presentations, Publicity and Education





9 Presentations, Publicity and Education

Presentation, publicity and education are helpful for heritage managers, local and regional governments, local communities, non-governmental organizations and other relevant organizations to commonly focus on the protection of the nominated property, thereby expanding the influence scope of the nominated property's heritage values.

9.1 Presentation

With rich Buddhist culture and ethnic culture, tourism of the nominated property was early developed. In order to meet the early development of tourism industry, a visitor centre and a specimen museum were built. There are 1,454 information signs about the rare and endangered and endemic flora and fauna geologic physiognomy etc. in the nominated property and its buffer zone, especially on both sides of the forest plank path and tourist trails at mountaintop. These information signs fully displayed the beautiful landscape and rich biological and ecological diversity of the nominated property. But the presentation of the nominated property's Outstanding Universal Value needs to be strengthened with only a little corresponding scientific explanation, new specialized presentation centre, and low coverage of marked signs that need to be updated and increased the contents about the World Heritage inscription of Fanjingshan.



Photo 9.1 Visitor centre and animal specimen's presentation





Photo 9.2 Information signs

9.1.1 Visitor Centre

Construct a presentation centre that is highly integrated with landscape. Strengthen the presentation of the nominated property's Outstanding Universal Value by increasing the relevant content about protection and management of the nominated property and equipping with professional commentaries and interpreters. In order to present the effectiveness of popularization of science, it is suggested to attract tourists' attention through 3D effects, dioramas, interactive games etc. Implementation period: 2016-2020.

9.1.2 Special Presentation Sites

Set up special presentation sites about the nominated property and its landscape and cultural values in visitor centre; present products with local characteristics, souvenirs and popular science books by using stands and shelves. Presentation walls with photo background or posters can present the nominated property's biology and ecology, overall landscape, Buddhism and folklore culture in bigger scale. At the same time, making videos about the nominated property's Outstanding Universal Value can present the nominated property's heritage value directly. Implementation period: 2016~2020.

9.1.3 Interpretation Signage System

The nominated property's interpretation signage system has been established, which can meet the requirements for the heritage protection and management, travel and tourism





and other activities. But it still needs to be further improved, and implementing the multi-language presentation is needed to provide better services for foreign tourists. The contents of signage of the nominated property and the buffer zone are as follows:

Image signage: The World Natural Heritage Nominated property, Member of *Man and Biosphere* Network, *Guizhou Fanjingshan National Nature Reserve*. Implementation period: 2016~2020.

Regional signage system: Introduction and scientific explanation of the nominated property's Outstanding Universal Value (including ecological processes, biodiversity, aesthetic landscape), introduction of National Nature Reserve, distribution map and interpretation of main attractions. Implementation period: 2016~2020.

Management signage system: Including the laws, regulations, rules, methods, notice about protection and management of the nominated property. Implementation period: 2016~2020.

Boundary signage system: Clear boundary of the nominated property and the buffer zone. Implementation period: 2016~2020.

Business signage system: Enterprise brand signage, staff dress signage, patrol signage, enterprise signage and business outlet signage. Implementation period: 2016~2020.

Guides and security signage: Tourism section signage (entrance), tourism lines signage (type, time), sanitation signage, road traffic signage, tourist service signage, tourist security signage. Implementation period: 2016~2020.

Service quality signage: Guide, dining, accommodation, products quality and other signage. Implementation period: 2016~2020.

9.1.4 Other Presentation Forms

The nominated property's heritage value can also be presented to the public vividly by holding creative photography exhibitions, painting exhibitions, specimen exhibitions of flora and fauna etc. Implementation period: 2016-2020.

9.2 Publicity

Office of the Leading Group for Fanjingshan World Natural Heritage Nomination of Tongren City (hereinafter referred to as "the Office") has edited bulletins, which are about the field surveys and seminars about the nominated property with expert teams and related person, and kept them on file. And the inscription of Fanjingshan and related

activities has been reported through media and WeChat platform (Table 9.1). The Office associate with Jiangkou Federation of Literary and Art Circles edited and published the popularization reader of *Take You to Understand the Fanjingshan Inscription*, which was distributed to farmers and farmhouse tourism in the nominated property and its buffer zone. Each forest ranger, patrol member preach into the community from house to house, delivered various publicity materials to tourism companies, restaurants and other institutions, and guided their environmental management, and at the same time, put up slogan and made publicity signs in school and tourist centres. The nominated property has carried out theme campaign of protection of *Rhinopithecus brelichi*, published the *Scientific Survey Set of Fanjingshan*, *Fanjingshan Research* and other academic books, as well as brochure like *Picture Album on Rare Animals and Plants of Fanjingshan*. At present, the global visibility of the nominated property has greatly improved through the deep reports of television, radio, internet and other media about ecological processes, biodiversity, aesthetical landscape and other heritage value.

Table 9.1 Statistics on media publicity

Time	Media Name	Column	Film Content	Broadcast
May 17, 2009	CCTV-3, CCTV net	Happy China	Charm Fanjingshan	Aired
April 28, 2010	Heilongjiang TV, major video websites	Benshan Happy Camp	Zhaosi guide Fanjingshan	Aired
August 13-15, 2010	CCTV-4	Discover China	Fanjingshan album	Aired
October 12-15, 2010	CCTV-10	Explorations	Fanjingshan topics	Aired
April 8, 2011	CCTV-9, major video websites	Human Geography	Looking <i>Rhinopithecus brelichi</i>	Aired
October 21, 2012	Tudou, Ku 6	Life	Three special cable-way cup of trek across Guizhou Fanjingshan station	Aired
May 24, 2013	CCTV-9, major video websites	Geo-China	"Indeed god beast" Mystery	Aired
February 5-8, 2014	CCTV-9, major video websites	Documentaries	Mountain spirit	Aired
April 21, 2014	Hubei Economic TV	Jing Shi Live	Fanjingshan: Cloud mountain and fog cover of pure time	Aired
October 2, 2014	CCTV-13	Beauties in our Country	Tongren Fanjingshan: odd mountain rocks, rising wind and scudding clouds	Aired
October 3, 2014	CCTV-13	Live News Room	Through scenic spots: close to the beauty, do not forget civilization	Aired
December 27, 2014	IQIYI web	Documentaries	Feral Asia of China: Fanjingshan	Aired



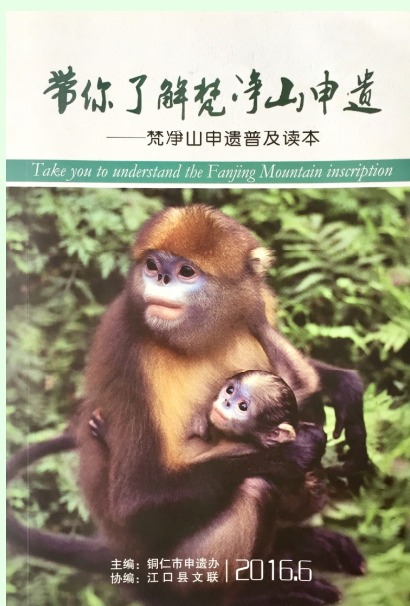


Photo 9.3 Publicity of the booklets *Take You to Understand the Fanjingshan Inscription*, *Picture Album on Rare Animals and Plants of Fanjingshan* and the popular science exhibition about the values of Fanjingshan

The publicity means of new media have preliminary attempted to use in the nominated property, for instance, creating the Fanjingshan Scenic Spot WeChat Official Accounts. But the traditional publicity means are still mainstreams so far. The publicity means are limited and need to be innovated, and the contents also need to be enriched, especially in the publicity about the inscription of World Natural Heritage. The publicity channels need to be improved, the promotion mechanism need to be ameliorated.

9.2.1 Formation of a High-quality Publicity Team

Form a publicity team and organize staffs that have good skills to take charge of publicity work of the nominated property's heritage value and its environmental protection duty; carry out publicity training; professionalize and standardize the publicity mechanism. Meanwhile, improve the guides' service level and professionalism. In particular, strengthen the guides' foreign language skills training to meet the needs of foreign tourists and update the tourism guide words about the nominated property and buffer zone in which the contents of threats to the nominated property and the corresponding protection

and management measures should be included. In addition, it is also important to recruit volunteers and community spokespersons to participate in the nominated property's publicity and protection work, and provide regular short-term training for them. Implementation period: 2016~2020.

9.2.2 Application of Innovative Publicity Platforms

Make full use of the advantages of rich forms, good interactivity and high coverage of diversified new media and new techniques like the micro-blog, WeChat, micro-film, mobile newspapers, APP, etc. to frame the effective communication and contact platform, forming a comprehensive, multi-platform, three-dimensional publicity pattern, expanding audience segments, popularizing heritage values and related protection and management knowledge and achieving universal participation in the protection of the nominated property. Implementation period: 2016~2030.

9.2.3 Use of the Traditional Media Platform

Invite professional teams to shoot high-quality videos, use radio, television, newspapers, websites and other mass media platforms for publicity. The related content of World Heritage inscription of Fanjingshan should be increased in Fanjingshan tourism website and tour areas (such as scenic spot entrance, the up stop of cable car, the down stop of cable car, mountaintop), which aims to introduce the Outstanding Universal Value of biological ecology and aesthetics landscape. Besides, it also needs to establish a special website for the nominated property. Use outdoor wall ads, car ads, bus shelters ads, street big screen ads and community galleries for promotion; combine natural and cultural characteristics; design tourism albums, manuals, brochures, postcards, calendars, souvenirs and other artisan publicity goods. In addition, publicity work such as forest fire prevention, animal and plant protection, environmental protection, civilization tour publicity should be prepared in the nominated property and the buffer zone. Implementation period: 2016~2020.

9.2.4 Organization of International and Domestic Conferences

Different levels of international and domestic forums, reports and workshops would be held to attract more domestic and foreign experts, scholars, researchers to involve in the study of the nominated property's values. At the same time, establish friendly relations with domestic and foreign protection organizations and other World Natural Heritage Nominated Sites and publish the books research papers and other publicity materials related to the nominated property. Implementation period: 2016~2030.





9.2.5 Integrated Publicity of Buddhism and Folk Culture

The nominated property's Buddhism and ethnic festivals are the most direct carriers to publicize its image by distributing publicity materials on festivals. Set the publicity activities themed on World Heritage and bring into play the positive effect of Buddhism, ecological protection concept in traditional culture on the protection of the nominated property. Implementation period: 2016~2030.

9.3 Education

The nominated property's unique geologic physiognomy, complicated geographical environment, typical forest ecosystem and rich special resources provide an excellent material for scientific experiments and teaching practice, which has a high academic value and is a good teaching base for biology, ecology, genetics, meteorology, geology and agriculture, forestry, science and other sciences.

The nominated property has been classified as “the National Wildlife Refuge Science Education Base” and established “the Provincial Science Education Base of Fanjingshan National Nature Reserve”.

The nominated property focuses on the education training of cadres and workers of the Authority. All of the workers enhance a sense of responsibility and urgency, and strengthen the awareness of protecting flora and fauna and maintaining ecosystem stability by learning the *Forest Law of People's Republic of China*, *Law of the People's Republic of China on the Protection of Wildlife*, *Regulations on Nature Reserves of the People's Republic of China*, *Regulations of Forest Fire Prevention* and professional laws as well as related policies. More than 20 people from abroad have been selected to participate in the Nature Reserve Management, Environmental Monitoring, Wildlife Management and other learning and training trips following the method of “coming and giving lessons, going out and training and holding meeting instead of training” and so on, which can strengthen the education management of managers and workers.

Community Education Programs and other books have been compiled and published. Develop volunteer activities and use specimen museum, rare botanical gardens and other channels to carry out diversified, content-rich educational activities.

Currently, education infrastructure and equipment of Fanjingshan are not adequate. Summer camps, public education and other forms of educational activities are underdeveloped. Systematic and targeted education materials are in shortage, and as a result, the public still lack the comprehensive and real understanding of the value of

biological evolution process and the importance of the global biodiversity. It is not conducive to protect and manage the natural heritage values of the nominated property. Hence, practical training and education programs aiming at different educational objects such as managers, tour operators, tourists, residents, students etc., should be established.

9.3.1 Administrative staff

The education and training of managers and workers, which mainly aims at cognition, protection and management of the nominated property's values, field patrolling, community co-management etc., should be strengthened. Invite IUCN and domestic heritage experts to give guidance for protection and management of the nominated property. Implementation period: 2016~2020.

Management and law enforcement personnel training will send people to participate in corresponding work and professional training courses regularly or irregularly, and organize the forestry administration, forest protection, wildlife protection, management of the nominated property, etc. Implementation period: 2016~2020.

Patrol personnel training can make them master the basic knowledge of nature conservation and they can teach nature conservation knowledge to the villagers through wildlife conservation, policies and regulations training. Patrol personnel can improve villagers' awareness of nature protection. Implementation period: 2016~2020.

9.3.2 Tourism Managers

Establish franchise system; require tourism manager to accept the education training of basic knowledge about the heritage. Their awareness of heritage value and conservation should be strengthened. Their heritage knowledge examination should be rigorous. Implementation period: 2016~2030.

Establish the rigid discipline and exit mechanism; require that tour managers make the heritage conservation as the first priority; punish, educate and even require withdrawing tourism managers who are dishonest and make significant damage to the heritage values. Implementation period: 2016~2030.

Promote heritage knowledge-building of tourism management enterprises; require that heritage tourism managers should ensure there is enough time to be devoted to studying the relevant laws and heritage knowledge. Implementation period: 2016~2030.





9.3.3 Tourists

Establish new science education centres and kinds of science and education projects through text, picture, satellite images, sand table, virtual three-dimensional diagrams, and physical specimens, audio, video and other techniques of expression. Guide the public to understand the scientific research value in the nominated property from a scientific point in a happy way. Establish a good ecological and moral concept, make natural protection consciousness internalized and promote voluntary protection actions. Implementation period: 2016~2030.

Establish a clear and explicit interpretation system with large amount of information and rich content and give full play to the information transmission function in protection and management by perfecting the scenic spots interpretation system, explaining service of visitor centre, printed materials interpretation system. Implementation period: 2016~2030.

Perfect the educational and promotional facilities on the premise of ensuring the value integrity of the nominated property. Set up field spots for publicity and education to let the tourists have the ecological experience and satisfy their demands for understanding wildlife and other nature conservation knowledge. To explain and identify heritage values on site easily, add 5 new wildlife educational and promotional spots, 1,000 wildlife signs, 300 interpretive signs and so on. Implementation period: 2016~2020.

The tourist feedback mechanism is suggested to be established for the nominated property. And the nominated property should conduct visitor satisfaction surveys on a regular basis, as means to hear and learn the comments and opinions from visitors, then make timely improvement in accordance with the feedback. Implementation period: 2016~2030.

9.3.4 Community Residents

A new training centre will be used for community residents' centralized learning. The nominated property's managing department will assist local government authorities to arrange and organize community residents to learn cultural education and accept technical training. They will teach villagers to develop ecological industry application technology, which can improve their working skills and competition ability. Implementation period: 2016~2030.

Each management forest ranger or patrol will organize group study or individual visit. They will publicize the natural protection knowledge to community residents, improve their

protection awareness, and encourage them to take part in the protective actions consciously. Implementation period: 2016~2030.

Give out printed pictures, calendars or daily necessities and other awareness and publicity materials with natural protection content and guide community residents to protect the environment spontaneously. Implementation period: 2016~2030.

9.3.5 School Students

Improve educational base construction, and set up teaching and research bases with colleges and secondary schools to carry out teaching practice regularly. Implementation period: 2016~2030.

Work with education department to set up tutorial curriculum about the nature conservation or ecological education in primary and secondary schools; establish the natural research interest groups; carry out holiday fieldwork to publicize the ecological science protection knowledge and bring up teenagers' enthusiasm of nature loving and nature protection. Implementation period: 2016~2030.

Carry out informal science education events and activities; cooperate with the local and surrounding education commission and schools; organize outings, summer camps, field writing, speech, essay, knowledge competition, photography, painting and other activities combined with festivals and the existing phonological landscape to make the nominated property become a real scientific education base of the natural environment protection. Implementation period: 2016~2030.





10 | Scientific Researches





10 Scientific Researches

In the early years of the last century, some scholars at home and abroad have noticed the scientific value of the nominated property. During 1930s to 1960s, various experts and organizations carried out research works in different subjects to some extent. The nominated property became the Provincial Nature Reserve in 1978, and National Nature Reserve and a member of the UNESCO MAB (Man and Biosphere) in 1986. A number of reserve network members took profit from those scientific researches; therefore, the scientific researches on the nominated property are strengthened and deepened, and such researches will provide a scientific basis for future scientific research and conservation management. This section talks about the present situation and achievements of scientific researches in the nominated property, puts forward the insufficiencies and challenges in the scientific researches and proposes the corresponding measures.

10.1 Scientific Research Achievements

10.1.1 The Existing Research Results

The nominated property management institutions set up a scientific research management department in order to carry out the investigation and study of the scientific problems involved in various fields and explore the value of the nominated property cooperated with research institutes and institutions of higher education. The exhibitions of research results, which were showed by science monographs and research papers, raised public awareness of the nominated property in the academic field. The nominated property has been the scientific holy ground for the study of humid subtropical mountain biology and ecology in domestic and foreign academic field. Nine books and nearly 800 academic papers in biology, ecology and Buddhism have been published. All of these scientific research achievements laid a solid foundation for promoting, protecting and managing the heritage values in the nominated property (Table 10.1).

Table 10.1 Important research results

Name	Content	Author	Location of Records
Scientific Research Collection of Fanjingshan of Guizhou Province	To take comprehensive scientific survey records of the physical geography, biological resources and environmental background value and so on of the nominated property, to discover <i>abies fanjingshanensis</i> and to conduct basic research in detail on rare and endangered species such as <i>Rhinopithecus brelichian</i> and <i>Davidia involucre</i> .	Liu Fengting	China Environmental Science Press, 1986
The Research of Fanjingshan	The collection of the papers of the scientific research on the nominated property in 29 subjects in eight years including geology, soil,	Zhou Zhengxian, Yang Yeqin	Guizhou People's Press, 1990

	forest type, plants, animals and the operation and management of reserve, etc.		
The working party report of PHVA in the protection, species and habitats of <i>Rhinopithecus brelichi</i> .	To assess the protection, species and habitats of <i>Rhinopithecus brelichi</i> .	Sun Dunyuan	Fanjingshan National Nature Reserve, 1999
The Wild Ecology of <i>Rhinopithecus brelichi</i>	This book expounds the contents involving habitat, activity routines, feeding habits, foraging behavior, population structure, population behavior, reproductive behavior, population quantity, the PHVA, protection and management of the wild population and more.	Yang Yeqin	Guizhou Science and Technology Press, 2002
Landscape Insects of Fanjingshan	This book has discussed the faunal features, origin, evolution, the insect resources and species diversity of the insects of the nominated property and has recorded 22 orders, 220 families, 1,440 genera and 220 species of insects.	Li Zizhong, Jin Daochao	Guizhou Science and Technology Press, 2006
Phytography of the common herbal seed plants of Fanjingshan National Nature Reserve	It has recorded the characteristics, habitats, production, distribution, main economic purposes and efficacy of the 61 families, 163 genera and 220 species of common herbal seed plants in the nominated property.	Xiong Yuanxin, Yang Chuandong	Guizhou Science and Technology Press, 2009
Macro Fungi of Fanjingshan of China	It has described the macroscopic and microscopic characteristics of 450 species of macro fungi in detail. In addition to form description, the book also includes literature citation, habitat, distribution and use, etc.	Wu Xingliang, Yang Chuandong	Science Press, 2014
The Bryophytes of Fanjingshan	The book has recorded 74 families, 22 genera and 674 species of bryophytes with morphological description, pictures taken from field or samples, habitats and distribution. It also has expounded the study history, community, distribution, flora, species diversity and protection of the bryophytes of the nominated property.	Xiong Yuanxin, Shi Lei	Guizhou Science and Technology Press, 2014
Buddhism Culture Research of Fanjingshan	This book talks about the history of the Buddhism spread and the inscription of the nominated property, achievement, current situation, challenges, goals and outlook.	Huang Shangwen	Bashu Press, 2012
803 academic papers	Geology, Geomorphology, Biology, Ecology, Buddhist, etc.	CNKI China National Academic Magazine Database	CNKI, 2015

10.1.2 Problems and Deficiency of Scientific Researches

The nominated property management institutions constantly invite experts and scholars in geology, biology, ecology and protection management from institutes and universities at home and abroad to carry out researches in geological and geomorphologic development and evolution, ecological processes and biological diversity as well as protection and management of the nominated property. Because of the lack of cooperation of the nominated property with the similar areas, the research results in ecological processes





and biodiversity values of the nominated property are too insignificant to facilitate the refinement of heritage values protection and management.

Efficient research mechanism is lack. The specialized research institution belonging to Administration of Fanjingshan National Nature Reserve has not established shared database and still lacks a scientific data release platform which is not conducive to the refinement of heritage values. Besides, the scientific researches on the nominated property are relatively independent and even lack communication and joint research, so, to some extent, the speed of heritage values researches is slow.

Targeted research programs on the nominated property need to be added and improved. Scientific research and assessment plan should be drawn up in detail in order to solve the following problems, including the ecological management of ecological destruction which is caused by the country road construction in the nominated property, villagers' ecological migration around the nominated property and the buffer zone, conservation and management of rare and endangered wild animals and plants.

The construction of the scientific team is relatively slow. Scientific research and management of science and technology in the nominated property are important, because these are the premise and foundation to guarantee the protection and management of the nominated property in the right direction. Administration of Fanjingshan National Nature Reserve pays attention to the scientific research work and has obtained certain achievements. But there are still some problems such as shortage of highly-educated and high-quality personnel, irrational personnel structure, and weak scientific research strength and so on.

Scientific research management lags behind. Scientific research management can be divided into the management of scientific research organization and the management of scientific research files. The former, namely, to organize the study subjects reasonably, is the pathway to the scientific research plans, and the latter reflects the centralized management of the scientific research results and scientific research planning for the nominated property. On the whole, the scientific research management of the nominated property seems to be slightly lagging.

Visiting scientists often collect data, then publish results long afterwards in obscure journals no feed into the staff or managers of the nature reserve. In future, the managers should be more involved in the selection of topics where researchers are invited to study and ensure that visiting researchers work closer with reserve staff, transfer knowledge

and provide full recognition to the reserve in their publications. Copies of all publications should be sent to the reserve so that a complete library of knowledge can be built up.



Photo 10.1 Scientific research and investigation

10.1.3 Measures and Countermeasures

10.1.3.1 Establishment and Improvement of Scientific Mechanism of the Nominated Property

Establish research centre of Fanjingshan World Heritage values. The nominated property management institutions can unite with institutes and universities to establish the Fanjingshan biological and ecological research centre. Some experts and scholars in geology, geomorphology, biology, ecology and the World Natural Heritage should be invited to set up the Fanjingshan academic committee. Funds through multi-channels should be used to establish research fund for Fanjingshan World Heritage values and support the researches on the nominated property. Implementation period: 2016~2020.

Create the academic journals named *Research of Fanjingshan* to further improve the nominated property's academic influence and international influence. Implementation period: 2016~2020.

On the basis of fully conducting scientific researches, the nominated property management institutions should strengthen its cooperation with universities and scientific institutes at home and abroad, hold academic seminars and reinforce academic exchanges. In order to further expand the influence of the nominated property in the international academic circles and find its heritage values, the local management institutions can undertake and organize academic seminar once every two years. Implementation period: 2016~2030.

The subjects in geomorphology, ecology, biodiversity and application researches should be set up with the needs of the resources and environment protection in the scenic areas, Nature Reserves or the World Heritage Site, and protection, utilization and the tourism development research of land, forests, rivers, and other resources. Implementation period: 2016~2030.





10.1.3.2 The Supplement and Implementation of the Targeted Research Programs

The nominated property has a great research value in biodiversity, ecological processes and aesthetics, etc. The scientific researches on the nominated property should be focused and targeted in the following aspects.

The protection and management problems: Including Fanjingshan National Nature Reserve and Yangxi Provincial Nature Reserve, the nominated property of Fanjingshan It is necessary to carry out various researches on collaborative institution settings, the protection and management of common areas, biological and ecological processes and the biodiversity value as well as community co-management model and technological research of the surrounding villages. Implementation period: 2016~2020.

The studies on ecological restoration of infrastructure construction and ecological migration should be strengthened. It is important to make basic researches on cultivation of all kinds of plants species and native species in the nominated property. Analysis and researches on local biological resources and native species should also be enhanced. Implementation period: 2016~2030.

Carry out studies on geology and geomorphology of the environment in the nominated property and its biology, ecology and climate impact. The researches on biodiversity uniqueness and values, and rare and endangered plant species in the nominated property should be enhanced. Implementation period: 2016~2020.

10.1.3.3 The Construction of Scientific Team

Scientific work is the premise and foundation of the protection and management of the nominated property in the right direction. The scientific team is the guarantee of scientific study, so there are several suggestions on the construction of scientific team of the nominated property.

Stabilize the existing team and introduce the professionals. The existing team can be consolidated and more researchers can be attracted to the World Natural Heritage by constructing and improving the scientific facilities, increasing the reward for the scientific personnel, solving the troubles of scientific and technical personnel, etc., so that the overall research level of the nominated property will also be improved. Implementation period: 2016~2020.

Cultivating professional talents and improving scientific research level. Scientific and technological power in the study on the nominated property can be cultivated systematically by the realistic planning for talent cultivation. Priority should be given to the existing scientific bases and personnel of the nominated property, and the business level of the existing scientific personnel should be improved through inviting talents from outside and sending our talents out. Implementation period: 2016~2030.

Establish the incentive mechanism to make scientific research of the nominated property reach a new stage. The incentive mechanism should be set up among scientific personnel in order to promote the scientific research, and the specific measures are as follows. First, personal performance will be linked to vital interests, and scientific payoffs will be associated with the promotion of job title and professional technical training. Furthermore, scientific personnel who make major scientific achievements are worthy to be rewarded. In addition, the existing scientific personnel of the nominated property management institutions should be encouraged to take an active part in the scientific cooperation projects of institutes. Implementation period: 2016~2030.

10.1.3.4 Improvement of the Scientific Management

To ensure the effective work of scientific study, the conventional scientific projects of the nominated property mainly rely on its own technological strength, while the general or unique scientific projects can be conducted based on the cooperation with institutes and universities. If there are large-scale national projects or cooperation projects with foreign parties, the scientific implementation plan should be formulated separately. The relevant mechanism need to be established or improved, including the special use of scientific funds, the use of scientific instruments, equipment and supplies, the system of scientific security and data management, the provisions of the identification, review and acceptance of scientific results and accountability system to the host of projects.

Scientific files, including the scientific results, papers, monographs, research records, original materials, research contracts or agreements and so on, are the reflection of the research achievements in the nominated property. The management of the scientific files should be enhanced in the following aspects.

Establish a scientific database. All kinds of files related to the natural conservation, including information, scientific results, research reports and published academic papers, should be input to the scientific research database of the nominated property in time and made into CDs or other digital formats for filing and preservation. To realize the network of information management, it is also necessary to build a platform for sharing scientific data and link with information storage and transmission system in heritage protection at home and abroad. Implementation period: 2016~2020.

Strengthen the improvement and updating of the existing specimens. The survey data of new background resources should be archived and sealed by using new technology so that the number of all kinds of specimens can be further enriched and the production quality of the specimens can be improved. A collection of digital specimens and photos can supplement the collections of wet and dry specimens. There is no need to kill rare species to create specimens. Implementation period: 2016~2020.





Technical training of the management personnel of scientific files needs to be strengthened and the technical level of the modern files management to which scientific personnel should adapt also needs to be improved. Implementation period: 2016-2030.

Establish a personal expert information database to strengthen the communication with the experts and scholars. We will consult experts and scholars for opinions and suggestions to promote and protect the development of the nominated property. Implementation period: 2016~2020.

The establishment and perfection of the file management system, such as accountability system of the files management, file collection and lending system and strict security measures; will make the scientific management scientific and standardized. Implementation period: 2016~2020.

10.1.3.5 Reinforce Academic Exchange

The nominated property contains great values in ecological processes, biodiversity and other scientific fields. Hence, on the basis of the original researches, it is necessary to strengthen the scientific research and academic exchanges, enlarging the influence of the nominated property in academic circles as well as enriching the heritage values of the nominated property (Table 10.2).

Table 10.2 Academic research plans from 2015 to 2020

NO.	Activity Name	Content	Year	Place Location
1	The academic seminar on biodiversity of Fanjingshan	To discuss the value of the biodiversity of the nominated property and the habitat conservation of rare and endangered species.	2015	Fanjingshan
2	The international conference on the ecological processes of Fanjingshan	To exchange the research achievements in the ecological process of the humid mountain forest in China and abroad.	2016	Fanjingshan
3	The special international academic seminar on <i>Rhinopithecus brelichi</i>	To exchange the research achievements of the <i>Rhinopithecus brelichi</i> in China and abroad and to discuss its survival, development and protection.	2017	Fanjingshan
4	The international conference on the protection and management of the value of Fanjingshan property	To exchange the experience of the protection and management of the World Natural Heritage in China and abroad and to discuss efficient and reasonable protection and management method of the nominated property.	2018	Yinjiang County
5	The sectional academic seminar on the nominated property of Yangxi Provincial Nature Reserve	To discuss the biodiversity and ecological process of Yangxi Provincial Nature Reserve and to exchange the research achievements in China and abroad.	2019	Yinjiang County
6	The academic seminar on the relationship among Buddhism, the nationality custom and the protection of ecological environment of Fanjingshan	To discuss the influence of Buddhist culture and activities as well as the customs on the biological and ecological environment in the nominated property.	2020	Fanjingshan

10.2 Organization and Management of Scientific Project

Scientific projects of the nominated property mainly contain regular basic research, technical projects, long-term monitoring, application research on protection and management and so on. In order to ensure the scientific researches on the nominated property are carried out effectively, the conventional scientific projects mainly rely on its own technical strength and the general or unique scientific research projects can be done with the help of institutes and universities. If there are large-scale national projects or cooperation projects with foreign parties, the scientific implementation plan should be formulated separately. The nominated property shall establish and improve the systems of scientific organization and management. Meanwhile, under the guidance of competent departments, the nominated property should join hands with universities and institutes so that it can take advantage of the talents from universities and institutes to organize the scientific researches. On the basis of the existing scientific personnel of the nominated property, the management department should absorb a batch of multidisciplinary research experts and hire long-term consultants from multiple disciplines. Scientific researches and seminars in the protection, construction and production experiment project of the nominated property shall be held regularly or irregularly through the way that the project approval of the nominated property combines with the researches which experts conduct by selecting topic to apply for the fund. The seminars are responsible for the compiling and printing of the Research Information Periodicals of Fanjingshan, keeping in touch with the academic communities at home and abroad, organizing academic exchange activities, pushing the study of the nominated property and promoting the research achievements of the nominated property to the world.

10.3 Cooperation and Exchange

International cooperation and exchange is one of the important measures to improve the level of protection and management of the nominated property. The nominated property has taken part in the international biosphere network of the UNESCO in 1986, so it complies with the CBD (Convention on Biological Diversity) and exchanges information with the UNESCO and the relevant biosphere reserves. Famous international experts should be invited to investigate research and put forward some suggestions in term of protection and management so that the international academic exchange can be enhanced. The relevant protection and management personnel shall go toward internationalization such as participating in the learning and training in the protection, management and long-term monitoring and evaluation of animals and plants. The nominated property has high research value in aesthetics, biology, and ecology and biodiversity protection and so on, so it is necessary to enhance the communication and cooperation with the relevant institutes and universities at home and abroad, enlarging the influence of the nominated property in academic circles and developing the heritage values of the nominated property.





11 | Monitoring and Feedback Evaluation





11 Monitoring and Feedback Evaluation

Monitoring and feedback evaluation are the most important approach to verifying the results of protection efforts. Through analysing field monitoring results and management achievements, the goals of the management plan can be easily reached. Moreover, this mechanism can highlight successful management achievements or problems that can be changed in time to meet expected requirements. Besides, the feedback mechanism can focus on and respond to changes in management policies and methods.

All the monitoring departments of the nominated property of Fanjingshan have established a monitoring system on basis of resource types, protective status and management requirements. However, there are still some potential threats and challenges in the protection and management work of Outstanding Universal Value. In this chapter, solutions and measures of those problems will be elaborated in detail.

11.1 Systematic Monitoring

Systematic monitoring is the inspection and evaluation of the World Heritage Sites by the State Party which is in charge of the sites. According to the requirements of *Operational Guidelines for the Implementation of the World Heritage Convention*, the State Parties should submit the periodic report every 6 years on the state of conservation of its World Heritage sites (UNESCO, 2015).

11.1.1 Current Situation Analysis of Monitoring

(1) Key indicators for measuring the state of conservation

Currently, the nominated property of Fanjingshan achieves some monitoring results, which can help protect the values. Based on the resource types, protective status and management requirements, the nominated property has established various monitoring facilities including monitoring centers, monitoring stations, checkpoints, meteorological stations, ecological fixed-point observation stations, observatories, protection and management points, hydrology and water quality monitoring points, etc. with monitoring equipment like GPS, camera, infrared camera, drones, automatic meteorological instrument. The monitoring system is still in development but includes indicators relevant to the Outstanding Universal Value, visitors' activities and impact, environmental elements, natural disaster, settlements and villages (Table 11.1). Cooperation with other research institutions shall be set up as a comprehensive monitoring platform.

Outstanding Universal Value monitoring: It mainly involves monitoring Outstanding Universal Value elements, including monitoring the abundant biodiversity in the

nominated property, especially paying close attention to the community populations and their dynamics, the age structure, the individual diffusion and other characteristics of *Rhinopithecus brelichi*, *Abies fanjingshanensis* and other rare and endangered species, endemic species, ancient relic species and type specimens of species, monitoring the integrity of the ecosystem, ecological regime of forests and vegetation and alien species and monitoring geomorphologic landscape and vegetation landscape.

Visitor monitoring: Monitoring of number and structure of visitors, monitoring of tourism activities, scenic spots, quality and quantity of tourism facilities.

Environmental quality monitoring: Observation and evaluation of air and water quality, in addition to noise, soil and environmental health.

Natural disaster monitoring: GIS monitoring and timely response to meteorological disasters, forest fire (even it happens very rarely), drought and flood, landslide, mud-rock flow, earthquakes, insect infestations, changing climate and impacts, etc.

Human activity monitoring: GIS monitoring, monitoring of poaching, forest harvesting, engineering construction, construction, land use change and population change, etc (Administration of Guizhou Fanjingshan National Nature Reserve, 2004).

Settlement and village monitoring: GIS and monitoring of villages and the resident populations of the World Heritage buffer zone, village construction, and economic development, etc.

Table 11.1 Monitoring Indicators

Monitoring Indicators	Periodicity Regularity	Location of Records
Size and boundary of Fanjingshan National Nature Reserve	Irregularly scheduled	Administration of Guizhou Fanjingshan National Nature Reserve
Ecosystem diversity and dynamic changes	Long term	Administration of Guizhou Fanjingshan National Nature Reserve, Guizhou Academy of Sciences
Geomorphic processes and landscape	Irregularly scheduled	Administration of Guizhou Fanjingshan National Nature Reserve and Guizhou Normal University
<i>Rhinopithecus brelichi</i> and its habitat	seasonally	Administration of Guizhou Fanjingshan National Nature Reserve
Animals species and population	5 years	Administration of Guizhou Fanjingshan National Nature Reserve, Forestry Bureau of Tongren, Guizhou Province, Forestry Bureau of Jiangkou County, Forestry Bureau of Yinjiang Tujia and Miao Autonomous County, Forestry Bureau of Songtao Miao Autonomous County
Plants species and population	5 years	Administration of Guizhou Fanjingshan National Nature Reserve, Forestry Bureau of Tongren, Guizhou Province, Forestry Bureau of Jiangkou County, Forestry Bureau of Yinjiang Tujia and Miao Autonomous County, Forestry Bureau of Songtao Miao Autonomous County
Alien species and impact	Long term	Administration of Guizhou Fanjingshan National Nature Reserve, Forestry Bureau of Tongren, Guizhou Province, Forestry Bureau of Jiangkou County, Forestry Bureau of





		Yinjiang Tujia and Miao Autonomous County, Forestry Bureau of Songtao Miao Autonomous County
Forest fire control and Forest diseases and insect pests	Long term	Administration of Guizhou Fanjingshan National Nature Reserve, Forestry Bureau of Tongren, Guizhou Province, Forestry Bureau of Jiangkou County, Forestry Bureau of Yinjiang Tujia and Miao Autonomous County, Forestry Bureau of Songtao Miao Autonomous County
Number and structure of tourists, degree of satisfaction	Daily	Tongren Fanjingshan Tourism Development Investment (Group) Co., Ltd., Tourist Bureau of Tongren, Guizhou Province, Tourist Bureau of Jiangkou County, Tourist Bureau of Yinjiang Tujia and Miao Autonomous County, Tourist Bureau of Songtao Miao Autonomous County
tourism project, visitor facilities	Annually	Tongren Fanjingshan Tourism Development Investment (Group) Co., Ltd., Tourist Bureau of Tongren, Guizhou Province, Tourist Bureau of Jiangkou County, Tourist Bureau of Yinjiang Tujia and Miao Autonomous County, Tourist Bureau of Songtao Miao Autonomous County
Surface water quality and water quantity	monthly	Environmental Protection Administration of Tongren, Environmental Protection Administration of Jiangkou County, Environmental Protection Administration of Yinjiang Tujia and Miao Autonomous County, Environmental Protection Administration of Songtao Miao Autonomous County; Water Conservancy Administration of Tongren, Water Conservancy Administration of Jiangkou County, Water Conservancy Administration of Yinjiang Tujia and Miao Autonomous County, Water Conservancy Administration of Songtao Miao Autonomous County
Quality of atmosphere	Daily	Environmental Protection Administration of Tongren, Environmental Protection Administration of Jiangkou County, Environmental Protection Administration of Yinjiang Tujia and Miao Autonomous County, Environmental Protection Administration of Songtao Miao Autonomous County
Noise impact	Seasonally	Environmental Protection Administration of Tongren, Environmental Protection Administration of Jiangkou County, Environmental Protection Administration of Yinjiang Tujia and Miao Autonomous County, Environmental Protection Administration of Songtao Miao Autonomous County
Change of soil property	Irregularly scheduled	Tongren Land Resources Bureau, Jiangkou County Land Resources Bureau, Yinjiang Tujia and Miao Autonomous County Land Resources Bureau, Songtao Miao Autonomous County Land Resources Bureau
Poaching	Long term	Administration of Guizhou Fanjingshan National Nature Reserve
Engineering construction	Long term	Administration of Guizhou Fanjingshan National Nature Reserve
Land use	Annually	Administration of Guizhou Fanjingshan National Nature Reserve, Tongren Land Resources Bureau, Jiangkou County Land Resources Bureau, Yinjiang Tujia and Miao Autonomous County Land Resources Bureau, Songtao Miao Autonomous County Land Resources Bureau
Local community (village, resident population, farmland area, employment status, etc.)	Annually	Administration of Guizhou Fanjingshan National Nature Reserve, Tongren Statistics Bureau, Jiangkou County Statistics Bureau, Yinjiang Tujia and Miao Autonomous County Statistics Bureau, Songtao Miao Autonomous County Statistics Bureau
Impact from community development project	Long term	Administration of Guizhou Fanjingshan National Nature Reserve
Community participation	Long term	Administration of Guizhou Fanjingshan National Nature Reserve

(2) Existing monitoring systems

Monitoring mechanism: There are two working monitoring mechanisms operating in the nominated property of Fanjingshan, in-house monitoring by the responsible managing organization or commissioned monitoring by outside agencies. Protection and management organizations of the nominated property are currently responsible for regular monitoring in such fields as forest fire prevention, invasive alien species, visitation number and structure, areas of site seeing, tourism service facility number and its quality, resident population and social economy, etc. Some other indicators would be monitored by outside agencies or institutions, regularly or irregularly, due to the lack of specialists or monitoring equipment within the local management body. For example, biodiversity, rare and endangered species, geology, air, noise and water environmental monitoring will be conducted by official forestry and environmental conservation organizations.

Monitoring methods: Several monitoring methods have been used in the nominated property of Fanjingshan, such as fixed-point observation, automatic equipment monitoring, infrared camera monitoring, quadrat monitoring, line transects, community patrol monitoring, survey and statistics, etc. The property hires patroller for forest fire prevention, geo-disaster monitoring and illegal hunting, picking and illegal logging.

Data processing: Data collection points regularly submit data to relevant departments, and commission research institutes and universities to analyse data for solution to or suggestions on current problems.

Monitoring results: Until now, the surface water sampling and monitoring results of the nominated property of Fanjingshan are in line with the first and second class limitation of *Environmental Quality Standards for Surface Water (GB3838~2002)*; air quality reaches first class limitation of *The Air Environmental Quality Standards (GB3095~2012)*; acoustic environment meets the 0 class condition of *Standard of Environmental Noise of Urban Area (GB3096~2008)*; and soil quality measures up with the first class limitation of *Environmental Quality Standard for Soils (GB15618~1995)*.

(3) Existing monitoring platforms and protective measures

The nominated property of Fanjingshan has established some monitoring platforms, such as tourism comprehensive meteorological service platform, automatic weather station, animal monitoring, lightning monitoring, ecological station, and have adopted a series of active protective measures.





Comprehensive mountain tourism meteorological service platform: There is a huge elevation gap in the nominated property, leading to a wide climate difference. Meteorology Bureau of Jiangkou County has built the Fanjingshan comprehensive mountain tourism meteorological service platform, aiming to provide tourism weather prediction in the nominated property. Now, the meteorological equipment and tourism service products have been playing its role effectively, providing professional meteorological monitoring, warning services and comprehensive travel service for tourists. The main function of the platform is to provide traveling meteorology service for visitors and carrying out fixed-point lightning monitoring, live observation on the top of the mountain. At the same time, the system also includes the introduction of tourist attractions, tourism traffic strategy, service of hotel, flight services, etc. Visitors can click on the screen to view the weather conditions and monitoring graphs of Fanjingshan at any time.

Automatic weather station and animal monitoring: Administration of Guizhou Fanjingshan National Nature Reserve called for bids to purchase equipment for automatic weather station (including data receiving platform and storage equipment) and animal monitoring equipment (including lightning protection facilities and equipment), providing equipment support for the meteorological monitoring and animal monitoring of the nominated property.

Lightning monitoring: Lightning monitoring network of Guizhou province lightning protection centre is responsible for lightning monitoring. The statistics of lightning monitoring in the past 5 years indicate that the yearly probability of lightning current more than 259 kilo ampere is 4/1000, and that of the lightning current more than 259 kilo ampere occurring in fall and winter is extremely rare, only 2/10000.

Fanjingshan Ecological Station: Fanjingshan eco-station is built by Guizhou Academy of Sciences, Administration of Guizhou Fanjingshan National Nature Reserve, together with Kunming branch of Chinese Academy of Sciences in 1981. The following are the main contents of three-way cooperation: strengthen the infrastructure construction of the Ecological Station within the nominated property, making it a comprehensive station integrating monitoring, research, experiment and demonstration as a whole; carry out joint routine monitoring and scientific research of forest ecosystem, biodiversity protection and sustainable development and other fields in Fanjingshan.

11.1.2 Inadequacies, Threats and Challenges

The nominated property of Fanjingshan has reached the requirements of UNESCO World Heritage Centre for study, protection, management and monitoring and chosen

comprehensive monitoring indicators, hired qualified specialists and equipped advanced facilities for monitoring activities. The nominated property has established integrated monitoring systems. Nevertheless, there are still some deficiencies, threats and challenges which need to be addressed:

Monitoring indicators need to be completed. Current monitoring indicators of the nominated property are routine monitoring such as atmosphere, water, climate, etc., and the indicators aiming at the Outstanding Universal Value of the nominated property are incomplete.

Monitoring methods need to be improved. The monitoring mission in the nominated property uses few methods, mainly based on scientific research institutions, colleges and universities, as well as little traditional patrol monitoring and video monitoring. In addition, the degree of community participation is low.

Specialized monitoring institutions and professional monitoring staffs need to be supplemented and improved. The monitoring missions mostly rely on the routine monitoring of environmental protection administrations and research monitoring of scientific research institutions. There are no institutions or professional staffs especially in charge of the monitoring mission, so scientifically and effectively arranging the monitoring mission is difficult.

The monitoring results have not been classified, archived and fully used systematically. Plenty of monitoring results of the nominated property have not been fully used. The lack of management effectiveness evaluation and adaptive management system limits the feedback effect on the management work and the guiding function to the protection, management, scientific research and the guiding of the following monitoring plan, and it also affects the scientificity of new round of protection management plan.

11.1.3 Basic Goals

To improve the monitoring system of the nominated property, establish and perfecting targeted indicator monitoring systems to monitor the elements of Outstanding Universal Value from all aspects.

To improve and perfecting monitoring systems, methods, equipment and facilities of all component parts.

To establish and perfecting management effectiveness evaluation, fully use monitoring equipment to guide the protection and management work, and gradually build up adaptive management mechanism.





To entrust World Heritage experts at home and abroad and relevant research institutes in Guizhou Province to establish monitoring data collecting system, analysis mechanism and monitoring and early warning system; enhance the utilization level of monitoring data and of monitoring and early warning capabilities.

11.1.4 Strategies and Measures

(1) Establish monitoring mechanism for the nominated property of Fanjingshan

Synchronize in accordance with the requirements of UNESCO World Heritage Centre on the World Heritages' research, conservation, management and monitoring, especially the requirement of a regular monitoring report every six years; build up monitoring indicators, and then make a clear monitoring period for each indicator. Implementation period: 2016~2030.

Use professional software systems to establish the monitoring database of the nominated property of Fanjingshan and update the data in real time. Once a factor reaches any critical level, early warning and precautionary measures should be conducted in timely fashion. Implementation period: 2016~2020.

Establish the specialized agencies responsible for the monitoring of the nominated property. According to the requirements of monitoring indicators and monitoring periods, conduct regular monitoring with appropriate monitoring equipment and report the monitoring results. Make regular monitoring reports of the nominated property of Fanjingshan in terms of the requirements proposed by the World Heritage Centre. Implementation period: 2016~2030.

Periodically organize external experts to analyse the monitoring results; prepare monitoring and evaluation reports; establish a feedback mechanism for monitoring results. Implementation period: 2016~2030.

Share the relevant monitoring results with relevant universities and research institutes; analyse the monitoring results and attract the related research institutes and universities to make scientific researches on the nominated property. In addition, undertake part of the monitoring and analysis work of monitoring indicators; provide scientific, feasible management plans for management organizations. Implementation period: 2016~2030.

Based on the monitoring results, score the protection and management effectiveness of the nominated property of Fanjingshan; establish an incentive mechanism; encourage each management institution to improve work. Implementation period: 2016~2030.

(2) Enrich specific monitoring indicators

Indicators demands: Establish and improve the targeted monitoring indicators according to the objectives of the nominated property, the significance of the protection and monitoring principles, the requirements of monitoring and evaluation of the nominated property in *Convention concerning the Protection of the World Cultural and Natural Heritage*, the periodic report, policies and regulations about environment protection enacted by the State and current monitoring indicators, as well as the special values and the challenges and threats in protection and management (Table 11.2).

Table 11.2 Monitoring indicators

Categories	Monitoring Indicators
Values	Ecological process; biodiversity, especially <i>Rhinopithecus brelichi</i> and other rare and endangered flora and fauna and their habitats, species changes and responses to changing climate; Geomorphologic landscape, the area of the property and its buffer zone
Exhibition	The number, source and structure of visitors, the degree of satisfaction of tourists, attractions, sightseeing areas, tourism service facilities and their quality
Environment	The changes of weather, atmosphere quality, water quality, noise quality, soil quality and environmental health, etc.
Threats	Fire, invasion of alien species, climate change, diseases and pests, poaching, engineering construction (residential building volume, roads, reservoir, tourism facilities, etc.), land use changes, geologic disasters and populations of the nominated property, etc.

(3) Enriching monitoring methods and monitoring equipment

Construction of research and monitoring station

Establish scientific research and monitoring stations relying on the current management stations and equip them with the best appropriate scientific research and monitoring equipment, including computers, binoculars, GPS, digital cameras, drones and so on. Necessary office facilities and accommodation for staffs should also be available. Implementation period: 2016~2020.

Construction of digital monitoring platform

Establish a digital monitoring and processing platform relying on the relevant facilities of the existing management station to observe main protection objects, the monitoring facilities operation condition of the ecological system, the monitoring data and the data collected by monitoring and patrol technicians. Fully digitize resource protection data, scientific research monitoring, publicity and education, community cooperation, comprehensive management and other data to realize the historical data, real-time data,





dynamic data management modernization and information sharing. Establish the information analysis and decision support platform. Implementation period: 2016~2030.

Microwave communication technology is used to establish the microwave network in the whole nominated property. Establish the monitoring network, including the information such as meteorological station and other environmental information, the wildlife information taken by infrared camera, plant community information, human activities, fire and other monitoring video information. As the first level of information nodes, the management stations are in charge of receiving the information of the activities of wildlife from different protection object automatic monitoring points, environmental monitoring points, human activity monitoring video and monitoring of wild animals by infrared camera, as well as inspection and maintenance. Implementation period: 2016~2030.

Construction of weather-environment monitoring platform

With the development of various projects in the nominated property, eco-tourism is developing rapidly, so the impact of visitors and related construction on the environment and resources needs to be constantly monitored to adjust and develop practical, targeted protection management measures. Establish a new meteorological observation point in Yan'gaoping with meteorological observation instruments, routine recording of meteorological factors. Set up automatic or fixed hydrological monitoring points in the frequent human activities areas alongside major rivers in the nominated property. In addition, set up fixed hydrological monitoring stations at Heiwanhe and Panxi test field with necessary hydrological monitoring equipment. Noise monitoring points should be set up in human activity areas. Implementation period: 2016~2020.

Construction of visitors monitoring centre

Establish visitors monitoring centre in the nominated property to ensure accurate statistics of the total number of tourists and other basic information, provide a scientific basis for the management of the nominated property. Implementation period: 2016~2020.

Establish monitoring management group and technical support team, determine their duties, responsibilities and working methods, and develop a visitor monitoring program, including monitoring methods, monitoring indicators, monitoring data reporting and processing methods. The monitoring indicators mainly include the behaviour of tourists, the range of activities, the source and amount of tourists, the satisfaction degree and the residence time, etc. The monitoring methods include the intelligent statistical system,

wireless network video monitoring system, the visitor registration and the tourist questionnaire survey, etc. Establish tourists monitoring and management centre in Heiwanhe with intelligent statistical system and wireless network video surveillance system. All-day all-weather monitoring of the nominated property and recording the tourist turnover rate are required to strengthen the supervision and safety management and improve the service quality. Implementation period: 2016~2030.

Office equipment

Enrich the scientific research and monitoring equipment and improve the level of scientific research, including the purchase of infrared camera for the monitoring and research of large mammals and their habitats, electron microscope, binocular microscopes, anatomical mirror, portable binoculars, computers, digital cameras, intelligent illumination incubator and other scientific research and monitoring equipment. Implementation period: 2016~2030.

Collection of monitoring data and analysis of monitoring results

Monitoring missions are conducted by the land and resources, forestry, environmental protection and other departments according to their division of functions. The data from related colleges and universities can also be used as the data source of monitoring information. Environmental protection department is in charge of the summary and analysis of the monitoring information and the compilation of periodic reports. Monitoring results and the periodic reports should be submitted to Administration of Fanjingshan National Nature Reserve and issued through its network platform. Implementation period: 2016~2030.

Enrich the form of monitoring data collection, paying close attention to the community participation in the monitoring process. We should attach importance to the information collection from many sources, and especially focus on the participation of community residents and tourists. It is the long-term mechanism in order to maintain the monitoring system. Publicize relevant knowledge of the monitoring and assessment to the public and encouraging community residents to participate in the monitoring and supervision work of the nominated property by taking pictures, video, text recordings, informal uploading files and other methods. Implementation period: 2016~2030.





Make monitoring results archived through system construction

Make monitoring results scientifically classified and archived to make the query and analysis of the monitoring results easier. It also provides basic data for the monitoring and assessment work and helps to carry out the protection and management work, as well as monitoring and evaluation work effectively. Implementation period: 2016~2030.

11.2 Countermeasures for Reactive Monitoring

Reactive Monitoring is the conducted by the Secretariat, other departments of UNESCO and the Advisory Bodies to the Committee on the state of conservation of specific World Heritage Sites that are under threat (UNESCO, 2015).

Set apart professional monitoring and early warning staff from the monitoring and management team in the nominated property to raise alarm whenever specific monitoring indicators reach critical values, find out the reasons and take effective measures to solve these problems. When the reactive monitoring occurs, they should actively respond to the questions raised by the Secretariat, other departments of the UNESCO and the Advisory Bodies and put forward the action plan to solve the threats and put it responses into practice.

11.3 Periodic Report and Feedback Evaluation

As required in *Operation Guidelines for the Implementation of the World Heritage Convention*, the State Party should submit periodic reports to the World Heritage Committee every six years on the state of conservation of the World Heritage Site. The nominated property should prepare periodic reports according to the requirements of the Implementation of the World Heritage Convention and submit it to the Housing and Urban-Rural Development Bureau of Guizhou Province and Ministry of Housing and Urban-Rural Development for recording, responding proactively to submit periodic report to World Heritage Committee every six years after successfully being listed into World Heritage List. Implementation period: 2016~2030.

Carry out an overall assessment on the maintenance of the Outstanding Universal Value of the nominated property and submit periodic reports annually to sum up the experience and problems in the protection and management work, provide references to the revision of management plan and the protection and management works. Implementation period: 2016~2030.

Invite domestic and foreign experts to analyse the monitoring results regularly, prepare periodic reports and establish the feedback mechanism of the monitoring results. According to the monitoring evaluation results, the management departments can put forward corrective measures on the following works. Establish corresponding incentive mechanism and performance appraisal systems to encourage the management agencies of the nominated property of Fanjingshan to better complete the protection and management work by evaluating the protection and management work of each management agency and staff members. Implementation period: 2016~2030.

11.4 Organization and Management

11.4.1 Current Situation Analysis

The scientific management and monitoring system has been established in the nominated property of Fanjingshan (Figure 11.1, Figure 11.2). The monitoring and management of Fanjingshan is mainly done by environmental protection departments, forestry departments, statistical departments and other relevant departments. Each department performs their respective duties, but overlaps of functions affect the efficiency of monitoring mission of the nominated property.

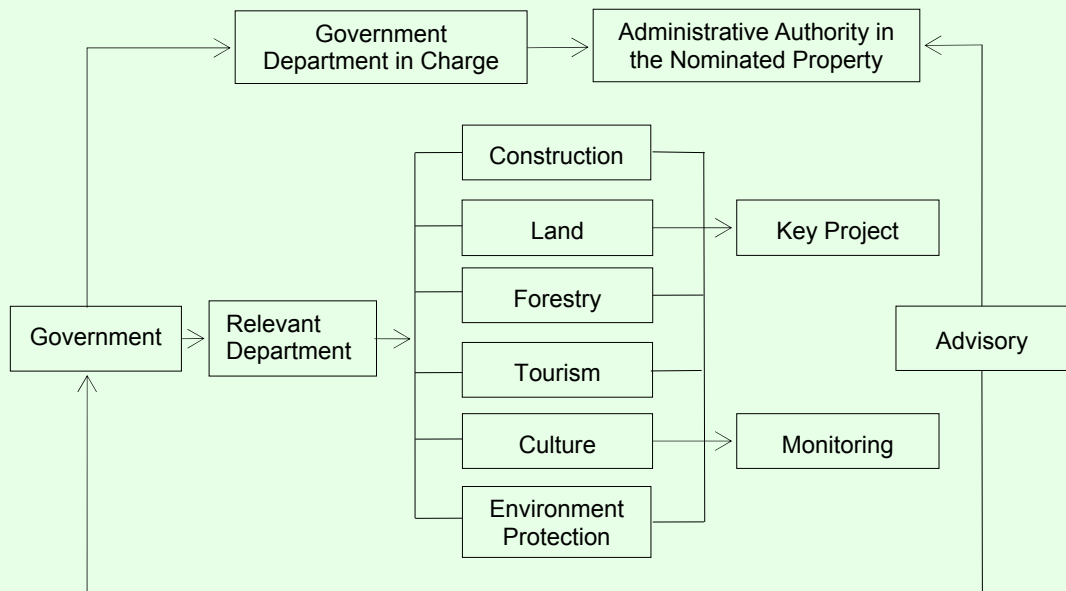


Figure 11.1 Management and monitoring system



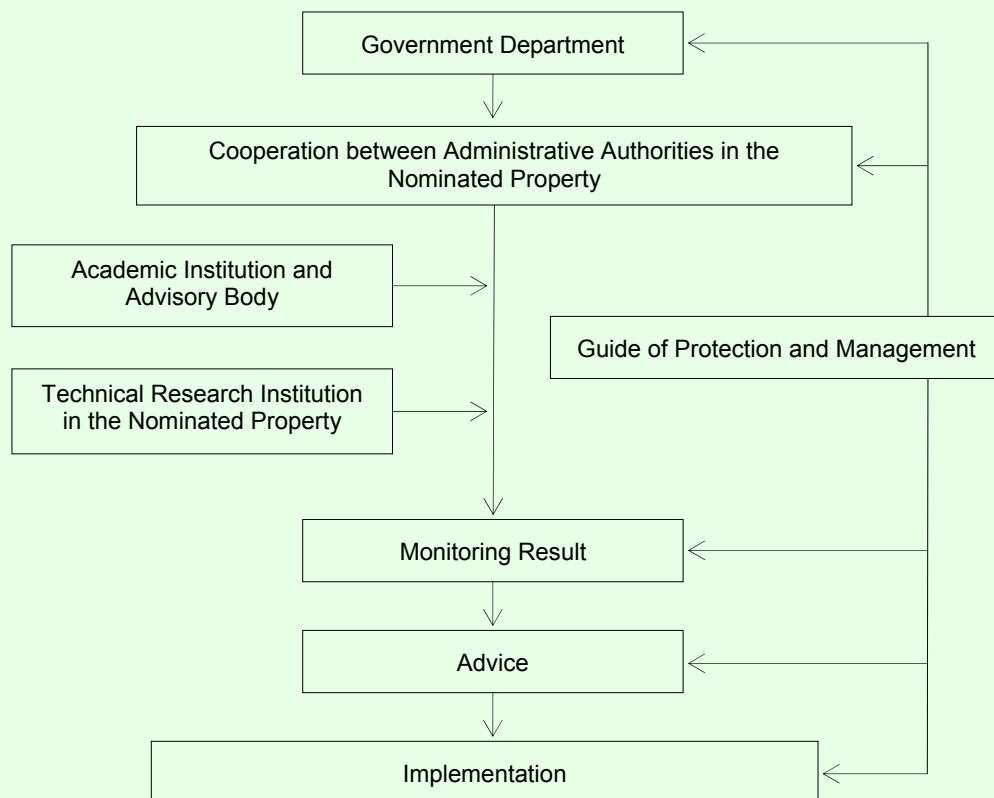


Figure 11.2 Science and technology monitoring system

11.4.2 Countermeasures for and Suggestions on Monitoring Organization and Management

(1) Establish a cooperative work mechanism for the nominated property

To improve the protection and management level, the capacity of disaster and risk prevention, value protection, and protect the authenticity and integrity from all kinds of damage, it is necessary to establish a scientific and perfect monitoring and warning system according to the relevant international standards and requirements with the aim of sustainable preservation and utilization of the nominated property. The monitoring and warning system is responsible for the organization of daily monitoring and management, data collection and record, emergency disposal and elimination of existing problems and hidden dangers. The system mainly uses the collaborative work mechanism of “two platforms and three levels of management”. “Two platforms” means the main monitoring platform and the secondary monitoring platform composed of environmental protection departments, transportation departments, forestry departments and other departments. “Three levels management” means related management departments of the nominated property of Fanjingshan in Tongren City, related management institutions of Jiangkou County, Yinjiang County and Songtao County, and villages and towns in the nominated

property. This kind of framework has the advantages of the collaborative sharing of resources, hierarchical warning system and collaborative inter-departmental working.

(2) Establish talents and mechanism guarantee

Establish professional competence standards, professional evaluation institutions with scientific certification and management methods. Meanwhile, introduce professional monitoring technicians and carry out regular professional training of monitoring and early warning to apply best practices experiences from home and abroad. The innovation of monitoring and management mechanisms is encouraged. Strengthen the construction of personnel management system of monitoring department to ensure that there is a good system guarantee mechanism for the monitoring mission (Figure 11.3).

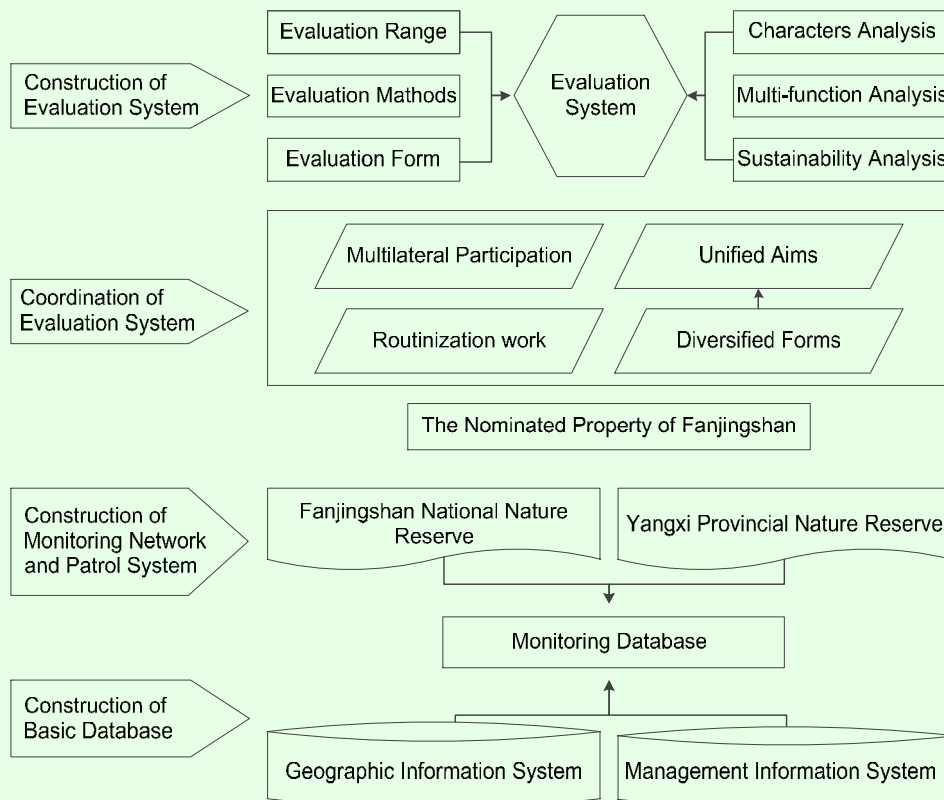


Figure 11.3 Framework of monitoring organization and management system of the nominated property of Fanjingshan

(3) Establish specialized monitoring institutions

Rely on management branch bureau and management stations and establish specialized monitoring institutions in charge of monitoring missions of the nominated property of Fanjingshan under the existing protection and management institutions. Invite domestic and foreign experts for consultation and evaluation. Monitoring and evaluation data should be reported to the World Heritage Management Office of Tongren City.





12 | Safeguards for the Plan Implementation





12 Safeguards for the Plan Implementation

The nominated property is an isolated area surrounded by heavy human activities. The work after the nomination is very important, and covers different areas like protection, conservation, presentation and management. In order to ensure that the smooth implementation of the plan and the benefits of management and protection of the nominated property, with regards to the local conditions, the protection and management work will be conducted based on unified planning and standards to pursue the comprehensive management and protection. Some essential safeguard measures are as follows.

12.1 Legal Safeguards

China has enacted the *Law of Intangible Cultural Heritage of People's Republic of China*. However, specialized laws for the protection of World Natural Heritage sites are still needed. In the case of any gaps in relevant national legal support on World Natural Heritage sites, the existing relevant legal documents can be used to protect the legal interests of the nominated property.

Constitution of the People's Republic of China (Revision), National People's Congress, the People's Republic of China, 2004

Criminal Law of the People's Republic of China (Revision 8), The Standing Committee of the People's Congress, the People's Republic of China, 2011

Law of the People's Republic of China on Environmental Protection, The Standing Committee of the People's Congress, 2014

Forestry Law of the People's Republic of China, The Standing Committee of the People's Congress, the People's Republic of China, 1984

Water Law of the People's Republic of China, The Standing Committee of the People's Congress, the People's Republic of China, 2002

Environmental Conservation Law of the People's Republic of China, the Standing Committee, the National People's Congress, the People's Republic of China, 2014

Law of Soil and Water Conservation of the People's Republic of China, the Standing Committee, the National People's Congress, the People's Republic of China, 2010

Land Administration Law of the People's Republic of China, the Standing Committee, the National People's Congress, the People's Republic of China, 2004

Water Pollution Prevention and Control Law of the People's Republic of China, the Standing Committee, the National People's Congress, the People's Republic of China, 1996

Flood Control Act of the People's Republic of China, the Standing Committee, the National People's Congress, the People's Republic of China, 1997

Regulations of the People's Republic of China on Nature Reserves, The State Council, the People's Republic of China, 1994

Regulations of the People's Republic of China on the Wild Plants Protection, The State Council, the People's Republic of China, 1996

Regulations of the People's Republic of China on the Implementation of Terrestrial Wildlife Protection, State Forestry Administration, the People's Republic of China, 2016

Regulations of the People's Republic of China on the Implementation of Forest Law, the State Council, the People's Republic of China, 2000

Regulations of the People's Republic of China on the Implementation of the Land Administration Law, the State Council, the People's Republic of China, 2014

Regulations on Cultivation and Management of the People's Republic of China, the State Council, the People's Republic of China, 1989

Regulations on Prevention of Forest Fire, the State Council, the People's Republic of China, 2008

Regulations on Forest Insect Pest Prevent, the State Council, the People's Republic of China, 1989

Regulations Concerning Forestry of Guizhou Province, The Standing Committee of the People's Congress of Guizhou Province, the People's Republic of China, 2000

Regulations Concerning Environmental Protection of Guizhou Province, The Standing Committee of the People's Congress of Guizhou Province, the People's Republic of China, 2009

Regulations concerning the Management of National Park, the State Council, the People's Republic of China, 2006

Regulations concerning Religious Affairs, the State Council, the People's Republic of China, 2004





Regulations concerning Geo-disaster Prevention, the State Council, the People's Republic of China, 2003

Regulations of Guizhou Province on the Implementation of the Protection of Terrestrial Wildlife, the People's Government of Guizhou Province, 1992

Measures for the Management of Natural Reserve Areas of Forest and Wildlife, State Forestry Administration, the People's Republic of China, 1985

Measures for the management of National Non-Commercial Forest, State Forestry Administration and Ministry of Finance, the People's Republic of China, 2013

Measures for Land Management in Nature Reserve, Ministry of Land Resources and Ministry of Environmental Protection, the People's Republic of China, 1995

Measures concerning the Management of National Park of Guizhou Province, the Standing Committee, the People's Congress, Guizhou Province, 2007

Directory on National Key Protected Wild Animals, State Forestry Bureau and Ministry of Agriculture, the People's Republic of China, 1988

Directory on National Key Protected Wild Plants, State Forestry Bureau and Ministry of Agriculture, the People's Republic of China, 1999

Directory on Terrestrial Wildlife of Useful or Important Economic and Scientific Research Value, State Forestry Bureau, the People's Republic of China, 2000

Regulations Concerning the Promoting Construction of Ecological Civilization of Guizhou Province, the Standing Committee, the People's Congress, Guizhou Province, 2014

Norms concerning National Park Planning, Ministry of Housing and Urban-Rural Development and State Bureau of Quality and Technical Supervision, the People's Republic of China, 1999

12.2 Financial Safeguards

Seek multilateral investments and increase investment budget: Capital investment is an important aspect for the implementation of the management plan. A part of the funds can be taken from local tourism income to set up special funds. The state party, local governments and relevant departments deploy special funds for several projects each year, such as infrastructure construction and ecological conservation, environmental protection and reforestation, grain-for-green projects and desertification rehabilitation, pollution control, protection of monuments and other projects. All of these have ensured

the expenditure of protection, construction, planning and design, and scientific research of the nominated property as well as daily management work. It is suggested that the nominated property should use the financial markets to establish diverse channels to seek investment and financing, actively seek domestic and foreign long-term, low-interest loans and grants, as well as all types of domestic loans and funds. Coordinate with the needs of the management plans, encourage investments in projects related to the long-term protection and management of the nominated property.

Strengthen financial management and tighten projects approval: In the process of project implementation, each project in the nominated property should be operated in accordance with the provisions of the project management, use funds exclusively for their intended purposes, make the accounts clear, and strictly control all illegal activities related to the funds' expenditures and management. Establish fiscal and taxation policies which will benefit the protection and management of the nominated property. Improve pricing system for users and some resources should be used in controlled areas of the nominated property. Strengthen fiscal control on the use of funds. Provide funds for the nominated property's protection, preservation, management, presentation, research and monitoring. At the same time, the relevant departments in each county should strictly implement the national basic development procedures in project examinations and approvals; establish projects in accordance with the planning; execute the dynamic management of projects; and make organizations and constructions according to the designs. Arrange the development funds according to the progress of the projects, evaluate projects according to the benefits, strictly implement the national regulations on environmental management for relevant project developments, and follow customary procedures of planning, evaluation and project fulfilment, to ensure that all funds are well spent.

12.3 Organizational Safeguards

Not only the reasonable setting up and efficient operation of local management agency, but also top organizational leadership at national and even international level are needed to get effective and reasonable measures of organizational safeguard in the nominated property. In addition, the three-level linkage, among Ministry of Housing and Urban-Rural Development of the People's Republic of China, Department of Housing and Urban-Rural Development of Guizhou Province and Guizhou Provincial Forestry Bureau and the People's Government of Tongren City, is needed to get a good organizational security in the nominated property. At the same time, effective organization and management implemented by management agencies which have a protection duty is needed in the nominated property (Figure 12.1).



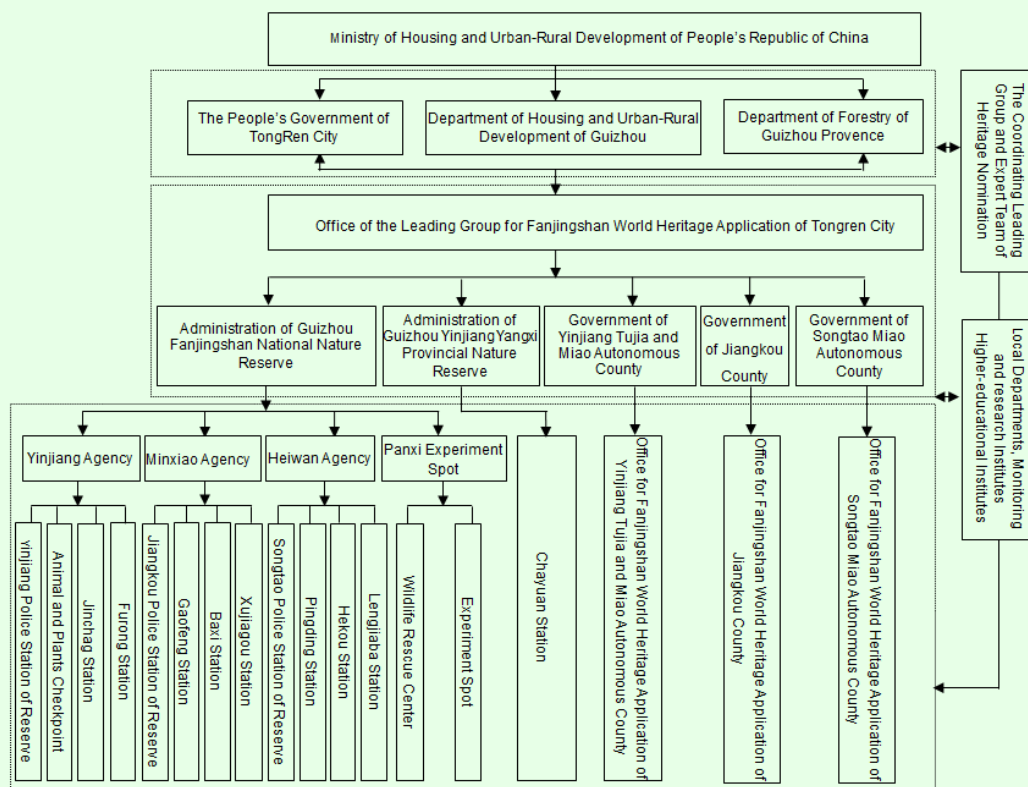


Figure 12.1 Organization agencies of protection and management in the nominated property

12.4 Support of Science and Technology

Strengthen the scientific research, identify the heritage values: The programme is directly in line with national policy to develop China as an 'ecological civilization'. Guizhou is a key province in putting such fine ideals into practice and the annual Guiyang Global Eco-forum is a strong indication of that commitment. Scientific research is the key to identify the values of the nominated property. And it's the academic holy land to study the forest ecosystem and rare endangered species' habitats under the subtropical humid monsoon climate on account of its incredibly scientific value about aesthetics, ecological process and ecological system, and the protection of biological diversity in the nominated property. In the future, the scientific research and the exchanges and cooperation with international academic institutions should be strengthened to implement the protection and management work, and it is important to introduce foreign experts from many fields to study and refine the heritage values in the nominated property. At the same time, the nominated property should jointly organize academic conferences; invite experts from home and abroad to participate in, regularly publish reports about the research progress and take timely measures to strengthen the protection of the nominated property's values.

Strengthen the scientific and technological consultation; deepen the scientific and technological methods: The protection and management of the World Heritage Sites involves the integration of various disciplines and technologies, and it needs strong support from science and technology. Especially for the protection and management of endangered wildlife like *Rhinopithecus brelichi* and *Abies fanjingshanensis* in Fanjingshan, the support of science and technology is an important part of the management plan. The nominated property should set up a joint advisory group of experts, invite international and domestic experts in related fields to participate in and give suggestions, and provide scientific guidance for the nominated property's protection and management. At the same time, the nominated property should strengthen the study and application of science and technology, master the relevant professional knowledge and professional equipment, and use these skills and apply them to the implementation of protection and management. In addition, use the most advanced technology available to realize the nominated property's comprehensive management and monitoring.

12.5 Management Capability-Building

The potential value of the nominated property shall be protected by effective and appropriate management. The management team which is the key to the promotion of management ability will provide better protection with excellent professionalism and stronger execution. Moreover, it's necessary for the local management agencies to invite experts from home and abroad to educate and train staff on professionalism and management skills, such as the management of the World Natural Heritage conservation, the management of national wild animals, laws, English language proficiency, computer and the environmental monitoring of wildlife habitats.





13 | Short-Term Action Plan and Budgets





13 Short-term Action Plan and the Budgets

The nominated property of Fanjingshan will get 100.41 million yuan from 2016 to 2020 as the protection and management fund, 20.22% (20.30 million yuan) of which will be used for capacity-building in protection and management, 11.93% (11.98 million yuan) for ecological protection, 11.80% (11.85 million yuan) for the environmental protection and management, 25.89% (26.00 million yuan) for the construction and sustainable development of the surrounding communities, 11.41% (11.46 million yuan) for carrying out scientific research projects and related monitoring system constructions, 18.74% (18.82 million yuan) for promotion, presentation and education (Table 13.1 and 13.2).

Table 13.1 Composition of investment projects of short-term action in the nominated property of Fanjingshan (From 2016 to 2020)

(Unit: RMB 1×10,000 Yuan)

Category	Aggregate Investment	The Percentage of Aggregate Investment	Annual Quota				
			2016	2017	2018	2019	2020
Aggregate	10,041	100	3,749	2292	1426	1309	1265
protection and management capacity-building	2,030	20.22	650	480	310	295	295
ecological protection	1,198	11.93	356	268	208	188	178
environmental protection and management	1,185	11.80	545	220	160	140	120
construction and sustainable development of the surrounding communities	2,600	25.89	910	740	320	320	310
scientific research projects and related monitoring	1,146	11.41	360	236	206	174	170
promotion, presentation and education	1,882	18.74	928	348	222	192	192

13.1 Range of Budgets

The range of budgets includes various resource protection projects, scientific research, publicity and education, environmental protection and management, infrastructure projects, as well as infrastructure and equipment maintenance, educational projects, community support, ecological protection and other works.

13.2 Basis of Budgets

(1) *Engineering Project Construction Standards for Nature Reserves* from State Forest Administration;

(2) *General Design Standards for Engineering Design of Nature Reserve* from the Former Ministry of Forestry;

(3) *Forestry Bureau (Field) Civil Construction Grade Standard, Road Construction Standards* from the Former Ministry of Forestry;

(4) The current price of equipment, instruments and materials obtained through investigation;

(5) *Methods of Estimates (Pre) Calculation for Forestry Basic Construction Project*;

(6) The relevant technical and economic indicators provided by Administration of Guizhou Fanjingshan National Nature Reserve and Administration of Guizhou Yinjiang Yangxi Nature Reserve.

13.3 Financial Sources and Budgets

The protection of the Fanjingshan World Heritage nominated property is a social commitment aimed at passing on the Outstanding Universal Value to future generations, which is based on the ecological and social benefits, and shared by the global community. The investment in constructions, project funding and operating expenses is mainly supplied by the national and local financial departments. A small part of the funds comes from the operating income of Fanjingshan National Nature Reserve and Yangxi Provincial Nature Reserve.

The total investment for planning projects comes from three channels: the central budget investment, Guizhou provincial budget investment and self-financing. Funds for protection projects, scientific research projects, promotion and education projects, infrastructure and other non-operational basic construction investment are provided by the central and provincial budgets; that for other projects are mainly from the investment of the construction projects. Commercial project funds are mainly from self-financing. Other management projects, investigation and monitoring projects, rescue and breeding projects can apply for National Special Funds. Scientific research projects can apply to scientific and technological departments for research funding. Construction of traditional Chinese herbal medicines pilot base and fruit plantation base can apply for the National Agricultural Comprehensive Development Project Fund (Administration of Guizhou Fanjingshan National Nature Reserve, 2013).

Table 13.2 Short-term action plan and budget of the nominated property of Fanjingshan
(Unit: RMB 1×10,000 Yuan)

Category	Project Name	Aggregate Investment	Annual Quota				
			2016	2017	2018	2019	2020
Protection and management capacity-building	Management facilities construction	530	170	120	80	80	80
	Patrol road maintenance and construction	700	200	200	100	100	100





	Patrol and management capacity-building	200	60	50	30	30	30
	Digital platform developed of the nominated property	300	100	60	50	45	45
	Capacity-building of fire control and maintenance of facilities	300	120	50	50	40	40
	Total	2030	650	480	310	295	295
Ecological protection	Upgrade and maintenance of wildlife rescue/ breeding centre	215	75	50	30	30	30
	Develop and implement <i>Rhinopithecus brelichi</i> Action plan	100	40	15	15	15	15
	Field surveys to identify secondary population sites for <i>R. brelichi</i> introduction	40	20	10	10	10	0
	Rare amphibian breeding and reintroduction programme - salamander and moustached frog	40	16	8	8	8	8
	Rare plants and botanical garden	60	15	15	10	10	10
	<i>Abies fanjingshanensis</i> observation base construction and operation	70	30	10	10	10	10
	Ecological corridor construction - underpasses, overpasses and guiding fences	225	60	60	45	30	30
	Ecological restoration project at the road slopes - engineering, soil, closure etc. in nominated property	430	100	100	80	75	75
	Total	1198	356	268	208	188	178
Environmental protection and management	Develop and implement regulation on the building style in the nominated property	500	200	100	70	70	60
	Construction and management of sanitation facilities	460	250	80	60	40	30
	Build and manage environmental toilets in the nominated property	120	70	20	10	10	10
	Develop and implement Alien invasion prevention and control programme	105	25	20	20	20	20
	Total	1185	545	220	160	140	120
Construction and sustainable development of the surrounding communities	Energy saving furnace/ stoves	280	110	80	30	30	30
	Construction of community waste water treatment facilities	600	200	200	70	70	60
	Traditional Chinese herbal medicines demonstration base in botanic garden	360	120	90	50	50	50
	Development of PA friendly production, branding and marketing	150	30	30	30	30	30
	Base of fruit and economic forest	530	200	150	60	60	60

	Set up the community medical health clinic	200	70	40	30	30	30
	Community co-management tourism operating project - investment loan programme	450	150	150	50	50	50
	Ecological migration research projects	30	30	0	0	0	0
	Total	2600	910	740	320	320	310
Scientific research projects and related monitoring	Resource investigations in nominated property	200	40	40	40	40	40
	Special investigation of <i>Rhinopithecus brelichi</i>	150	30	30	30	30	30
	Special investigation of fungi and bryophyte resources	80	20	15	15	15	15
	Special investigation of Chinese herbal medicine resources	80	20	20	20	15	15
	Ecological base map updating	55	20	100	10	8	7
	Construction and maintenance of monitoring stations	227	100	50	40	20	17
	Purchase and maintain of monitoring equipment	230	100	50	30	25	25
	Scientific research and monitoring capacity-building	30	10	5	5	5	5
	Monitoring system development in the nominated property	44	12	8	8	8	8
	Publication of scientific and technological achievements	36	8	8	8	8	8
	Total	1146	360	236	206	174	170
Promotion, presentation and education	Construction and maintenance of the exhibition centre	500	250	100	50	50	50
	Construction of Fanjingshan visitor centre	200	90	50	20	20	20
	Awareness materials and activities	50	10	10	10	10	10
	Staff training	442	242	50	50	50	50
	Signage system	600	300	120	80	50	50
	Outdoor electronic bulletin board	20	8	3	3	3	3
	Wild plants publicity and education points	20	8	3	3	3	3
	Specimen making and preservation	50	20	12	6	6	6
	Total	1882	928	348	222	192	192





APPENDIXES

Table 1 Coordinates of the nominated property boundary of Fanjingshan

Number	Latitude	Longitude
T-001	N28°02'35"	E108°47'02"
T-002	N28°02'20"	E108°47'02"
T-003	N28°01'44"	E108°46'41"
T-004	N27°59'46"	E108°47'13"
T-005	N27°59'46"	E108°46'26"
T-006	N27°58'01"	E108°46'05"
T-007	N27°56'28"	E108°47'02"
T-008	N27°55'59"	E108°46'08"
T-009	N27°54'54"	E108°47'02"
T-010	N27°54'22"	E108°46'26"
T-011	N27°53'13"	E108°47'53"
T-012	N27°51'40"	E108°45'40"
T-013	N27°51'07"	E108°46'01"
T-014	N27°50'13"	E108°45'04"
T-015	N27°49'44"	E108°44'42"
T-016	N27°49'08"	E108°43'55"
T-017	N27°48'18"	E108°43'08"
T-018	N27°46'30"	E108°42'40"
T-019	N27°46'37"	E108°41'31"
T-020	N27°45'29"	E108°40'55"
T-021	N27°46'12"	E108°40'01"
T-022	N27°45'58"	E108°39'18"
T-023	N27°45'07"	E108°39'32"
T-024	N27°45'25"	E108°38'13"
T-025	N27°46'34"	E108°38'13"
T-026	N27°47'10"	E108°37'30"
T-027	N27°48'00"	E108°37'44"
T-028	N27°48'54"	E108°37'23"
T-029	N27°49'37"	E108°37'19"
T-030	N27°50'46"	E108°36'25"
T-031	N27°51'14"	E108°36'58"

T-032	N27°51'47"	E108°38'28"
T-033	N27°52'34"	E108°38'28"
T-034	N27°52'44"	E108°37'44"
T-035	N27°53'24"	E108°37'52"
T-036	N27°52'55"	E108°36'32"
T-037	N27°53'35"	E108°35'20"
T-038	N27°53'38"	E108°34'12"
T-039	N27°53'53"	E108°33'36"
T-040	N27°53'20"	E108°33'11"
T-041	N27°52'19"	E108°33'04"
T-042	N27°50'49"	E108°32'38"
T-043	N27°52'08"	E108°30'54"
T-044	N27°52'30"	E108°31'23"
T-045	N27°52'41"	E108°30'50"
T-046	N27°53'28"	E108°30'43"
T-047	N27°53'42"	E108°31'48"
T-048	N27°54'04"	E108°31'55"
T-049	N27°54'22"	E108°31'34"
T-050	N27°55'05"	E108°31'26"
T-051	N27°55'12"	E108°31'52"
T-052	N27°55'16"	E108°31'37"
T-053	N27°55'37"	E108°31'37"
T-054	N27°56'35"	E108°33'04"
T-055	N27°56'28"	E108°34'16"
T-056	N27°56'53"	E108°34'37"
T-057	N27°56'06"	E108°34'34"
T-058	N27°56'42"	E108°35'38"
T-059	N27°55'55"	E108°36'32"
T-060	N27°56'24"	E108°37'01"
T-061	N27°56'35"	E108°38'42"
T-062	N27°56'56"	E108°37'41"
T-063	N27°57'47"	E108°37'34"
T-064	N27°57'40"	E108°40'08"
T-065	N27°58'12"	E108°40'44"
T-066	N27°58'08"	E108°41'42"





T-067	N27°59'35"	E108°42'18"
T-068	N28°00'25"	E108°43'23"
T-069	N28°00'36"	E108°44'10"
T-070	N28°00'25"	E108°44'49"
T-071	N28°02'06"	E108°44'42"
T-072	N28°03'11"	E108°45'25"
T-073	N28°02'42"	E108°46'41"

Table 2 Coordinates of the buffer zone boundary of the nominated property of Fanjingshan

Number	Latitude	Longitude
H-001	N28°04'23"	E108°46'48"
H-002	N28°03'32"	E108°47'28"
H-003	N28°02'35"	E108°48'58"
H-004	N28°01'26"	E108°48'43"
H-005	N28°01'05"	E108°49'52"
H-006	N27°58'16"	E108°49'41"
H-007	N27°55'59"	E108°48'54"
H-008	N27°55'01"	E108°50'17"
H-009	N27°54'36"	E108°50'35"
H-010	N27°53'35"	E108°50'06"
H-011	N27°53'17"	E108°51'22"
H-012	N27°52'23"	E108°51'29"
H-013	N27°49'16"	E108°49'08"
H-014	N27°48'32"	E108°46'41"
H-015	N27°46'23"	E108°46'34"
H-016	N27°45'29"	E108°45'11"
H-017	N27°44'49"	E108°42'40"
H-018	N27°44'35"	E108°41'02"
H-019	N27°43'37"	E108°40'19"
H-020	N27°43'41"	E108°38'56"
H-021	N27°45'11"	E108°37'37"
H-022	N27°45'04"	E108°36'32"
H-023	N27°46'55"	E108°36'47"
H-024	N27°47'56"	E108°35'13"
H-025	N27°49'48"	E108°35'42"
H-026	N27°50'56"	E108°35'17"
H-027	N27°51'29"	E108°34'16"
H-028	N27°50'17"	E108°31'34"
H-029	N27°50'35"	E108°31'08"
H-030	N27°51'29"	E108°48'54"
H-031	N27°52'16"	E108°29'42"
H-032	N27°54'29"	E108°30'43"





H-033	N27°54'54"	E108°30'18"
H-034	N27°56'31"	E108°31'34"
H-035	N27°57'32"	E108°34'23"
H-036	N27°56'56"	E108°35'38"
H-037	N27°57'25"	E108°35'53"
H-038	N27°58'01"	E108°36'58"
H-039	N27°58'34"	E108°37'59"
H-040	N27°59'53"	E108°38'28"
H-041	N28°00'43"	E108°37'41"
H-042	N28°02'49"	E108°42'04"
H-043	N28°02'42"	E108°44'24"

Table 3 Species of wild plants in the nominated property of Fanjingshan

Phylum	Family	Genus	Species
Freshwater algae	36	63	99
Lichens	22	47	119
Macrofungi	65	179	452
Bryophytes	78	241	791
Pteridophytes	28	89	349
Gymnosperms	7	20	36
Angiosperms	156	823	2,548
Total	392	1,462	4,394





Table 4 Species of wild animals in the nominated property of Fanjingshan

Class	Order	Family	Genus	Species
Insecta	19	208	1,105	2,109
Arachnida	3	45	110	176
Oligochaeta	1	2	4	26
Pisces	4	10	44	60
Amphibia	2	8	23	43
Reptilia	2	10	28	43
Aves	16	48	129	224
Mammalia	8	24	57	79
Total	55	355	1,500	2,760

Planning Scope of the Nominated Property of Fanjingshan



Universal Transverse Mercator Projection, Elevation from Huanghai Sea Level 1956 and WGS1984

Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

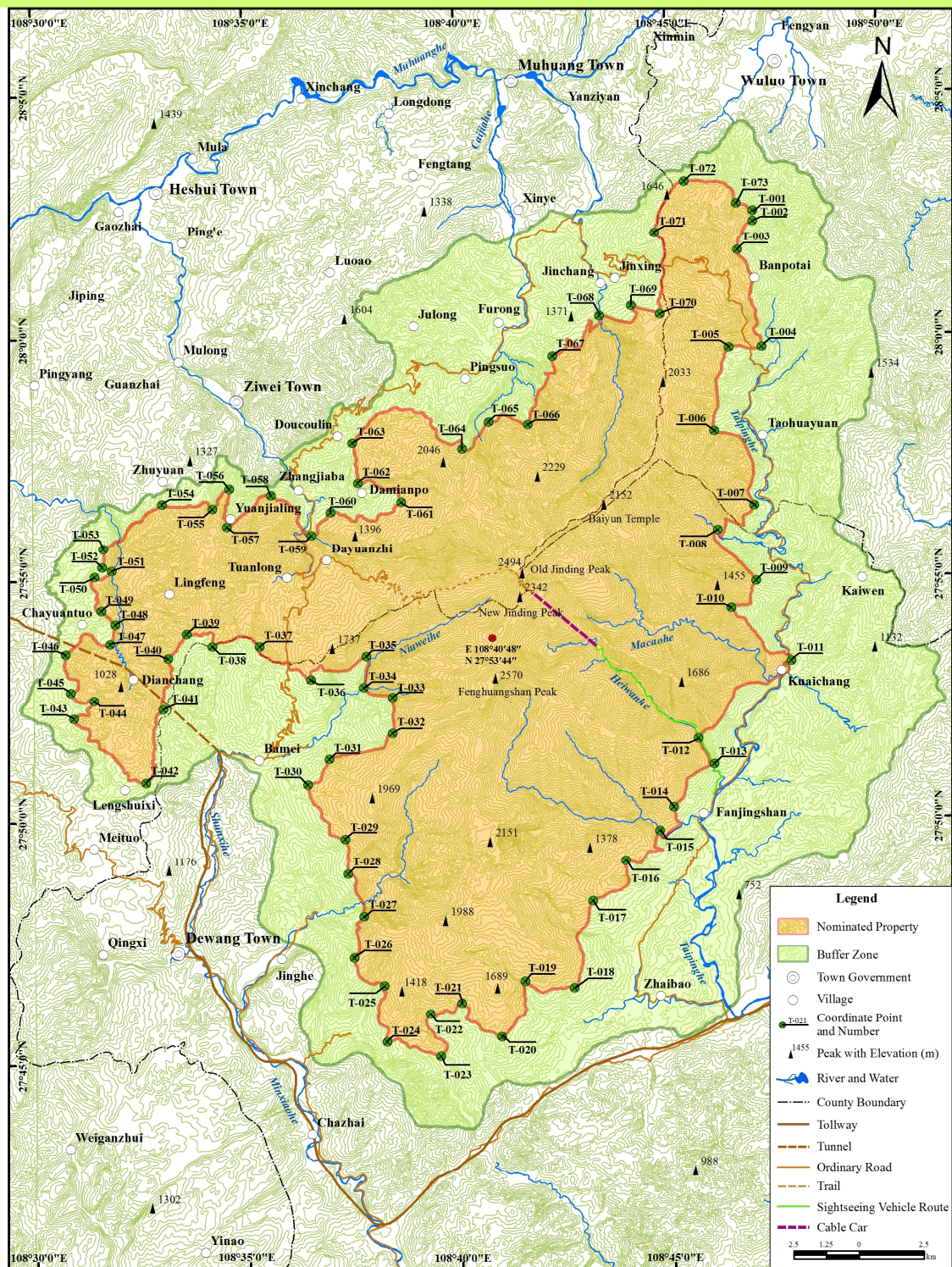
Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016





Coordinate of the Nominated Property Boundary of Fanjingshan



Universal Transverse Mercator Projection, Elevation
from Huanghai Sea Level 1956 and WGS1984

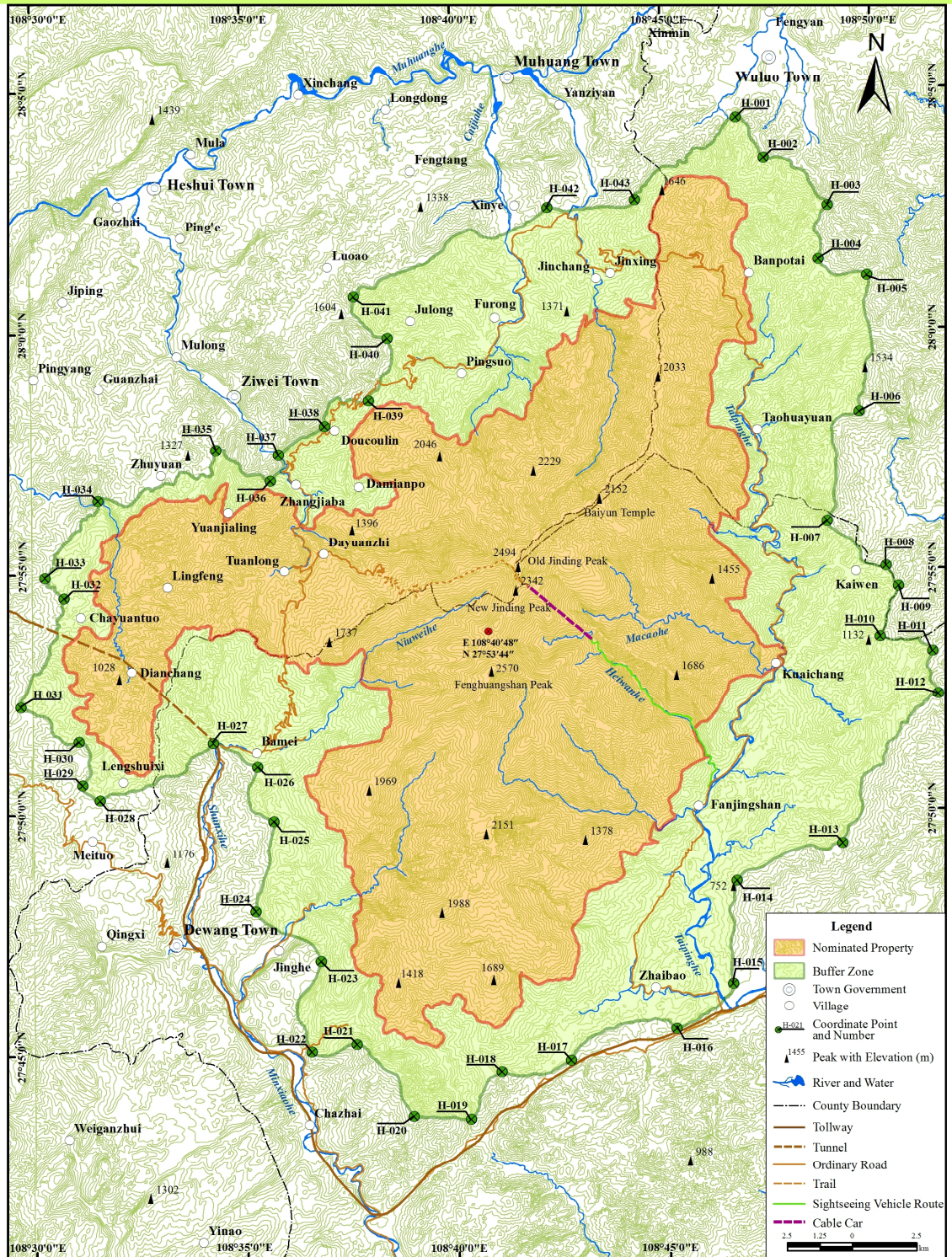
Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016

Coordinate of the Buffer Zone Boundary of the Nominated Property of Fanjingshan



Universal Transverse Mercator Projection, Elevation from Huanghai Sea Level 1956 and WGS1984

Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

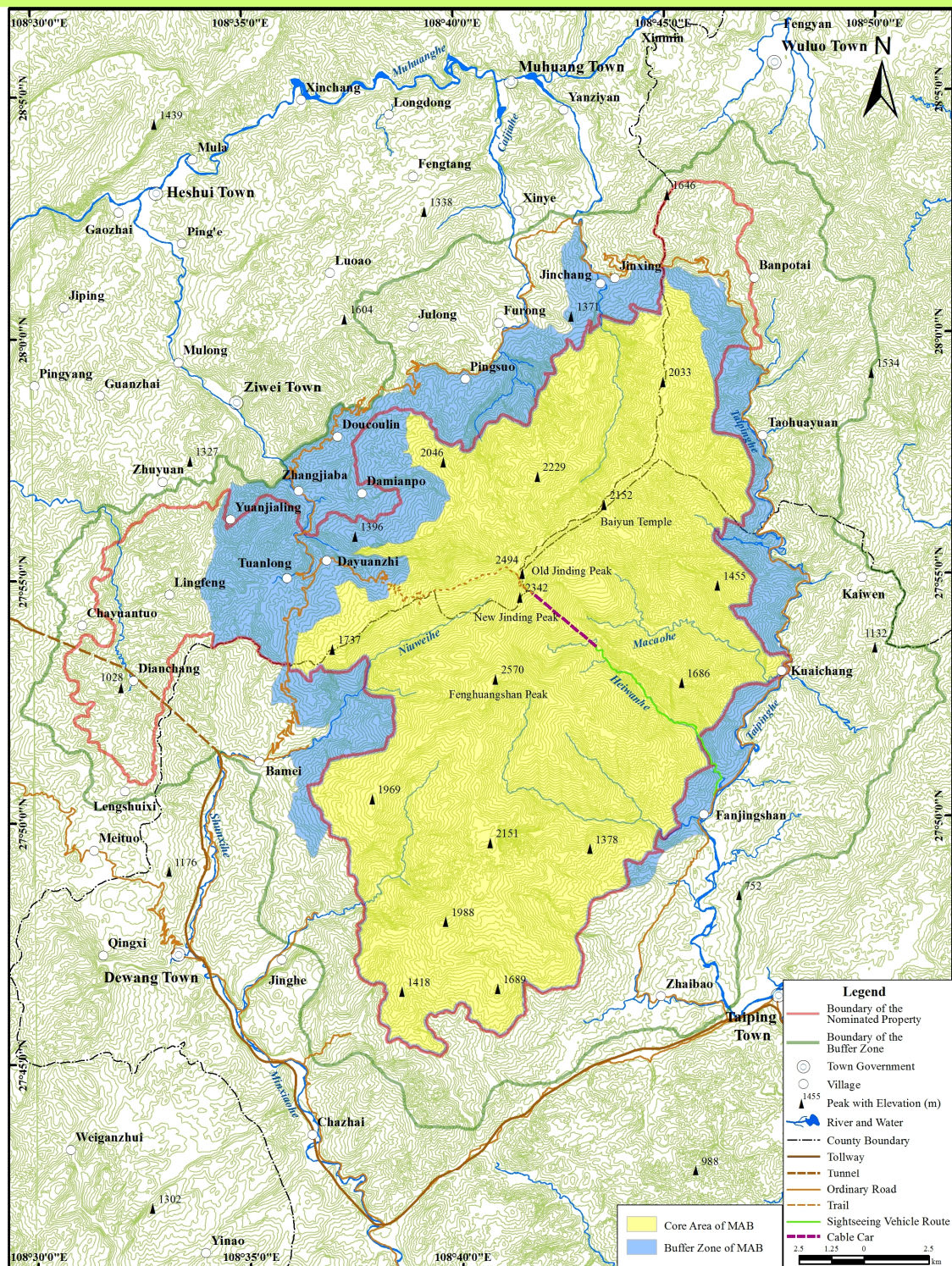
Mapmaker:
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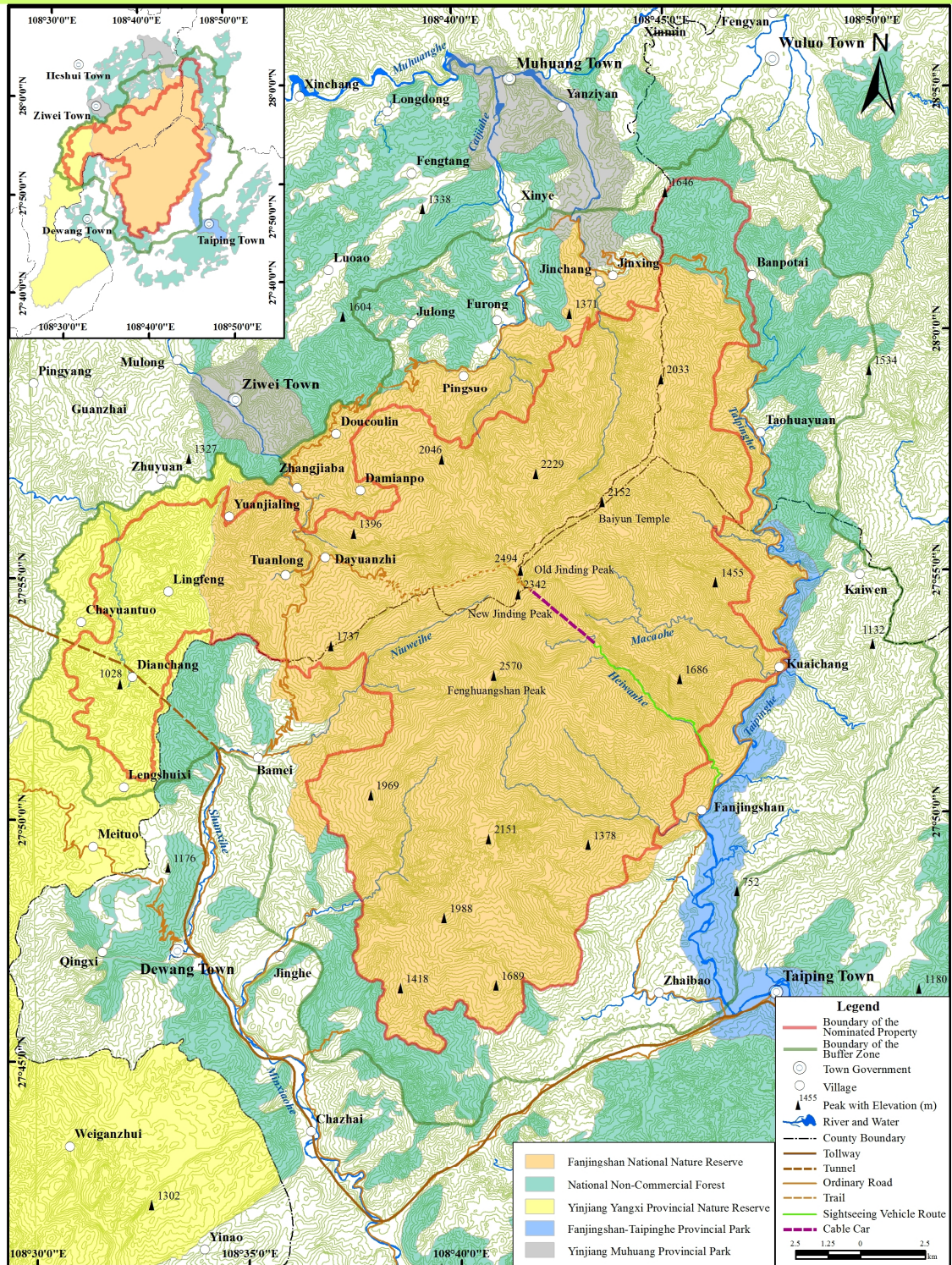




Relationship of the Nominated Property of Fanjingshan to MAB



Relationship of the Nominated Property of Fanjingshan to the Existing Protected Areas



Universal Transverse Mercator Projection, Elevation from Huanghai Sea Level 1956 and WGS1984

Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

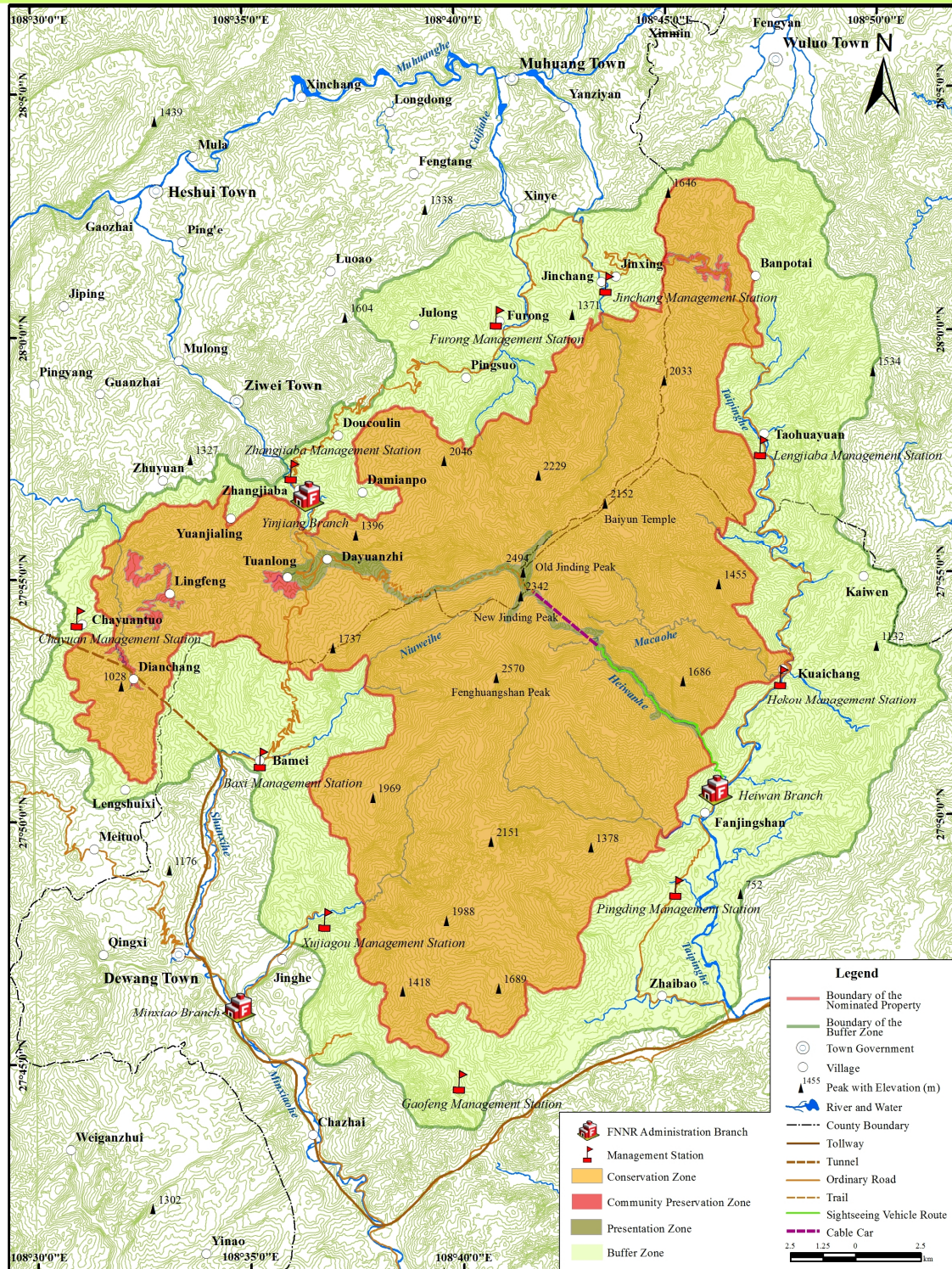
Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016





Protection Zoning of the Nominated Property of Fanjingshan



Universal Transverse Mercator Projection, Elevation
from Huanghai Sea Level 1956 and WGS1984

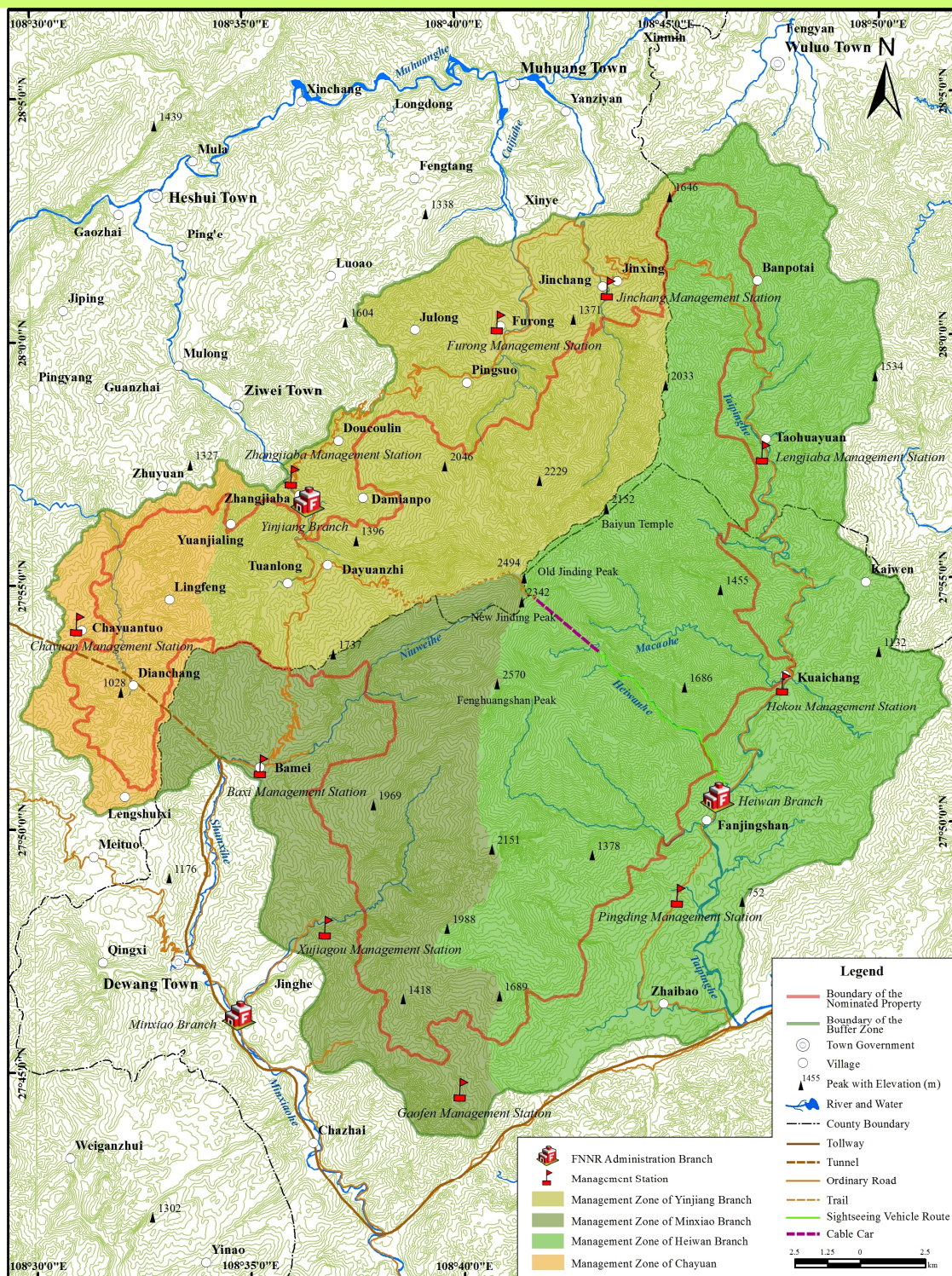
Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016

Management Zoning of the Nominated Property of Fanjingshan



Universal Transverse Mercator Projection, Elevation from Huanghai Sea Level 1956 and WGS1984

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Cartographer:
Xiong Kangning

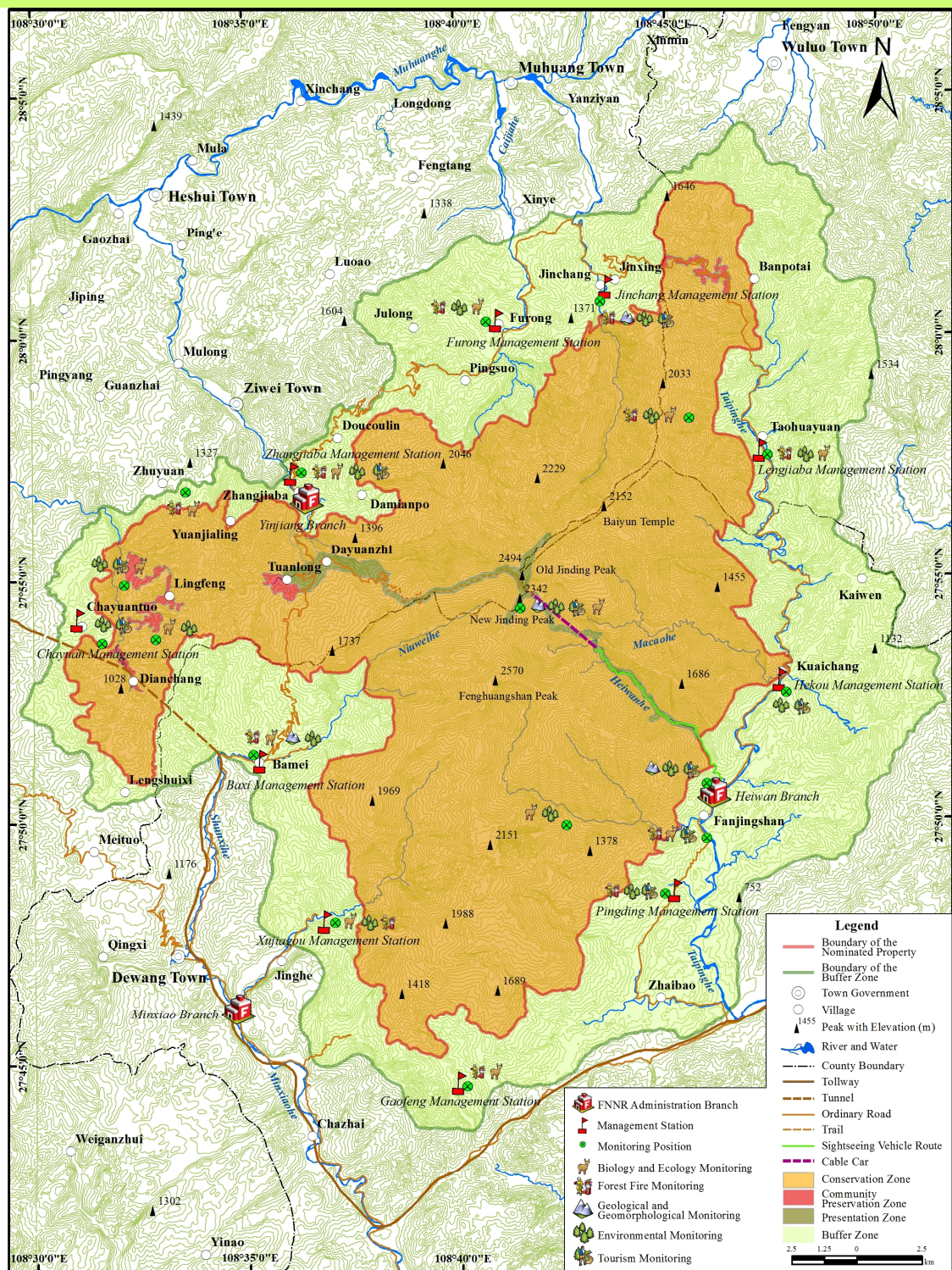
Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016





Monitoring System of the Nominated Property of Fanjingshan



Universal Transverse Mercator Projection, Elevation
from Huanghai Sea Level 1956 and WGS1984

Edit: School of Karst Science, GNU

Cartographer:
Xiong Kangning

Mapmaker:
Ying Bin, Xiao Hua and Wang Qi

December 2016