

# ECOTOURISM ACHIEVEMENTS AND CHALLENGES IN CHINA AND THE WORLD

## Abstract

Which is worth more to the regional economy of western China: dams and hydropower, or conservation and tourism? As China grows richer, the balance tips to tourism. Dams last decades, and by then China will be as wealthy as the USA. The Colorado Grand Canyon grew to a global tourism icon, and mainstay of the regional economy, in just a few decades. The great gorges of the Nu, Lancang and Yangtze are larger, deeper and equally spectacular - but hardly anyone has yet seen them. There are two billion domestic tourist trips in China every year, and the number is growing. If we want these tourists to travel and spend in China, not overseas, we must keep places for them to visit. Based on a Colorado model, for example, the Great Bend section of the Yangtze could earn about the same through tourism as it could from hydro power – because power operations are intermittent, costs and losses in transmission to eastern cities are high, and bulk purchase prices are well below retail. And tourism has far lower social and environmental costs than hydropower dams, and far lower risks. The Western USA learnt this lesson at the last moment, conserving only the Grand Canyon for tourism when equally beautiful sections upstream and downstream were already dammed. Should not China also keep its great gorges, for its own people to visit as tourists? It will be worth more than hydropower.

## Introduction

Ecotourism is translated into Mandarin Chinese as shengtai lüyou. The two concepts, however, are not quite the same. A detailed comparison by Buckley, Zhong *et al.*, (2008) found that shengtai lüyou is a broad concept. It includes an important component related to human health, which is not included in Western definitions of ecotourism. In addition, shengtai lüyou reflects a Chinese view of the place of humans in nature which is different from Western views. The Chinese perspective, however, may change as China grows increasingly wealthy. This has happened in other nations.

Academic discussions about the theoretical meaning and role of ecotourism were reviewed by Weaver and Lawton (2007). The achievements of ecotourism in practice have been evaluated recently from an environmental perspective (Buckley, 2009a). In a commercial sense there are close links between ecotourism and adventure tourism (Buckley, 2000, 2006, 2009b).

Both in China and worldwide, the differences between ecotourism and shengtai lüyou, or between ecotourism and adventure tourism, are much less important than the differences between tourism and other industry sectors such as agriculture, forestry, fisheries, mining and manufacturing. The key issue is that there is a large and still growing outdoor tourism industry which relies on natural areas and is currently worth about RMB 6000 billion per year worldwide. Within that sector, the most significant distinction is not between ecotourism and adventure tourism, but between mobile activities and fixed-site accommodation and infrastructure.

According to the UN World Tourism Organisation there are about 900 million international tourist trips each year, but this is a somewhat misleading figure since most of them are between the many small countries of Europe. In China, there are around 20 million international visitors each year, but around 2 billion domestic tourist trips. Chinese wealth is continuing to grow very rapidly indeed, and the future of tourism in China probably depends far more on domestic than international markets. Currently, the expectations of most Chinese domestic tourists are quite different from those of international tourists, but this is likely to change, as it has in other countries.

### **Ecotourism Achievements**

Ecotourism has had both negative and positive effects on the natural environment (Buckley, 2009a). Table 1 summarises the main mechanisms involved, and Figure 1 compares their overall scale and significance at a global level. Table 2 provides more detail for mechanisms yielding net positive outcomes.

The key issue is that whilst environmental technologies, management practices, education, certification and so on can be important at a local scale, it is the political role of ecotourism which has the most far-reaching effects, both positive and negative. The negative political effects occur when property developers use ecotourism as an excuse to build high-impact infrastructure and private resorts inside protected areas. The positive political effects occur when ecotourism provides an incentive for governments to provide protection for ecologically valuable areas which are under threat from other sectors.

**Figure 1**

Direction of mechanism	generate or increase	generate negative effects (mostly uncertain)		generate positive effects (reliable, but few)
	no net change		ecotourism brand or label but no net environmental effects	
	remove or reduce	reduce negative effects (many examples, small scale)		n/a: same as generating negative effects
		negative effects	negligible effects	positive effects
Type of environmental effect				

This figure illustrates that the mechanisms discussed here, positive or negative, may represent only small components in a broad matrix of little effect. From Buckley (2009a).

**Table 1 Potential Mechanisms for Environmental Effects of Ecotourism**

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<b>GENERATING POSITIVE EFFECTS</b>	<b>GENERATING NEGATIVE EFFECTS</b>
Political action for conservation Support for NGOs Support for parks agencies Community reserves Private reserves	Environmental impacts Greenhouse emissions Development in parks Ecotourism lite Undeserved awards
<b>REDUCING NEGATIVE EFFECTS</b>	<b>CONTROVERSIES AND CONTESTED ISSUES</b>
Regulations Fees, incentives Codes of practice Ecomarketing	Mainstreaming and scale Local empowerment Poverty alleviation Ecolabels and awards
Education, interpretation Post-trip lifestyle change	

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From Buckley (2009a); further detail in original.  
NGO = Non-Government Organisation.

**Table 2 Mechanisms for Ecotourism to Generate Positive Environmental Effects**

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<b>POLITICAL</b>	<b>CONTRIBUTE TO PARKS AGENCIES</b>
Parks policies	Compulsory fees
CTO lobby	Cash donations
Clients lobby	Staff salaries
	Equipment
	Operations
<b>SUPPORT NGOS</b>	<b>COMMUNITY CONSERVATION</b>
CTO cash	Lease land
CTO in-kind	Employ locals
Clients local	Client purchases
Clients global	Community-owned ops
NGO as CTO	Revenue-sharing

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From Buckley (2009a); further detail in original.

CTO = Commercial Tour Operator.

## **Chinese Context and Cases**

China is very rapidly becoming a wealthy developed nation. Its economy has continued to grow through the current global financial crisis when most national economies contracted, some very severely. It may well become the world's wealthiest nation in the not far distant future. Meanwhile, it already has an enormous middle class, a billion people who now have the money, the time and the desire to take holidays – to travel for enjoyment, not only for work. Other countries worldwide are already planning to attract Chinese tourists. But the Chinese domestic tourism industry is far larger than either inbound or outbound international tourism. Most Chinese tourists will travel inside China – and it is in the interests of both the national and provincial economies to encourage this.

The major population centres of China are in the east, but the major outdoor tourism attractions are in the west: the forests of Xishuangbanna, the deserts of Inner Mongolia and Xinjiang, the mountain grasslands of Tibet and Qinghai, the great peaks of the Himalayas, and the great rivers of Tibet, Yunnan and Szechuan. These areas are also the regions of China with higher populations of minority ethnic groups. And they are also the areas subject to inbound migration, and high intensity exploitation of natural resources such as minerals, timber and water. So there are conflicts between primary industry and conservation, and between traditional communities and new immigrants. These patterns have been commonplace in many countries at different historical periods. Arguably, for example, the same patterns, issues and conflicts still occur in North America, though in that case they started earlier than in China.

Tourism, and ecotourism in particular, must therefore establish itself in a context of competition – for land, for resources, for political support, for the interests of residents, migrants and holiday-makers. New tourism enterprises in western China are not only competing against older tourism enterprises in eastern China or in other countries. They are competing against roads, resettlement programs, hydroelectric dams, logging operations, pulp mills and farms. They are also competing against each other. In addition, local ethnic groups may use tourism to support and strengthen local lifestyles and cultural identities – or they may find their traditions used as tourist attractions without their consent or control.

There are two particular examples where China could perhaps gain some advantage by looking at the development histories of other countries. The first is the Himalayan region. The countries on the southern side of the Himalayas, including Nepal, Bhutan and India, all have thriving tourism industries based in and on the mountain scenery, activities and cultures. A key aspect of this industry is that large areas are protected in national parks. China has the opportunity to do likewise. There is already a tourism industry around places such as Mt Kailash and the northern base camp for Mt Everest. But much less of the northern, Chinese, Himalayas are protected than on the southern side.

Examples worldwide have shown that uncontrolled tourism development almost always leads to environmental and social degradation and ultimately to economic loss (Buckley, 2003). To create a successful longterm outdoor tourism industry, the first step is to protect the natural attractions through legal designation of conservation reserves, and regional planning to ensure that conservation areas are not damaged by other industries. In the Himalayas, one option would be a giant transboundary reserve which could almost certainly be declared as World Heritage, increasing its value for tourism ten-fold (Buckley, 2004). The southern Himalayan nations are actively developing this approach. It is in China's interests to join them; and it is in the interests of the Chinese tourism industry to lobby for such a park.

The second example is provided by the great western rivers, especially the Nu, the Lancang and the Yangtze. The upper corridors of these rivers, both in their headwaters on the Tibetan plateau and through the giant gorges as they drop down into Yunnan, are relatively undeveloped and highly valuable for both tourism and conservation. For the river corridors in western China, decisions on land and water use will be made through political processes, but largely on economic grounds. Therefore, it becomes important to consider the future economic scale of outdoor tourism as compared to hydroelectric power generation.

The key issue is to make a rational projection for the potential scale of domestic river-based tourism in a wealthy China. To do this, we can use per-trip values derived from existing upmarket international tours on Chinese rivers, and calculate potential

numbers of participants based on physical and social crowding limitations in an intensively developed industry, comparable to that on the Grand Canyon of the Colorado or other such rivers worldwide. Economic calculations of the value of river tourism have been made in some detail for the rivers of the western USA (Bowker *et al.*, 1996; Chouinard and Yoder, 2004; Cordell *et al.*, 1990; English and Bowker, 1996; Hynes and Hanley, 2006; Loomis *et al.*, 2007; Prideaux and Cooper, 2009; Siderelis and Moore, 2006).

If the rafting industry in the Great Bend of the Yangtze, for example, developed to a similar scale as that of the Grand Canyon, it would generate around RMB 500 million per annum directly, and around RMB 1.2 billion p.a. in total for the local region (Hjerpe and Yeon-Su, 2007). Tourists who actually raft down rivers, however, make up only a tiny proportion of the total number of tourists who visit rivers simply to look at them. If a million visitors a year also came just to look at the river – as they do at Tiger Leaping Gorge – and if each spent say RMB 1500 locally, with a typical local economic multiplier around 2.0, that would add another RMB3 billion. If we also add the costs of travel, expenditure in surrounding areas, the value of time, and consumer surplus, then the total social economic value of tourism might be several times higher. In addition, the economic value of a river used for conservation and recreation includes that of ecosystem services as well as those of tourism and recreation.

As in most countries, the principal economic statistics available for proposed hydroelectric dams in western China are estimated construction costs and “installed capacity” – i.e., the maximum power output if the turbines ran full speed, day and night, year-round. But they don’t – in fact, quite the opposite. Unlike other forms of electric power generation, hydropower generators can be turned on and off quickly without damage or loss. So in most electricity supply grids, the role of hydroelectric generators is to boost power during peak demand in the mornings and evenings. The rest of the time, they sit idle. In addition, if dams are constructed in a linked series, they actually cannot all operate at once. Outflow from one becomes inflow to another. So overall, actual output from a series of dams may typically be only 10% of installed capacity.

In addition, to calculate effective economic returns, two further adjustments are needed. The first is to reflect transmission losses. The demand for electricity is in the giant cities of eastern China, thousands of kilometres from the rivers. Not only must the costs of building transmission lines be considered, but also the loss of power along those lines. The second is that this power will not be sold at residential retail rates. It will be sold on contract to individual industrial consumers or electricity supply utilities, at heavily discounted wholesale rates. When these factors are taken into account, the economic viability of hydropower generation, and especially the net return to local regional economies, is actually rather poor. There are also very large potential economic, social and environmental costs associated with the risks of cascaded dam collapses, since this is an earthquake-prone region. And as global warming decreases rainfall and runoff, the dams will operate less often.

There seem to have been few attempts to make direct economic comparisons between river tourism and hydropower development. There is one published comparison from Ireland, but at a very small scale for both sectors. There are, however, figures from Colorado USA which can be used to calculate the current value of tourism in the Grand Canyon, and compared with the current value of hydro power produced by the dams upstream and downstream. The key issue is that the economic scale of river tourism, in the “underdeveloped” western provinces, could easily be as great as that from supplying power to the east.

There is, however, one more factor which confuses this comparison. Global carbon tax and trading schemes have created an enormous demand for carbon offsets, and one of the accepted mechanisms is to build dams and hydroelectric plants instead of power plants burning fossil fuels. Various companies, e.g. in Canada, already sell offsets from Chinese hydroelectricity investments at up to US\$16 per tonne CO<sub>2</sub> equivalent. No doubt they pay a very much lower rate to the Chinese provider, but the key issue is that the payments are based on the nominal CO<sub>2</sub> emissions which would be avoided from coal-fired power plants if all the hydro plants were running continuously at full capacity. So even if these hydro plants do not actually sell electricity all the time, they still earn offset funds. This is probably one reason why many more dams are planned in China’s great western rivers than could operate economically.

## **Conclusions**

The following conclusions may be drawn.

1. The key achievement of ecotourism worldwide has been to protect areas of high ecological value against more damaging industries. It has done this partly by providing financial income, but mainly by raising political interest.
2. The key challenge for China is to plan as a developed nation with a very large middle class which has both the wealth and the desire to take holidays in beautiful, clean natural environments. Domestic tourism within China is at least 20 to 100 times larger than inbound international tourism, and is already a very important component of the economy in western and central provinces.
3. Of course, tourism and ecotourism in China are developing in a distinctively Chinese style, and this is to be expected. China can, however, avoid mistakes made in other countries.
4. If the Western Provinces lose their natural attractions because of other industries, they will lose their income from tourism. And if Chinese tourists visit destinations overseas because China's environment is damaged, then the whole nation will lose that tourism income.
5. There are enormous opportunities for ecotourism on the northern side of the Himalayas, if China joins the proposed transboundary World Heritage Area.
6. In the western States of North America, too many hydroelectric dams were built and too few rivers were saved for tourism and conservation. The Grand Canyon of the Colorado River is so valuable that tourists wait over 20 years to raft down it, and the river is the mainstay of the region's economy. Sections both upstream and downstream were dammed - now recognised as a mistake.

7. Power companies are building dams all along the great rivers of Western China. But from an economic perspective, tourism would be better for China. There are too many dams, a high risk of cascaded collapse, and decreasing rainfall. The dams can only provide power intermittently, and power transmission losses are very high. Tourism is growing and can provide higher return with lower social and environmental costs.

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