



**Sustainable development in minority areas in China:
A case study of the Moso minority in the Lugu Lake region**

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Abstract

This paper uses political ecology to analyze the dynamic relation between the Moso minority, their surrounding natural resources and environmental degradation in four periods. It shows that the ecological changes in the Lugu Lake region was intimately linked to the development path of China after the establishment of the People's Republic in 1949. The paper argues that the mainstream statement which saw underdevelopment and traditional living practices of local poor people, especially the minorities, were the main cause of environmental degradation in western China as reductionist and problematic. In addition, it points out that the purely technical-oriented sustainable development policies in minority areas which ignore the power relation between the majority and minorities and lack a comprehensive concern for cultural difference could bring unintended social, economic and cultural impacts and inequalities.

Keywords

Moso minority, the Lugu Lake region, Yunnan, Environmental degradation, Sustainable development, Open up the West, Political ecology

Introduction

China's deteriorating environmental conditions mostly presented by large-scale land deforestation, erosion, desertification, water shortage, and industrial pollution along with rapid economic growth has gained more and more concern internationally since the late 1970s. There seems a tacit consensus that the country is experiencing a serious ecological crisis which may not only threaten its own national security but also bring rising pressure on global resources. While discussing the causes of degradation, a Malthusian concept has been frequently adopted by some Chinese scholars who strictly indicated that China's western region¹ plays an important role in ecological crisis and this has been induced by population pressure, backward agricultural technology, intensified grain production and grazing on inadequate slope lands, moreover, by the traditional life style of minorities (Environmental and Ecological Science Research for West China 2007, Lee 2006, Shen 2004).

The western region is accounting for 71.5% of China's total area. According to the fifth population census in 2000, the West has a population of 364.5 million, in which 21.7% are minority nationalities (Goodman 2004, Shen 2004). Since the economic performance of the West lagged largely behind the eastern region in many aspects, for example, the low GDP per capita per year in 2000 of only 9,119 RMB compared with the national average of 15,435 RMB, the vicious circle of the relation between poverty and environmental deterioration was thus raised out as a core issue in dealing with the western development (Lee 2005, YEDP 2005)².

Facing growing natural disasters brought by unstable western environmental situation³ and the emerging huge economic gap between the West and the East, the Chinese government initiated a series of ecological construction projects in the western region as a win-win strategy of achieving both economic growth and environmental improvement. The most well-known project was the "Open up the West" campaign from 1998 including two ambitious environment restoration projects. First, the Natural

¹ The western region of China was defined as Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang according to the state's "strategy of developing western China" (Shen 2004: 637). In 2001 the Xiangxi Tujia-Miao Autonomous Regions, Hunan, the Enshi Tujia-Miao Autonomous Prefecture, Hubei and the Yanbian Korean Autonomous Prefecture Jilin were also added (Goodman 2004).

² For other comparison of development indicators among the East, Central and West in China, see Shen (2004).

³ Especially in response to severe droughts in 1997 that caused the lower reaches of the Yellow river to run dry for 267 days, and massive soil erosion in the upper reaches and devastating floods in the middle reaches and downstream basin of the Yangtze River in 1998 which caused more than 3000 deaths and around 12 billion US dollars damage (Muldavin 2000, Yeh 2009).

Forest Protection Plan (NFPP), usually referred to as “the commercial logging ban” in the upper reaches of the Yangtze River and middle-upper reaches of the Yellow River; Second, the Sloping Land Conversion Plan (SLCP), also called “Grain for Green” project, which was aimed to convert million hectares of croplands to forest (Yeh 2009, Yin et al. 2005).

However, such policies were following a rather common but simplified logic that “the high natural population increase rate in the western region is caused by low level of socio-economic development” (Shen 2004: 645), and the comprehension that:

“The minorities still live in high altitude mountain areas lacking basic living standards which forces them to keep using traditional slash-and-burn agriculture and burning huge amounts of firewood to maintain their livelihood, hence gravely deteriorates the ecological condition.” (Environmental and Ecological Science Research for Wet China 2007: 15).

Such narrative neither deals with broad political, economic and social forces that led to the changes of land and resource use and the way of production by local people, nor with a more profound discussion of the definition of “backward” or “poverty” in these remote ethnic societies. More intriguingly, on the one hand, the literature of natural conservation emphasizes the ancient ecological conservation philosophy and practices of local minorities in China in the past (He et al. 2000, Hong and Gu 2007, Hong and Qing 2006); on the other hand, these local people have become the main target to be blamed for worsening the nature because of supposed backward and irrational living way. It is just like the paradoxical discourse that was pointed out in the case of Huaorani Indians in Ecuador that indigenous people⁴ are usually perceived as only two polar states of being: either “pristine and untouched” as “the noble savage”, or “contacted, corrupted” and needed to be considered for relocation (Holt 2005: 210). Using such extremes to comprehend human-nature relations of indigenous or minority societies easily leads to the simplified understanding of environmental changes in terms of degradation and therefore comes out with purely technical-oriented solutions.

Berkes, Colding and Folke’s (2000: 1252) argued that in many traditional natural resource management systems in indigenous societies:

“Biodiversity conservation is not necessarily the objective but a consequence of practices. Traditional knowledge is a knowledge-practice-belief complex...as a cumulative body of knowledge, practice, and belief, evolving by adaptive process and handed down through generations by cultural transmission”.

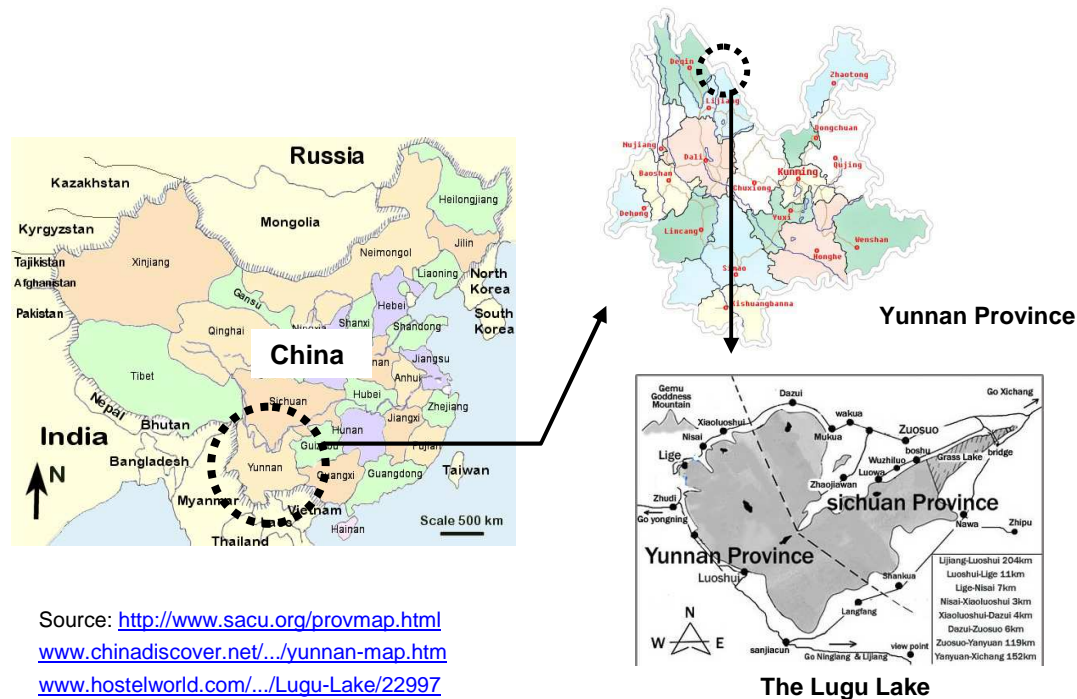
⁴ The discussion of the definition or comparison between indigenous people and minority people is not one of the main issues and will not be dealt with in this paper. However, they do share very similar knowledge-practice-belief system in relation to natural surroundings in many aspects. See (Berkes et al. 2000) and also the description of Moso society in Chapter 2 in this paper.

The knowledge and the practice are not static, of course, but the crucial point is to ask why it has changed? And how it has changed?

Therefore, the aim of this research paper has two parts. First is to ask how the internal and external political, economic and social factors have forced the transition of minority people's knowledge-practice-belief system in relation to the changes of the environment in China. By understanding minority people's traditional practice linked to natural resources use as a first step, and furthermore investigating the causes of the change of people's practices could help in obtaining a more holistic picture of the happening of environmental degradation. Second, based on this understanding, critically analyze the merely technical-oriented ecological construction projects led by Chinese government which were claimed to achieve so-called Sustainable Development in western China.

The Moso minority, the case I am going to use for empirical analysis in this paper, live in the Lugu Lake region which is located between Ninglang County in Northwest Yunnan province and Yanyuan County in Southwest Sichuan Province in China (see figure 1). Around 40,000 people of Moso minority still remain matriarchal society. Because of the marvellous landscape, diverse ecological functions and a very special culture, the Lugu Lake region was established as Natural Protected Area in 1983 and Provincial Tourism Area in 1994.

Figure 1: The map of research field



Before the 1950s, the relation between local Moso and their surrounding nature was intimate. Their economy was based on agriculture, grazing, fishing, and collecting non-timber products. Because of the feudal governance system, religious beliefs and social norms, the appropriation of natural resources was restricted and followed special ritual process. Moreover, the matriarchal social structure appropriately controlled the speed of population growth. Several researches indicate that water quality and the surrounding forest in the Lugu Lake had been maintained by local Moso culture for a long time (Deng 2006, Hong and Qing 2006, Wang 2004, Yan et al. 2008).

Nevertheless, the environmental problems in the Lugu Lake region were growingly revealed after an unmanageable increase in tourism during the 1990s. The reports pointed out that soil erosion happened more and more frequently, and the lake was contaminated and eutrophicated by huge numbers of visitors and transformed agriculture (Dong et al. 2008, Nyaupane et al. 2006). What has been seen and discussed were on the one hand, the polluted water flowing into the lake directly from hostels, the continuing use of fuel woods from barren mountains; and on the other hand, keeping the harvest of non-timber products in natural forests, just as what happened in other Western marginal areas (Muldavin 2000, Zha 2000). As a result, local Moso was seriously blamed for the growing and unregulated tourism development, as well as their population growth and rising demand for fuel woods which was tightly related to their religious and cultural practice (Lee 2006, Wan and Guo 1997, Wang 2006).

The Chinese governmental initiated a series of political and technical projects under a big policy umbrella of the ‘Open Up the West Campaign’ in response to the increasing environmental degradation in the western region since the late 1990s and possible earlier. In the Lugu Lake region, except for the large-scale ‘Going Greening’ policies such as “Natural Forest Protection Plan” from 1998 and “Sloping Land Conversion Plan” from 1999 (which started in 2002 in Yunnan province)(Yeh 2009: 2), there was another “Pro-Poor Environmental Sustainable Program” in cooperation with the British government from 2002 to 2005 and several “Eco-construction projects” assisted by the Dutch government from 2004 to 2008 (Ministry of Environment Protection of the People’s Republic of China 2008, YEDP 2005).

The officials and the planners of these projects saw that the depletion of forests and the pollution from tourism development were related to a lack of local people’s environmental protection awareness, as well as the scarcity of innovative technology. I would argue that tourism development was just one of the causes that revealed and deteriorated environmental problems. Actually, the environmental changes in the Lugu Lake region were highly linked to the development path of China after the establishment of the People’s Republic of China in 1949. Furthermore, government policies on “Sustainable Development” largely ignore the power relations between State-ethnic

minorities, East-West and core-peripheral; merely believe that environmental problems can be solved through more modernization and technological innovation. This will bring about several other problems and unintended impacts after the implementation.

In order to build my argument more precisely, I suggest that insights from political ecology are suited in helping to understand the contextual historical causes of environmental changes in the Lugu Lake region, and to reveal the implications of the Open up the West Project and its narratives. This theoretical framework will be explained in Chapter one.

In the past, research about the impact of monetary economy and tourism development on Moso society has been done, mostly from cultural, anthropological and gender perspectives (Inglehart and Baker 2008, Luo 2008, Mueggler 2008, Zheng et al. 2008). Although several reports recorded the change of water quality and forest biodiversity in the Lugu Lake region (Deng et al. 2008, Dong et al. 2008, Wang et al. 2008, Zhao and Jia 2008, Zhao et al. 2008, Zheng et al. 2008), few of them dealt with the historical, political, social and economic causes related to environmental changes. Neither did they analyze how national development or natural conservation policy have influenced environmental changes and Moso people's livelihood in different stages.

This paper aims to depict and analyze how external forces influence the linkages between Moso minority, natural resource use and environmental degradation in different stages in the Lugu Lake region, and discuss the implication and the impacts brought by the "Open up the west" campaign in order to contribute to a critical rethinking of sustainable development practices in minority areas, and policies that are currently implemented to promote sustainable development in China.

There are 55 ethnic minorities officially recognized in China nowadays. Most of them are scattered in the barren mountainous Northern and Western regions. The reason that Moso minority in the Lugu Lake region is chosen to be discussed in this paper includes several aspects:

First, the Lugu Lake region is located in a relatively isolated hilly area with harsh natural conditions and lack of transportation. Even though the provincial roads were built after the 1970s, currently it still takes eight hours of uncomfortable travel to get inside. These conditions have played a crucial role in shaping economic activities and maintaining matrilineal social structure of the Moso society, whereas Moso people's cultural and religious practices have also influenced resource use in their surrounding. It is meaningful to see how state policies and monetary economy along with China's modernized development have penetrated in such isolated society, hence changed the resource demands and the practice-belief system of the local Moso.

Moreover, because of the unique matrilineal culture, the Yunnan government has strongly promoted ethnic and ecological tourism in the Lugu Lake region as a means to solve the poverty problems (YEDP 2005). It is intriguingly to see how powerfully the state manipulates the representation of minorities in these sustainable projects and government-led information campaigns, for example, the emphasis on the “exotic, pristine, romantic” imagination of the ‘Women Kingdom’ (Yu 2008). Thrillingly, at the same time, the local Moso’s cooperative tourism management and the rethinking of their native culture have emerged as well (Deng 2003, Namihira and Che 2004, Wang 2004, Zhou 2008).

In this research paper I will deal with the following research questions:

1. What are the political and socioeconomic causes of observed environmental degradation of the Lugu Lake region?
2. What are the implications of the following ecological construction and sustainable development policies as part of the “Open up the West” campaign?
3. What are the impacts which altered human-environment relations and affected Moso minority cultural practices, social structures and the biotic environment brought by the ecological construction and sustainable development policies?

In order to answer these questions, the following secondary literature and data sources were collected for analysis. Including large amounts of materials providing details about the Moso culture, economic activities, matrilineal structure and natural resource use in the past, as well as the transition of the Moso society over time; also literature about Chinese forestry management policies will be used. I also reviewed the policy implementation of the “Natural Forest Protection Plan” and “Sloping Land Conversion Plan” as parts of the ‘Open Up the West Campaign’; as well as the contents of the “Yunnan Pro-Poor Environmental Sustainable Development Programme” assisted by the Department for International Development (DFID) of the British Government.

Moreover, I contacted researchers who participated in the “Tourism Development Plan and Village Preservation Plan of Lugu Lake” in 2005 to obtain more profound information about daily practice of local Moso and their opinions and concerns about the restriction of natural resource use by the projects.

A mix of the methods including political-economic analysis, historical analysis, and discourse analysis will be used within this paper inserted in the political ecology framework.

The contents in this research will be arranged as following organization: In Chapter one, the political ecology concepts will be explained, mostly based on Neumann's work (2005) in order to build a framework for analysis. Here, a chronology of four periods is introduced and will be applied to my analytical structure in the following chapters. In Chapter two, what follows is the first period with an illustration of the Lugu Lake region and Moso people before 1949, including its natural and geographic condition, Moso's matrilineal system, traditional way of production and significant cultural practice, also importantly, the restricted way of using natural resources according to the feudal *Tusi* rule and *Daba* religious norms. In the third chapter, starts with analyzing reports and data showing the observed environmental degradation in the Lugu Lake region, followed by analyzing political, social, and market causes in respect of the periods during Mao's leadership and the post-Mao era. In the fourth chapter, the narrative of the "Open up the West" campaign is discussed with the implication of such ambitious ecological construction, confronting this with the social and cultural impacts of Moso society after the implementation of these projects. In the close chapter, I will conclude with a critical perception of sustainable development of minorities in China.

Chapter 1

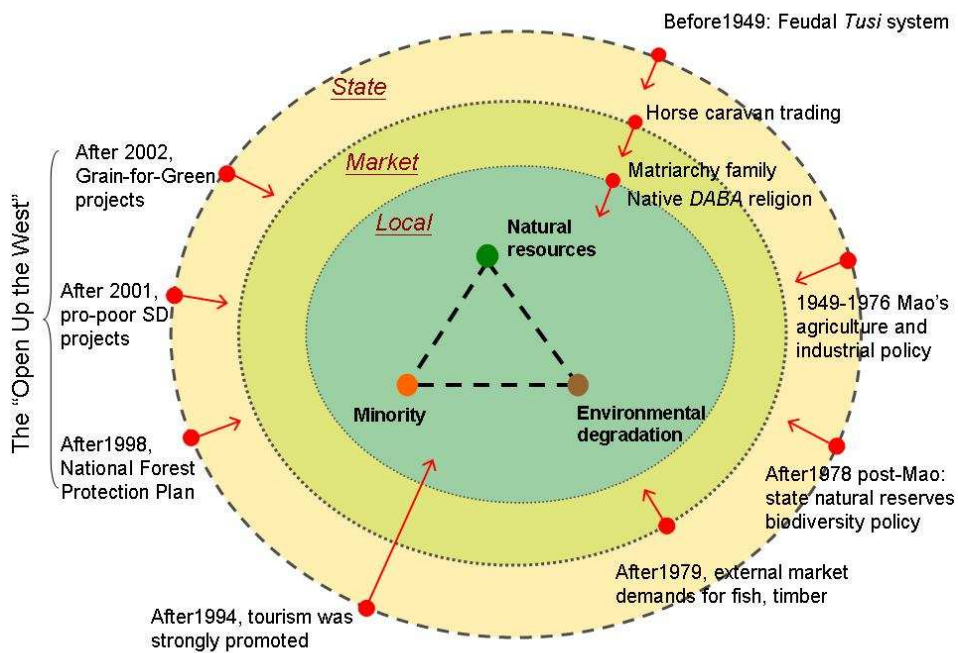
Theoretical framework

For political ecology, the main premise in understanding environmental degradation is that “the ecological problems are at their core social and political problems, not technical and managerial.” (Neumann 2005: 12). Therefore, it is necessary to build a theoretical foundation to analyze “the complex social, economic, and political relations in which environmental change is embedded” (Ibid: 5). Based on political and economic interests, it is also important to ask “how issues of social justice, poverty, human rights are linked to the politics of environmental conservation” (Neumann 2005: 2).

The relation between natural conditions and the Moso people in the Lugu Lake region can be seen as dynamic linkages between three main factors. The first factor are natural resources, which include the Lugu Lake, specific aquatic life, and surrounding forests, farmlands, grasslands and wetlands. The second factor is the Moso people who lived here for thousands of years. They use natural resources and co-exist with environment based on complex religious belief, mythology, social structure and informal institutions (Deng 2006, Hong and Gu 2007, Wang 2004). In addition, under this factor, what cannot be ignored is the prevalent poverty situation of minority societies in western China. The third factor is the observed environmental degradation including deforestation, soil erosion, water pollution, and extinction of specific aquatic life.

The dynamic linkages between these three factors are said to be caused by tourism development and local people’s intensifying exploitation of natural resources such as timber, fish, and seaweed. A political ecology approach helps us to reveal the external forces in a historical time axis, see figure 2. I will divide them according to a chronology of four periods and use different theoretical concepts or methods to assist my analysis.

Figure 2
The external factors in the Lugu Lake region



Source: this research

1.1 The first period: before 1949 - A view from Cultural Ecology

Challenging the “Environmental Determinism” which believed that “the physical environment, particular climate, determined the essential traits of a population’s culture” (Neumann 2005: 16), Cultural Ecology⁵ moved further to see the role of humans in transforming the natural landscape. The key concepts of “change” and “adaptation” helped to understand that “Human societies and the natural environment are in constant flux and interplay. The creative behavioural responses to environmental conditions provide an important key to explaining cultural change” (Neumann 2005: 18).

Before the establishment of the People’s Republic of China in 1949, the Moso society was governed by a strict feudal chieftain system (*Tusi*), practicing a natural economy based on barter. The interdependent interactions between humans and environment, the connection between the Moso’s social, cultural and religious practices and the stable natural conditions could be observed in this pre-capitalist period.

⁵ For the evolution of Cultural Ecology concepts in the fields of geography and anthropology, please see Neumann (2005).

1.2 The second and third period: Mao's era from 1949-1976 / Post-Mao era from 1977-1998 – a view from Political Economy

Under Mao's leadership from 1949, several ambitious agricultural and industrial policies spreading all over China brought tremendous overcutting of forests and large-scale grain agriculture in ecologically unsuitable areas (Shapiro 2001, Smil 1984). After the economic reforms initiated in 1978, the environment was still exploited because of a fundamental contradiction between rapid economic growth which demanded massive amounts of natural resources and a renewed concern for forest protection and biodiversity conservation (Harkness 1998). Although hundreds of natural reserves were established in this period including the Lugu Lake Natural Protected Area, these reserves remained as problematic "paper parks" because of the fiscal decentralization lacking sufficient financial support from the central government to the local communities (Ibid). In 1990s, tourism was strongly promoted in minority areas by the Chinese government to be imaged as a win-win solution for both poverty reduction and nature conservation. Mass tourism without deliberate planning actually brought large environmental pressures to the Lugu Lake region, as well as the dramatic changes in income levels, agricultural structures and cultural patterns of Moso society.

Since "development discourse" was applied in the "Third World" after the Second World War, few communities – "even the most 'primitive' tribes or 'isolated' societies – could avoid the penetration of state's political forces and the global markets" (Neumann 2005: 20). In the 1970s and 1980s, researchers started to shift their concern on cultural ecology towards a political economy approach to analyze "how Third World communities dealt with the social and ecological demands of an external capitalist economy" (Ibid: 20). In addition, "the interactions of the state and the market and the influence on environment outcomes" are also critical (Ibid: 6). For example, geographer Bernard Nietschmann tried to understand "how the pressures of external market demand for resources altered human-environmental relations and affected the long-term viability of local cultural practices, social structures and the biotic environment" (Ibid: 21). This perspective indeed provides a broader view for comprehending the process of ecological changes in the Lugu Lake region in these two periods.

1.3 The fourth period: the 'Open up the West Campaign' after 1998 – a critique of mainstream Sustainable Development

The origins of Natural Resource Management could be traced to the model of game reserves by British elites and the managing strategies in colonies by European imperialism from the mid-eighteenth century (Adams and Hulme 2001). Following with numerous National Parks and Protected Areas built in North America and Australia which took the wilderness combining with the intention of nation building from late 19th

century, the idea of separating humans and other species to preserve pristine nature, and the belief of applying rationality, scientific knowledge and innovated technology in environmental management has been long rooted in the dominant Western culture (Adams and Hutton 2007).

The post-war development discourse in the “Third World” was basically following the steps of “modern technological and managerial practices” introduced from the “First World” (Neumann 2005: 94). While facing the increasing environmental degradation and resources depletion all over the world after the 1970s, the neo-Malthusian idea that “the degradation was mainly caused by over-population and mismanagement of resources” has been growingly accepted (Ibid: 27). Instead of challenging the expanded industrial capitalism and economic growth which brought about ecological pressures, the solution was merely to introduce more modernization, technological innovation and rational planning by specialists (Ibid). This idea influenced the logic that runs through the implementation of sustainable development later on, arguing that the way to reduce environmental degradation is to reduce poverty, needing more economic development and ecological modernization (Ibid).

Therefore, “the discursive construction of environmental degradation justify and rationalize all manner of interventions into people’s daily lives in the name of ‘development’ or ‘environmental conservation’” (Neumann 2005: 102), just like what happened in the western China with the launching of ‘Open up the West Campaign’. The projects with large scale forest restriction and land conversion were essentially “technocentrist and managerial intervention” by governments which ignored “social relations, economic constraints and political power structures” that shaped land and resource use (Ibid: 28).

Located in one of the main upper areas of Yangtze River, the Lugu Lake region has been involved in many eco-construction and pro-poor sustainable development projects. Discourse analysis in Political Ecology helps to explore how environmental problems are discursively constructed in these projects, and to reveal the manipulation of ethnic culture and the implication of the ecological modernized nation which has been rooted in the mainstream discourse of sustainable development in minority areas in the western China.

Chapter 2

The first period- an interacting human-nature relation

This chapter starts with a depiction of the harsh natural condition and the value of ecosystem in the Lugu Lake region; followed by an overview of the political and socio-economic system in the Moso society before 1949, and ending in a discussion of the relation between the Moso's culture, religious practice and natural resource use in this period.

2.1 The natural condition

Located in the hinterland of the Hengduan Ranges across Yunnan and Sichuan province, the Lugu Lake is a plateau basin at an elevation of 2690.8 meters with an area of 50.1 km². The climate has distinct dry and wet seasons, the average temperature is 9°C, with frequent rain in summer, freezing weather and occasional hailstorm and snow in winter (Lee and Zhao 2008, Luo 2002: 52).

The fountainhead of the Lugu Lake is at the foothill of the Lion Mountain, which is situated at Northwest and has been called “Mother Mountain” by the Moso people for generations. The wet season from June to October, water flows cross the lake from Northwest to Southeast, flows into the Yalong River in Sichuan via the wetlands called Big Grass Sea and Small Grass Sea (*caohai*). However, in the dry season, there is almost no discharge, thus the water volume is limited (Su et al. 2007, Zhao et al. 2008).

As a consequence of the limitation of warm temperature and water source, people can only cultivate cold-resistant and drought-enduring crops, such as corn, wheat and potato (Luo 2002). The steep mountains and deep gorges force the Moso settlements scatter along lakesides; also obstruct the possibility of large-area collective production. In addition, before the provincial Yongling road and Yanzuo road were built to connect to external cities in 1970s, the Lugu Lake region was almost isolated. The only way to trade with outsiders was by horse caravan. Men from each household carried their farm–subsidiary products, such as leather, pork, spice and herb medicine crossed over ranges for months to cities in Yunnan and Sichuan, even to Tibet, and brought back salt, tea and cotton (Wang 2004).

2.2 Abundant ecosystem

Although the natural condition is harsh for agriculture, the biodiversity is high in the Lugu Lake region. Inside the nearby forests, there are 869 terrestrial vascular plants species, including a cluster of valuable plants such as Yunnan fir (*Abies spp*), High mountain oak (*Lithocarpus*), Hemlock (*Tsuga dumosa*), Red fruit fir (*Larix polaniniivar*) and a protected species Pendent branch Chinese juniper (*Sabina recurva*), which is located at altitude from 3400 to 3700m, with special scent and excellent timber quality (Wan and Guo 1997, Zhou 2004). In addition, there are 105 terrestrial animals, in which 31 species are national key protected wild animals, for example, Black muntjac (*Moschus crinifrons*), Oriental stork (*Ciconia boyciana*), Black stork (*Ciconia nigra*), Macaque (*Macaca mulatta*), Dhole (*Cuon alpinus*), Asian black bear (*Selenarctos thibetanus*), and the Black-necked crane (*Crus nigricollis*) and so on (Zhou 2004).

The Lugu Lake, as the center of ecosystem in this region, has 133 aquatic lives, including 60 phytoplankton species, 54 zooplankton, 14 submerged plants, and 5 fish species. One kind edible seaweed "*Ottelia acuminata var.crispa*" is the most important and prosperous aquatic family in the Lugu Lake. It plays a significant role as food for the Moso people, their pigs, and also as the bait for fishing (Li et al. 2000). However, in an investigation of unique aquatic life in Lugu Lake held by Yunnan Institute of Environmental Science in 2000, researchers Li et al. did not find the famous rare fish species "*Schizothorax luguhuensis*" which supposed to be here. According to their record, it could be harvested up to 300 tons yearly in 1960s. Nevertheless, it was less and less gradually. Nowadays, as fishermen told, they can still capture some, although the amount is very limited (Ibid).

Besides, the wetland, Big Grass Sea with an area of 7 km² and Small Grass Sea with 2 km², provide fodder for pigs raising. It is also a significant filter for water flow, as well as an important habitat for various creatures such as microorganism, fishes, ducks, storks and cranes (Su et al. 2007).

2.3 The feudal Tusi system

The feudal *Tusi* system had been a strategy for China Central Empire to control over minorities in South-west regions during the Yuan, Ming and Qing dynasty (from A.D.1271 to A.D. 1911). The emperor awarded a certain designation and position for the tribal chiefs who showed their submission, and handed over the entire power for chiefs to govern their own dominion. It was a strict feudal hierarchal system, separating people into several classes with different rights, properties and obligation (Zhang 2005). The *Tusi* system was abolished via Democratic Revolution Campaign in 1956 by the

government of the People's Republic of China, in the name of ending the slavery, liberating indigenous people from feudal exploitation, and following the socialist route.

In the Lugu Lake region, the *Tusi* governance started from the Ming dynasty (around A.D. 1368). Except for the ruling class, local people were classified into three levels. Besides the first official level which is hereditary, the rest two were not able to possess private property and ought to pay very high tax yearly, including grain, stocks, farm-products, and even their labours (Chen and Chin 1999, Luo 2008).

Based on the *Tusi* system, the ruling class has extreme dominative power over natural resource in their territory. "All lands, water, grasslands, forest are belonged to the feudal elite which is comprised less than 5 % of the Moso people" (Luo 2008: 16). The rule of forbidding any logging in a specific period in their Saint Mountain was so strict that there was even a famous tale passed through generations talking about a guy got punished to cut his finger because of cutting down one tree in the past, not mention to the heavy fine (He et al. 2000: 52).

As a result of the feudal *Tusi* system founded on such hierarchy and exploitation, the Moso people need to perform a collective production mode rooted in kinship (Luo 2008). They didn't have enough surpluses for a great deal of trading or accumulating wealth. However, at the same time, this is also one of the reasons for maintaining their matrilineal family structure and generating related daily practice to cope with limited usable resources (Ibid).

2.4 The Moso culture and socio-economic condition

The Moso people who settled in the Lugu Lake region are the offspring of the Qiang ethnic minority from North China around 2000 years ago (Hong and Qing 2006). Nowadays, there are still 40,000 Moso population distributed in Ninglang County in Yunnan (51.8%) and Yanyuan County in Sichuan (48.2%) (Zhao et al. 2008).

Matrilineal society

The Moso minority is best known for its unique matrilineal system. Although the Moso language dose not have its own literature, however, the steady concept of respecting the Mother has been handed down by generations through a number of legends and folk songs (Wang 2004). The saint mountain is called "*Mother Mountain*", the Lugu Lake has another name "*Mother Lake*", and the main building of the house is entitled "*Grandma House*", which is the center and the most powerful space inside a household, and also the sleeping room of the family's head woman names "*Dabu*", usually the eldest one (Ibid).

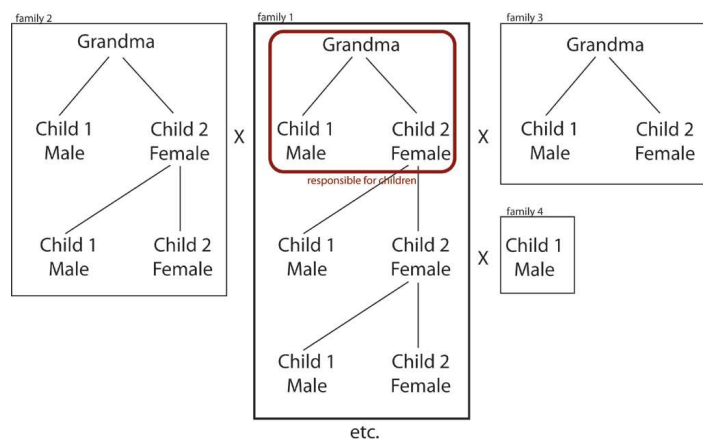
A matrilineal family normally consists of an oldest woman, the grandma, and her sons, daughters, and daughters' children. Also possible the grandma's brothers, sisters and her sisters' children can live in the same family. Meanwhile, the man's children stay

in their partner's family. Therefore, only the women's blood relationship is kept, not the men's, and the uncles would play the role as the father of their sisters' kids (Luo 2008). The figure 3 shows an illustration of this matrilineal structure.

The Moso do not have a so-called "Marriage" relationship as the patriarchal society like Western or Han's world. Instead, "they have sexual relationships called *Tisesse*", referred to as the visiting, or walking marriage by Han Chinese" (Luo 2008: 15). Generally, girls have their own bedrooms, called "flower room", until they start connecting with guys on social occasions in order to choose partners. When a man and woman from different families are in a relationship, the man only stays in the woman's room during the night, and returns to their family's house before the sunrise. This relationship could be terminated at any time by either part. The children of the woman that might have from this relationship will be raised by her maternal family (Ibid, Water 2008). However, this kind of sexual relationship is not as casual as outsiders misunderstand. To start a *Tisesse* must follow a series of strict cultural rules. The society actually has very conservative sexual notion that they even have a special "shy culture" to forbid people to talk about *Tisesse*, giving birth or anything related to sex in front of the opposite sex relatives, not mention to the public (Luo 2008). Even though a couple may decide to finish their relationship, their children can still recognize their biological farther by attending social occasions, or learn from uncles and relatives (Wang 2004, Luo 2008).

Figure 3

The Moso matrilineal structure



Source: Water (2008: 11)

A Moso family usually has up to 20 to 30 members. As the head of such a big family, the grandma "*Dabu*" ought to be in charge of all the domestic affairs. For example, the family finances, the distribution of the labour force, the food, the income and so on. The "*Dabu*" needs to be skilled at farm work and household tasks, and needs to possess the intelligence at financial management to ensure an adequate subsistence of

the whole family (Luo 2002). In addition, the harmony between each house member also depends deeply on a *Dabu's* wise leadership (Ibid). With regards to the division of labor, females are mainly responsible for all the farm works and domestic matters, males usually put effort on caravan trading by horses and mules, or take care of all the traditional rituals inside a family, or even become monks (Ibid).

Natural economy with bartering system

Agriculture has been the main sector of Moso people's production. They plant rice, corn, potato, wheat, highland barley, millet, oats, soybean, pea, green beans, and have certain degree of grazing, fishing, handiwork and the collection of non-timber products such as herbs and mushrooms as their substitute subsistence ways (Luo 2008). Even though the tourism has been more and more prosperous in the Lugu Lake region after 1990s, except for the main tourist sites around the lake, the other villages still remain mostly an agricultural production and a natural economy at least until 2002 (Ibid).

This natural economy based on a barter system is greatly related to the harsh natural condition and Moso's low productivity. As a consequence of the restriction of natural environment, such as the isolated location⁶, the obstruction of mountains and ranges, and the short period of warm temperature and water source, most households can barely achieve subsistence levels production, thus have less surplus available for monetary trading and wealth accumulation. Take a record for example, "in 2000, the average production of grain in Yongning Township was 394 Kg per capita per year. After deducting the fodder and seed remaining for the next year of production, this harvest fell to only 243 Kg, which is far lower than the 1999 national standard of 750.91 Kg" (Luo 2008: 22).

Therefore, the Moso deeply depends on a collective relationship based on the kinship to improve low productivity and distribute resource efficiently (Ibid), no matter on cultivating, domestic working, food and space sharing, or finance managing. Moreover, it is common to observe the cooperation teams consist of different families to exchange labor forces during harvest seasons (Luo 2002). Even in the contemporary tourism business, there is an association collaborated by 73 Moso households in Xia Luoshui village to run the tourism management and share profits together (Su et al. 2007).

Unique Moso culture related to wood use

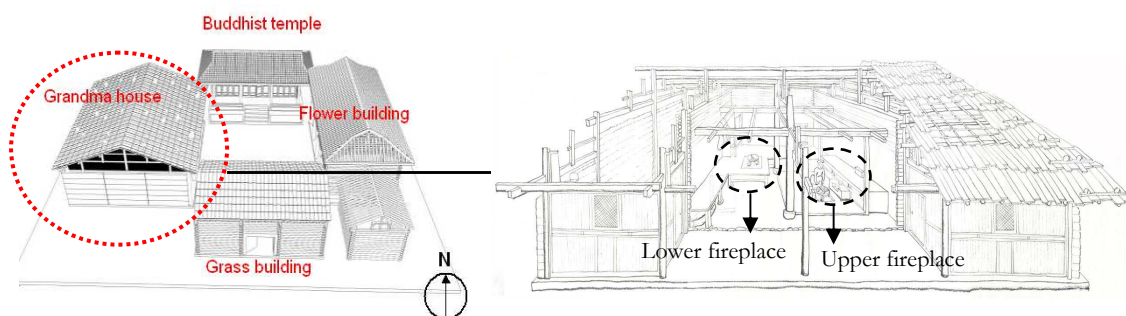
The traditional family house is a significant part of Moso people's cultural practice. The use of natural materials shows the tight connection between people and surrounding

⁶ Although the provincial road was built at 1970, it still takes at least 8 hours to reach Lijiang city in Yongning Township.

environment; the building style illustrates the way of fitting in natural condition and also shows their art craft; the exchange of labor forces while building or repairing a house demonstrates Moso's cooperative mechanism; the arrangement of the residential space explains the power relation within members and the implication of social function of each room (Guang 2008, Su et al. 2007).

Figure 4

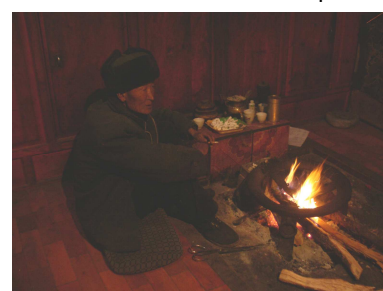
Moso's family house and the fireplace in Grandma House



The flower building



The lower fireplace



Source: Su et al. (2007)

The fireplace in Moso's family house has significant cultural meanings. The lower fireplace is the sacred place to worship the Fire God "*Zanbala*", meaning "*Grandma Goddess*". As a result, the fire should be kept continuously (Wang 2004). Two wooden doorposts are placed by the side of the fireplace. The one nearby the main gate called Female Post, the other inner one called Male Post. Both of them supposed to come from one same tree, reflecting Moso's belief that female and male are from the same origin (Su et al. 2007). Except for the worship significance, as a place of cooking, eating, chatting and warming for the whole family, the lower fireplace also plays a significant role of connecting the affection of each house member (Guang 2008). On the other hand, the upper fireplace has the function of receiving guests and holding rituals, for example, the funeral (Ho 1999).

Therefore, the collection and the uses of the timber from the surrounding forests by the Moso people for thousands of years was not merely for their subsistence, but also deeply related to their building and religious culture. Nowadays, how to preserve the

Moso's family house and fireplace has become an important issue for several architectural scholars (Xia et al. 2007). The governmental officials and tourism agencies also took it as a specific attraction to appeal visitors (Song 2006).

2.5 The relation between Moso's traditional culture and their natural resource use

“For the Moso people, the matriarchal family is the most suitable living way to the tough living environment, and it is also a kind of chosen result.” (Ho 1999) The livelihood of Moso society has been tightened with nature for a long time. Yan et al. interviewed 136 families from 20 villages in the Lugu Lake region from 2004-2006 in order to analyze the relationship between traditional Moso culture and the local environment (Yan et al. 2008). Moso's way of recognizing the environment and using natural resource, which profoundly links to their social and cultural practice, can be seen in the following examples.

The religious influence

The Moso people have two major religious faiths. One is their native *Daba* religion which exists for a long time. The other is Tibetan Buddhism (*Lamaism*) spread from Tibet during the thirteenth century. Both of them play an important role on forming Moso's special attitude and ideology for respecting nature and their moral consciousness and rules of behaviours.

The essence of *Daba* religion is that every object in the world has its own spirit. Natural phenomena and natural objects, including creatures or non-creatures, are all believed to be gods, such as the Earth, the sun, the moon, mountains, fires, winds, rains, thunders, streams, stones, plants and animals. Meanwhile, lots of sacred worships related to them would be held and combined with rules and taboos (Hong and Qing 2006, Yan et al. 2008). In addition, almost all villages have its own holy mountain located behind it, which is normally protected by villagers themselves. People cannot collect wood or graze animals on the holy mountains, not mention to chopping and hunting. Moreover, the aged trees alive for hundreds years are forbidden to be cut no matter where they are (Yan et al. 2008). These rules more or less dispersed logging activities and at the same time forced people to use limited firewood efficiently (Hong and Qing 2006). Another philosophy in *Daba* which has huge difference from modern society is that the belief of the kinship between humans and the nature. Holy mountains and the Lugu Lake are their nature mothers, every natural creatures are their brothers or sisters that all should live in a harmonious and mutual beneficial way. Actually, at the moment of a child's birth, the family already chooses a specific tree in the forest for this baby. It is the first connection

between the baby and the nature, with a significant meaning that they will definitely protect each other (Deng 2006, Yan et al. 2008).

At the same time, the other influential Tibetan Buddhism religion also “provides a holistic view that differs from anthropocentrism” (Yan et al. 2008: 51), and emphasizes on “the unity of substances” and “oneness of human and environment” which suggest that all creatures are interdependent in an integrated system (Ibid). Consequently, all these religious philosophy, rules and taboos brought Moso people the concepts that not only the reverence to the nature, but also the belief to see the environment and human as a whole, the continuous interaction and benefit with each other.

The relatively low population growth rate

According to the statistical data from Statistics Bureau of Ninglang County 1981-2003, “the total Moso population has only increased 30% from about 30,000 in the Qing dynasty to around 40,000 in the 1980s” (Yan et al. 2008: 52).

Take Zhudi village as an example. It is composed with three ethnical groups: Han, Yi and Moso communities. From 1979 to 1999, the population growth rate of the Moso was 15.4%, which was only one eighth that of the Han and one twelfth of the Yi (Yan et al. 2008). Another similar case in Bazu villiage, from 1970 to 2001, the Moso’s annual population growth rate is 0.47%, while the Pumi people’s growth rate is 1.66%, the Han is 1.76%, almost 3.5 times of the Moso’s (Lee and Yan 2004).

The reason that the Moso population could be better controlled than other ethnic communities is deeply related to its matrilineal system. Even there seem more members in a Moso household, the division of family caused by new marriages is rare in the Moso society. In Yan et al.’s investigation, in 136 Moso family samples, only 12 new families were separated from their original matrilineal family, and most resulted from the policy which compelled patriarchal marriage during the Cultural Revolution from 1966 to 1976 (Yan et al. 2008). In a Moso family, all members share works together that have less pressure to increase the amount of labours through having more children like other ethnical families who divide households more often. In addition, in a Moso family, children actually see no difference between their biological mother and their mom’s sisters, thus the women do not have necessity and great motivation to have their own child (Ibid). Consequently, Moso’s low population growth indeed mitigates the pressure of the resources and lands needs in the Lugu Lake region.

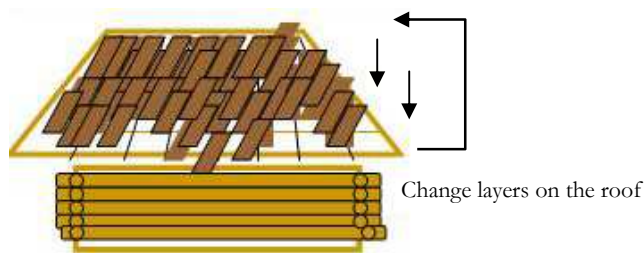
The efficient use of wood

While building a house, although it needs about 400 pieces of logs to repair a Moso house and up to almost 10 thousand pieces to build a whole new one (Song 2006), however, in a Moso family, there are several ways to save wood spending as much as possible. For example, the Moso used to turn over the sides of the wood on their roof

and change the layers up to down periodically in order to extend the utility duration of the wood. Just as the Moso elders said: “The fireplace is just below the ridge of the roof. The wood could be preserved longer after smoked by the fire. That’s why we need to change the layers at times” (Su et al. 2007: 53). If the wood of the building is destroyed or decayed, they would not discard it unless it cannot be cut in smaller pieces anymore to be used into other parts of the house.

Figure 5

The Moso people change layers of the wood on the roof periodically



Source: Su et al. (2007 : 53)

Traditional Moso social structure, natural economy and cultural practice are related to the closed geographic environment, harsh natural condition and inconvenient transportation. Strict feudal *Tusi* system and native religious beliefs also played considerable roles on their natural resource uses for years. Moso’s traditional life and culture has indeed been influenced and changed after the establishment of the People’s Republic of China. Some people were forced to give up the *Daba* practice; some started to exploit the environment without awareness; some villages started the tourism; some remained the agriculture and couldn’t get rid of the poverty; some left their original matriarchal family and have their own nuclear one; some began to promote it as an attraction of tourism. However, the point is not only to ask what changed, but also why changed. In the next chapter, I would raise the socio-economic and policy factors on the route of Moso’s development, which brought the pressures on their surrounding nature, as well as on their traditional culture.

Chapter 3

The second and third period - Environmental degradation

By bringing out the observed environmental degradation phenomenon at the beginning, this chapter aims to discuss how the political economic forces in the second and third periods caused the changes of the ecological condition in the Lugu Lake region; at the same time, how it altered the Moso's economy system, culture and daily practice.

3.1 The phenomenon of the environmental degradation

The environmental degradation in the Lugu Lake region has been revealed and discussed on media and research papers gradually more since early 2000s. The observed facts could be seen in following aspects:

The deforestation

The prosperous natural forests in the past time before 1949 were depleted greatly nowadays. Although some mountains have been replanted afterwards, however, the average diameter of trees is only 5 to 8 centimetres, which is far smaller than the old-growth ones. The ecosystem services of the replanted forests are no longer as much diverse as the natural ones, several valuable plants such as High Mountain Oaks and Aspens were disappeared or naturally replaced by short shrubs and grasslands (Wan and Guo 1997).

The deterioration of lake quality and aquatic life

According to the reports of the Lugu Lake protected area, “the transparency degree of the water body nearby the lake shore in 5 meters distance was 4.5-11.5 meters in the Xia Luoshui village in 1992, yet in 1996 at the same place, the transparency degree was decreased to 2.8-8.6 meters” (He 2001: 50). The native fish “*Schizothorax lugubensis*” became rare and rare, instead, the exotic species raised by people such as carps, whitebaits, and “slender top-mouth gudgeons” which aggressively competed seaweeds with native fish, have been crowded into the Lugu Lake. Moreover, the high death rate of these exotic fish even deteriorated the water quality more (He 2001: 50, Zhao and Jia 2008: 73).

The frequent mudslides

Because of deforestation and the construction of provincial roads, the mudslides in the rain season have happened more and more frequently. It brought unpredictable threats to villages at the foot of mountains, also carried large amounts of silt to the lake. In the past decade, several new formed alluvial fans have already replaced original farmlands (Wan and Guo 1997).

Increasing waste and rubbish

In the early 2000s, without the mechanisms of the sewage treatment system and the rubbish collection, the increasing trash was scattered along the lakeshore everywhere, and the living sewage was directly discharged into the lake. It seriously impacted the environmental quality and led to more “non-point source pollution” in the Lugu Lake (He 2001: 50, Zhao and Jia 2008: 73). A Moso girl who lived in one of the most popular tourist sites, the Lige village, indicated the situation of growing pollution (Wu et al. 2006):

Originally we can drink the water from the lake directly, however, after more and more visitors coming, the water tasted strange.... The tourists like to stay in a hostel which is more nearby the lake, but the more close to the lake, the more sewage and trashes go straight into the water.

Several news and research papers stated that above environment degradation was mainly caused by unregulated tourism development in the Lugu Lake region. I would argue that this is one of the causes that revealed and deteriorated environmental problems, but not the only one contextually. The environmental changes in the Lugu Lake region were highly linked to the development path of China. Meanwhile, the external political economic forces also gradually influenced the economy system and cultural, religious practice of the Moso people which related to a relatively stable ecological condition in the past.

3.2 The cause of degradation – During Mao era

The political factors

The historic records showed that after the founding of the People’s Republic of China, several natural management policies were practiced at the beginning years (Edmonds 1994, Harkness 1998, Lester 1998, Muldavin 2000). From 1949 to early 1950s, the Chinese government had initiated tree-planting program in large areas, along with the land reform that promoted private ownership of woodlots (Lester 1998). From 1952 to 1956, there was a decision of planting wide range shelterbelt in the Northeast China and other areas including Hebei, Jiangsu, Xinjiang, Inner Mongolia, Guangdong, and Hainan islands. In 1955, plans for flood control along the middle Yellow river were begun.

Afforestation was concentrated in south of Yangtze River from 1956. From 1957 to 1960, many collective forest farms were established, and in 1963, subsidies for afforestation were provided by the state to communes and production brigades (Edmonds 1994). However, the performance of reforestation during this period was poor; survival rates of new plantings was extremely low (Smil 1984); and the afforestation statistics were not based on actual measurements (Lester 1998). Moreover, all these efforts actually faced a severe challenge of large-scale deforestation activities at the same time, which was the Great Leap Forward campaign from 1958 to 1961, and the Cultural Revolution from 1966 to 1976 led by the party chairman Mao Zedong.

Declaring the belief that “Man Must Conquer Nature” [*Ren Ding Sheng Tian*], Mao initiated the Great Leap Forward campaign to mobilize the whole society in a desire of “transforming the material world” (Shapiro 2001). The large scale iron-making activities for establishing an industrializing country sharply increased the demand of timber; thus put a damaging stress on China’s forests, especially the North and Southwest regions (Smil 1984, Muldavin 2000). During the 1960s and early 1970s, what followed was Mao’s another notorious policy “Take Grain as the Key Link” [*Yi Liang Wei Gang*] (Shapiro 2001). In order to overcome the enormous famine caused by the Great Leap Forward campaign (Muldavin 2000, Shapiro 2001), “the expansion of cereal production once again destroyed at least 6.7 million ha of forests converting to grain fields” (Smil 1984: 16). In 1964, Mao advocated the entire country to learn from the experience of the Dazhai Brigade of the Dazhai People’s Commune who had overcome natural disasters in Shanxi’s mountainous area (Shapiro 2001). This blind implementation of grain growing resulted in large-scale terraces on ecologically unsuitable regions such as slope and barren lands with heavy amounts of fertilizer use (Ibid).

Severe deforestation was happened during these national campaigns. Although there were intermittently replanting projects, the wood removal scale and speed was far ahead in the whole country (Smil 1984). Take Sichuan and Yunnan provinces where Yangtze basin locates as examples, “from the early 1950s to 1975, Sichuan’s forests have been reduced from 19 to 13.3 percent of the province’s territory, and Yunnan’s forests have drop from about 55 to 30 percent” (Ibid: 19).

The 64-year-old Moso La Yin-Xiang depicted the serious environmental destruction in the Lugu Lake region during this period in Deng’s research interview (Deng 2003: 37, 2006: 197):

When I was a child, the Lugu Lake region was so beautiful, the water flowing from mountains was so limpid, the forests were highly dense, and the Grass Sea (caohai) was full of native unique species. I never heard about mudslides. However, under the policy of “the Great Leap Forward” and iron-making campaign, everybody seemed insane at that time. The troops of

National Forestry Ministry cut surrounding forests to make steel, built roads to transport huge amounts of timber. Mountains were cleared out one by one.

In the Lugu Lake region, we used to see river deer, bears, leopards, wild boars, wolves, monkeys and tigers. But in the period of “take grain as the key link”, in order to protect grain production, the people were called together to expel all the wild animals from farmlands. Once we killed almost 64 wolves. Some dense forests were also cut down in order to catch the hidden animals. Afterwards, the “Learn from Dazhai” campaign during the Cultural Revolution period further depleted all the mountains nearby the lake, and part of the Grass Sea was filled up for cultivation. Several valuable trees such as oaks were disappeared forever.

The cultural factors

The Cultural Revolution started from 1966 to 1976 called for “Red Specialists” to overthrow capitalism and class hierarchy, seriously destroyed all of the previous rules, laws, and cultural heritages (Edmonds 1994). Numerous intellectuals and scholars were accused or even killed. Because of the abandon of all the scientific knowledge and technology, the tree planting programs in the previous period were terminated (Ibid). Dai Qing, a journalist who was known for opposing the Three Gorges Dam, argued that the traditional Chinese philosophical concepts such as Daoism of “maintaining order and balance between humankind and nature” were totally destroyed by Mao-era mobilization activities (Shapiro 2001: 91).

All the traditional cultural practices and religious belief in the minority areas were also suffered prohibition under Mao’s campaign (Deng 2003, 2006). In the traditional Moso society, native *Daba* religion was a sacred strength to avoid environmental destruction by people; matrilineal system which was profoundly related to harsh natural condition also played a role of preventing over use of natural resources. Nevertheless, during the Cultural Revolution, all the *Daba* rituals were forbidden. The Moso’s unique *Tisese* (*walking marriage*) was prohibited by the local government as well, and most Moso “couples” were obliged to marry and live together (Yan et al. 2008). The local Moso La Yin-Xiang stated the diminishment of natural protection notion over time (Deng 2006):

The Moso people used to believe that each creature and substance has its own spirit, for example, the red-crested crane is a saint bird, human being cannot harm it; you cannot hurt the snake, otherwise some terrible things may happen to you...; in the saint forest and mountain, not even one single item you can destroy. However, during the Cultural Revolution, people destruct four traditional notions, no matter saint birds or saint trees were all killed and cut out.

The Cultural Revolution threatened the inheritance of *Daba* spirit and practice, as well as the maintenance of Matriarchal families. In Yan et al.’s survey, it indicated that *Daba* religion truly has had less influence on the young Moso people nowadays. Most of

them who agreed with the importance of protecting the environment actually mentioned about attracting more tourists and obtaining more economic benefits as main reasons, few talked about conserving spiritual mother mountains and water (Yan et al. 2008). *Daba* religious practice is so easy to be lost because it has no written words to be handed down (Wang 2004). Since the elder *Daba* (wizards) were passed away one after one, the inheritance of *Daba* belief has certainly faced a crisis.

3.3 The cause of degradation – Post Mao era

After Mao's death and the demise of above campaigns, the ecological condition didn't get much better. Although the environmental issues were obtained rising attention after sequence of severe pollution incidents in 1972, and were put in the practice of Environmental protection Law and Forest Law by 1979; hundreds of natural reserves were also established one by one in the 1980s (Harkness 1998, Muldavin 2000), however, the environmental degradation was still rapidly extended in the whole China due to ineffective management of natural reserves, and most importantly, the innate contradiction between the concern of natural conservation, hasty economic growth and fiscal decentralization in the post Mao era (Harkness 1998).

Increased timber consumption and problematic logging industrial policy

After the initiation of economic reform in 1978, the consumption of timber and wild animals was dramatically increased during the early reform period. "The annual commercial logging amounts rose from 196 million cubic meters between 1973 and 1976 to 344 million cubic meters between 1982 and 1988. The wildlife trade boosted even more significantly. For example, in Yunnan, the number of leopards' pelts that were sold went up from 10,000 pieces in 1970 to 80,000 in 1988" (Harkness 1998: 914).

The unmanageable timber use was crucially influenced by the state's policy of encouraging industrialization. The central planners deliberately set lower domestic prices for timber production in comparison with world market. The suppliers were allocated to industrial consumers according to plan, not through a market process, thus resulting in further forest depletion (Lester 1998).

In addition, forest regeneration has not kept pace with logging. A series of reforest programs were implemented continuously since 1978 by the Chinese government, aimed at "watershed protection, erosion control, stream regulation, and biodiversity maintenance." (Yin et al. 2005: 20). The reasons of less effectiveness of these projects included the limited financial support, loose practice and management (Ibid). For example, the silvicultural fee (*yulin fei*) set by the state was too low to subsidize re-plantation. It only covered the costs incurred in the first three years after planting, but ignored the costs of post-plantation management, thereby reducing the quality of the

next generation of trees. Therefore, many provinces in Southwest China such as Sichuan and Yunnan had suffered net declines in forest resource during this period (Lester 1998).

Ineffective management of natural reserves

The stated financial support for conservation didn't provide equally with the rapid growth rate of natural reserves in China during the 1980s. On the contrary, the heavy burden was almost left all for local government to carry due to the implementation of fiscal decentralization (Harkness 1998). The local reserve managing offices neither had enough money, nor adequate payments and professional trainings for staffs. The Lugu Lake natural protection area set in 1986, as an example, was indicated by researchers to be in an urgent need of monetary support by the central government to get trained workers in zoology, botany and pest disease fields (Zhou 2004).

Moreover, most reserves are located in poorer regions. An official from the Protection Division of the Ministry of Forestry once pointed out at a forestry conference in Beijing in June 1997 that "30 million poor people were living in and around China's natural reserves" (Yan cited in Harkness 1998: 918). These local governments have had insufficient revenue for a long time (Harkness 1998), not surprisingly it resulted in weaker practice of natural conservation. Local people's livelihoods including subsistence and cultural practices in mountain areas have tightly linked to surrounding lands and resources, consequently, the conflicts between reserve officials and local people have happened frequently (Harkness 1998, Lee 2006).

Household Production Responsibility System

In the early 1980s, in order to improve efficient rural agricultural production, the "Household Production Responsibility System" was initiated as part of rural land reform (Harkness 1998: 914). Since the peasant households were now permitted to grow crops on their contracted lands and trade surplus into markets, farmers were more active in enhancing productivity (He 2000, Shapiro 2001). For those peasants who obtained contracted lands in forests, "fearful that the land use policy may change again at any time, they intended to cut down trees and sell it for money as much as possible" (Harkness 1998: 914). The collective forests and state-owned forests were illegally cut and suffered seriously in the Lugu Lake region at this time (Deng 2003).

Increased demands for hard currency by local Moso

In Luo's research (2002, 2008), she pointed out that the Moso have been increasingly in need of hard currency "while encountering China's market economy in the process of national industrialization" (23). In fact, except for those people living in the tourist sites,

most Moso have faced growing difficulties to afford services such as medication and education since their daily life was still based on bartering natural economy and had not enough money (Ibid). These basic services were provided freely or at cheap price during commune period, even the tax could be paid by grains (Luo 2002: 43). But nowadays, “most of services and goods were commodified, people can no longer see doctors or attend elementary schools without cash” (Luo 2008: 27). The only choice for people was either try hard to earn cash or give up these services (Ibid).

The rising demands of money somehow intensified people’s appropriation of natural resources such as timber, non-timber products, fish and seaweeds in the lake. In the early 1980s, some people started to raise exotic fish in the Lugu Lake for selling with better price or providing tourist’s meals (Deng 2006).

The impact from mass tourism development

The lack of supportive funding by the state and the poor revenue situation of the local government pushed natural reserves officials to take action in promoting tourism as an “environmentally-benign revenue-generating activity” (Harkness 1998: 919). “By 1998, over 12 China’s natural reserves had received more than 100,000 visitors per year” (Ibid). In the Lugu Lake region, partly because of the requirement of hard currency, from the early 1990s, people living in the villages beside the lakeshore have begun tourism business (Deng 2006). The yearly tourists in 1995 were 80,000, until 2003, the number had exceeded 250,000 (Yan et al. 2008: 53).

The mass tourism development in these natural protected areas without guidelines and regulation resulted in people’s widespread collection of wild plants and animals, the intensification of agricultural production, the rising demands of wood and fresh water, as well as the increasing volumes of solid waste and sewage (Dong et al. 2008, Nyaupane et al. 2006, Wu 2006).

The elder Moso La Yin-Xiang stated the condition that local people started the raise of exotic fish in the lake for providing tourists’ meals and obtained good profits on market, but eventually threatened the native fish and produce water pollution (Deng 2006: 197):

Some people started to throw the young exotic fish into the Lugu Lake, such as grass carps and crucian carps which forced the original native fish extinct eventually. Two years ago, they heard that Japanese people like to eat whitebait and there could be great profits by raising this kind of fish. Therefore, people blindly threw young whitebaits into the lake.... However, the newborn whitebaits come out from the bodies of mother fish only after the death of it. Every October the water quality was deteriorative as a result of numerous dead bodies of mother fish.

The environmental degradation in the Lugu Lake was a long-term process with complicated political economic forces and social, cultural transformation of Moso society. Without understanding their interacting relation, it is easily to come out with reductionist solution which might create additional social problems. In the next chapter, the Chinese government's policy in response to the expanding environmental degradation will be analyzed.

Chapter 4

The fourth period– the Open up the West Campaign

This chapter starts with analysing the narrative and the intention of the “Open up the West” campaign. It follows with the environmental rehabilitation and pro-poor sustainable development projects implemented in the Lugu Lake region, while ends the chapter by discussing the ecological, social, financial and cultural impacts, and local people’s struggle while facing the tourism development.

4.1 The Open up the West Campaign

The reason and the purpose

In the 1990s, the Chinese government began to pay attention to the regional inequality between Western and Eastern China after more than one decade encouraging the coastal provinces to forge ahead with economic reform and rapid growth (Lai 2002). The records indicated that the “underdevelopment” condition in the West should be responsible for increasing environmental problems, slow industrialization and urbanization, and the threat to the whole country’s security (Shen 2004). For example, the natural population increase rate in western regions was higher than other areas of China from 1978 to 1999 (Ibid: 645); grain production output per capita in the West was lower than the national average after 1980s (Ibid: 647); and the development indicators such as “GDP per capita, level of urbanization, and share of non-farm employment” in the West all showed a poorer performance compared to Central or East regions (Ibid: 648).

Therefore, a simplified but prevalent conclusion was drawn that population pressure and peasants producing grain below subsistence levels forced people in western China to damage the forests and expand hillside agriculture resulting serious ecological degradation (Shen 2004). Without questioning why and how the livelihoods of western people had become so difficult and exploring the relationship between marginal poverty and ecological degradation, the Chinese government simply took above judgment in responding to western development problems.

As a result of the growing demands from several western provincial leaders who urged the central government to provide aids and initiate more concrete policies to reduce regional inequality (Lai 2002), and severe droughts in 1997 and massive floods in 1998 that directly threatened economic accumulation and ecological security in the East (Yeh 2009, Yin et al. 2005), the central government realized the immediate urgency to

adopt more important and influential projects. It launched the "Open up the West" [*Xibu Da kaifa*] campaign in 1998, which mainly targeted at two issues: to boost economic development in the West, and to solve the environmental problems.

In order to achieve these two targets, the government fostered a series of plans as below⁷:

- The ecological reconstruction projects such as the "Natural Forest Protection Plan" (NFPP) and the "Sloping Land Conversion Project" (SLCP)⁸
- Infrastructures such as highways, communication and water facilities
- The introduction of science, technology and education
- The improvement of the performances of SOEs⁹
- The promotion of the growth of non-state economy, especially rural enterprises and foreign direct investment (FDI)
- The advocacy of green business such as bio-agricultural products, clean energy and eco-tourism

Actually, behind these two observable targets, others intended purposes were clearly present. First, the consumption volumes of manufacturing goods in the "underdevelopment" western regions were still far below the level of coastal regions. In other words, the western regions still remained a potentially large market to be explored (Lai 2002). The infrastructure also lagged far behind, which meant huge opportunities for recruiting labour force to build highways, electricity, and irrigation systems. Second, in relation to natural resources, the western region contained "52.5% of the national water resources, 80% of the nation's potential hydropower, 58% of the nation's natural gas reserves and more than half the nation's main minerals reserves" (Chen 2000 cited in Lai 2002: 445). Under the headings of stimulating western development, these resources and energy generation will be transmitted to other regions to satisfy the nation's rising demand. Third, perhaps the most significant purpose is to ensure national security and unity. Chinese leaders have had a resolved standpoint against any form of separatism for a long time. While facing frequent separatist movements in Xinjiang and Tibet, by launching the western development projects, the central government attempted to avoid ethnic tensions by emphasizing the lifting of living standards of ethnic minorities (Lai 2002). This was seen a process of "nation building" that "forges a common identity and aggressively promotes social homogenization, particularly in terms of civilizing influence of Chinese culture on the non-Han peoples" (Goodman 2004: 326). Announcing a ten year achievement of the "Open up the West" campaign at the '10th Western China

⁷ These are quoted from references including Lai (2002), Namihira and Che (2004) and Shen (2004).

⁸ Or sometimes dubbed as 'Grain for Green' project, in this paper, I will use the name SLCP.

⁹ State Owned Enterprises.

International fair' in October, 2009, Chinese premier Wen Jia-Bao again highlighted that the economic and social progress in western regions successfully brought better ethnic unity and border territorial stability (Xu 2009).

The Open up the West in Yunnan

As the eighth largest province in China, Yunnan is one of the poorest provinces with cliffy and rugged terrain targeted by the "Open up the West" projects. Mountain region accounts 84% of the total provincial lands. The average altitude is 2000 m. The population of Yunnan province is 43.75 million of which 13.6 million are minorities. Up to 15 minorities live dispersedly in mountain areas (Lee 2005). However, Yunnan is also a region with relatively abundant mineral resources and hydropower potential. The location that adjacent to Myanmar, Laos and Vietnam brings Yunnan the noticeable importance of the relationship with these neighbouring countries. Diverse fauna and flora species, the harsh but marvellous landscapes and exotic minority cultures have been seen as advantages in promoting eco-tourism and ethnic tourism (Namihira and Che 2004).

For the reason, Yunnan has taken three main objectives under the Open up the West policies. First is to establish a powerful province with a 'Green Economy'¹⁰; second, to be the connecting bridge of the transportation and business market between China, South Asia and South-East Asia; moreover, to promote minority ethnic cultures through developing tourism and lifting "minority people's scientific knowledge and civilizing level" (Ibid: 24). In relation to the Lugu Lake region, because of the growing environmental degradation in the late 1990s, the major goals were environmental rehabilitation and pro-poor sustainable development. The former one was basically covered in the NFPP and SLCP plans, and the "Eight Ecological Constructions". The latter one was dealt with in the Yunnan Environmental Development Programme (YEDP) assisted by the British government.

In the following sections, the content and impact of these projects will be analyzed respectively, in order to reflect the problematique of the discourse of sustainable development in the Open up the west campaign.

4.2 Environmental rehabilitation

Natural Forest Protection Plan (NFPP)

In order to tackle environmental problems such as soil erosion, mudslides and floods caused by deforestation and slope farming, NFPP basically aims at not only protecting

¹⁰ For example, through the way of protecting environment, exploring clean energy, setting green production standard, and developing green commodities and green brands (Namihira and Che 2004).

the existing natural forests¹¹, but also to expand the plants coverage through planting (Shen et al. 2006). Nearly 90 million ha of natural forests are to conserved, 0.5 million ha of degraded land will be afforested each year, and 1.4 million ha of mountains and hillsides will be closed for natural generation every year¹² (Ibid: 770).

The NFPP covered 17 provinces¹³, but most significant protection and afforestation has been concentrated in the south-western and north-eastern regions. Especially in the upper reaches of the Yellow and Yangtze rivers where the Lugu Lake region is located, commercial logging was completely banned by 2000 (Yin et al. 2005). It resulted in “a drop of round-wood production from 18.54 million m³ in 1997 to 11.02 million m³ in 2003” (Ibid: 22). In addition, “timber resource removals from these areas were forced to decrease from 87.58 million m³ in 1997 to 26.50 million m³ in 2000”, which influenced local people’s non-commercial timber uses such as cutting for fuel or housing (Ibid: 22).

In relation to financial inputs, “between 1998 and 2000, the central government invested 22.26 billion Yuan and planned to spend another 96.2 billion Yuan in the following ten years”, including the expense on purchasing seedlings, regeneration, protection, management and relocation of forest workers, as well as the promised compensation for those local governments which suffered revenue reduction (Ibid: 22).

Slope Land Conversion Program (SLCP)

Besides the regeneration in the natural forest areas, the slope-farming and overgrazing in ecologically vulnerable regions by local peasants were also targeted to be converted into forests in order to “alleviate the deterioration of steep lands, to maintain water storage, and to avoid severe soil erosion” (Feng et al. 2005, Peng et al. 2007). The SLCP which was launched in 1999¹⁴ was such a project focusing on the conversion lands with 25 degrees of slope or more in Southwest China, and lands with 15 degrees of slope in Northwest China (Xu et al. 2005).

In the SLCP program during the initial period (1999-2001), “farmers converted about 12,000 km² of cropland into forest and grassland. From 2001 to 2003, approximately 70,000 km² of cropland and 50,000 of waste land was afforested by

¹¹ From the national forest inventory in 1998, “China’s natural forests amount to 106.97million ha, that is 69.62 percent of the total forest area. Within this amount, 51.5 percent is under state ownership, 48.5 percent is under collective control” (Yin et al. 2005: 21)

¹² For more data of forest regeneration and tree planting under NFPP from 1998 to 2010, please see (Shen et al. 2006)

¹³ Including “Tibet, Yunnan, Sichuan, Chongqing, Guizhou, Hubei, and Hunan in the upper reaches of the Yangtze River; Gansu, Qinghai, Xinjiang, Ningxia, western Inner Mongolia, Shaanxi, and Henan in the middle and upper reaches of the Yellow River; Heilongjiang, Jilin and eastern Inner Mongolia in the northeast; and Hainan Island” (Yin et al. 2005: 22).

¹⁴ It was formally started from 2002 in Yunnan province.

around 400-600 million trees”. By the end of the program in 2010, the aim of China’s government is to set aside nearly 150,000 km² of cropland (Xu et al. 2005, Zhou et al. 2008).

Since around 40-60 million rural households were or will be affected by the SLCP policy (Xu et al. 2005), the government has implemented a series of compensation measures in terms of grain, cash and free seedlings for local farmers in order to ensure their cooperation. “Farmers can receive 1,500 to 2,250 kilograms of grain per hectare per year¹⁵, or in cash equivalent to 2,100 to 3,150 Yuan” (Uchida et al. 2005: 250). “The government also provides farmers 300 Yuan per year for every hectare of forest or pasture they replant to cover their medical and educational expenses” (SFAB 2000 in Feng et al. 2005: 302). In addition, “a fund is also prepared by local forestry authorities for farmers to purchase seedlings or seeds to restore wasteland” (Cao et al. 2008: 1183). The anticipation is that “the subsidies will be provided for 8 years during the project and 8 years more after the project ends in 2010” (Ibid: 1183). It was estimated that “the total investment in the SLCP will amount to around 10 billion Yuan per year, making it as the largest and most expensive environmental program in China” (Yin et al. 2005: 23).

The Eight Ecological Constructions¹⁶

As the yearly numbers of visitors to the Lugu Lake region increased from 80,000 in 1995 exceed to 250,000 in 2003, without an overall development planning and the mechanisms of the sewage treatment system, the lake and surrounding environment suffered heavy pressure from tourists’ waste water and solid waste (Ministry of Environment Protection of the People’s Republic of China 2008, Wu et al. 2006, Zhao and Jia 2008). While realizing the fact that only an unpolluted natural surrounding can attract people to visit it, the Yunnan government invested 80 million Yuan from 2005 to 2008 in the “Eight ecological constructions” (Ibid).

The government basically wanted to take this chance to establish an overall development planning for the Lugu Lake region. Except for building the sewage treatment system and trash treatment system to deal with increased amounts of the waste, the government also strongly promoted “green concepts and innovated

¹⁵ The different amount of compensated grains is based on the different areas. For example, farmers in the upper reaches of the Yangtze River can receive 2250 kg of grain each year, while farmers in the upper and middle reaches of the Yellow River will receive 1500 kg of grain per year (Uchida et al. 2005).

¹⁶ Here, I call this project the name of “construction” because of the direct translation from Chinese language. Actually, it is hard to name it precisely since this project included diverse contents such as infrastructure building, tourism development plans and the issue of bans.

technology” by constructing biogas home systems¹⁷, energy saving stoves and set restrictions for using phosphorus-detergent and disposable plastic products (Ibid).

In addition, it is obvious that the Lugu Lake region has been given a significant position in enhancing ethnic tourism since there were several tourism-oriented projects included in this project either led by official management committee or cooperated with private enterprises. Intriguingly, the projects all have a very similar “colourful, exotic and romanticized” name¹⁸, for example, “the leisure town of Women’s Kingdom”, “Moso Paradise”, “Moso Entertainment Center”, and “Axia Heaven” (Ibid).

A comprehensive discussion of the environmental rehabilitation projects

The ecological effectiveness

After 10 years of the implementation of NFPP and SLCP, the forest coverage rate in the Lijiang city, where the Lugu Lake is located, was claimed to have risen from 40.3% in 1999 to 52.5% in 2008; the afforested areas amounted to 90,000 ha; converted land summed up to 35,000 ha; and there were 14.5 million trees planted (Li 2008). In the Lugu Lake region itself, the research data also indicated that because of the logging ban, the volume of annual allowable forest cutting dropped to zero, and forest cover has significantly increased with a 2.2% annual rate (Dong et al. 2008).

However, besides these data, several negative ecological results were pointed out at the same time. Local Moso people stated the fact that survival rates of planted trees are often quite low (Su et al. 2007). Actually, this situation has been particularly seen in other reforested areas (Winkler 2003, Yeh 2009, Yin et al. 2005). The reason partly was the shortage in seedlings which needed 3-5 years before they can be planted out (Winkler 2003). Since the NFPP and SLCP covered such great-scale areas and huge amounts of seedlings were demanded, without a sound nursery system assisted by the government, localities usually ran out of seedlings and inevitably used immature or low quality ones (Winkler 2003). The other reason was the delay of official annual planting plan. In the Yunnan situation, the annual plan and funding always reached the local level after the appropriate climate period. Therefore, the seedlings were often seriously damaged after the plantation in the rain season (Zha 2002).

In addition, the SLCP was blamed for the overemphasis on tree planting, with less interest in grass and scientific measures (Yin et al. 2005). It only targeted the threshold of 25 degrees of slope without considering specific natural conditions such as soil fertility,

¹⁷ It is a construction called ‘biogas digester’ that combines livestock stalls and toilet that generates biogas from the waste (YEDP 2005).

¹⁸ Gladney (1994) indicated the pervasive minority/majority discourse throughout Chinese culture, art and media that strongly emphasized on these “pristine, colourful, exotic and romantic” images of minority groups (94).

soil type and water capacity, “massive” and “blind” reforestation may cause even worse environmental problems and waste of human forces and financial investment (Wang 2006). In Inner Mongolia, huge artificial plantation has worsened degradation through lowering of the groundwater table (Jiang 2006 in cited Yeh 2009).

Moreover, Xu et al. (2005) indicated that the monoculture of pine plantations has increased the acidity of soil, and also reduced the diversity of both biological system and non-timber forest products. Once insect pest and plant diseases occur, the monoculture forest will have less resistance than diversified one, thus leading to severe ecological and socio-economic losses.

The social cost

In Lijiang city and Ninglang County, before the NFPP and SLCP, almost 80% of governmental revenue came from the forestry sector. Except for some tourist sites, numerous local people still relied on agriculture, forestry, fishing and grazing (Wang 2006). After the implementation of logging ban, cropland conversion and the restriction in fishing, income from agriculture and forestry sectors decreased 2.4 million Yuan yearly, annual income from timber hauling decreased 3.4 million Yuan; and financial revenue of the County government also reduced by 1.7 million Yuan (Wang 2006, Zhao 1999).

At the state level, it was estimated in government statistics that almost 1.2 million logging, hauling and processing workers were laid off by the implementation of NFPP (CFY 2002 cited in Yin et al. 2005). Although the government and enterprises promised to provide employment opportunities in forestry protection sector and transform the forest-based economy into, for example, ecotourism (Winkler 2003, Yin et al. 2005). It was mainly the forest bureau employees or logging workers of state enterprises who benefited from these new positions. The farmers who lived nearby the natural forests have experienced severe reduction in their incomes, and had to confront the restriction of collecting fuel wood and non-timber products¹⁹ (Yeh 2009, Yin et al. 2005).

Therefore, some farmers turned to participate in the SLCP since there was another stronger incentive for obtaining grain or cash subsidies through conversing cropland and planting trees (Yin et al. 2005). Nevertheless, there was a growing uncertainty that how long the state subsidies could last. Some research investigation actually indicated that a large proportion of farmers plan to return to cultivating once the subsidies finish in 2018 (Uchida et al. 2005). The reasons included “the lack of property rights and unclear responsibility for management of the trees, which means the absence of strong incentives for farmers to maintain forest plots in the long-term” (Uchida et al. 2005: 251). In fact, there was a huge gap between local people and forestry officials because “farmers would

¹⁹ China’s natural forests have two systems. One is under state ownership; the other is under collective control. The compensation of the NFPP was mainly offered to state-owned logging enterprises, but not to numerous peasants who significantly relied on the collective forests (Yin et al. 2005).

prefer to plant economic trees which can create alternative income source instead of ecological trees which have been mainly promoted in the project” (Uchida et al. 2005: 251).

The weak financial condition of the government

According to the financial plan of the NFPP for Yunnan province, the central government promised 80% of the total expenditure, the rest 20% should be taken upon by local governments themselves (Zha 2002). However, most counties in Yunnan province belonged to a national list of poor regions. Since the main revenue source of forest industry was terminated by the NFPP, many local governments have been running growing budget deficits and could not afford enough funding to ensure the quality of the reforestation and monitoring. Even the original annual budget for preventing forest fire and forest insect pest was insufficient anymore (Zha 2002).

Moreover, the compensation from the central government such as with grain and cash delivery has been delayed all the time (Yin et al. 2005). Because of the difficulty of subsistence, several peasants went back to logging or grazing (Winkler 2003, Yeh 2009). Consequently, livestock was accused of gnawing seedlings and damaging reforested lands, local villagers were blamed for illegal collecting natural resources in the protected areas. Not surprisingly, continuing conflicts between local people and forest officials were reported frequently, yet these reports seldom discussed the worse marginalized situation of the local people (Lee 2006, Wang 2006, Winkler 2003).

Indirect cultural impact

In April of 2006, a serious fire happened in the Lugu Lake town in Yanyuan county. The flame swept through the area of 5,400 m², and around 25 houses were destroyed (Song 2006). After this disaster, the Moso people started to hesitate about whether to restore traditional Moso wooden houses or build brand-new sturdy concrete ones? (Ibid) Except for considering the resistance ability to fire, such struggle was also mainly resulted from the logging ban of the NFPP.

The traditional Moso house has a deep cultural meaning of articulating power relation, cooperation in production and sharing output within family members. The use of building materials shows people’s adaptation to the surrounding environment; the building style expresses the art craft inherited for thousands of years; the space arrangement indicates the social functions based on the unique social relation embedded in the Moso matrilineal system; the activity of changing layers of the roof wood is also an important collective cooperation between households. Moreover, the fireplace in the centre of the grandma’s house is a significant symbol of gathering, sharing and worship (Su et al. 2007, Xia et al. 2007). The restriction of the timber source somehow directly influenced the maintenance of the Moso house and indirectly brought uncertainty of

continuing these cultural practices. Yet, the serious consideration of the Moso house has become not only talking about culture preservation per se, but also its unusual characteristics for attracting tourists (Song 2006). Some tourists stated that “without staying in front of the fireplace drinking and singing with the local Moso, it is meaningless to come to visit the Lugu Lake region” (Ibid: 2). For many Moso people and tourism officials, it is a dilemma of their cultural alteration, and a business concern as well.

In fact, the choice of whether maintaining traditional house and fireplace or not is deeply influenced by the economic ability after the implementation of the logging ban. Nowadays, people can only purchase certificated wood from outside markets. To repair a traditional Moso house needs almost 10,000 pieces of round wood, it is equal to 9,000 to 15,000 Yuan (Su et al. 2007). According to the governmental statistics, for those villages which are the famous tourist sites nearby the lake, like Luoshui and Lige, “the average annual per capita income in 2007 was more than 4,000 RMB, however, the average annual per capita income in the whole Yongning township was only 1,338 RMB” (Luo 2008: 32). Consequently, for those peasants who do not earn so much, it is getting harder to prepare such huge amounts of money to renovate their house these days, not mention to start a new tourism business.

Furthermore, for those people who cannot afford to buy fuel wood constantly, the women need to go out to collect dropped branches for more than two hours everyday (YEDP 2005). The government proposed the alternative energy plan such as biogas system or energy saving stove to replace the demand of fuel wood, though the problem comes back to the household financial ability again. Without subsidy, these poor families can barely afford the new technical system (YEDP 2005).

4.3 Pro-poor sustainable development program

Yunnan Environmental Development Program (YEDP)²⁰

YEDP is a 4-year program from 2002 to 2005 with around 7.4 million Euros investment funded by the UK Government’s Department for International Development (DFID), in partnership with Yunnan Provincial Government (YPG). The aim was to promote environmentally-sustainable, pro-poor development throughout the Province, and assisted the YPG to build governmental capacity in developing integrated approaches to environmental and poverty-related policy making (YEDP 2005).

²⁰ Yunnan Environmental Development Program had its own website showing details of the implementation of their projects. The depiction of the objectives, contents and strategies of YEDP program in this section is summarized from the nine issues of newsletters on website. See <http://www.yedp.org>

The scheme of YEDP was to define the complex relation between environmental problems and the poverty first, and initiate three pilot activities in three different counties. Through participatory fieldwork, the program expected to build a feedback mechanism to inform policy and practice and to develop opportunities for improved livelihoods of the poor and other vulnerable groups, especially women and minorities (Ibid). Overall, the program indicated three fundamental problems. First, there is a lack of communities' participation and flexibility in the development and implementation of policies. Second, for those farmers who heavily rely on natural resource-based activities, there are not enough alternative livelihood opportunities and options for generating income, especially after the NFPP project. Last, local people still have less chance to participate and benefit from the development of tourism. Besides these three findings, the YEDP recognized how different locations have different environmental constraints and unique cultural practice. Therefore, it suggested YPG to develop a range of solutions rather than applying a "one-solution-fits-all" approach (Ibid).

Ninglang County was one of the pilot plans in YEDP, and it was the Lugu Lake region being targeted. Basically, the recommendation of the sustainable development in the Lugu Lake region was to promote "Ecotourism" and "Pro-Poor tourism" that both enhance opportunities for the poor to participate in tourism and contribute to environmental protection (Ibid).

A critical view of discussing YEDP result

The inadequacy of the epistemology

YEDP emphasized the importance of including local knowledge and showed its "gender concern" and "people-centered approach" focuses on people's lives in the project (YEDP 2005). However, from its discourses and the contents of activities, it is still easy to see the hegemony of recognizing environmental and poverty problems. For example, there was a workshop gathering officials from the World Conservation Union, the State Environmental Protection Administration of Yunnan Province, the Management Institute of Nature reserve in Yunnan and the leaders of YEDP. The officials concluded that serious pollution in Yunnan was mainly caused by "domestic waste, livestock breeding and unreasonable usage of pesticide, chemical fertilizer and plastic sheeting by the local people, as well as their unsustainable utilization of firewood" (Ibid)²¹. These are observed causes, doubtlessly, but without asking why these people "unreasonable use pesticide?" and why they "need to keep collecting firewood", the potential solution that being raised out in the workshop was simply "to increase awareness of the rural environment and of the concept of sustainable development" (Ibid).

²¹ In the Newsletter issue 4 of YEDP program.

Similar in the Lugu Lake pilot, the promoted definition and strategies of Ecotourism came out from “The International Ecotourism Society”, a non-profit organization founded in the USA (Ibid)²². I would argue that why do they not investigate the Moso traditional knowledge which related to efficient wood use, religious belief and matrilineal system? The concept of the natural resource management and biodiversity conservation may not be the objective at that time, but indeed a consequence of practices (Berkes et al. 2000, Deng 2003, Yan et al. 2008). Why do they not ask why and how the spiritual belief of respecting the nature was diminishing by generations and encourage the Moso to revival it but instead, educating them the globalized, monopolistic epistemology of ecosystem and environmental protection concept defined by the mainstream scientists?

With regards to Pro-Poor tourism, the outcome was more suspicious because the village that YEDP chose to deal with was Luoshui, the first village started tourism business in the 1990s, and the most well-being one so far. Actually, the opportunities for developing tourism in the Lugu Lake region have been principally influenced by the geographic location. For those villages which are not nearby the lake actually encountered worse marginalization and needed the assistance for finding alternative development much more (Xia et al. 2007).

The local struggle of developing tourism

The tourism program now in the Lugu Lake region has now been standardized as a two days package including horse riding, rowing, traditional dancing and singing performance, introduction of Moso house and matrilineal culture, and barbecue dinner by the lake (Deng 2006). For the visitors, mostly the majority Han people, the imagination of the pristine nature in the Lugu Lake region and the exotic Moso culture are the romantic experience different from their living places that they come to seek for (Luo 2008). The Moso realized their culture can attract tourists, therefore, they were willing to “display” it; the tourist agencies, media, and the governmental officials also strongly promoted the Moso as a “living fossil”, “women kingdom”, and “a free-love society run by beautiful women” (Ibid: 32).

Luo (2002, 2008) worked on deep field research in the Lugu Lake region and found out that most local Moso stated that they do appreciate tourism development because it improved their economic situation. In addition, “they began to feel proud for their cultural identity since it has received more and more attention” (46). However, under the tourism business, the Moso culture was not merely presented by the local Moso people, but instead by the media, professionals and businessman from outside. Such misrepresentation has brought them puzzlement and struggle at the same time.

²² In the Newsletter issue 7 of YEDP program.

For example, some tourists are specifically interested in the unique “*Tisese*” relationship (*walking marriage*) in the Moso society. “Some businessmen even built a small red-light district near the Lugu Lake and promoted the prostitutes as a way to experience Moso culture” (Ibid: 49). In the Moso society, the walking marriage has been based on numerous rules and taboos for thousands of years, Moso women feel really offended by such distortion which is founded on “mainstream patriarchal society” (Ibid: 49). A Moso girl depicted that:

“the most frequent questions the tourists asked were: ‘Have you practiced walking marriage? How many men you’ve practiced with?’ and asked that if they can ‘walk’ into my room. I hate that last question, I hate it!!”²³ (Zhou 2008).

Furthermore, running the tourism business has more or less changed the original division of labour and power structure in the Moso society (Luo 2008). In the past, women played the core roles in producing and distributing resources in a household; men basically focused on caravan trading. Nowadays, men have taken over the leading role in important decisions since “the households are no longer the center of economic, political, and social activities” but the tourism-related business (Ibid: 40). The family’s head grandma “*Dabu*” is just like a display showed to tourists today and she actually loses her original power and spiritual representative symbol. Additionally, while getting in touch with patriarchal values more frequently, some Moso people chose to marry to Han people to start nucleus families these days (Luo 2008, Su et al. 2007).

A Moso girl in “the Women’s Kingdom” video confessed:

“Tourism development indeed brought higher standards, but I still don’t like it. I want to be what I used to be. I’d rather hide myself in the mountain eating potato or herding cows than entertain tourists everyday.” (Zhou 2008).

It is hard to judge to what extent has the tourism development influenced the modern transformation of the Moso society; and it is not saying better to preserve traditional culture as a static fossil. But crucial it is to think about what kind of imaginary culture is represented through tourism and manipulated by whom, as well as to challenge the so-called sustainable development in minority areas.

²³ This depiction made by the Moso girl could be seen on the video “The Women’s Kingdom” on the website: <http://www.germancamera.com/kingdom.html>

Chapter 5

Discussion and conclusion

5.1 Discussion of sustainable development in minority areas

Sustainable development was brought into “the political mainstream” forum by a well known report “Our Common Future” on Bruntland Commission (Neumann 2005: 84). The report focused on poverty as the main cause of environmental problems and suggested a way of promoting economic development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bruntland 1987 cited in Neumann 2005). This definition has been adopted universally leading to rational technological and managerial practices in dealing with environmental degradation yet seldom with regard to social justice and equality. The case of the Moso minority in the Lugu Lake region has provided us a picture of several problems and of people’s struggle between development and traditional culture under the implementation of sustainable development policies.

Goodman (2004) pointed out the aggressive purpose of “promoting social homogenization and forging a common national identity” by Chinese government using Open up the west campaign (326). By emphasizing the backwardness of the minority people and how their poverty situation has worsened the surrounding nature, it legitimates the state’s authority to “enforce them homogeneity, morality and civility among the nearly 92 percent of Han majority” (Gladney 1994: 116). The minorities in China are almost always portrayed in media and propagandas as “colourful, exotic and romantic people surrounded by pristine nature with traditional customs smilingly singing and dancing” (Ibid: 97). Tourism mixed with exotic performance and commodities of minorities’ “images, artworks and customs” have been promoted as the best way to save them out of poverty (Ibid), just as what has been seen in the Lugu Lake region. However, Gladney precisely indicated how the majority Han intend to reaffirm their superiority by dominating the discourse of the representation of minorities²⁴ (Ibid). The case that several male tourists manipulated the meaning of Moso’s “*walking marriage*” and used their role of consumers to take advantage of Moso women was one typical example that how majority people show their patriarchal sexual hegemony in imaging the minorities. China used to emphasize it as a multi-national country, especially through the international broadcast on special events such as New Year shows or the Olympic opening in 2008.

²⁴ For more excellent discussion about why majority Han need to “seek for their own identification at the expense of the exoticized minorities” in China, please see Gladney (1994).

Behind the highlight of the strength and harmony of state's multi-nationalities, and the "myth of the democratic representation" of minority cultures (Ibid: 96), however, the minority people "are encouraged to do little more than sing and dance" in China (Ibid: 118). The mainstream discourse and practice of sustainable development in western China has exactly endorsed this relation between state and minorities that Goodman called "the internal colonialism and colonization to the development" (2004: 327).

Another pertinent issue of concern is that to what extent we can judge sustainable development projects as effective or successful? In relation to the income standard, the primary tourism site Luoshui village in the Lugu Lake region dramatically became one of the ten wealthiest villages in Lijiang city (Zhao and Jia 2008). While "the average annual per capita income in Luoshui in 2007 was more than 4,000 Yuan, the annual per capita income in other villages was still remained less than 800 Yuan" (Luo 2008: 32, Zhao and Jia 2008: 72). As a result of logging and fishing bans of environmental protection projects, these disadvantaged people have been placed more marginally and have faced increasing difficulties in maintaining basic subsistence. Since the demand of hard currency was rising because of the penetration of monetary market, numerous Moso have either migrated to cities to increase income, or been forced to give up luxury medical services²⁵ and education opportunities²⁶ (Luo 2008, Zhao and Jia 2008). Extremely imbalanced social-economic situation between villages would bring social instability within the region (Zhao and Jia 2008). This stands as another critical issue that the sustainable development policies should take into account.

Of course, we cannot deny that the development policies in minority areas also make minority cultures noticeable and instil in them pride towards their identity yet again. Not only the Moso people, but also several ethnic-minority elites such as Yao scholars are having more institutional and cultural spaces to reclaim Yao culture, and they attempted to "see the colourful representations of ethnic traditions not as practices of commodification and exoticization but as ways to gain ideological distances from dominant discourses produced in 1950s and 1960s" (Litzinger 1998: 240). Still, the Moso continuously face struggles, for example, whether to rely on the external professionals to represent Moso culture for them or trust their own comprehension; whether to maintain the fireplace, the wooden roof and wooden house with profound meanings or adopt biogas stoves and new building materials promoted by the government. Nowadays, few

²⁵ For detailed information about the comparison between Moso's disposable income and the cost of medical services, see Luo (2008).

²⁶ "The dropout rate for the higher grade students in local primary schools in the Lugu Lake region was 52.4 % between 1998-2000" (Wu and Yang 2005 cited in Zhao and Jia 2008: 72). In order to prevent this condition, "the Chinese government has cancelled all school fees of elementary school and junior high school in 2007. Therefore, in 2007, 98% of Moso youth attended compulsory education and none dropped out" (Luo 2008: 29).

people keep sharing the tales and legends about respecting the natural environment from the *Daba* belief, but instead emphasizing the ecological knowledge brought by external scientists. Therefore, there is still space to see how the Moso people exercise their agency in the process of sustainable development.

At last, as a result of strict restriction of commercial logging in the natural forests in China after the implementation of the NFPP, the domestic supply of round wood has faced serious difficulty to satisfy the growing timber demand since the exports of China's wooden products such as furniture dramatically increased in the past ten years (Forest Trends 2006, Shen 2006, Yin et al. 2005). To fill this gap, China has turned to the international market and imported huge amounts of log, lumber, pulp, and paper products (Shen 2006, Yin et al. 2005). From 1997 to 2005, the total volumes of imports of these timber related products were enlarged from 40.2 million ha to 1,340 million ha (Forest Trends 2006). The evidence showed that plentiful illegal logging in Myanmar, Indonesia, Russia and other African countries has been exported to China frequently (Forest Trends 2006). While emphasizing achievement of sustainable development in China itself, Chinese government has kept ignoring the unsustainable environmental situation and social problems caused by illegal logging in other countries (Forest Trends 2006, Yin et al. 2005). Without reconsidering and re-managing the demand side of timber products globally, it is ironic to declare the success of reforestation and sustainability merely within China's territory.

5.2 Conclusion

This paper argues that the mainstream discourse of understanding the causes of environmental degradation in western China, especially in the minority areas, and the following government-led sustainable development policies as reductionist and problematic. By a historical analysis of the Moso case in the Lugu Lake region, it helps to reveal that the environmental changes were highly linked to the development path of the state after the establishment of the People's Republic of China in 1949. In addition, the sustainable development projects without regard to the power relations between State-ethnic minorities, East-West and core-peripheral could bring more but not less social, economic and cultural impacts and inequalities.

Before 1949, the isolated Moso society maintained an intimate interdependent relation with surrounding nature. The limitation of appropriating natural resources at this time was due to strict feudal *Tusi* system and *Daba* belief with its special philosophy, taboos and norms; the harsh natural condition and the exploited relation imbedded in the *Tusi* governance also heavily influenced the formation and maintenance of matrilineal structure, collective production and natural economy system in the Moso society.

The environmental depletion started to happen during Mao's leadership toward a socialist industrialized country to compete with the United States and Soviet Union. Specifically under the "Great Leap Forward" campaign, "Take Grain as the key link" policy, and the "Cultural Revolution", even the most remote villages could not escape from such national-scale military mobilization. The forests were chopped down for supporting iron-making activities; slope-lands were converted for growing grains; the traditional philosophy and norms were abandoned; the religious practices were forbidden. The previous close and balanced linkage between the environment and human being was replaced by an aggressive and confident attitude that "Man must conquer the nature" imposed by the state.

The ecological condition did not improve much despite of the building of environmental laws and numerous natural reserves in the Post-Mao era. Several reasons mixed with each other such as increased timber consumption, weak management in natural protected areas, rural land reform system, the penetration of money and markets, and the mass tourism development. All of these made the continuous natural resource depletion on the one hand, and inefficient reforestation and poor management on the other hand.

Facing the growing regional inequality and ecological degradation all over the country, Chinese government initiated the Open up the West campaign in 1998 in order to boost economic development in the western China and improve environmental condition simultaneously. Although huge amounts of re-plantation was achieved by the NFPP and SLCP projects, basically on their quantities but not qualities, several negative ecological results and unintended social costs were indicated at the same time. The pro-poor environmental sustainable development project in the Lugu Lake region essentially promoted the alternative energy stoves to substitute people's need of fire wood and advocated ecological tourism as a primary way for their future development. This paper argues that once again we see the dominance over the interpretation of ecological knowledge from the majority's point of view with a simplified, sometimes distorted representation of Moso's culture in order to serve tourists.

Along with the development path of China toward modernization, the Moso case demonstrates how easily and strongly state's policies and market penetration influenced the minorities to alter their social, cultural and subsistence practice and natural resource use. Ironically, these relatively vulnerable people are always to be blamed for damaging the environment on account of their backwardness and poverty. The sustainable development policies in China usually ignore such sturdy core-peripheral relationship imbedded in the process of national development between the state and minorities, and between majority and minorities, but actually keep reproducing this dominant relationship by promoting mainstream discourse and implementing government-led

projects. The minorities do have their autonomy to certain degree in terms of reaffirming their traditional culture or managing their own tourism business. Nevertheless, the subjectivity and independence of minorities always threaten the Chinese government who desperately seeks for an imaginary homogeneity within its “multi-national country”. Therefore, the minorities still can do little more than expressing their colourful symbols by singing, dancing and displaying nowadays. Meanwhile, sustainable development in minority areas is yet under the hegemony of the state which lacks a comprehensive concern for social justice and equality, and deep respect for cultural difference, in particular in resource management.

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