



Review

National parks in China: Experiments with protecting nature and human livelihoods in Yunnan province, Peoples' Republic of China (PRC)

D.Q. Zhou ^a, R. Edward Grumbine ^{b,*}

^a Faculty of Environmental Science and Engineering, Kunming University of Science and Technology, 68 Wenchang Road, Yieryi Street, Kunming 650093, China

^b Kunming Institute of Botany, Chinese Academy of Sciences, Heilongtan, Kunming 650204, China

ARTICLE INFO

Article history:

Received 23 October 2010

Received in revised form 27 December 2010

Accepted 8 January 2011

Available online 8 February 2011

Keywords:

China

Laojun Mountain

National parks

Nature reserves

Protected areas

Pudacuo National Park

Yunnan

ABSTRACT

Beginning in 1956, China has built a large protected areas system, but has struggled to implement effective management. There remain ongoing problems with administrative authority, unclear regulations, inadequate funding, inappropriate development within protected areas, a dearth of professional capacity, and more. To address these concerns, since 2001, international nongovernment organizations led by The Nature Conservancy have encouraged various levels of government in China to experiment with an international model of national parks. The government in Yunnan province, the center of China's biological and cultural diversity, has acted to create a national park experimental system with new administrative bureaus, comprehensive regulations, park master plans, and several national park pilots. We review two of these pilots, Pudacuo National Park and Laojun Mountain National Park, to evaluate whether this park model, as it is being applied in Yunnan, offers an improvement to existing nature reserve regulations and implementation. Though the experiment is in its early stages, issues remain around regulatory authority, community participation, park funding and staff capacity.

© 2011 Elsevier Ltd. All rights reserved.

Contents

1. Introduction	1312
2. Nature reserves vs. national parks	1313
3. Methods	1313
4. Results and discussion: Provincial definition of national parks	1314
4.1. Creation and location of national park management office	1314
4.2. Provincial design and administration of national parks	1314
4.3. The case of Pudacuo National Park	1315
4.3.1. Strengths of Pudacuo National Park	1315
4.3.2. Problems in Pudacuo	1315
4.4. Laojun Mountain National Park	1316
4.4.1. Planning for Laojun Mountain National Park	1316
4.4.2. Biodiversity management	1316
4.4.3. Community participation	1316
4.4.4. Problems with master plan implementation	1316
5. Conclusions: The future of national parks in China	1317
Acknowledgements	1318
References	1318

1. Introduction

In August 2008, government leaders in Yunnan Province, People's Republic of China (PRC), approved the initial operations

* Corresponding author. Tel.: +86 871 15887260143; fax: +86 871 5216350.

E-mail addresses: dqzhou2009@gmail.com (D.Q. Zhou), egrumbine@prescott.edu (R. Edward Grumbine).

of China's first National Park Management Office within the Yunnan Forestry Department. The State Forestry Administration (SFA) in Beijing had recently approved Yunnan as the site for creating national park pilot projects. These actions were more than important steps in the evolution of a potentially more stable and secure nature reserve system in the PRC. Harboring more plants, animals, and bird species than all of North America, as well as half

of all ethnic nationality groups in China, Yunnan is the most biologically and culturally diverse part of the country (Policy Research Office, 2006; Yang et al., 2004).

In fact, the PRC has officially recognized 2538 nature reserves of all categories covering over 15% of the land mass of China (MEP, 2008). Yet despite much recent progress (over 50% of these areas date since 1995), China still struggles with protecting reserves through effective management on the ground. In 1994, the central government issued specific guidelines under official Nature Reserve Regulations (Harris, 2008; Jim and Xu, 2003). But China still lacks any comprehensive national nature reserve law that addresses lessons learned over the last two decades (IUCN, 2006).

This statutory vacuum has contributed in part to a host of well-known problems with the implementation of current protected area policies (MacKinnon and Moore, 2006; PATF, 2004; Xue et al., 2007). Nine different agencies including the SFA, Ministry of Environmental Protection, and Ministry of Construction share responsibilities for nature reserves, yet their actions are not coordinated internally. China's administrative system does not often operate in a transparent, collaborative fashion. It is difficult, for example, to understand the complexities of the relationship between the SFA, which manages the greatest number of nature reserves, and the Ministry of Environmental Protection which retains significant oversight authority over the SFA. At the policy level, there remain major disconnects between Beijing's goals and those of China's provincial governments and the wide array of prefectures, counties, and municipalities within the PRC's decentralized administrative system. Absent a new national law addressing these administrative gaps, current nature reserve regulations do not clarify these multiple, conflicting lines of authority. Certainly, the core/buffer/experimental zones model (loosely based on the UN Man and the Biosphere zoning system) that China adopted some years ago for many reserves has not been implemented with any consistency. And historically, just as the PRC has often privileged economic development over environmental protection, so do the "prohibitions contained in the (protected area) regulations sit uncomfortably atop whatever other activities are already legal and ongoing on the land at the time of designation, as provided for by local, regional, or provincial economic imperatives." (Harris, 2008: p. 114).

In addition to the lack of legal and administrative clarity and consistency, China's nature reserves have suffered from inadequate funding. Since the 1980s, the central government has expected local authorities to fund reserve operations. Many areas depend on managerial and local government entrepreneurial behavior for funding reserve activities. This has led to a pattern of inappropriate development inside reserves (Han and Ren, 2001; Lindbergh et al., 2003).

A dearth of professional management capacity has also been a problem. As has been noted throughout the developing world, reserve staff, especially those who work on the ground, suffer from low levels of professional training. The most recent published research shows that only about a third of China's nature reserve employees have adequate training (MacKinnon and Moore, 2006; Xue et al., 2007). Recent investment by international NGOs and governments has begun to reverse this trend but much remains to be done (EU-China Biodiversity, 2009). Given this general state of affairs, it is no surprise that staff lack familiarity with the principles of conservation biology and science-based nature reserve design and management (McNeely et al., 2009).

Issues around people and nature reserves in China are not limited to professional capacity building. What makes the PRC very different from the US, for example, is that anywhere from 30 to 60 million people live in and around Chinese nature reserves (Harkness, 1998; Jiang, 2005; Jim and Xu, 2003). Chinese managers must grapple with pressures on protected areas from poor rural

villagers who often depend on reserves for much of their livelihoods. This is not going to change any time soon; in China, the trick is to protect biological and cultural diversity where human activities remain integral components of the landscape.

2. Nature reserves vs. national parks

Given the slow pace of central government efforts to revise national nature reserve legislation combined with the state of management on the ground, The Nature Conservancy (TNC) and other NGOs since 2001 have been encouraging the Yunnan provincial government to experiment with an international model of national parks as a new addition to the current system. The assumption is that national parks adapted to conditions in China can better serve to protect biodiversity and human livelihoods while allowing for tourism development that would fund conservation management. Unlike China's strict 1994 nature reserve (*ziran baohuqu*) regulations which in intent and on paper limit human activities to a great extent, national parks (*guojia gongyuan*) would explicitly allow for some level of development to coexist with conservation. After all, the original national park impetus was "for the use and enjoyment of the people" as well as resource protection (Nash, 2001; Runte 1997). As policy documents make clear, it is just this issue, that, in China, the strict rules around nature reserves "do not correctly tackle the relation between exploitation activities and resource protection" that sparked the interest of park advocates in Yunnan (ROPGYP, 2010: p. 136). National parks could improve on nature reserves by adjusting the balance between protection and utilization.

Yet Yunnan remains part of the complex constellation of natural resource policy conditions found across China. For example, though nature reserve regulations exclude people from zoned core areas, in practice enforcement of this can be minimal. Tourism is not a focus of reserve regulations but this has not hindered some managers from developing extensive visitor facilities. Current policies do not address issues of human livelihoods even though nature reserve resources often support many local people. And policies do not address well the means by which reserves can generate sufficient funding. The potential for national parks to be successful in Yunnan (and China) lies in crafting and then implementing new regulations that address the above issues.

Beyond its wealth of biological and cultural diversity and the interest of provincial officials and managers, Yunnan is an excellent laboratory for this park experiment. The province remains relatively little developed compared to much of the rest of China. This is partly due to its low human population density and high poverty rate; out of China's 28 provinces and autonomous regions, Yunnan ranks 21st in population density and 25th in GDP/capita (National Geographic, 2008). Yunnan is also undergoing rapid change due to the central government's plan for *xibu dakafa*, "Great Western Development" and there is much impetus to get conservation right in the province as development proceeds (Goodman, 2004; Grumbine 2010).

3. Methods

Both of us have extensive policy and pilot site experience from the early stages to the present in the national park experiment in Yunnan. ZDQ served as the TNC project manager for the Laojun Mountain National Park pilot from 2004 to 2009 and currently serves on the National Parks Experts Committee. REG served as consultant for an SFA/TNC-cosponsored study tour of US national parks in 2008 where he interviewed managers of three of the twelve initial park pilots.

For this paper, we draw on the above experience along with 15 semi-structured interviews conducted during 2009–2010 with

people working on national park policy and implementation in Yunnan. Interviewees included national park personnel, government officials, NGO staff, members of the Experts Committee, and academics. Questions focused on the roles of respondents and their organizations in the crafting of park regulatory policies and management implementation. All interviews were conducted in person using Chinese and/or English. Length of interviews ranged from 45 min to 1.5 h with follow-up as needed. We took written notes during sessions which were then typed and archived. We supplemented this data with provincial government national park planning documents, individual park master plans, NGO documents, along with readings from published academic literature. In analyzing data, we looked for patterns in respondent's attitudes toward national park definitions, regulatory design, and management implementation as well as barriers and bridges in both the present and the future that might help or hinder the realization of the national park experiment.

4. Results and discussion: Provincial definition of national parks

To aid a national park study process, TNC promoted a variety of park models to Chinese officials, administrators, and managers, with a focus on meeting the IUCN Category Two standard for parks as: “large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities”. (IUCN, 2010; for general background see Boitani et al., 2008; Jenkins and Joppa, 2009; Joppa et al., 2008; McDonald and Boucher, 2010). In addition, TNC sponsored study tours for Chinese officials and conservation managers to visit national park field operations in Australia, Nepal, New Zealand, Thailand, and US, conducted numerous workshops on park management, and distributed a booklet in Yunnan that used a question and answer format to explain park concepts.

Two areas that the Chinese were particularly interested in were how administrative authority and funding for national parks were designed and implemented. Some countries (Norway, Thailand, and US) use a federal/central government top-down approach for management and funding. Other nations (Germany and Australia) combine central legal and regulatory guidelines with local government operations, while other countries (Japan, UK, and Indonesia) use a mix of central, state, and local authority and control (ROPGYP, 2010: pp. 149–150).

The definition of ‘national park’ in Yunnan that has emerged from this fact finding process incorporates ideas from several models as it attempts to alleviate “the contradiction between resources conservation and regional development” found in the province (and China) (ROPGYP, 2010: p. 1). In Yunnan, the specific definition of national park closely follows this aspiration even as it also ties into the IUCN definition: “the purpose of national parks is to protect nationally or internationally significant natural resources, cultural resources, and magnificent landscapes while providing opportunities for scientific research, recreation, community development, etc.” (ROPGYP, 2010: p. 46).

Beyond this general definition, there are three areas that address specific circumstances for national parks in Yunnan. First, provincial documents specify that parks are meant to provide “social benefits” that are “higher than those of a nature reserve” and ecological benefits that “far exceed those of scenic and historic areas” (ROPGYP, 2010: p. 136). There is a greater emphasis placed on local community economic development than in the IUCN national park definition. Second, administrative authority for design-

ing park-specific rules and regulations resides with the province through a new National Park Management Office (NPMO), but local government park offices are authorized to run the parks and collect and distribute income from park receipts. This follows the international model of park administration where central authorities set the rules and local government implements them. Third, NPMO documents are clear that present administrative structures in China are problematic for park operations as outlined above due to “overlapping duties, multiple leaders, and gaps between provincial and local government law enforcement authority” (ROPGYP et al., 2010: p. 155) (see Section 4.2).

4.1. Creation and location of national park management office

TNC attempted not to favor one department over another while introducing Yunnan officials and managers to national park concepts. Staff from Yunnans' Environmental Protection and Tourism Bureaus, and Forestry and Construction Departments, among others, participated in the study tours as well as other educational fora. In the end, the new provincial NPMO was located in the Forestry Department (sharing staff with the existing Wildlife Conservation and Management Office) due to the support of a high-level departmental official with scientific training and research institute administrative experience who became convinced that parks were in the best interests of conservation and development in Yunnan. The NPMO serves the Provincial Government by implementing the “facilitation, guidance, coordination, and supervision management for... national park(s)” (ROPGYP, 2010: p. 141).

4.2. Provincial design and administration of national parks

Working with the Yunnan Province Government Research Office, the NPMO has created an overall plan for pilot parks in the province. Published in 2009, this plan received input from the following Provincial-level bodies: the Development and Reform Commission, Department of Finance, Department of Land Resources, Department of Environmental Protection, Department of Legal Affairs, and Tourism Administration. All the major academic institutions in Kunming were also consulted as well as the Kunming Institutes of Botany and Zoology (Chinese Academy of Sciences). A National Parks Expert Committee was established to provide the NPMO with advice on and review of park proposals, planning, construction, and management. To date, these administrative bodies are functioning and a three-phase national park blueprint out to 2020 that would result in twelve pilot parks is being implemented.

The process to create a national park pilot is clear. Application is pursued by local governments (prefectural or municipal) following NPMO guidelines. The application goes to the Experts Committee for review and evaluation; the NPMO responds, and if the application is successful, it is sent to the Peoples' Congress of Yunnan for final approval. The NPMO works with local governments to draft general park master plans. Once these are completed and approved, local park management bureaus create and implement specific plans for each zone in the master planning document (ROPGYP, 2010).

The NPMO plays a key role by assisting with the drafting and approval of management plans for individual parks, and has written regulatory policy along with technical criteria for a coherent provincial park system (ROPGYP, 2010). Recognizing that, unlike nature reserves, national parks must “protect not only natural resources, but also human culture”, these regulations clearly base park policy on scientific planning and flexible zoning that takes into account tourism activities and human livelihood support as well as environmental protection. Regulations explicitly confer responsibility for tourism development onto local government

and private companies with oversight from the province (ROPGYP, 2010: p. 156).

A close reading of the new park regulations reveals that the parks are meant to improve on nature reserves through funding conservation and human livelihood support from concessions-based tourism while unifying administrative regulations to allow for “innovation and breakthrough to current environmental protection and management systems in our country” (ROPGYP, 2010: p. 4). Nevertheless, the process of creating a national park framework in Yunnan absent an overarching central government legal mandate has not been straightforward. Though the NPMO has the regulatory authority to fulfill its mission as outlined above, it (so far) has limited enforcement authority, when, for example, local governments deviate from park regulations and master plan specifics. This gap between regulatory and enforcement authority exists for several reasons. First, the NPMO has been charged with writing regulations before any provincial or central government law governing national parks has been passed, so there is no legal framework to back enforcement. Second, the political lines of authority between an office (the NPMO) within a provincial bureau (the Yunnan Forestry Department) and the upper levels of a given city government are not always clear in China’s highly negotiated political system. Third, any new office (the NPMO) must establish its place and power within an already-complex political system. In fact, provincial authorities agree that “establishment of the national park model... shall to a large extent depend on the reform of governmental administrative system... (and) ... the institution must be authorized for administrative law enforcement” (ROPGYP, 2010: p. 159).

Yunnan’s national parks experiment also fits into the current mainstream ideal supported by international conservation NGOs that focuses on broad involvement of stakeholders, community participation that yields local economic benefits, and public/private management structures and incentives (Brockington et al., 2008; Pressey and Bottrill, 2009). Draft Yunnan pilot park regulations highlight local community support through benefit sharing, the establishment of co-management committees for each park, conservation of local traditional cultures, and jobs for local people. In addition, the regulations state that residents “have the right to know” about park planning and “can participate in discussions, express their opinions, and have the decision-making right to a certain degree” (ROPGYP, 2010: p. 43). But the assumption that national parks in China can in fact do a better job of biodiversity conservation, recreation development, and human livelihoods support has never been tested until the current pilots described below.

4.3. The case of Pudacuo National Park

To begin experimenting with the national park pilots on the ground, TNC, working with local and provincial government partners, identified several project areas in Northwest Yunnan: Pudacuo near Shangri-la; Laojun Mountain to the northeast of Lijiang; and Meili Snow Mountain, an area surrounding the highest mountain in the province. Pudacuo, a 2000 km² mountainous area with high levels of plant and mammal biodiversity, was the first national park pilot to commence operations (Zhou and Chen, 2006). This pilot was based on an already-existing nature reserve, was close to the regional airport to facilitate visitation, and, most important, had support from Diqing Tibetan Autonomous Prefecture leaders who had already constructed a regional economic plan based on expanding tourism.

TNC helped to negotiate a management partnership between the provincial and prefectural governments with input from county and municipal officials as well as park and ecotourism experts from Southwest Forestry University in Kunming. The prefectural government took the lead in management implementation. The government established the Diqing Prefecture Tourism Invest-

ment Corporation to secure RMB 200 million (USD 24 million) in bank loans for new tourist infrastructure in the park. A local National Park Management Bureau was established to coordinate environmental protection. And a Tourism Service Company was also created to collect visitor fees, repay loans, and provide funds to local residents for lost income due to the parks’ new ban on horse rides for tourists in lieu of state-controlled management (Zinda, 2010). In 2006, Pudacuo National Park opened for trial business and in June 2007, it was officially declared the first “national park” in the mainland of China (Xinhua News Agency, 2007).

4.3.1. Strengths of Pudacuo National Park

Pudacuo represents a pragmatic shift away from aspirational Chinese regulations that declare nature reserves inviolate. Instead, national park management seeks to protect biodiversity while tourism generates revenues for conservation and local livelihoods. By the end of 2008, Pudacuo had received about 1.3 million visitors and generated some RMB 236 million (USD 33.7 million) in fees (ROPGYP, 2010). Visitors cannot drive into the park; instead, they must travel on natural gas-powered green busses on new roads that are well-constructed. Bus stops feature buildings with composting toilets and boardwalk nature trails that elevate hikers above fragile wet meadows. The vast majority of the park (over 97%) remains free of development.

Local agropastoralists (some 6600 people live in and around Pudacuo) have also benefitted from the park although this outcome is controversial (see Section 4.3.2). People continue to gather resources and graze livestock in Pudacuo as the park has not restricted these activities. Local people have received some preferential hiring for jobs in the park. In addition, to compensate local people for use of collective forest lands and the loss of horse tourism revenue, about RMB 3.04 million (USD 430,000) has been disbursed by the park to hundreds of affected households (Pudacuo National Park Management Bureau, 2010).

4.3.2. Problems in Pudacuo

Despite the creation of a revenue stream for conservation and communities as well as a local National Park Management Bureau with explicit environmental protection and community development goals, it is too soon to know what “success” will look like in Pudacuo. There are three primary problems. First, the local government has focused most of its attention on tourism, not conservation. The Tourism Services Company wields greater authority and controls more funding than the Park Bureau, and there remains a lack of funding for conservation activities such as monitoring (Tian and Yang, 2009; Zinda, 2010). Despite tens of millions of dollars of park income, Pudacuo’s boundaries have yet to be marked on the ground; NPMO regulations stipulate that boundaries should be demarcated no more than a year after park approval. While there are some caps on visitor numbers in the park master plan, it remains to be seen if the limits will be honored as tourism across Diqing Prefecture is growing dramatically.

The second problem involves appropriate support and compensation for local residents. While some revenues have been disbursed to local people, they represent less than 3% of all park income and there are increasing demands from local people for greater compensation (Yunnan Province Ethnic Affairs Commission, 2010). And various commissioned reports that highlight specific ways to enhance community-based tourism have not been acted upon by the local government (Zinda, 2010).

The third problem is politically complex; Pudacuo National Park commenced operations some 13 months prior to the official start-up of Yunnan’s National Park Management Office. We do not mean to imply that local government initiative automatically creates problems and, given the areas’ status as the first pilot park in an experimental land management system, one might expect chal-

lenges surrounding implementation. Yet the situation in Pudacuo does highlight several questions about the fundamental relationship between provincial and local government authority over national park management and implementation. It is not clear, for example, whether repayment of loans secured by the local government to build initial park infrastructure will create ongoing financial pressures that may result in prioritizing profits over provincial requirements for biodiversity and cultural conservation. Acting before provincial regulations that require open bidding for tourist concession contracts were written, local government in Pudacuo created a state-owned company to provide visitor services. This company sits at the same level of administrative authority as the Pudacuo Park Management Bureau, but it controls park income and therefore has the financial wherewithal to effectively run the park. On the other hand, the park master plan created by local government has existed in draft form for some time but by early 2011 it had not yet been approved by the provincial government even though Pudacuo has been open for 4 years. Without an approved plan, future development of Pudacuo theoretically should be on hold, but local government authorities are moving ahead with new commercial tourism projects that may conflict with biodiversity and human livelihood goals.

These events spotlight a fundamental inconsistency at root of the national park experiment in Yunnan. There is as yet no central government legal category to accommodate “national park”, so any protected area labeled as such remains in some way “unofficial”. Given the ongoing drive to expand economies within local governments in China, policy gray areas can provide local leaders with incentives to place tourist development and profits over other goals. It is uncertain whether this evolving situation will in the end be sufficient to create a stronger alternative to the nature reserve status quo in China. A look at another national park pilot in Yunnan provides further perspective.

4.4. Laojun Mountain National Park

The Yunnan provincial government has embraced several additional national park pilots beyond Pudacuo. Planning for Laojun Mountain National Park is ahead of other efforts throughout Yunnan, so the remainder of our discussion will focus on Laojun.

Laojun Mountain National Park was officially announced to the public in January 2009 (ROPGYP, 2010). A little-known montane upland of broad peaks and narrow valleys spreading across 1085 km², Laojun Mountain has never been an official state nature reserve though in 2003, the area was included in the UNs Three Parallel Rivers World Heritage Site (Policy Research Office, 2006). While Laojun Mountain is home to about 10% of all rhododendrons in the world, the area is best known as one of the few remaining homes for the Yunnan snub-nosed monkey (*Rhinopithecus bieti*), the most endangered primate in the PRC (Hvistendahl, 2009; Long et al., 1994).

4.4.1. Planning for Laojun Mountain National Park

In 2004, engaging with a complex mix of prefecture, county and municipal governments, TNC began to help coordinate initial planning for the new national park. Progress was slow; as in the US, working across multiple jurisdictions and engaging numerous stakeholders presents many challenges (Grumbine, 1994; Layzer, 2008). In Yunnan, these challenges are heightened not only by bureaucratic barriers, but also socioeconomic disparities between local villagers (the majority of which are members of several ethnic nationalities) who are poor and often illiterate, and government officials who seldom visit the planning area. Despite this difficult working environment, the People’s Government of Lijiang Municipality completed a draft master plan for Laojun Mountain National Park in 2008 and it was approved by the provincial government in 2009.

On paper, following TNC’s data-driven, target-based Conservation Action Planning template, the Laojun Mountain master plan provides for management of the pilot park. (TNC, 2007). This conservation planning tool features identification of key threats to biodiversity, a management focus on specific targets that would reduce such threats, monitoring plans to measure progress toward goals, and an overall adaptive management framework. There are so far only a few other protected areas in China that have used such a detailed scientific planning framework. We focus here on specific aspects of biodiversity management and community participation in the plan that may create barriers to success in Laojun Mountain. We draw attention to issues that will likely plague ongoing attempts to reform nature reserve management in China.

4.4.2. Biodiversity management

The biodiversity section of the Laojun plan identifies specific conservation targets including protection of essential habitat for the Yunnan snub-nosed monkey, and conservation of regionally rare old growth forests and alpine wetlands (Government of Yulong Naxi Autonomous County and Fangcheng Planning Company, 2008). The park is divided up into five conservation zones: highly protected/no development areas; recreation areas where tourism services will be developed; zones where traditional livelihoods are emphasized; and buffers between the park and surrounding lands. A biological information gap study is incorporated into the plan; what needs to be learned to fulfill conservation targets is outlined clearly. It is here, however, that several potential barriers to success arise: there is no explicit channel set up to share planning information with field staff, nor is there any procedure to update baseline biological inventories as new knowledge is generated. There is also no mechanism for the provincial NPMO to receive feedback from local government staff working in the field. Most critical, there is little recognition that local field staff capacity to understand and use biological data remains weak.

4.4.3. Community participation

The Laojun Mountain Master Plan mandates an active role in decision making for local communities including how to distribute economic benefits of the park to residents. This is appropriate since about 11,000 people dwell inside park boundaries and their main concern is how their livelihoods may be affected by the new national park. Early in the history of planning for Laojun when TNC was spearheading efforts at community involvement, the NGO supported environmental education in local schools as well as the establishment of a guide cooperative to support visitor services (Grumbine, 2010). To reduce pressures on the resource base of Laojun Mountain, TNC also supported community working groups to create more efficient marketing practices for edible mushroom cultivation, medicinal plant gathering, and walnut tree grafting. Government approval of the management plan, however, has also meant the replacement of TNC with Yulong County through their Laojun Mountain Conservation and Management Committee, and with the Lijiang Municipal government through their Laojun Mountain National Park Management Bureau. Given the level of community – based conservation interest and capacity of these two groups, we are not convinced that they are as attuned to local peoples’ needs as the NGO.

4.4.4. Problems with master plan implementation

As in Pudacuo, local officials so far appear to be more focused on establishing infrastructure for tourism to generate income than community livelihood enhancement. Given the role of government in natural resource management throughout the history of the PRC, this is not surprising (Grumbine, 2010; Shapiro, 2001). Into early 2011 in Laojun Mountain, there had yet to be any substantive

participation by local people in implementing the national park master plan.

Beyond concerns about local peoples' involvement, other aspects of Laojun Mountain master plan implementation reveal much about barriers to success using the national park model in Yunnan. As already detailed, several steps have been taken by the provincial government to create administrative lines of authority over the pilot national parks. Even as these procedures were being drafted, however, in December 2008 the Lijiang Municipal government signed a contract with a large commercial tourism company for the initial development of Laojun Mountain.

Who specifically will be responsible for managing Laojun Mountain National Park? Yulong County, Lijiang Municipality, or the tourism company? At first glance, the answer should be Yulong County since most of the park lies within its geographical jurisdiction. The county has formed the Laojun Mountain Conservation and Management Committee to oversee the park. But the county has little professional capacity and almost no funding for park management. Most important, Yulong County is trumped by Lijiang Municipality which has political power over the county in China's complex, two-pronged administrative system. In the PRC, administrative authority is distributed by function, territory, and rank. Power is wielded both vertically (*tiao*) from the central government down to local functional levels, as well as horizontally (*kuai*) across and within local governments (Lieberthal, 1995). Municipalities have *tiao* authority over counties in the PRC; in fact, Lijiang retains administrative control over four counties. Therefore, Yulong County's Laojun Mountain management efforts must follow the lead of the municipality. Yet, at the same time, the county retains some territorial-level (*kuai*) authority that may conflict with Lijiang interests. In China, administrators are subject to both kinds of directives—those coming from higher levels of government, and those coming from within a given locality. Overall, these distributive processes create incentives to bargain, negotiate, and sometimes block political action.

So far, Lijiang Municipality has used its power to manage Laojun Mountain in two ways. First, the city has formed the Laojun Mountain National Park Bureau, though this body has not yet gained official approval from the provincial government. Then there is the matter of the contract signed with the Yunnan Tourism Development Group. Whatever bureaucracy controls Laojun Mountain management, funding remains key, and the Yunnan Tourism Development Group has committed to investing RMB 500 million (USD 73.1 million) through 2012 to build the parks' transportation infrastructure and visitor services (GoKunming, 2009). Though most details are not known, it appears that during the first 5 years of the contract, the group is not required to reinvest any profits back into the park. This suggests that there may be little to no funds available for conservation or community livelihood support. It is also clear that the operator has limited knowledge about conservation in general and the Laojun Mountain master plan in particular. The tourism group lacks basic capacity in conservation yet it appears to have the legal position and financial means to deeply influence on the ground management at Laojun.

5. Conclusions: The future of national parks in China

This brief review of Yunnan's ongoing experiment with national parks shows clearly that international concepts and expectations about nature reserves, when fed into China's current cultural and political conditions, may not be as serviceable as they are in their original context. One could argue that China's nature reserve system is robust simply because it exists; it provides a better alternative than no nature protection at all. One could also portray the

national park pilots as worthy experiments, providing the possibility for improvement to a system with ongoing problems. We agree with aspects of both of these positions but the park experiment in Yunnan has not advanced enough yet to determine success. One thing is clear: as China continues its rapid economic and infrastructural development, already-powerful pressures on biological and cultural resources will only increase (Grumbine, 2010).

Despite its promise, we see little evidence so far that the pilot national parks by themselves can resolve China's nature reserve issues of unclear lines of administrative authority, inadequate funding, poor professional capacity, and lack of community participation. In regard to professional capacity, the reduction of an international NGOs' advisory role creates a cost that has yet to be offset by the expertise residing within the Chinese administrative bureaucracy. TNCs' primary role throughout the park experiment has been to offer ideas about conservation alternatives, provide seed funding, introduce the Conservation Action Plan framework, and assist in general training and capacity building. The shrinking of TNCs' involvement is a logical move; over time, international NGOs should play a much reduced role in the conservation affairs of China. But the Tourism Services Company in Pudacuo and the Yunnan Tourism Development Group in Laojun are at this point certainly no replacements for conservation NGO expertise. There are, however, plans being formulated by the NPMO for a new training center for national park and nature reserve staff. If this center's resources are made available to local government park management staff, then an increase in professional capacity would surely result.

Lack of clear administrative authority held by the new Chinese conservation actors, for example, the NPMO and, especially, its local government counterparts, remains a concern for us. Regulatory responsibility for the parks may be defined well on paper, but implementation continues to be problematic as we show clearly in the cases of Pudacuo and Laojun Mountain. Will the Yunnan Tourism Development Group, for example, develop Laojun Mountain following the guidelines in the master plan or will they simply borrow the national park name and create a commercial mass tourism site? If they pursue the latter course, does the provincial NPMO have the authority to constrain them if local government supports the company? At present, given that the NPMO lies within the Yunnan Department of Forestry, this authority remains weak. The power imbalances between province and municipality and local government park bureaus and tourism boards may be the most problematic aspect of Yunnan's park experiment so far. But a draft provincial law designed specifically to improve NPMO enforcement authority is under active discussion and may be passed in 2011. And, in Beijing, a new draft National Natural Heritage Protection Act that addresses both nature reserves and national parks is being debated, though prospects for passage are uncertain. However these legislative processes unfold, reform in a country as large and complex as China will not depend only on new laws to correct administrative gaps. Realistically, experience with Yunnan's park pilots may help advance reform, but no single initiative in any one sector can resolve all the issues.

Beyond legal and administrative authority, funding for any kind of protected area in China will remain contentious until the central government assumes more financial responsibility. We do not see this happening any time soon. Instead, as is increasingly the case in the US, we expect that public/private partnerships will drive nature reserve funding in Yunnan and other places in China. Much park pilot funding in Yunnan has come recently from the EU-China Biodiversity Programme, but this support will end in 2011. TNC is in the process of reorganizing its program priorities throughout China. The Yunnan provincial government has made financial commitments to national park administrative efforts over the next several years. Of course, the parks themselves, by design, are supposed

to generate their own income for management. Absent greater oversight and professional capacity, however, local-level entrepreneurial behavior will likely continue to cause problems in the new national parks. Profit incentives in such an uncertain and evolving regulatory and administrative environment are difficult to contain.

Funding policies directly impact the level of financial benefits that reach local peoples in the communities surrounding Yunnan's national parks. Though the pilots have been designed to improve local livelihoods by providing monies from park tourism receipts, provincial regulations make clear that the majority of income goes to tourism companies (ROPGYP, 2010: p. 147). Commercial tourism investors and operators are already favored on the ground in Pudacuo and appear to be gaining similar power in Laojun. Given the administrative circumstances in China outlined in this paper, along with the rapid influx of money and numbers of visitors into local communities around the parks, we see Yunnan's park pilots as sites for incremental reform, steps along a path that slowly will shift more of the income stream to local peoples. Using park funds to enhance local education programs for young people and vocational training for young adults could boost support for parks (Yuan et al., 2008). In China, however, as long as short-term economic growth incentives (as opposed to support for human livelihoods and equity issues) remain the first priority for local officials, it is idealistic to expect more rapid change.

In regard to community participation in national parks, results will likely remain mixed over the short term. Affected communities still have not yet been brought into the planning process, even as some local people in Pudacuo are benefiting economically. This is a tough issue – subsistence agropastoralists need time to develop a participatory consciousness about the novel concept of national parks and poor rural villagers in general have little special planning expertise and no financial resources to contribute. This has been noted time and time again in many places throughout China (and the developing world) even as most observers also recognize the role of local communities in the implementation of conservation plans (Berkes, 2009; Li et al., 2007; Menzies, 2007; Plummer and Taylor, 2004).

Citizen participation in governance in China is, of course, an issue that goes well beyond bringing local peoples into national park planning in Yunnan (Joeph, 2010). Yunnan's park regulations defining community participation are strong on paper – and remain weak in practice. We believe that incremental progress will occur here when: the province passes legislation that enhances NPMO authority to enforce park regulations with local governments; local officials, after completing initial park infrastructure, begin to construct educational facilities that spotlight traditional cultures and customs; and residents gain experience lobbying park managers to follow through on community commitments (as they already are beginning to do in Pudacuo). Visitors to the parks may also play a role here if general tourism behavior in China follows international trends and begins to evolve away from an emphasis on “show me” experiences toward deeper “show and tell” educational encounters (Honey, 2008). We also want to emphasize here an original impulse behind Yunnan's park experiment: to bring greater long-term benefits to local peoples than nature reserves provide. In the short 3 year lifespan of the park pilots, hundreds of thousands of dollars have accrued to local households around Pudacuo, and participatory involvement has gained greater traction. In the long term as more parks begin operations, the door is now open for local peoples to gain greater benefits.

Lack of local participation is a symptom of more fundamental issues in conservation throughout China. The PRC bureaucracy has always been a top down, command – and – control hierarchy. The creation of new levels of provincial and local government bureaucracy to administrate national parks does nothing to change this, so it is not surprising that the local people in Pudacuo and

Laojun Mountain are not yet full financial beneficiaries and still have little voice in park affairs. The question for Yunnan's national park experiment going forward is, can the new parks provide a better alternative to the nature reserve status quo absent more stakeholder input?

Without attention to the above concerns, the success of national parks in Yunnan will remain in doubt. At worst, the park experiment may function like a new coat of paint applied to decrepit timbers, soothing to the eye without addressing underlying issues. At best, over time the national parks may help move China toward a more functional nature reserve system that provides economic benefits to local people while maintaining their most important cultural values, stimulates new environmental knowledge and national pride for visitors, and maintains globally significant biological diversity.

Acknowledgements

We appreciate detailed feedback from three peer reviewers. We thank all the interviewees from government offices, NGOs, academia, and others who gave amply of their time to assist us. John Zinda was especially helpful with sharing data before it was published. We also wish to thank Luisa Walmsley for word processing parts of the manuscript. Funding during the latter stages of this research was generously provided by Chinese Academy of Sciences visiting Professorship for senior international scientists, Grant No. 2010T152.

References

- Berkes, F., 2009. Community conserved areas: policy issues in historic and contemporary context. *Conser. Lett.* 2, 19–24.
- Boitani, L. et al., 2008. Change the IUCN protected area categories to reflect biodiversity outcomes. *PLoS Biol.* 6 (3), e66. doi:10.1371/journal.bio.0060066.
- Brockington, D., Duffy, R., Igoe, J., 2008. *Nature Unbound*. Earthscan, London.
- EU-China Biodiversity Programme. 2009. Annual report for 2008. EU-China biodiversity programme, Beijing.
- GoKunming, 2009. China's second national park slated for Laojunshan. <http://www.gokunming.com/en/blog/iten/777/chinas_second_national_park_slated_for_1> (accessed December, 2009).
- Goodman, D., 2004. The campaign to “Open Up the West”: national, provincial-level and local perspectives. *China Quart.* 178, 317–334.
- Grumbine, R.E., 1994. What is ecosystem management? *Conser. Biol.* 8, 27–38.
- Grumbine, R., 2010. *Where the dragon meets the angry river*. Nature and Power in the People's Republic of China. Island Press, Washington, DC.
- Han, N., Ren, Z., 2001. Ecotourism in China's nature reserves: opportunities and challenges. *J. Sustain. Tourism* 9, 228–247.
- Harkness, J., 1998. Recent trends in forestry and conservation of biodiversity in China. *China Quart.* 156, 911–934.
- Harris, R., 2008. *Wildlife Conservation in China*. M.E. Sharpe, Armonk, NY.
- Honey, M., 2008. *Ecotourism and Sustainable Development*. Island Press, Washington, DC.
- Hvistendahl, M., 2009. Monkey king. *Nat. Conser. Mag.* 59 (4), 56–64.
- IUCN (International Union for the Conservation of Nature), 2006. International experts discuss China's draft protected areas law in Beijing. IUCN, Beijing. <http://www.iucn.org/en/news/archive/2006/02/21_pas_china.htm> (accessed January, 2007).
- IUCN, 2010. Category 2 National parks. IUCN, Gland, Switzerland. <http://www.iucn.org/about/work/programmes/pa/pa_products/wcpa_catego> (accessed December, 2010).
- Jenkins, C., Joppa, L., 2009. Expansion of the global terrestrial protected area system. *Biol. Conser.* 142, 2166–2174.
- Jiang, Z., 2005. Lun zhongguo ziran baohuqu de mianji shangxian [On considering an upper limit of China's nature reserves], *Shengtai xuebao [Acta Ecol. Sin.]* 25, 14–21 (in Chinese).
- Jim, C., Xu, S., 2003. Getting out of the woods: quandaries of protected area management in China. *Mt. Res. Dev.* 23, 222–226.
- Joeph, W. (Ed.), 2010. *Politics in China*. Oxford University Press, New York.
- Joppa, L., Bame, S., Pimm, S., 2008. On the protection of “protected areas”. In: *Proceedings of the National Academy of Sciences of the United States of America* 105, pp. 6673–6678.
- Layzer, J., 2008. *Natural Experiments*. MIT Press, Cambridge, Massachusetts.
- Li, B. et al. 2007. Review of CCA studies in southwest China. In: *International Union for the Conservation of Nature (IUCN)*, Gland, Switzerland.
- Lieberthal, K., 1995. *Governing China: from revolution through reform*. WW Norton, New York.

- Lindbergh, K. et al., 2003. Ecotourism in China's nature reserves. In: Lew, A. et al. (Eds.), *Tourism in China*. Haworth Hospitality Press, New York. pp. 103–125.
- Long, Y. et al., 1994. Report on the distribution, population and ecology of the Yunnan snub-nosed monkey (*Rhinopithecus bieti*). *Primates* 35 (2), 241–250.
- MacKinnon, J., Moore, P., 2006. China's protected areas: Why is there a problem? Lessons from international best practices regulatory and management issues. IUCN, Gland, Switzerland.
- McDonald, R., Boucher, T., 2010. Global development and the future of the protected area strategy. *Biol. Conser.* (in press).
- McNeely, J. et al., 2009. Conservation biology in Asia: The major policy challenges. *Conser. Biol.* 23, 805–810.
- Menzies, N., 2007. Our Forest, your ecosystem, their timber. *Communities, Conservation, and the State in Community-based Forest Management*. Columbia University Press, New York.
- MEP (Ministry of the Environment), 2008. Report on the state of the environment 2008. MEP, Beijing. <http://www.english.mep.gov.cn/standards_rports/soe/soe2008/201002/t201002> (accessed October, 2010).
- Nash, R., 2001. *Wilderness and the American mind*, fourth ed. Yale University Press, New Haven, Connecticut.
- National Geographic Society, 2008. *Atlas of China*. National Geographic Society, Washington, DC.
- PATF (Protected Area Task Force), 2004. Report to the China council for international cooperation on environment and development (CCICED). Evaluation On and Policy Recommendations to the Protected Area System of China. State Environmental Protection Administration, Beijing.
- Plummer, J., Taylor, J. (Eds.), 2004. *Community Participation in China. Issues and Processes for Capacity Building*. Earthscan, London, UK.
- Policy Research Office of the Peoples' Government of Yunnan Province et al., 2006. *The Three Parallel Rivers*. Yunnan Peoples' Publishing House, Kunming, China.
- Pressey, P., Bottrill, M., 2009. Approaches to landscape and seascape-scale conservation planning: convergence, contrasts, and challenges. *Oryx* 43, 464–475.
- Pudacuo National Park Management Bureau, 2010. Shangri-la Pudacuo national park management bureau 2009 work report and targets for work in 2010. (in Chinese).
- ROPGYP (Research Office of the Peoples Government of Yunnan Province), 2010. Yunnan national park management office, and the nature conservancy, China office. *Resource Book of Yunnan National Park Policy and Research*. People's Government of Yunnan, Kunming, China.
- Runte, A., 1997. *National parks. The American Experience*. University of Nebraska Press, Lincoln, Nebraska.
- Shapiro, J., 2001. *Mao's War Against Nature*. Cambridge University Press, New York.
- Tian, S., and Yang, G. 2009. An empirical study on the changes in management systems of national parks – A case study of Pudatsuo national park in Shangri-la of Yunnan Province. *J. Guangxi Univ. Natl. (Philosophy and Social Science Edition)*. <http://www.cnki.com.cn/Article_en/CJFDTOTAL-GXZS200904015.htm> (accessed May 2010) (in Chinese).
- TNC (The Nature Conservancy), 2007. *Conservation action planning*. The Nature Conservancy, Arlington, VA.
- Xinhua News Agency, 2007. China's first national park unveiled in Shangri-La. Beijing. <<http://www.china.org.cn/english/environment/214718.htm>> (accessed June, 2007).
- Xue, D. et al., 2007. Final report. Protected Area Early Action Grants: China. The Nature Conservancy, Beijing.
- Yang, Y., Tian, K., Hao, J., Pei, S., Yang, Y., 2004. Biodiversity and biodiversity conservation in Yunnan, China. *Biodivers. Conser.* 13, 813–826.
- Yuan, J., Dai, L., Wang, Q., 2008. State-led ecotourism development and nature conservation: a case study of the Changbai Mountain Biosphere Reserve, China. *Ecol. Soc.* 13(2), 55. <<http://www.ecologyandsociety.org/vol13/iss2/art55/>> (accessed December, 2010).
- Yulong County Naxi Autonomous County and Fangcheng Planning Company, 2008. Master plan of Laojun mountain national park (in Chinese).
- Yunnan Province Ethnic Affairs Commission, 2010. Diqing tourism development compensation mechanism has clear results. Shangri-la County Government website. <http://xianggelila.org/wMcms_ReadNews.asp?NewsID=2942> (accessed July, 2010) (in Chinese).
- Zhou, W., Chen, B., 2006. Biodiversity of Bitahai nature reserve in Yunnan province, China. *Biodivers. Conser.* 15, 839–853.
- Zinda, J., 2010. Hazards of collaboration: Local state co-optation of a new protected area model in southwest China. *Soc. Nat. Res.* (in press).