Strategic Environmental Assessment Study

Tourism Development in the Province of Guizhou, China

March 2007

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World Bank

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For and on behalf of Environmental Resources Management

Approved by: David Arthur

Signed: [Signature]

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Date: 9 March 2007

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## Glossary

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<th>C</th>
<th>CPC Chinese People’s Congress  国务院</th>
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<tr>
<td>D</td>
<td>DRC Development and Reform Commission  发展与改革委员会</td>
</tr>
</tbody>
</table>
| E | EA Environmental Assessment  
EIA Environmental Impact Assessment  
EPB Environmental Protection Bureau  环保局  
ERM Environmental Resources Management |
| G | GCA Guizhou Provincial Administration of Culture  贵州省文化厅  
GCB Guizhou Provincial Cultural Heritage Bureau  贵州省文物局  
GLRA Guizhou Provincial Land Resource Administration  贵州省国土资源厅  
GTSA Guizhou Provincial Transport Administration  贵州省交通厅  
GTA Guizhou Provincial Tourism Administration  贵州省旅游局 |
| I | IUCN International Union for the Conservation of Nature |
| M | MP Guizhou Provincial Tourism Development Master Plan, 2003  
MSW Municipal Solid Waste |
| N | NDRC National Development and Reform Commission  国家发展与改革委员会 |
| P | PMO Project Management Office  项目办  
PPP Policies, Plans and Programme |
| R | RTDP Guizhou Rural Tourism Development Plan, 2006 |
| S | SEA Strategic Environmental Assessment |
| U | UNESCO United Nations Educational, Scientific and Cultural Organization  
UNWTO World Tourism Organization |
INTRODUCTION

1.1 BACKGROUND

The Guizhou Provincial Government has adopted policies to promote the Province’s diverse natural and cultural heritage tourism resources for the economic benefit of the people of Guizhou. The Provincial Government recognises the need to balance the economic benefits from tourism development with environmental protection and heritage conservation. To this end, the Guizhou Tourism Administration (GTA) is taking a leading role in ensuring that plans and polices adopted today preserve the province’s unique tourism resources for the enjoyment and benefit of future generations. With financial assistance from the World Bank, the GTA has therefore undertaken a Strategic Environmental and Social Assessment (SEA) of the Province’s tourism plans and policies.

1.2 WHY THE NEED FOR SEA?

Unfortunately, the development of the tourism sector has resulted in environmental degradation and socio-cultural impacts both in Guizhou and elsewhere in China. While the provision of roads, hotels and utility infrastructure may improve the accessibility and amenity of tourism sites, inadequate management and planning may endanger the natural and cultural heritage assets that attract visitors in the first place.

Strategic Environmental Assessment (SEA) is an analytical and participatory approach for up-streaming and mainstreaming environmental and social issues into the decision-making process. SEA has elements that are common to the Planning EIA and Regional EIA processes under the Chinese regulatory EIA system. SEA is particularly useful for evaluating the environmental and socio-economic consequences of plans, policies or strategies that have cross-sectoral implications, such as tourism development. The SEA process assists policy-makers in balancing competing environmental and socio-economic priorities and in fine-tuning sectoral plans and policies.

1.3 OBJECTIVES OF THE SEA

The objective of this SEA is to enhance the sustainability of Guizhou’s tourism sector through assessing environmental and socio-economic impacts of tourism development and improving the design and implementation of tourism development policies, plans and programmes.

This is the first time that SEA has been undertaken for the tourism sector in China and it is also hoped that the GTA’s work may be replicated elsewhere to promote the development of sustainable tourism practices in China.
2

METHODOLOGY AND APPROACH

2.1 INTRODUCTION

There is no universally agreed definition or standard accepted SEA methodology that may be adopted for any given scenario. Rather, expert investigation on common frameworks and key elements of good practice\(^1\) shows how SEA methodology works best when it is aligned with the realities and constraints of the local context as well as specific needs and objectives of the assessment. The wide range of concepts/methodologies lay between two extremes.

At one extreme is what may be termed “policy-level SEA”, where the SEA is embedded within, or is part of, a decision making process. The objective and output of a policy-level SEA is informed decision-making itself, rather than producing a report. This approach is focused on strategic policies, rather than on plans or programs, and is most useful at the early stages in the development of policy where alternatives and scenarios can be assessed and where a wide range of options (of differing environmental or social consequence) are still available. Consultation is the main methodological tool and cumulative, synergistic and indirect effects and externalities are fundamental aspects to assess.

At the other end of the spectrum is what is sometimes referred as Sectoral Environmental Assessment (EA). Here the main difference with a project level EIA is the fact that there are a number of sub-projects included within a plan or programme, the impact of which are assessed individually and cumulatively, to assess the environmental and social acceptability of the proposed plan or programme. For Sectoral EAs, the output of the assessment is a set of mitigation measures to minimize negative impacts and maximize benefits.

SEA is a relatively new process in China. Amendments to the EIA Law in 2003 require planning EIAs for tourism development plans. While technical guidelines\(^2\) for undertaking planning EIAs have been issued by the State Environmental Protection Administration (SEPA), there are no specific guidelines for policy-level SEAs.

The methodology adopted for this SEA drew on a combination of both approaches and, as shown in Figure 2.1, lies between the two ends of the methodological spectrum.

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(1) Strategic Environmental Assessment (SEA); current practices, future demands and capacity-building needs, M.R. Partidário (IAIA)

(2) Technical Guidelines for Planning Environmental Impact Assessment (Trial), HJ/T 130-2003, State Environmental Protection Administration, 2003
2.2 APPROACH FOR THE SEA

The SEA was undertaken through the following tasks:

Task 1: Literature review and screening;
Task 2: Scoping;
Task 3: Development of analytical framework;
Task 4: Consultation;
Task 5: Impact assessment; and
Task 6: Development of recommendations and conclusions.

2.3 TASK 1: LITERATURE REVIEW AND SCREENING

Relevant literature was reviewed in order to gain an understanding of the Provincial tourism development plans and policies and to establish a baseline environmental and social context for the SEA. The key policies and plans on which the SEA is based include:

1) Guizhou Provincial Tourism Development Master Plan, World Tourism Organisation (UNWTO), China National Tourism Administration (CNTA) and Guizhou Provincial Tourism Administration (GTA), 2002.


3) Guizhou Provincial Proposal for World Bank Loan to Construct Infrastructure to Protect Cultural and Natural Heritage (Draft Proposal), International Project Consultation Centre, 2005.

Secondary reference was also made to the following policy documents that are partly relevant to the tourism sector:

- Guizhou Provincial Eleventh Five Year Environmental Plan (Draft), 2006
- Guizhou Provincial Eleventh Five Year Socio-economic Plan (Draft), 2006

The literature review enabled the SEA team to define targets and policy objectives against which predicted impacts could be assessed. The Provincial plans and policies on which the SEA is based, as well as the specific targets referenced for the assessment, are described in Section 4 of this report.
2.4 **TASK 2: SCOPING**

Scoping was undertaken during the initial stages of the SEA in order to identify interactions between the proposed tourism development plans and policies and environmental or social aspects (called “receptors”). Scoping had paid particular emphasis to the types of activities to be implemented, particularly under the specific plans assessed. The scoping exercise therefore ensured that the SEA focuses on those issues that are most important for design and decision-making. SEA scoping was discussed with Provincial Government representatives in early March 2006 to verify that the issues identified for priority focus reflect those of stakeholder interest. The scoping of the SEA is described in more detail in Section 6 of this report.

2.5 **TASK 3: DEVELOPMENT OF ANALYTICAL FRAMEWORK**

The analytical framework finally chosen for the purpose of this SEA is based on the development of tourism growth scenarios to assess the environmental and social impacts vis-à-vis the actual tourism development policy being implemented.

Tourism growth scenarios were developed based on projections provided by the GTA and in the *Tourism Supply and Demand Assessment for Guizhou* (ERM, 2006). Metrics such as the number of expected visitors, the amount of tourist infrastructure to be constructed and the amount of transport infrastructure required to convey visitors to tourist sites were drawn from the plans and policies or otherwise provided by government authorities.

For the purpose of this assessment, four scenarios were developed (see Section 7 for detailed descriptions). Under each scenario, likely environmental and social impacts vis-à-vis the actual policy being implemented were assessed (Task 5) and recommendations to adjust tourism development scenarios developed (Task 6). The use of the four scenarios helped identify alternative policy options to enhance the sustainability of Guizhou’s tourism sector.

Objectives, targets and indicators relevant for the strategic assessment were drawn from provincial policies, plans and regulations, and constituted the criteria against which to assess the environmental and social impacts of tourism development in Guizhou Province. These were also the basis to develop the alternatives and scenarios introduced in this section. The objectives and targets used for the assessment (see Section Error! Reference source not found.) were adopted from the MP and related PPP that are the main policy and strategy document to assess tourism development in the province. The assessment criteria were complemented with baseline information collected from primary and secondary sources.

Identifying and analyzing linkages and externalities is a key element of the SEA process that has often been given insufficient attention in project-level EIAs. Linkages are normally described as other sectors of economy related to tourism, which are necessary for its development or as the knock on effects of tourism on other economic sectors. Externalities have been defined for the
purpose of this report as the un-intended by-products of tourism, sometimes defined also as indirect effects. Linkages may have direct and indirect effects and externalities, cumulative and synergistic effects.

An example that evidences the interconnectivity and complexity of the relationship between these is transport development. Although a basic feature for tourism development in remote areas, its driver is not necessarily and only tourism. An improved transport network can also have well known externalities/indirect effects such as enhanced accessibility for migrants, wood loggers or general industrial development.

Identifying indirect and cumulative/synergistic effects was done by different methods including expert judgment/experience from other similar circumstances.

2.6 TASK 4: CONSULTATION

A common feature of all forms of SEA is stakeholder consultation. For policy-level SEAs, consultation is in fact the main methodological tool. Similarly at the sectoral EA extreme of the continuum, there is a trend towards more or less constant consultation throughout the assessment.

During preparation of this report engagement was conducted through extensive personal interviews with provincial government officials and local experts, as well as three formal consultation meetings that also included representatives of affected communities. Stakeholder consultation is further elaborated in Annex A.

2.7 TASK 5: IMPACT ASSESSMENT

This task involved the evaluation of predicted impacts resulting from the implementation of the proposed tourism development plans and policies. Outcomes of the evaluation were benchmarked against relevant objectives and targets for the four scenarios. Where policies and plans state numerical objectives and targets, these were adopted for the assessment with reference to the environmental and social baseline described in Section 5.

The SEA was as precise and specific as the definition of the plans themselves was (or will be in the case of the proposal for Bank finance that is currently being revised). Inherently, the SEA could not quantify aspects that were not amenable to quantification or for which policy targets had not been set. This was the main methodological challenge of the SEA.

The impact assessment was undertaken at two levels. Firstly, the types of activities to be undertaken as part of the Guizhou Provincial Master Plan (2002) and Rural Tourism Development Plan (2006) were assessed and mitigation measures proposed, where appropriate. This approach is similar to the Chinese Planning EIA process and the results are presented as Scenario 1: Planned Tourism Development in Section 8.1. Second, alternative development scenarios were considered at a policy level (see Sections 8.2-8.4) in order to
determine whether alternative development scenarios may result in similar or improved environmental and social outcomes, while achieving the same policy objectives.

2.8 **TASK 6: DEVELOPMENT OF RECOMMENDATIONS AND CONCLUSIONS**

In consultation with key stakeholders, recommendations were developed to minimize, mitigate and manage potential adverse impacts, and enhance the benefits that tourism development policies and plans may bring to local communities.
3.1 TOURISM RESOURCES

Due to their relative isolation, Guizhou’s natural and heritage-based tourism assets remained relatively unvisited until the late 90s when the Guizhou Government began promoting tourism.

While Guizhou’s tourism assets are diverse, they may be broadly grouped into two categories: nature-based and heritage-based resources.

3.1.1 Nature-based Tourism Resources

Nature-based attractions include the following:

**Natural landscapes**
- Over 60% of the province comprises karst landform, the most spectacular examples of which can be found at Maolan National Nature Reserve in Qiannan Prefecture and Wanfeng Lake in Qianxinan Prefecture;
- Numerous deep gorges, many of which are endowed with waterfalls, such as Malinghe Gorge in Qianxinan Prefecture and Nanpanjiang Gorge.
- Picturesque waterways including the Yangtze and Pearl River Valleys flow through scenic areas including Wujiang, Chishuihe, Wuyanghe, Beipanjiang, Nanpanjiang and Hongshuihe.

**Biodiversity**
- Ten national and provincial level nature reserves, and 42 national and provincial level forest parks provide protection to 66 rare species of plants at state-level protection listed in the *Rare Plants in Danger in China*, 41 species of plants at provincial-level protection, and seven bird species classified “vulnerable” by BirdLife International (1) (see Annex B).

3.1.2 Heritage-based Tourism Resources

**Ethnic minority culture**
- Guizhou is home to diverse and colourful ethnic minority groups whose traditional culture and lifestyle have been largely preserved. Ethnic minority culture experience (including Miao, Bai, Gelao, Buyi, etc.) is one of the most important tourism attraction in the province, where local minority villagers dance, play instrument and cook for the visitors, show their costumes and handicrafts, etc.
- Long March relics: The meeting held in Zunyi (north of Guizhou), so called *Zuiyi Meeting*, determined the core status of Mao Zedong within the party and the red army, which was fundamental to the Long March and consequently the foundation of People’s Republic of China. Together with

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(1) www.birdlife.org
neighboring key locations of Long March, Zunyi is one of the most attractive locations for Red Tourism (1).

### 3.1.3 Tourism Infrastructure and Facilities

Owing to Guizhou’s hilly and inaccessible terrain, transport infrastructure is one of the most important factors for tourism development in the province.

#### Road Network

In 2005, the total length of highways in Guizhou was 3,258 km, consisting of 576 km of expressway and 2,682 km of Class I and II roads. According to the Transport Bureau, there were 3,201 rural road construction projects between 2003 and 2005, with a total length of 28,055 km that enabled access to 3,468 remote villages previously inaccessible by road. Between 2003 and 2005, the total investment in road infrastructure was RMB 3.4 billion. As of 2006, 85% of villages in Guizhou are accessible by vehicle; whereas there 6,768 villages remain inaccessible. Figure 3.1 illustrates the existing road network.

![Figure 3.1 Guizhou Road Network (2005)](image)

**Figure 3.1 Guizhou Road Network (2005)**

Road Network Map

Source: Guizhou Provincial Transport Administration

#### Railways

Guizhou has over 2,000 km of railway (2005), running roughly north, east and south from the capital, Guiyang (see Figure 3.2). Railway networks cover Tongren, Qiandongnan, Qiannan, Guiyang, Anshun and Liupanshui, passing through 19 counties and 69 villages. The development of the railways has been instrumental in enabling the exploitation of mineral resources.

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(1) Note: Red Tourism is named because of the Red Armies who participated in the Long March.
Figure 3.2 2005 Guizhou Railway Network Map

Airports

There are currently six airports in Guizhou, namely Longdongbao Airport in Guiyang City, Huangguoshu, Xingyi, Libo, Leping, and Tongren. Two other airports, in Bijie and Renhuai, are currently under construction (see Figure 3.3).

Figure 3.3 Airports in Guizhou

Source: Guizhou Provincial Transport Administration

Source: Guizhou Map Collection (2006), Guizhou Provincial Land Resource Administration (GLRA)
3.1.4 Accommodation

Guizhou offers a range of options, including star hotels, non-rated hotels and guesthouses, as well as rural home stay accommodation. The Chinese National Tourism Administration (CNTA) empowers the GTA to conduct the assessment and award process for 1 and 2 star hotels and to nominate establishments for higher grades to CNTA; however, beyond Guiyang and a small number of municipalities, most tourist accommodation is in the form of basic guesthouses of variable quality.

While simple guesthouse accommodation in the rural areas of Guizhou generally does not meet the international star rating classification system, such accommodation is popular in Guizhou since it does not require a large amount of investment nor sophisticated operational management, making it particularly well-suited for local community development. Figure 3.4 shows typical guesthouse accommodation in a rural village.

Figure 3.4 Guizhou Rural Village Accommodation

![Typical rural village home-stay accommodation at Maomaohe village, Bala River showing the building (left), the bedroom (middle) and bathroom (right). The original structure and condition of the house, as well as the small size of the rooms, makes conversion into guest accommodation difficult.](image)

Source: Guizhou Tourism Demand and Supply Study, ERM, 2006

3.1.5 Restaurants

In Guizhou, designated tourist restaurants exist at the prefecture, city and county levels. According to the Tourism Quality Administrative Department of the GTA, the minimum standards stipulated in *Tourism Hotel Star-rating and Evaluation* (GB/T 14308-2003) are applied to certify designated tourist restaurants. At the village level, the minimum standards relevant to restaurants stipulated in the *Guizhou Village Household Hotel Quality Assessment and Administration Standards* (DB52/T 466—2004) are used to certify village-level restaurants.

Based on the Consultants visits to a number of rural tourist villages, it is evident that many of the informal, family-run restaurants do not hold the necessary hygiene certification. The quality of such restaurants varies widely.
Family run restaurants and other small businesses is one of the key ways that local communities can benefit economically from tourism.

3.1.6 Shops

Souvenir products in Guizhou include all kinds of handicrafts, postcards, minority clothes and fabrics. Souvenir shops are typically located at the places that attract the greatest number of visitors. They are often concentrated around tourist information centres, car parks and service areas.

Handicrafts are one of the most important heritage-based products in Guizhou and include batiks made by Buyi people in the Anshun region, embroidery works from Miao, Dong, Shui and Buyi, silver jewellery from Miao and Gejia, bamboo flutes from Yuping County and opera masks. A variety of gastronomic products are distinctive to the region including: Maotai and Dongjiu liquor, Zunyi mutton rice noodles, Guiyang changwang noodles, Bijie dumplings, Dong preserved fish and meat, and Miao soups. Guizhou is also rich in traditional medicinal plants (1).

3.1.7 Tour Guides

Tour guides working for travel agencies in Guizhou must obtain a Professional Tourist Guide Certificate in order to be contracted by travel agencies to receive group tourists. Professional tour guides in China generally graduate from vocational institutes and have received a minimum of high school level education. According to the Guizhou Tourism Demand and Supply Study (ERM, 2006), the participation of local residents is actively being encouraged in Guizhou and consequently many villagers that have little or no formal training are acting as local tour guides in order to meet the demand from domestic and international visitors.

3.2 Tourism as a Sector of the Economy

3.2.1 Guizhou Tourism Profile

In 2001, Guizhou attracted 23,840,000 visitors- 320,000 (1.3%) from abroad and 510,000 (2.1 %) from Hong Kong, Macao and Taiwan; and 23,000,000 (96.6%) domestic visitors. An additional 37,950,000 overnight visitors are estimated to originate from within the province itself. The most current statistics for foreign and domestic visitor arrivals to Guizhou since 1994 are presented in Figure 3.5, and Figure 3.6 respectively.

(1) The traditional medicine of the Miao people of Guizhou has been included as in the 2005 best heritage-based practice contributing to sustainable development in UNESCO's Harmony List. The list was created in 2004 as a result of partnership between the International Fund for the Promotion of Culture and IDEAM-Groupe Crédit Agricole. The list selects best traditions heritage-based practices that significantly contribute to improvements in quality of life, and which integrate heritage-based dimensions into social, environmental and economic development.
The principal international markets by country of origin mirror that of China as a whole, namely Japan (15%) and USA (12.5%). As compared to China as a whole, the proportion of Japanese and Korean tourist arrivals to Guizhou is smaller and countries such as Indonesia and Singapore are more important. English speaking countries are the largest market segment, accounting for around one-third (31%) of the international tourist market.

While the domestic market in China has grown at an annualised rate of 8.2% over the last 10 years, Guizhou has grown at less than half that rate (3.37%) over the corresponding period. This means that the increase in domestic tourist numbers has benefited other provinces more than Guizhou. In other words, it seems that tourists prefer to visit other provinces than Guizhou. However, the effect of “business tourists” may be biasing this impression towards more visits in developed provinces.

At present visitors are concentrated in the Guiyang/Anshun area, with secondary areas being Qiandongnan, Qiannan and Zunyi. The provincial capital, Guiyang, is the natural transportation hub for visiting much of the province. The more remote areas are sometimes more easily reached by visitors from neighbouring provinces (Yunnan, Guangxi, Hunan, Sichuan and Chongqing). Although Guiyang will remain a hub for visitors travelling
through the province, the long term objective of this strategy is to spread tourism more evenly across the province. However, it must be recognised that this objective will take time to deliver. The main constraints on dispersal of tourism throughout Guizhou are the limited number of good roads to places of interest to visitors, and the short length of stay of visitors.

Further details of the baseline tourism profile and are provided in the *Guizhou Tourism Supply and Demand Report* (ERM, 2006).

### 3.2.2 Economic Contribution from Tourism

In places like Guizhou and elsewhere in China, where tourism statistics are still being developed, a way to measure tourism’s contribution to GDP is to express gross tourism earnings as a proportion of GDP. In the case of Guizhou, this proportion has been growing steadily and it grew from 6.3 % in 2000 to 13.2 % in 2005.

The contribution of tourism to GDP earnings from international tourism are estimated to have increased from US$60.9 million in 2000 to US$101.4 million in 2005. Details are shown in Table 3.1 below.

<table>
<thead>
<tr>
<th>Table 3.1 Growth of Foreign Exchange Earnings from Tourism, 1995-2005</th>
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<tbody>
<tr>
<td><strong>1995</strong></td>
</tr>
<tr>
<td>Overseas tourist arrivals (person/time)</td>
</tr>
<tr>
<td>International tourism receipts (US$ million)</td>
</tr>
<tr>
<td>Expenditure per overseas tourist (US$ per person)</td>
</tr>
<tr>
<td>Growth rate of receipts over previous year (%)</td>
</tr>
</tbody>
</table>

*Source: GTA and MP*

According to the Planning and Finance Division of the GTA, revenues from tourism accounted for 0.6 % of total taxes collected by Guizhou Provincial Government in 2005. These taxes include 5% of total taxes contributed by hotels, travel agencies, restaurants, souvenir shops and scenic area management companies. The contributions of small business are not included.

<table>
<thead>
<tr>
<th>Table 3.2 Contribution of tourism to local financial revenues (1995-2005)</th>
</tr>
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<tbody>
<tr>
<td><strong>1995</strong></td>
</tr>
<tr>
<td>Tourism tax revenues (million yuan)</td>
</tr>
</tbody>
</table>

*Source: GTA*

### 3.2.3 Tourism and Poverty Reduction

Poverty reduction through tourism is a Government policy reflected in both the Tenth Five-year Plan and MP. There is significant overlap in the priority
areas designated for tourism development with areas registered at either the national or provincial level as priority areas for poverty alleviation and development. However, tourism-related employment is concentrated in the central and northern part of the province mainly in Guiyang, Zunyi and Anshun prefectures.

Pro-Poor tourism strategies focused on maximising economic benefits are at the heart of the tourism development agenda in Guizhou, including commitment to create local jobs and programs to train people\(^1\) and to bring the benefits of tourism to all the regions in Guizhou, particularly those with high poverty levels. The strategy also seeks to promote the expansion of business opportunities for the poor through their participation in businesses that offer products directly to tourists, such as lodging, guiding, crafts and tea shops.

### 3.2.4 Rural Tourism Development

Guizhou is often referred as the “big countryside” because of its 30,000 villages spread across its mountainous geography (85% of its population live in rural areas). This fact makes support to rural tourism development a government priority to construct the “new socialist countryside”\(^2\) aimed at reducing poverty and improving economic development. The GTA reports\(^3\) that there were 2,660 villages involved in rural tourism that attracted a total of 10.84 million visitors in 2005 (34% of the total). From this figure, 90% were domestic visitors, generating a sum of over RMB 2 billion revenue, equivalent to about 8% of the total revenues from tourism in the province. As a result, around 150,000 people were directly or indirectly employed, which represents about 37% of total tourism-related employment in the province.

Table 3.3 presents an overview of the situation with regards to rural/ethnic tourism in Guizhou. It is clear from the data presented by the GTA that in 2005 secondary tourism areas namely Qiandongnan, Qianxinan, and Qiannan Autonomous Prefectures have become recently attractive tourism spots that generate jobs and revenues. The three regions received almost 50 percent of the total number of visitors to rural Guizhou and generated 40 percent of the total revenues. The presence of ethnic minorities and high value natural environments contribute to the attractiveness of these locations.

<table>
<thead>
<tr>
<th>No. of Rural Tourism Sites</th>
<th>Visitors</th>
<th>Revenue (billion RMB)</th>
<th>Average Expense by Visitor (RMB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guiyang</td>
<td>499</td>
<td>2,480,000</td>
<td>0.266</td>
</tr>
<tr>
<td>Zunyi</td>
<td>350</td>
<td>1,674,200</td>
<td>0.4</td>
</tr>
<tr>
<td>Anshun</td>
<td>14</td>
<td>635,100</td>
<td>0.099</td>
</tr>
<tr>
<td>Qiannan</td>
<td>1,380</td>
<td>1,760,000</td>
<td>0.681</td>
</tr>
<tr>
<td>Qiandongnan</td>
<td>33</td>
<td>1,500,000</td>
<td>0.52</td>
</tr>
</tbody>
</table>

\(^1\) For a detailed discussion on the definition and the strategies for pro-poor tourism see “Pro-Poor Tourism Strategies Making Tourism Work for the Poor. A review of experiences”, C. Ashley, D. Roe and H. Goodwin, ODI/IIED/CRT, April 2001

\(^2\) The Chinese government presented in 2006 a policy document on building "a new socialist countryside," and established it as one of the primary objectives of the 11th Five-Year (2006-10).

\(^3\) Report on Rural Tourism Development of Guizhou Province, GTA, 2006
<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
<th>Tourist接待量</th>
<th>Population Share</th>
<th>Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongren</td>
<td>30</td>
<td>300,000</td>
<td>0.03</td>
<td>100</td>
</tr>
<tr>
<td>Bijie</td>
<td>299</td>
<td>150,000</td>
<td>0.013</td>
<td>86.7</td>
</tr>
<tr>
<td>Liupanshui</td>
<td>45</td>
<td>450,000</td>
<td>0.034</td>
<td>75</td>
</tr>
<tr>
<td>Qianxinan</td>
<td>10</td>
<td>1,895,000</td>
<td>0.056</td>
<td>29.6</td>
</tr>
</tbody>
</table>

| Total      | 2,660      | 10,844,300    | 2.1              | 193.5    |

*Source: Report on Rural Tourism Development of Guizhou Province (2006), GTA*
4.1 **GUIZHOU PROVINCIAL TOURISM DEVELOPMENT MASTER PLAN, 2002**

The MP was prepared by a joint team of national and international consultants under the guidance of the CNTA and GTA, with technical and financial assistance from the UNWTO and World Bank. After the MP was approved by the CNTA in 2003, the MP was formerly adopted as the official guideline for tourism development in Guizhou.

The principal objective of the MP is to maximize the benefit of tourism as a sector of the economy as quickly as possible while providing sufficient protection of environment and cultural heritage. The MP sets out appropriate strategies for tourism development based on an analysis of the province’s tourism assets and condition of supporting infrastructure.

4.1.1 **Tourism Development**

**Tourism Segments**

The MP emphasises Guizhou’s pristine ethnic minority cultures and unique natural environments. Six integrated clusters and six feature clusters focusing on Environmental Tourism, Cultural Tourism, and Rural Tourism, and developments were proposed as the key products for both the international and domestic markets (see Figure 4.1). Rural tourism focuses on ethnic minority culture, whereas eco-tourism the landscapes, flora and fauna.

**Figure 4.1 Overview of Proposed Tourism Clusters**

Source: Adapted from Project Proposal for Protecting and Developing Cultural and Natural Heritage of Guizhou Province, Guizhou Tourism and Culture Research and Promotion Centre, 2006
The integrated clusters are as follows:
- **Cluster A**: Guiyang
- **Cluster B**: Anshun
- **Cluster C**: Kaili – Zhengyuan
- **Cluster D**: Liping – Congjiang – Rongjiang
- **Cluster E**: Libo
- **Cluster F**: Xingyi – Anlong

The featured clusters are as follows:
- **Cluster 1**: Fanjing Shan
- **Cluster 2**: Zunyi
- **Cluster 3**: Chishui – Xishui – Renhuai
- **Cluster 4**: Zhijin – Qianxi
- **Cluster 5**: Weinin – Liupanshui
- **Cluster 6**: Wujiang Gorge

**Tourism Activities**

The MP defines three broad types of tourism for the province: Nature-based Tourism, Heritage-based Tourism and Rural Tourism. A number of tourism activities are proposed for each broad category and are summarised below:
- **Nature-based Tourism**:
  - Hiking within scenic sites and natural reserves;
  - Sightseeing; and
  - Rafting and Boating.
- **Heritage-based Tourism**:
  - Sightseeing (ethnic minority architecture, ancient towns and monuments);
  - Performances (dancing, musical instruments, traditional livelihoods);
  - Handicraft sales (costumes, fabrics, silver, etc.);
  - Traditional guesthouse accommodation and enjoying ethnic cuisine.
- **Rural Tourism**:
  - Horse riding;
  - Demonstration of farmhouse operations (including traditional farming practices and livestock breeding); and
  - A combination of other nature and heritage-based activities described above.

**4.1.2 Infrastructure Construction and Upgrading**

**Roads**

The MP highlights the poor accessibility to proposed tourism attractions as a key obstacle likely to hinder tourism development and selects 25 sites located in Zunyi, Tongren, Qiandongnan, Qiannan, Liupanshui, Bijie and Anshun as priorities for road improvements. It proposed that construction and
upgrading of existing roads leading to 18 Class A and B\(^{(1)}\) tourism sites will be finished by 2007 \(^{(2)}\) and roads to 7 Class C tourism sites will be finished by 2010.

**Tourism Reception Facilities**

The MP identified the need to improve tourism information centres, service centres and public toilets. It proposed to build information centres at each airport, as well as points in the cities frequented by tourists and at the most popular tourism sites. It also proposed that service centres would be located at entrances to key tourist sites and would incorporate car parks, emergency services, public toilets, shops, restaurants and possibly simple accommodation.

**Accommodation**

By 2010, Guizhou aims to be able to accommodate over 150,000 guests. The MP proposed construction of a range of accommodation, including:
- Star-rated hotels in urban areas;
- Unrated hotels in urban areas;
- Village guesthouses;
- Homestays in villages;
- Eco-lodges at tourism sites; and
- Camping facilities.

### 4.2 *Guizhou Rural Tourism Development Plan 2006*

In June 2006, the CNTA approved the *Guizhou Provincial Rural Tourism Development Plan* (RTDP). The purpose of the RTDP is to provide strategic guidance for the development of Guizhou’s rural tourism sector with special emphasis on ethnic and cultural tourism.

The RTDP highlights the following benefits from rural tourism development:
- Creation of employment opportunities and alternative sources of income for local community;
- Addition of new values to traditional culture;
- Enhancing the confidence and pride local people have in their own culture to encourage conservation;
- Improvement of the social status of vulnerable groups including women and the elderly; and
- Promotion of Guizhou to the international and domestic market.

However the RP also identified the following potential impacts of rural tourism on the natural environment and cultural heritage:
- Excessive development may lead to over-exploitation of natural resources;

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\(^{(1)}\) GTA has categorised tourism assets in the province into three types: Nature, Folk Culture and the Integrated. In addition, these assets are ranked from A to E to five classes based on analysis of their intrinsic value and attractiveness to tourists. Therefore, Class A tourism sites are the most important tourism assets to Guizhou.

\(^{(2)}\) Where the Master Plan says “with in five years”, since it is produced in 2002, therefore the proposed completion time will be 2007.
• Low level of capacity at local level may result in destruction of fragile cultural heritage;
• Loss of intangible cultural heritage due to assimilation caused by opening up of remote areas;
• Visitor numbers that exceed the carrying capacity of villages may damage historic architecture;
• Disturbance caused by tourism activities may upset villagers;
• Commercialization of villagers leads to loss of traditional values and culture.

The RTDP identifies some 160 rural villages to be developed for rural tourism. The types of activities to be promoted largely reflect those contained in the MP and there is once again a focus on ethnic minority attractions. The RTDP proposes a model for the establishment of cultural and eco-museums at a number of pilot villages. Under this model, local communities would become shareholders in the tourism development company and would receive a share of economic benefits from the enterprise.

4.3 OTHER RELEVANT PLANS

The 2006 Guizhou Eleventh Five Year Socio-economic Plan defines socio-economic targets for the period 2006-2011, as well as strategies to achieve them. The plan aims for a 25% annual increase in tourism revenue through the following proposed strategies:

• Enhance infrastructure constructions, focusing on providence of modern transport infrastructures and information systems.
  - Guizhou government seeks to enhance road based transport system by achieving the following targets by 2010:
    - Total length of express highway: 1,300km;
    - Construction of 3,000km Class II highway;
    - Establish transport network connecting express highways, airports, railway stations, key industrial and mining districts and Class II highways that lead to tourism sites;
    - Construction of 8,000km roads in rural villages;
    - Have 90% of towns covered in bitumen road network, or 95% of the administrated villages connected by highways; and
  - Promote information system buildings including the installation of telecommunication cables, broadband internet connections and IP television connections.
• Accelerate service industries lead by tourism sector by two key strategies namely driving strategy and high quality strategy, realised through the following actions:
  - Focus effort on promotion of key tourism attractions in Anshun, Libo and Liping – Congjiang – Rongjiang areas;
  - Promote diversification of tourism products apart from sightseeing tourism to include eco-tourism, red tourism, ethnic minority tourism and leisure tourism;
- Building comparative advantage of Guizhou’s rich tourism assets of ethnic minorities, karst landform and pristine natural environment;
- Comprehensive improvement of tourism infrastructures and facilities including transport, accommodation, food and shopping services, as well as amenity services; and,
- Continue implement tourism management system reformation; where appropriate introduce special tender systems for scenic sites.
BASELINE CONDITIONS

5.1 PHYSICAL ENVIRONMENT

5.1.1 Overview of Physical Environment

Guizhou is located in southwest China and borders Sichuan, Chongqing, Hunan, Guangxi, and Yunnan Provinces. It has a total area of 176,000 km², and a population of approximately 39 million (2005).

Around 87% of Guizhou is mountainous; the remaining areas are hills (10%) and river valleys (3%). The most outstanding characteristic of Guizhou’s physical environment is the widespread distribution of limestone karst features that cover 73% of the total area of the Province. The karst topography increases the risk of soil erosion.

5.1.2 Areas of Global Significance

Caohai, Fanjing Shan and Maolan nature reserves are classified as Important Bird Areas (IBA), by BirdLife International, a Non-Governmental Organization (NGO). IBAs are sites that provide essential habitat to one or more species of breeding, wintering, and/or migrating birds that are recognised by the International Union for the Conservation of Nature (IUCN) as globally threatened species (1).

Fanjing Shan and Maolan natural reserves are UNESCO Man and Biosphere Reserves. The biosphere reserve concept was developed initially in 1974 by UNESCO, aiming to improve the relationship of people with their environment. Unlike traditional nature reserves, biosphere reserves are characterised by having large human populations living within their boundaries.

In 2005, a joint application for inscription to UNESCO’s World Natural Heritage List was made for the Karst Landforms in the South of China that includes Libo in Qiannan Prefecture.

5.1.3 Existing Environmental Issues and Hotspots

Existing sources of environmental pollution include mining, vegetation clearance, chemical and paper manufacturing, and solid waste management:
- Mining in particular has led to significant impacts to natural landscapes, biodiversity and water quality, many of which are in tourist sites
- Guizhou’s vegetated karst formations are particularly sensitive. Clearance of vegetation on karst slopes for road construction, logging, mining and agriculture results in stripping of a thin layer of top soil, exposing the underlying rock. In extreme cases of degradation, karst formations

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(1) As defined by the IUCN’s Red List of Globally Threatened Species, a widely accepted system for classifying species at high risk of extinction.
become entirely denuded, leading to a loss of ecological function and creating severe landscape and visual impacts.

- Surface pollution of surface water has resulted from limited treatment and control of municipal and industrial wastewater discharges that has lead to deterioration in the water quality in and around major tourist sites, including Maling Gorge, Huangguoshu Waterfall, the Beipang River and the Wu River.

- A lack of solid waste disposal facilities at several key tourism sites including Huangguoshu, Dragon Palace Caves, Tiantai and Yelang Hu has resulted in adverse environmental and visual impacts.

The following sections present details of the physical environmental baseline of Guizhou Province.

### 5.1.4 Surface Water

The province has an abundance of surface water including some 980 rivers over 10km in length. Surface water resources in Guizhou principally comprise two main river systems, the Yangtze and Pearl River basins. Annual precipitation in Guizhou is high; 1,179 mm in 2005.

Surface water quality is one of the most serious environmental issues for Guizhou and water pollution is particularly poor within urban areas and downstream of industrial facilities and mines. Water quality is below acceptable level in many scenic areas and attractions, including Baihua and Hongfeng Lakes, Huangguoshu Falls, Dragon Palace Caves, and Malinghe. Figure 5.1 presents an overview of surface water quality in the province.
Hongfeng Lake

Hongfeng Lake is located in Qingzhen, 33km from Guiyang, with a total area of 20,000 hectares. Being the largest artificial lake on the Guizhou Plateau, the Lake is used as a water recreational centre as well as served as water supply for Guiyang. However, Hongfeng Lake is facing serious water pollution from surrounding industries, and is not considered suitable for further tourism development.

Malinghe

Malinghe is located 6km from Xingyi city of Qianxinan Prefecture and 366km from Guiyang. It is famous of its turbulent water falls and deep valleys with magnificent views on both sides. Malinghe will be developed into a water based tourism area with a focus on rafting. However, Malinghe is facing water pollution challenges due to the siting of industrial facilities upstream.

5.1.5 Solid Waste

As of 2005, Guizhou had a total of eight municipal solid waste (MSW) landfills, located in Guiyang, Zunyi, Anshun, Liupanshui and Kaili. Together they have a total capacity of 4,112 tonnes/day. According to the Guizhou Environmental Status Bulletin (2005), the average solid waste treatment rate in 2005 was 26.7%. Assuming that the landfills are all operated at their capacity, this implies waste disposal of around 0.4 kg/person/day. Even taking into account Guizhou’s level of development, this implies that a significant volume...
of solid waste is being disposed of by other means. Assuming a fairly
conservative estimate of solid waste generation of 0.7 kg/person/day, some
11,700 tonnes/day of solid waste (0.3 kg/person/day) is being disposed of by
other means, including open dumping and tipping down hill slopes, burning
and use as compost or animal feed.

All landfills are located in major cities and there is no formal solid waste
collection or arrangements for disposal of solid waste in rural areas. This has
implications for the proposals to promote rural tourism.

Siting of existing waste disposal sites in rural areas is a concern. In particular,
the siting of waste dumps close to rivers in places such as Langde and Xijiang
villages (both are Miao villages in Qiandongnan Prefecture) may result in
rubbish or leachate being flushed into the rivers during the rainy season. It is
considered likely that leachate from dump sites is entering groundwater in
some areas, such as Basha Village, since the dump sites are not lined and there
is good connectivity between the surface and groundwater owing to the
underlying limestone which is relatively porous.

Tipping waste down hill slopes has resulted is visual impacts in some areas.

5.1.6 Biodiversity

Flora

Owing to its long history of isolation, Guizhou is one of China’s most pristine
environments. According to the China Valuable and Near-Extinct Flora Inventory
(1999) (1), there are 66 national and 41 provincial level protected or endangered
flora species in Guizhou. There are some 29 species of rare flora distributed
within the proposed tourism development areas detailed in the MP (2). Among
them, the dove or handkerchief tree, (Davidia involucrata) is under Class I State
level protection. Ten species are under the Class II State level protection,
including Alsophila spinulosa (tree fern) and Liriodendron chinensis (Chinese
tulip tree).

Several of these flora are very rare and date from the Tertiary Period. Some
of the gymnosperms, such as Amentotaxus argotaenia, and Alsophila spinulosa
(tree fern), lived even earlier during the Jurassic period.

Flora of Historic and Cultural Value

There are over 100 known ancient trees growing within the proposed tourism
development areas detailed in the MP (3). They are classified into 26 species
under 22 different families.

These ancient trees are of significant historic value that enhances both the
cultural and physical landscape for their value in scientific research and for

(1) Rare Plants in Danger in China, SEPA and China Science and Research Academy, Flora Research Institute, 1987
the appreciation of visitors. In addition, many of these trees have been protected in the past for *feng shui* reasons.

**Man-made Forests**

The major types of trees in man-made forests in Guizhou are *Pinus massoniana* and *Cunninghamia lanceolata*, which are widely distributed and are planted to control soil and water erosion. The Tung oil tree, *Aleurites*, is grown in the south-east of the Province for oil production. Poplars are commonly planted alongside roads to protect the roads from water erosion.

**Fauna**

While the botanical resources of the province are well known, there has been less research on its fauna, especially birds. The following areas of Guizhou are known to provide habitat for a range of protected wildlife:

- Fanjing Shan Nature Reserve, a UNESCO Man and Biosphere (MAB) reserve,
- Maolan Forest Nature Reserve in the south-east (also a UNESCO MAB reserve), and
- Caohai Lake at Weining in the west which is a national nature reserve and internationally recognised IBA for migratory birds.

Protected fauna include the following:

- Golden monkeys, *Rhinopithecus roxellanae brelichi* in Fanjing Shan, and
- Birdlife in Caohai Lake, including seven species under Class I State level protected species: Black-necked crane (*Grus nigricollis*), Hooded crane, White stork, Black stork, Golden eagle, Imperial eagle and White tailed sea eagle; and some 20 species under Class II State protection.

**5.1.7 Nature Reserves**

There are 130 nature reserves in Guizhou (2005) with a total area of 961,000 ha, or roughly 5.5% of Guizhou’s total area. There are 7 national level reserves, 3 provincial level reserves, 22 prefecture/municipal level reserves and 98 county level reserves. The distribution of national level nature reserves is shown in *Figure 5.2*. 

**Caohai Nature Reserve**

Caohai Lake is a state-level natural reserve located in Weining, Liupangshui with a total area of 12,000 ha. Caohai is an IBA and is the home to 17 rare bird species. It is a wintering place for more than 170 bird species and is acknowledged as an internationally recognised bird watching area by BirdLife International. Environmental threats to Caohai Nature Reserve include tourist behaviour and over-fishing by the local community.

**5.1.8 Forest Parks**

The Forestry Department selects areas of forest that possess suitable ecotypes and scenic landscapes to establish parks that are managed for recreation, conservation, cultural and scientific activities. In most cases, forest parks have been established on land that has been deforested in the past and has now been replanted with native species for environmental protection, as well as with rare and endangered trees. Guizhou has established 50 forest parks with a total area of 210,000 ha (some are also included within scenic areas); 19 at national level, 23 at provincial level and eight at county level. The location of the national level forest parks is shown in Figure 5.3.
Fanjing Shan

Fanjing Shan is located in Tongren City with a total area of 41,900 ha. Being an UNESCO Man and Biosphere Reserve, it is known for its large protophyte forests, as well as for its endemic golden monkeys (*Rhinopithecus brelichi*).

The MP highlighted that carrying capacity for Fanjing Shan had reached its limit in 2002. The situation has since worsened.

5.1.9 Geo-Parks

*Figure 5.4* shows Guizhou’s six national and two provincial level geo-parks.

*Figure 5.4* Geo-Parks in Guizhou

Source: Guizhou Map Collection (2006), GLRA
5.1.10  Scenic Areas

Based on scenic amenity, cultural or scientific values, there are many outstanding natural and cultural landscapes in Guizhou. The best of these landscapes, especially those that occur over a substantial area and include many features of interest are protected at national, provincial and county levels as designated scenic areas. The Construction Department manages designated Scenic Areas with responsibilities delegated to the relevant administrative levels. There are 13 national level scenic sites and 56 provincial level scenic sites in Guizhou by the end of 2005 as shown in Figure 5.5. Collectively they have a total area of 1,028,600ha, which is 5.8% of total provincial land area.

**Figure 5.5  National Scenic Sites in Guizhou**

*Source: Guizhou Map Collection (2006), GLRA*
**Huangguoshu Waterfall**

Being the largest waterfall in China, Huangguoshu Waterfall is a state level scenic area with a total area of 11,500 hectares. The waterfall is on the Baishui River, 15km from the Zhenning County, and 137km from Guiyang. It is famed for its many waterfall groups, water-curtain cave, karst stone forest and vegetation, as well as rare plants in the area.

Huangguoshu Waterfall is one of the most popular tourist sites in Guiyang. In 2002, the MP noted that the main attraction area had reached its carrying capacity and that a fundamental reassessment of visitor circulation, traffic management and means of access was urgently needed. During the Golden Week holidays of 2005 and 2006, tourists waited for hours in traffic jams leading to the site and in queues to buy entrance tickets. Ticket sales were reportedly suspended during the May 2006 Golden Week holiday because the site could not physically accommodate more visitors.

5.2 **SOCIO-ECONOMIC CONDITIONS**

5.2.1 **Demographics and Population**

*Size and Distribution*

In 2004 Guizhou’s population of 39 million comprised 26% (10.2 million) urban residents (1) compared to 24% in 2000(2). In 2000, the number of people aged 15-64 was 22.53 million (63% of the total population) and those aged 65 and above 5.8%.

Guizhou’s population density is 200 persons/km², which is higher than the national average and is tending upwards over time. The difference in population distribution between urban and rural areas is large and distribution by geographical area varies greatly (see Figure 3.1). According to UNESCAP the population density is greater in the central part of Guizhou.

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(2) Guizhou Tourism Development Plan (2002)
5.2.2 Ethnic Minorities

Size and Distribution

Guizhou is home to 49 ethnic minority groups with a population of 13.39 million, which accounts for 38% of the population. Guizhou is one of four provinces in China with an ethnic population of more than 10 million. Ethnic groups whose population exceeds 100,000 include the Miao, Buyi, Dong, Tujia, Yi, Gelao, Shui, Hui and Bai. The total population of these ethnic groups is the fifth largest in China, after Yunnan, Xinjiang, Qinghai, and Guanxi. The Miao nationality is the largest ethnic group, with a population of 4.3 million or 12% of Guizhou’s total. As shown in Figure 5.7, many ethnic groups are mixed and some of them are concentrated in small areas.
5.2.3 Economy

Overview

Guizhou has a predominantly agricultural-based economy and the development of industry (apart from mining and heavy industry), and of the service sector (especially tourism), has lagged behind the rest of China. Despite exceptional growth in recent years, Guizhou remains the poorest province in China, with annual per capita GDP of only US$3,603 in 2005 compared to US$9,101 in China.

Economic development in Guizhou has, for 50 years, been dominated by state investment in heavy industry, coal mining and nonferrous metals, focusing not just on the large cities of Guiyang, Zunyi, but also creating heavy industrial facilities in small cities and rural areas such as Liupanshui, Bijie, Tongren. According to Guizhou’s provincial government, between the naissance of the People’s Republic of China in 1949 and the implementation of the “go west” strategy in 2000, the aggregate investment in fixed assets in Guizhou was...
about US$ 36.23 billions. Between 2000 and 2004, the investment in fixed
assets was US$ 38.53 billion, roughly equivalent to the total sum of the
investment of the previous 50 years. The investment has mainly been allocated
to infrastructure, particularly communications and transport infrastructures.
However important these investments might be for Guizhou, total investment
is still low compared to most eastern provinces.

During the period of the Tenth Five-Year Plan (2001-2005), the gross domestic
product (GDP) increased from RMB 108.49 billion in 2001 to RMB 193.00
billion in 2005. The annual growth rate of 9% in GDP was similar to the
national average of 9.5 over the same period, with the secondary and tertiary
sectors expanding at over three times the rate of the primary sector.

### Table 5.1 Sectoral Composition of GDP and Employment, 2000-2005

<table>
<thead>
<tr>
<th>Sector</th>
<th>GDP (% of total) 2000</th>
<th>Employment (% of total) 2000</th>
<th>Annual growth (%) 2000-05</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>27.3</td>
<td>69.9</td>
<td>3.6</td>
<td>n/a</td>
</tr>
<tr>
<td>Secondary</td>
<td>39.0</td>
<td>11.9</td>
<td>11.0</td>
<td>n/a</td>
</tr>
<tr>
<td>Tertiary</td>
<td>33.7</td>
<td>18.2</td>
<td>10.6</td>
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</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>9.0</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source: MP, 2002

**Labour Force**

The total number of employed persons in Guizhou in 2005 was 22.2 million. In
2000, there were an estimated 249,000 unemployed persons in the urban areas,
with an unemployment rate of 5.4%. The registered unemployed totalled
102,300 persons (3.8 %) . There are no formal statistics for rural
employment. Official statistics assume that all persons seeking employment
are employed, but unofficial estimates suggest that in 2000 there was a labour
surplus of some five million people in rural Guizhou.

**Living Standards**

Over the period of the Tenth Five-year Plan (2001-2005), the number of
persons living below the poverty line (defined in this period as less than
RMB625 of net income per capita) fell from 2.8 million in 2000 to 2 million in
2005. However, based on the 2005 Human Development Index (HDI) of
different provinces in China, Guizhou ranks 30 out of 31 provinces, last before
Tibet and after Yunnan (29). The situation of Guizhou compared with
neighbouring provinces of Sichuan (24), Guangxi (22) and Hunnan (17) seems
quite disadvantaged in term of human development. The per capita GDP
increased from RMB 2,662 in 2000 to RMB 3,603 in 2005, but was still below
the average of 9,101 for China as a whole in 2005.

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(1) Source: MP (Vol.3)
(2) A composite index measuring average achievement in three basic dimensions of human development- a long and
healthy life, knowledge and decent standard of living.
### Table 5.2 Living Standards (RMB), 2000-2003

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th></th>
<th>2003</th>
<th></th>
<th>% change 2000-2003</th>
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<tbody>
<tr>
<td></td>
<td>Guizhou</td>
<td>China</td>
<td>Guizhou</td>
<td>China</td>
<td>Guizhou</td>
</tr>
<tr>
<td>Per capita GDP</td>
<td>2,662</td>
<td>7,063</td>
<td>3,603</td>
<td>9,101</td>
<td>26%</td>
</tr>
<tr>
<td>Urban per capita GDP</td>
<td>n/a</td>
<td>n/a</td>
<td>8,573</td>
<td>16,307</td>
<td>n/a</td>
</tr>
<tr>
<td>Rural per capita GDP</td>
<td>n/a</td>
<td>n/a</td>
<td>2,042</td>
<td>5,047</td>
<td>n/a</td>
</tr>
<tr>
<td>Per capita annual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>disposable income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban households</td>
<td>5,122</td>
<td>6,280</td>
<td>6,530</td>
<td>8,472</td>
<td>21%</td>
</tr>
<tr>
<td>Rural households</td>
<td>1,374</td>
<td>2,253</td>
<td>1,565</td>
<td>2,622</td>
<td>12.2%</td>
</tr>
</tbody>
</table>

Source: Guizhou Provincial Statistical Yearbook, 2003

### Poverty

The 29 million poor people registered in China in 2005 were concentrated in rural areas in western provinces. In 1995, around 10% of China’s poor lived in Guizhou. It is estimated that less than 2 million people, or 6.9% of the total poor in China, live in Guizhou (1). In general, poverty is higher in the rural and mountainous areas where 74% of the population live. Limited access, lack of social infrastructure, and a poorly developed agricultural-based sector all contribute to poverty in rural areas. The Government is making a sustained effort to reduce poverty. The number of poor assisted under government programmes between 2001 and 2005 was 400,000. In the same period the government assisted around 800,000 needy people (average income < RMB 825) to avoid them falling into absolute poverty.

### Disparities between Urban and Rural Areas

There are two features that explain the disparity between urban and rural areas in Guizhou. The first one is the unequal pattern of income and employment distribution and the second one is the decline in the traditional agriheritage-based system (2). In 2003, the annual disposable income of the rural population was only 24% that of urban residents. Government policy aims to promote growth in the secondary and tertiary sectors and provide employment opportunities in the urban areas. During the Tenth Five Year Plan, Guizhou’s secondary and tertiary sectors grew 11% and 10.6% respectively compared to 3.6% of the primary sector. A direct consequence is insufficient employment growth in rural areas needed to absorb the surplus labour force and to generate income levels to match those of urban residents.

The consequence of this is the tendency for young and low middle-age people to migrate to urban areas in search for work. The pattern of in and outbound migration has similarities with other provinces in China. In general migrants into Guizhou are from rural areas of other provinces, and they flow into urban areas in Guizhou. Migrants from Guizhou are from rural areas and they often migrate to other rural areas in other provinces.

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(1) Source: GTA
(2) MP (Vol.3)
6 SCOPING OF ISSUES

6.1 SCOPING OF THE SEA

Scoping is undertaken during the initial stages of an SEA in order to identify interactions between the proposed tourism development plans and policies and environmental, cultural or social aspects (called “receptors”). The scoping exercise therefore ensures that the SEA focuses on those issues that are most important for design, decision-making and stakeholder interest.

Receptors that may be affected by the proposed tourism development strategy were identified and grouped into three categories:

1) Environmental;
2) Socio-economic; and
3) Cultural heritage.

The identification of potential impacts drew upon a review of the proposed tourism development plans detailed in Section 3 of this report, published guidance, as well as discussions with the PMO, relevant specialists and community representatives in Guiyang. Typical activities that could affect sensitive receptors were identified for each category of tourism development.

Guizhou’s tourism strategy focuses on two major tourism categories, namely nature-based tourism and heritage-based tourism.

Key activities associated with nature-based tourism include:
- **Passive**: sightseeing, relaxation and walking.
- **Active**: hiking, camping, caving, climbing, and water-based activities (e.g. rafting, swimming, water skiing, etc).

The activities targeted by the heritage-based tourism strategy in the RTDP are generally experience-based and include:
- **Ethnic culture immersion**: visiting/staying in remote ethnic villages, watching ethnic performances, purchase of minority handicrafts, and visiting cultural heritage sites.
- **Experiencing rural village lifestyle**: Short homestay vacations in rural households (农家乐) and visiting farms.

The interactions of the activities and receptors have been drawn up into a matrix, as shown in Table 6.1.
## Table 6.1 SEA Scoping Matrix

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Physical Environment</th>
<th>Socio-Economic</th>
<th>Cultural Heritage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPP</td>
<td>Ecosystem and Nature</td>
<td>Physical landscape and vision (e.g. karst)</td>
<td>Solid Wastes</td>
</tr>
<tr>
<td>Activities, Aspects and Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infrastructure Construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrading/Provision of Transport Infrastructure</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Upgrading/Provision of Tourist Infrastructure (e.g. shops, exhibition centres, hotels, etc.)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Activities of Tourism Development Plans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature-based: Passive</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nature-based: Active</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heritage-based: Cultural immersion tourism</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heritage-based: Visiting rural villages and farms</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Externalities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Waste</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wastewater</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Implementation of Tourism Development Plans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion of Service Sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training and Basic Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private Sector Investment</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
</tr>
</tbody>
</table>

Note:
“+” indicates a benefit
“-” indicates an impact
“+/−” indicates both a benefit and impact
6.2  **KEY IMPACTS ASSESSED**

6.2.1  **Introduction**

Potential impacts resulting from features of the Provincial tourism strategy and activities likely to be undertaken were identified through a review of similar tourism developments elsewhere and extensive consultation (see *Annex A*). Potential impacts and effects were categorised into three groups and are discussed in detail in the following sections:

1. Impacts to the physical environment;
2. Socio-economic impacts; and
3. Cultural heritage impacts.

6.2.2  **Physical Environment Impacts**

Key impacts to the physical environment may include:
- Loss of ecological resources and biodiversity due to greater access to remote areas, increased tourist numbers, uncontrolled tourist behaviour, introduced external species, and disturbance of habitats. Soil and water erosion has been identified as being of particular concern for karst landscapes;
- Landscape and visual impacts caused by road construction, unplanned development, illegal construction, and inappropriate solid waste storage and disposal;
- Pollution from solid waste resulting from inadequate waste collection and treatment, which in turn may result in visual and water quality impacts;
- Deterioration of surface and groundwater quality due to inadequate wastewater treatment facilities and dumping of solid waste into surface water bodies; and
- Exceedence of site carrying capacity at the most popular tourism sites.

6.2.3  **Socio-Economic Impacts**

As a direct result of the planned tourism development, significant socio-economic benefits can be expected to accrue, particularly in the rural areas. The greatest challenge is ensuring that economic benefits are shared equitably amongst local communities, particularly ethnic minorities.

Changes to traditional lifestyles may result in negative social effects. For example, communities living in remote areas may find that they lose supplemental income from sources such as hunting, collection of firewood, fishing, etc if access to these resources is restricted for tourism development.

6.2.4  **Cultural Heritage Impacts**

Cultural heritage impacts are generally related to heritage-based tourism, particularly cultural immersion tourism activities. It is worth noting that stakeholder consultation suggested that the proposals for heritage-based tourism may have both negative and positive effects. Successful tourism
development that brings economic benefits to ethnic minority communities is likely to promote cultural pride, which is beneficial for protecting and preserving material and intangible cultural heritage. On the other hand, uncontrolled development to cater to tourists’ interests has resulted in mass commercialization of intangible heritage elsewhere in China, detracting from its traditional value. Stakeholder consultation indicated that this represents a significant risk for Guizhou.
7 DEVELOPMENT OF SCENARIOS AND ALTERNATIVES

7.1 INTRODUCTION

The SEA is focused on assessing the predicted tourism-related impacts arising from implementation of the MP and RTDP and, to a lesser extent, related policies, programmes and plans.

The SEA has also evaluated the impacts (and benefits) that may arise under three alternative scenarios to that outlined in the MP. The purpose of "scenario assessment" is to compare anticipated benefits and impacts from alternative options as compared to that proposed in the MP. Where alternative scenarios are predicted to result in benefits that outweigh those under the MP, recommendations have been made to optimise plans and policies to maximise these benefits. Where alternative scenarios are predicted to cause negative impacts of greater magnitude than that under the planned approach, such scenarios serve as a warning to all stakeholders of development paths to avoid.

The following four scenarios have been adopted for the SEA and are presented in detail in the following sections:

- **Scenario 1:** Planned Tourism Development (implementation of MP).
- **Scenario 2:** Business-as-usual (without implementation of MP).
- **Scenario 3:** High growth.
- **Scenario 4:** Controlled/Low growth.

Each of the scenarios has been assessed over the short-term (2001-2005) medium term (2005-2015) and long-term (2015-2025), with a nominal starting date of 2000. Scenario development drew on a review of the policy objectives and specific targets from the MP and related PPP (see Section 4) and two rounds of consultation; initially with the Vice-Director of the GTA and subsequently with the Planning and Finance Department of the GTA.

The forecast growth in visitor arrivals to Guizhou under each scenario is illustrated in Figure 7.1.
Figure 7.1  Tourist Arrival Growth Rates for Each Scenario

![Tourist Arrivals in Guizhou (2001-2025) (Unit: 1,000)](image)

Table 7.1  Tourist Arrival Growth Rates for Each Scenario

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Planned Development</td>
<td>6.5%</td>
<td>6.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td>2</td>
<td>Business as Usual</td>
<td>3.5%</td>
<td>5%</td>
<td>4.5%</td>
</tr>
<tr>
<td>3</td>
<td>High Growth</td>
<td>20%</td>
<td>13%</td>
<td>6%</td>
</tr>
<tr>
<td>4</td>
<td>Low Growth</td>
<td>3%</td>
<td>3%</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Source: MP (Scenario 1) ERM (Scenarios 2, 3 and 4)*

Table 7.2  Projected Tourist Arrivals for Each Scenario 2000-2021 (unit: 1,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Scenario 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>20,671</td>
<td>20,671</td>
<td>20,671</td>
<td>20,671</td>
</tr>
<tr>
<td>2001</td>
<td>21,079</td>
<td>21,079</td>
<td>21,079</td>
<td>21,079</td>
</tr>
<tr>
<td>2002</td>
<td>22,084</td>
<td>22,084</td>
<td>22,084</td>
<td>22,084</td>
</tr>
<tr>
<td>2003</td>
<td>5,024</td>
<td>5,024</td>
<td>5,024</td>
<td>5,024</td>
</tr>
<tr>
<td>2004</td>
<td>20,076</td>
<td>20,076</td>
<td>20,076</td>
<td>20,076</td>
</tr>
<tr>
<td>2005</td>
<td>25,093</td>
<td>25,093</td>
<td>25,093</td>
<td>25,093</td>
</tr>
<tr>
<td>2006</td>
<td>26,724</td>
<td>25,971</td>
<td>30,111</td>
<td>25,845</td>
</tr>
<tr>
<td>2007</td>
<td>28,461</td>
<td>26,880</td>
<td>36,133</td>
<td>26,621</td>
</tr>
<tr>
<td>2008</td>
<td>30,311</td>
<td>27,821</td>
<td>43,360</td>
<td>27,419</td>
</tr>
<tr>
<td>2009</td>
<td>32,281</td>
<td>28,794</td>
<td>52,032</td>
<td>28,242</td>
</tr>
<tr>
<td>2010</td>
<td>34,379</td>
<td>29,802</td>
<td>62,438</td>
<td>29,089</td>
</tr>
<tr>
<td>Year</td>
<td>Scenario 1</td>
<td>Scenario 2</td>
<td>Scenario 3</td>
<td>Scenario 4</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>2011</td>
<td>36,511</td>
<td>31,292</td>
<td>70,555</td>
<td>29,962</td>
</tr>
<tr>
<td>2012</td>
<td>38,774</td>
<td>32,857</td>
<td>79,728</td>
<td>30,861</td>
</tr>
<tr>
<td>2013</td>
<td>41,178</td>
<td>34,500</td>
<td>90,092</td>
<td>31,787</td>
</tr>
<tr>
<td>2014</td>
<td>43,731</td>
<td>36,225</td>
<td>101,804</td>
<td>32,740</td>
</tr>
<tr>
<td>2015</td>
<td>46,486</td>
<td>38,036</td>
<td>115,039</td>
<td>33,722</td>
</tr>
<tr>
<td>2016</td>
<td>49,415</td>
<td>39,557</td>
<td>121,941</td>
<td>34,060</td>
</tr>
<tr>
<td>2017</td>
<td>52,528</td>
<td>41,140</td>
<td>129,257</td>
<td>34,400</td>
</tr>
<tr>
<td>2018</td>
<td>55,837</td>
<td>42,785</td>
<td>137,013</td>
<td>34,744</td>
</tr>
<tr>
<td>2019</td>
<td>59,355</td>
<td>44,497</td>
<td>145,234</td>
<td>35,092</td>
</tr>
<tr>
<td>2020</td>
<td>63,094</td>
<td>46,276</td>
<td>153,948</td>
<td>35,443</td>
</tr>
<tr>
<td>2021</td>
<td>67,069</td>
<td>48,128</td>
<td>163,185</td>
<td>35,797</td>
</tr>
<tr>
<td>2022</td>
<td>71,295</td>
<td>50,053</td>
<td>172,976</td>
<td>36,155</td>
</tr>
<tr>
<td>2023</td>
<td>75,786</td>
<td>52,055</td>
<td>183,354</td>
<td>36,516</td>
</tr>
<tr>
<td>2024</td>
<td>80,561</td>
<td>54,137</td>
<td>194,355</td>
<td>36,882</td>
</tr>
<tr>
<td>2025</td>
<td>85,636</td>
<td>56,302</td>
<td>206,017</td>
<td>37,250</td>
</tr>
</tbody>
</table>

Source: MP (Scenario 1) ERM (Scenarios 2, 3 and 4)

### 7.2 Key Impacts Assessed

For each scenario, the SEA assessed the predicted impacts and benefits of typical activities, aspects and features contained in the MP and RTDP as described in Table 7.3.

#### Table 7.3 Typical Activities, Aspects and Features

<table>
<thead>
<tr>
<th>Activities, Aspect or Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure Construction</strong></td>
<td></td>
</tr>
<tr>
<td>Upgrading/Provision of Transport Infrastructure</td>
<td>Mainly roads and airports.</td>
</tr>
<tr>
<td>Upgrading/Provision of Tourist Infrastructure</td>
<td>Tourist reception facilities, hotels, entertainment venues, toilets and heritage/ecological museums.</td>
</tr>
<tr>
<td><strong>Activities</strong></td>
<td></td>
</tr>
<tr>
<td>Nature-based: Passive Sightseeing, relaxation and walking</td>
<td></td>
</tr>
<tr>
<td>Nature-based: Active Hiking, camping, caving, climbing, and water-based activities (eg rafting, swimming, water skiing, etc)</td>
<td></td>
</tr>
<tr>
<td>Heritage-based: Cultural immersion tourism Visiting/staying in remote ethnic villages, watching ethnic performances, purchase of minority handicrafts, and visiting cultural heritage sites.</td>
<td></td>
</tr>
<tr>
<td>Heritage-based: Visiting rural villages and farms Short homestay vacations in rural households (农家乐) and visiting farms.</td>
<td></td>
</tr>
<tr>
<td><strong>Features of Tourism Development Plans</strong></td>
<td></td>
</tr>
<tr>
<td>Activities, Aspect or Feature</td>
<td>Details</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Promotion of service sector</td>
<td>All scenarios see a shift away from primary and secondary industries into the service sector.</td>
</tr>
<tr>
<td>Training</td>
<td>Tour guides, hotel and small business management</td>
</tr>
<tr>
<td>Private sector investment</td>
<td>Particularly in the rural tourism sector.</td>
</tr>
</tbody>
</table>

### 7.3 SCENARIO 1- PLANNED TOURISM DEVELOPMENT

This scenario involves development of the tourism sector as planned for under the MP and related PPP. This scenario represents a balanced growth scenario where the benefits of increased tourism are weighed against environmental, social and cultural heritage impacts. Private sector investment in rural villages is regulated to ensure that local communities benefit economically from the use of collectively-owned natural and cultural heritage assets.

A range of star and non-star rated accommodation, reception facilities and other infrastructure is developed to serve visitors throughout the province, particularly in rural areas. Under the RTDP, ecological and cultural museums are developed at a large number of rural villages and a portion of the entrance fee is paid back to the community.

Upgrading of transportation infrastructure is focused on improving secondary and tertiary roads linking rural villages to trunk road network in order to facilitate rural tourism.

Typical activities in the MP and RTDP include:
- Sightseeing at scenic areas, forest parks, waterfalls and other natural features;
- Hiking in nature reserves, forest parks, and scenic sites;
- Horse riding and adventure tourism (climbing, trekking, etc);
- Water-based activities such as rafting and boating;
- Experiencing rural village lifestyle;
- Cultural immersion tourism with a focus on experiencing authentic ethnic traditions.

Under this scenario, the following objectives of the MP are met:
- Economic benefits of tourism are spread throughout the Province by extending tourism development and activities into poorer areas.
- Net revenue from tourism expenditure in Guizhou grows from RMB 4.4 billion in 2000 to RMB 60 billion by 2020 by developing more opportunities for spending and increasing the number of overnight stays from 6.2 million to 17 million over the corresponding period.
- Tourism stimulates economic development in rural areas.
- Private sector investment in the tourism sector thrives, providing employment opportunities for local communities.
- The Guizhou experience provides a new model for China and the rest of the world to alleviate policy via sustainable natural and cultural heritage tourism.
Scenario 1 represents the base case against which alternative scenarios below have been assessed. It should be emphasised from the outset that the growth in tourist arrivals and forecast tourist revenue earnings in the period 2004-mid 2006 have far exceeded that predicted in the MP and roughly follow the High Growth Scenario forecast in Scenario 3.

### 7.4 SCENARIO 2- BUSINESS-AS-USUAL

This scenario represents the path of tourism development without implementation of the MP.

A large number of rural villages remain unconnected to provincial trunk roads and are ill-equipped with tourist infrastructure such as carparks, accommodation, and waste treatment and collection. The lack of tourist infrastructure in rural areas, combined with minimal marketing and promotion, results in visitors choosing alternative domestic destinations. The rate of tourism growth gradually increases from the 10 year-average for domestic visitors (1995-2005) of 3.37% as a result of unplanned and ad-hoc infrastructure development and promotion but remains below the average rate of growth of China as a whole for the corresponding period (8.2%).

Tourism development continues with little cross-sectoral planning. Industrial zones may be constructed in the vicinity of tourism sites, detracting from their visual amenity or environmental quality.

In terms of the type of activities under this scenario, the key difference is that there is little focus on rural tourism and activities tend to be passive. There is no promotion or construction of cultural and ecological museums in rural areas and no emphasis on promotion of more active, adventure-based activities such as trekking and horse riding. As a result, there continue to be few options for economic development in rural areas and the goal of poverty alleviation through tourism is not realised in many areas. The more traditional tourist activities such as sightseeing and other passive nature and heritage-based activities continue albeit in lower numbers.

### 7.5 SCENARIO 3- HIGH GROWTH

Under this scenario, tourism growth far exceeds that forecast in the MP. The provincial government successfully promotes rural tourism and Guizhou’s tourism product becomes increasingly well-known throughout China. In a surprisingly small period of time, rural tourism shifts from being a marketing strategy to the only realistic option to deal with the rapid growth in tourist arrivals.

Economic benefits rapidly accrue to local communities over the short-term (0-5 years). By 2012, there are 80 million visitors to Guizhou every year, double which planned for under the MP in Scenario 1. In the medium term (5-10 years) a large proportion of Guizhou’s population has shifted from the agricultural sector into the service sector.
Problems begin to appear rapidly. The more popular scenic sites such as Huangguoshu and Libo can physically accommodate no more visitors during the Golden Week holiday periods. The spectacular growth in visitors to rural villages encourages an influx of private-sector investment in hotels, entertainment venues and other ventures and economic benefits may accrue disproportionately to the private-sector which sacrifices environmental and heritage conservation for financial gain. Environmental quality, particularly water quality, deteriorates and tension may surface between local residents and outside investors and/or tourists. Development may encroach on environmentally sensitive areas.

Between five and ten years after the implementation of the MP, the rate of growth slows dramatically as further tourism growth is physically constrained by the capacity of transport infrastructure (roads, trains and airports). Environmental quality, particularly surface and groundwater resources, deteriorates further as treatment facilities become overloaded. Tourism to rural villages has reached unsustainable levels. Visitors become less-interested in the “developed” rural villages and seek a more authentic experience in more remote villages that were not intended to be developed as tourist destinations under Scenario 1. Once rural villages lose their tourist appeal, incomes decline and poverty begins to reemerge. Culture and traditions may have been irreversibly damaged or lost as the boom and bust cycle of tourism growth and decline is completed.

A key feature of this scenario is investment in tourist lodgings and entertainment venues and other attractions in Guizhou’s rural areas.

7.6 SCENARIO 4- LOW OR CONTROLLED GROWTH

The low growth scenario could arise from various circumstances:
- Government taking a conservative approach to environmental conservation and heritage protection, strictly limiting tourism to sites of ecological or heritage significance;
- Tourists choosing alternate destinations to Guizhou; and
- A public health crisis (or perception thereof) that disproportionally affects tourism to Guizhou Province, as per the SARS outbreak in 2003.

From a SEA perspective, the most useful aspect to consider is that of a conservative approach to environmental and heritage conservation since this is most directly related to policy decisions. The end result of all of these alternatives, i.e. lower levels of tourism than that planned for in the MP, would all have similar (although not identical) environmental and socio-cultural consequences.

Under the controlled growth scenario, only a portion of the rural villages proposed for tourism development in the MP are initially promoted as tourist destinations. Villages are “graded” according to their environmental, cultural and social sensitivity, which is used to determine their suitability for tourism. Government actively discourages mass tourism to those deemed to be of highest sensitivity by charging high fees to enter these villages or by requiring...
visitors to apply for a limited number of permits that are issued by community leaders. Fees collected from entry to these villages are used exclusively for environmental and heritage conservation. Government may implement a “conservation tax” that is applied to all accommodation in the Province in that is also used for environmental and heritage conservation.

Government adopts a range of other “hard” and “soft” measures to control the numbers of visitors to sites that are either sensitive or operating at close to their assessed carrying capacity. Hard measures could include requiring visitors to be accompanied by a restricted number of tour guides at nature reserves or to apply for a limited number of permits to visit especially sensitive ethnic minority villages. Soft measures could include raising entrance fees or removing references to popular sites from marketing materials in the lead up to Golden Week holidays. Similar measures could be adopted at appropriate times of the year (such as during breeding or migration periods) for ecologically sensitive sites.

Tourism growth in the most environmentally and culturally sensitive rural villages, in particular, and to Guizhou Province as a whole, is lower than that proposed under the MP and the objective of poverty alleviation in some areas is not achieved. However Guizhou’s reputation as a pristine travel destination is best-preserved under this scenario.
8.1 SCENARIO 1- PLANNED DEVELOPMENT

8.1.1 Overview of Predicted Impacts and Benefits

This scenario represents a balanced-growth scenario where the benefits of increased tourism are weighed against environmental, social and cultural heritage impacts. Private sector investment in rural villages is regulated to ensure that local communities benefit economically from the use of collectively-owned natural and cultural heritage assets. This section presents the predicted impacts and benefits from implementation of the MP and related PPP. The relative impacts and benefits of this scenario as compared with Scenarios 2-4 are summarised in Table 8.5.

8.1.2 Physical Environment

E1: Ecology and Biodiversity

Benefits and Impacts

At the regional level being considered in the SEA, implementation of the MP and related policies and plans may cause the following ecological impacts:

- **Disturbance of fauna.** Tourism activities may disturb wildlife, resulting in forced migration and a reduction in population size. Disruption of wildlife during breeding seasons is of particular concern and authorities have reported issues at Caohai during the breeding period. Construction projects and traffic may generate air and noise emissions as well as vibrations that may disturb wildlife.

- **Loss of habitat.** May result from clearance of vegetation for hotels, access roads and utility infrastructure.

- **Disruption of habitat corridors.** Construction of footpaths, roads and utilities may disrupt wildlife habitat corridors; especially to wildlife that is undertake seasonal migration or that forage over large distances.

- **Increased access to ecological significant areas.** The proposed construction of tertiary roads to link remote villages to secondary roads may create accesses to areas previously inaccessible by vehicle. This may encourage poaching/hunting of wildlife or collection of rare plans.

- **Degradation of biodiversity.** May result from large number of tourist flow and controlled misbehaviour of tourists, such as trampling of grassland, and fire accidents etc.

- **Soil erosion.** Can be resulted from both development (such as clearance of land) as well as tourist activities (such as hiking and camping), particularly in Guizhou where the karst topography increases the risk of soil erosion.

- **Impacts on aquatic life.** Increasing numbers of tourists will generate greater volumes of domestic wastewater, much of which is discharged untreated to surface waters in rural areas.
The above impacts are mostly generated from active, nature-based tourism activities such as trekking, camping, horse riding and other adventure activities at nature reserves and forest parks. Such impacts are likely to be most severe where visitors veer off marked paths and enter undisturbed habitat. The provision of transportation infrastructure to facilitate opening up of remote areas for rural and heritage-based tourism may also pose threats to the ecosystem and preference should always be given to upgrading of existing roads rather than construction of new routes.

The MP emphasises that eco-tourism, incorporating responsible, educational activities, should be promoted in Guizhou. Eco-tourism has the potential to raise environmental awareness of visitors and Guizhou residents and fits well with Guizhou’s overarching strategy for sustainable tourism development.

Recommendations

The following measures are recommended in order to minimise ecological impacts and enhance environmental awareness as part of Guizhou’s tourism development strategy. These recommendations are particularly important for the administrative authorities of natural reserves and sensitive areas.

- Visitors to Fanjing Shan, Caohai and Maolan and other sensitive areas could be provided guidance on appropriate behaviour to minimize impacts on flora and fauna, including restriction of fishing, hunting and collection of flora.
- Training for tour guides at nature reserves so that environmental awareness and education are a key part of the message to visitors; and
- Where ecologically sensitive sites are operating at close to their assessed capacity or during especially sensitive times of the year such as during breeding seasons, it is recommended that authorities consider adopting measures described in Scenario 4 (see Section 7.6) to reduce tourism demand at these areas. Such measures include requiring visitors to be accompanied by a restricted number of tour guides at nature reserves, raising entrance fees or removing references to sites from marketing materials in the lead up to holiday periods, wildlife breeding seasons or in the lead up to seasonal wildlife migrations.
- Restoration of vegetation should be considered and budgeted during design stage of site development to minimise erosion in karst areas.
- Preference should be given to upgrading of existing roads rather than construction of new routes.
E2: Landscape and Visual Impacts

Benefits and Impacts

Tourism development may have a positive effect in terms of maintaining and sometimes re-instating natural landscape and vegetation. Evidence in Guizhou and elsewhere suggests that community based management initiatives to control logging, restrict cultivation on marginal slopes and preserve the architectural style of villages can be successful where communities are able to generate income from the tourism sector.

Stakeholder consultation taken for this SEA also proved the theory. In Langde Village for example, local architectural codes are enforced by the community rather than planning or cultural heritage authorities. There is a high level of awareness within the community that the traditional architectural style of the village is itself a tourism attraction and that the construction of modern buildings will detract from this and therefore make it less attractive to tourists (as shown in the picture above).

However, tourism development may also cause direct and indirect landscape and visual impacts. The construction and upgrading of roads and highways may detract from the visual amenity of tourist sites. This may be severe given Guizhou’s tranquil, rural setting.

Similarly, tourism development demands amenity infrastructure such as hotels, shops and recreational facilities that may result in landscape and visual impacts where their siting, architectural style or colour are inconsistent with the surrounding environment. This impact will become particularly significant for heritage-based tourism development, if new constructions are not compatible to host environment and cultural costumes.

Natural landscapes, particularly karst outcrops, are key attractions in Guizhou. While classified scenic areas are afforded administrative protection, implementation is weak and the Construction Bureau (which manages scenic areas) has raised concerns about uncontrolled commercial development within protected areas, some of which are either not through proper permitting procedure or planning guidance.
Recommendations

Construction within classified scenic areas is already regulated; issues raised during consultation related to the enforcement of the existing regulations. It is recommended that Construction Bureau representatives be included in provincial and regional development planning since consultation suggests that they are unaware of plans being proposed by other government departments within scenic areas under their jurisdiction.

There is currently little consideration of landscape and visual impacts outside of classified scenic areas. There are no specific requirements for their consideration under the EIA Law and accompanying technical guideline. Given the strategic importance of the tourism sector to Guizhou’s economy, it is recommended that the landscape and visual impact of construction projects be incorporated into EIA procedures for Guizhou. The State Environmental Protection Law empowers Provincial EPB’s to issue such administrative procedures for the implementation of EIA within their jurisdiction. Alternatively, the requirement for landscape and visual impact assessment could be included in sector-specific EIA technical guidelines for the transport and mining sectors rather than for all construction projects.

It is also important that development and renovation within remote ethnic minority villages should strictly follow local style with local materials to minimise potential negative visual impact.

E3: Solid Waste Management

Benefits and Impacts

Assuming that each visitor to Guizhou generates 1kg of solid waste per day, the amount of waste generated as a result of tourism projections in the MP are summarised in Table 8.1.

Table 8.1 Municipal Solid Waste Generation Projection: Scenario 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of daily visitors to Guizhou*</th>
<th>Solid Waste Generation Attributable to Tourists** (t/day)</th>
<th>Proposed Treatment Capacity (tonne/day)</th>
<th>Proportion of Solid Waste Generation Attributable to Tourists to Proposed Treatment Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>68,748</td>
<td>206</td>
<td>4,112 (existing)</td>
<td>5.0%</td>
</tr>
<tr>
<td>2011</td>
<td>94,189</td>
<td>283</td>
<td>9,995 (planned)**</td>
<td>2.8%</td>
</tr>
<tr>
<td>2016</td>
<td>135,384</td>
<td>406</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2020</td>
<td>172,860</td>
<td>519</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2021</td>
<td>183,751</td>
<td>551</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2022</td>
<td>195,329</td>
<td>586</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

* Based on projections in the MP

** Assumes an average three day stay by each visitor.

*** Capacity proposed in the Guizhou Provincial Environmental 11th Five-Year Plan (2006)

Based on the MP projections, the annual number of tourist arrivals will reach 36.5 million by 2011. Assuming an average stay of three days, the number of visitors projected by 2011 will generate some 300 tonnes of waste per day,
equivalent to around 7% of the existing capacity of Guizhou’s 8 solid waste treatment facilities in 2005. Under the draft *Eleventh Five Year Environmental Plan* (2006), Government plans to construct 82 new landfills by 2011 with a combined treatment capacity of 9,995 tonnes per day. Coupled with the existing treatment capacity of 4,112 tonnes per day, this represents a total treatment capacity of 14,077 tonnes per day. Solid waste generation from the tourism sector is estimated to represent less than 3% of this capacity by 2011.

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While the contribution of solid waste from the tourism sector could be comfortably accommodated by the proposed expansion of future treatment capacity, it would need to be collected from rural areas and transported to the new landfills that will be located on the outskirts of urban areas. Of greater concern is the size and siting of these facilities. At an average capacity of 120 tonnes per day, these landfills are four times smaller than the average size of the existing 8 landfills serving Guizhou’s urban areas. It is not cost effective to incorporate adequate environmental controls (such as lining, drainage diversion, leachate collection and treatment and proper operational management) into such a large number of small facilities. Only by constructing a smaller number of large landfills does it become cost-effective to do so. The 82 new landfills planned to be constructed over the next 5 years are therefore likely to be of low quality with minimal environmental controls. While they are likely to be an improvement over the existing practices of open dumping, tipping down hill slopes and burning, their siting may have implications for the proposed rural tourism developments.

The MP is focussed on solid waste collection and treatment of municipal solid waste in urban areas and does not include solid waste management proposals targeted at rural villages and remote areas. A solid waste management review for Guizhou (1) highlights that many rural villages are ill-equipped to manage increased volumes of solid waste from tourists. In these areas, individual households are responsible for their own solid waste collection, and waste collected are typically transferred to dumping site located just outside of the village.

Guizhou experiences high annual rainfall in the order of 1,100-1,300 mm per annum. Coupled with the predominant limestone geology of the Province, this creates a significant risk of surface and groundwater contamination as a

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result of runoff and leachate from poor quality dump sites. Moreover, uncontrolled solid waste dumping activities by tourists will have negative visual impact and degrade the tourism amenity.

Recommendation:
Current proposals to construct 82 small landfills with an average capacity of 120 tonnes per day are inappropriate. It would be preferable to construct a smaller number of landfills of greater capacity that incorporate environmental controls such as lining, leachate collection and treatment and stormwater diversion. Solid waste would need to be collected from the larger villages and transported to waste transfer stations by road and then to strategically located regional landfills.

E4: Water Quality

Benefits and Impacts
Groundwater and, in particular, surface water quality are among the most critical environmental issues for Guizhou. Existing sources of water pollution include domestic wastewater, industrial effluent (e.g. from paper manufacturers and mining activities), and agricultural runoff. The Eleventh Five Year Plan (2006-2010) established the following targets for wastewater treatment: Guiyang- 80%, medium-sized cities- 60%, and county level- 50%. In order to meet this objective, the Provincial Government intends to construct 10 new wastewater treatment plants by the end of 2006. It is understood that these will be constructed mainly in Guiyang and the larger urban centres of Guizhou.

In rural areas, both surface water and groundwater is used as a village drinking water supply. Traditionally, household wastewater in rural villages has been used to feed livestock and as agricultural fertiliser. Toilet facilities in many of the rural villages are rudimentary and untreated sewage is in many places discharged directly to surface waters without even the most basic biological treatment. Many of the rural villages which are being prioritized for tourism development are located along the banks of rivers or streams. Groundwater is typically shallow and is the drinking water supply for local communities and is therefore sensitive from an environmental and human health perspective.

Linkages between tourism and water quality may be positive and negative. On the one hand, increased tourism may create the demand and provide incentives for investment in water treatment facilities in cities and at sites that receive large numbers of tourists. However increased tourism to rural areas, particularly to small villages without (or with very basic) wastewater treatment facilities may result in a deterioration of surface and groundwater quality. There is a risk that the increased volume of wastewater from guesthouses and small hotels may cause deterioration of surface water and groundwater quality and cause health impacts on local communities that are reliant on this water, particularly those who consume untreated water. Negative impacts to surface water may also result from storage solid waste...
along river banks and dumping of waste into surface waters by tourists themselves or the operators of hotels, guesthouses and restaurants.

Water quality impacts are likely to be of greatest concern as a result of informal rural village tourism, such as overnight homestay accommodation (农家乐) and day trips to rural areas since much of this tourism is “informal” and there are often not adequate toilet facilities provided as there are for scenic sites. Larger hotels and restaurants are more likely to be equipped with basic wastewater treatment facilities, however enforcement of this requirement is important for private sector investment that is encouraged in rural areas under the RTDP.

Recommendations

Hotels and guesthouses should be equipped with septic tanks as a minimum form of biological treatment of domestic wastewater since it is unlikely that the number of tourists that will visit rural villages will justify the construction of more sophisticated treatment facilities.

Residents and visitors to rural villages should be encouraged to boil all non-bottled water.

For areas where water based tourism activities are promoted, a routine monitoring of water quality incorporated with comprehensive water quality management plan would help to minimise the risks of water deterioration.

E5: Carrying Capacity and Visitor Flow

Benefits and Impacts

The carrying capacity, as defined by the UNWTO, is ‘the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors’ satisfaction’(1).

The MP carried out a brief study on carrying capacity in key tourism areas by using the method called the Limited Acceptable Change (LAC) which adopted several assessment indicators, including number of tourists, site infrastructure status, traffic status and significance of environmental impacts. The vulnerability of key tourism areas was also assessed by analysing the total area, environmental pressures and protection levels. In total 9 nature reserves, 18 scenic areas and 3 other tourist areas were assessed and rated. Details are provided in Annex C to this report.

The MP highlights Fanjing Shan and Huangguoshu Waterfall as being of particular carrying capacity concern during peak seasons. The MP recommended further detailed carrying capability assessment be undertaken for these sites. This has not been undertaken to date. Moreover, Caohai Lake

(1) http://www.biodiversity.ru/coastlearn/tourism-eng/con_capacity.html (UNEP/MAP/PAP, 1997)
was identified as being highly vulnerable by virtue of its significance for migratory birdlife. Red Maple (Hongfeng) Lake was noteworthy for severe pollution caused by tourism development and the MP suggests that further tourism developments in the area be prohibited.

Passive nature-based tourism currently poses the greatest carrying capacity risks at sites such as Huangguoshu, Libo and Red Maple Lake. However the carrying capacity of some villages being promoted for ethnic immersion tourism is relatively low and crowding can be observed at some of the more popular villages within the Bala River cluster.

Recommendations

The MP includes a range of measures related to carrying capacity and visitor flow control including:

- Controlling the number of tourists (e.g. by limiting ticket sales or tour group sizes);
- Diversification of tourists to other sites;
- Seasonal restrictions to sensitive sites, e.g. during breeding seasons;
- Enhancing environmental awareness by posting signs and providing training to tour guides.
- Implementing visitor flow plans during peak seasons; and
- Developing site level transportation management plans to avoid traffic congestion.

The Government Consultation Workshop in July 2006 revealed that no further carrying capacity assessments have been undertaken since the MP was developed in 2002 and visitor flow management plans have not been implemented. However ticket sales at Huangguoshu were reportedly suspended during the May 2006 Golden Week holiday because the site could not physically accommodate more visitors. This number of visitors is clearly beyond the carrying capacity of the site.

Where appropriate, authorities should consider restricting private vehicle access to sites that are environmentally sensitive or unable to accommodate large numbers of vehicles. This may be done by constructing a single car park for a cluster of sites and providing shuttle buses, battery operated vehicles or other transport connecting sites within the cluster (see Figure 8.1).

Figure 8.1 Visitor Control at Wanfenglin, Xingyi

The scenic roads at Wanfenglin (top left) are too narrow and dangerous to accommodate private vehicles and buses which are accommodated at a large carpark at the visitor entrance area (top middle). Visitors are then transported through the scenic area via battery operated carts (top right).
E6: Environmental Awareness

Benefits
The RTDP includes environmental awareness training for rural tourism experts, operators, service sector employees, and relevant institutions at the county and municipal level. This focuses on environmental protection, the significance of the environment to rural tourism and economic development, environmental laws and regulations, and local environmental protection plans. Furthermore, it encourages public participation in developing local environmental protection action plans, to improve the awareness and involvement of local villagers. According to the proposed schedule, training will be undertaken at 13 villages located in Qiandongnan, Qiannan, Qianxinan, Tongren and Anshun by the end of 2008. Train-the-trainer sessions are also planned at the provincial and municipal levels. As of November 2006, training had not been initiated at either level.

Tourism development can act as a stimulus for promoting environmental protection. For example, the action plans in the Rural Tourism Development Plan (2006) include increasing vegetation cover and prohibition of commercial logging in support of eco-tourism.

Recommendations
In order to maximise the benefits of improved environmental awareness from tourism, the following actions are recommended:

- **Training programmes**: Institutional training at provincial, prefecture/municipal and county level to ensure that environmental considerations are incorporated into development plans;
- **Training programmes**: For private operators, especially tour guides who can pass on relevant information to tourist groups. Development of specific environmental awareness flyers for individual sites will help to establish Guizhou’s reputation for sustainable eco-tourism and reinforce appropriate visitor behaviour; and
- **Community Awareness Training**: Local communities should be educated about the importance of natural resource conservation in order to maintain the attractiveness of tourism assets, which is critical to long-term sustainable tourism.

E7: Other Effects and Linkages

1) Zoning, Planning and Protected Areas
Tourism development strategies contained in the MP represent a rational balance between conservation, tourism and public use. However, the MP does not address conflicts between tourism and industrial development. Examples of inappropriate zoning in Guizhou include the construction of a new industrial park directly upstream of Malinghe Gorge, a protected scenic area used for rafting and other water-based recreational activities. Wastewater effluent from the industrial park is discharged upstream of the gorge, flowing into the area used by tourists. While industrial parks are subject to planning...
EIA under national legislation, there are no specific requirements for consideration of tourism resources under the EIA law or its accompanying technical guideline.

According to Chinese EIA procedures, nature reserves, forest parks, scenic areas and classified heritage sites are considered “environmentally sensitive areas” (1). Construction projects within environmentally sensitive areas must be assessed for a range of issues such as use of hazardous materials, change of landform, discharge of pollutants, etc.

A large number of attractions in the MP and RTDP are not protected under any national or local regulation. Ethnic minority villages, which are the cornerstone of the rural tourism strategy, are afforded little regulatory protection from inappropriate development. As a result, commercial development has gone unchecked in many areas. The types of private sector investment proposed under the RTDP could exacerbate this problem if they remain unregulated.

Protected areas may benefit from sustainable tourism in many ways:

- Tourism generates additional funds for conservation which is important as in Guizhou many protected areas are facing serious financial constraints;
- Raising awareness amongst visitors increases the profile of the protected area and promotes conservation of the site; and
- By providing alternative income opportunities for people living in and around the protected areas, tourism may help to reduce unsustainable exploitation of natural resources and promote conservation awareness within local communities. This is especially important where large numbers of people live within reserves, or are dependent on their natural resources, such as in Fanjing Shan and Maolan Reserves.

Since tourism is being prioritised as a key development strategy in Guizhou, it is critical that potential impacts on existing and planned tourism resources from new developments such as mines, industrial facilities and infrastructure be considered. This is not explicitly required under the existing EIA Law. Consequently, environmental and planning authorities need to liaise closely with the Tourism Bureau to ensure that sectoral plans at local and regional levels are appropriately integrated. Given the strategic importance of the tourism sector to Guizhou’s economy, it is recommended that the impact of construction projects on all tourism assets (including both protected and unprotected areas) be incorporated into EIA procedures.

While several sites including Caohai, Fanjing Shan and Huangguoshu have established their own management regulations, these do not include specific requirements for tourists or tour operators. Better guidance could be provided to visitors in sensitive areas. Visitors to protected nature reserves such as Fanjing Shan and Caohai could be handed information booklets at the park entrances explaining the ecological importance of the area and practical advice

(1) “Environmentally sensitive areas” are listed in the Construction Project Environmental Protection Classification Management Inventory, SEPA (2002)
on appropriate behaviour. This may include staying on marked paths, not feeding wildlife or not picking wildflowers. Visitors to nature reserves in Canada and Australia will be familiar with the phrase, “Take nothing but photographs and leave nothing but footprints”. Such campaigns have also been initiated at several sites in China. Given Guizhou’s relatively low amount of tourism to date, there is a real opportunity for the Province to establish a reputation for ecologically sustainable tourism by encouraging appropriate visitor behaviour.

2) Traffic and Transport

The MP proposes upgrading of both air and road infrastructure to serve the tourism sector. The four airports proposed in the MP are now operational and have considerably improved the accessibility of some of Guizhou’s more remote areas to both domestic and international tourists. In terms of the road network, the MP focussed on the construction of tertiary roads rather than trunk roads and highways. These roads were proposed in order to link remote villages to county level roads to facilitate rural tourism.

Surveys of 280 domestic and 40 international tourists in Guizhou undertaken as part of the Guizhou Tourism Supply and Demand Analysis (ERM, 2006) revealed that the main reason that tourists did not visit rural villages is the lack of transport infrastructure to the villages. Upgrading and construction of transport infrastructure benefits both tourists and remote communities. Benefits to remote communities not only include improved accessibility and access to markets but also allow economic benefits to accrue as a result of rural tourism in these areas.

Potential impacts include pressure on biodiversity from habitat destruction and the human pressures that result from improved accessibility (e.g. hunting, tree-felling and roadside development). Transport infrastructure improvements will likely facilitate an overall increase in the number of tourists in Guizhou. While this may have implications for the carrying capacities of rural villages, this will be offset by the effect of dispersing tourists away from key tourist sites that are already operating at maximum capacity to alternative destinations.

The improvement in road infrastructure will encourage private vehicle access to remote areas. It is important that appropriate controls are adopted in ecologically sensitive areas and at sites of low carrying capacity (see Issue E5).

3) Public Infrastructure

Public infrastructure includes water and electricity supply, drainage and sewer systems, carparks, roads and other utilities. Opportunities to increase access to services and infrastructure for local communities may arise when these are being developed for the needs of tourists. Through consultation to understand local needs, plans may be adapted to serve the needs of both tourists and residents.

Where possible solid waste landfills and wastewater treatment facilities should serve a cluster of sites, rather than a single site, in order to achieve
economies of scale that allow for a higher level of treatment. Preference should be given to siting such facilities so that they may serve both tourists and residents.

Promoting the use of green energies such as bio-gas and solar power would be appropriate given Guizhou’s desired positioning in the ecotourism market.

8.1.3 Cultural Heritage Impacts

C1: Physical Cultural Heritage Damaged or Destroyed

Benefits and Impacts

Cultural heritage tourism is one of the foundations of Guizhou’s tourism development strategy and the MP advocates use the Province’s rich and varied cultural heritage as a resource for development. The strategy acknowledges the need to protect heritage to ensure that, in the future, it continues to perform its function as a tourism resource and to avoid any deterioration of its authenticity or quality. The fact that much of this heritage vests in settlements or historic, cultural or architectural importance, particularly those of ethnic minorities, makes the balance between conservation and development a key challenge.

Damage or destruction of physical cultural heritage may occur as a result of demolition, reconstruction of inappropriate restoration of physical monuments, structures and significant architecture. This may result from inappropriate siting of new tourist facilities proposed in the MP and RTDP or restoration/reconstruction of existing structures by unqualified personnel.

Rebuilding and Recreation

Unnecessary reconstruction or restoration that does not match the original architecture, style and colour and recreation of minority heritage is a threat to Guizhou’s heritage. For example the new architectural style for dwellings under construction in Wangfenglin villages recreate Buyi minority culture through architecture, prescribing a new style that is completely at odds with the existing stone houses that Buyi people have lived in for centuries. Similarly, the building of a Miao-style bridge in a Dong village in Qiandongn is an example of inappropriate recreation. The renovation of traditional buildings with low quality materials and without expert guidance may result in the irreversible loss of valuable heritage.
One of the objectives of the RTDP is to keep the integrity of the village’s architectural style. The list of improvement actions described in the Plan includes an urgent call to repair deteriorated vernacular architecture in the 150 demonstration villages using traditional styles and techniques, and the removal of visually intrusive modern buildings, or if it is not practical, cosmetic treatment to make them fit. However, these protection measures listed in both the MP and the RTDP have not been further developed into enforceable building and restoration standards to be applied in all tourism development areas. Currently, local planning authorities decide which standards to apply.

**Damage of Physical Cultural Fabric**

Visitor numbers that exceed the carrying capacity of a site may lead to degradation of traditional architecture. Vandalism, littering, pilferage and illegal removal of cultural heritage items are examples of how architecture can deteriorate. The MP highlights the importance of protecting fragile environments and sensitive traditional cultures from the arrival of large numbers of tourists. The number of visitors and/or visitor flow control represents a risk to the site itself or to visitor safety. In light of the estimated increase in the number of visitors to and from the tourist sites, it is necessary to develop flow control and restriction measures. In 2005, 10.84 million visitors (34% of the total) visited Guizhou’s rural areas. The GTA expects this segment of the market to grow and it is implementing a strategy that calls for the ‘opening’ of new clusters of villages to tourism development.

**Recommendations**

**Cultural Heritage Management Observatory**

A Cultural Heritage Management Observatory that directs local level expert teams has been proposed to minimise the risk of adverse effects on cultural heritage and ensures that heritage is not reduced simply to an economic commodity for tourism purposes, but rather is managed for its intrinsic and future value for the people of Guizhou. The main functions of the observatory would include the gathering and analysis of technical knowledge and communication between the variety of institutions, businesses and organisations concerned with cultural heritage. The Observatory would provide know-how and expertise for the effective sustainable management, conservation and preservation of Guizhou’s material and intangible heritage and cultural landscapes, and mitigate against inappropriate commercial exploitation. The composition and functioning of the observatory has been described in detail by in the Guizhou Strategic Overview Report (ERM,2006).
Develop Building and Restoration Standards for Minority Villages

It is recommended that detailed building and restoration standards to be applied and jointly enforced by planning authorities and residents in minority villages be developed. All relevant authorities including those dealing with tourism, heritage, infrastructure and local development should participate in the elaboration of the standards and subsequent guidelines. The process should include extensive consultation with local residents to ensure that protected settlements continue to be fit places in which to live and can be upgraded to meet people’s expectations of gradually improving living standards. Its implementation will require constant dialogue and consultation with affected communities and the establishment of a special committee within each Village Association to approve interventions and upgrading projects, including those initiated by private investors and local authorities. The objective is to encourage local residents to be active in the protection of their heritage and avoid conflict and distrust.

The China Principles provide an integrated and methodological approach to the conservation and management of sites, in compliance with the existing legislation of the People’s Republic of China. The China Principles state that all conservation measures must observe the principle of not altering the historic condition of heritage sites. The principles have been adopted by SACH but local implementation remains poor. It is recommended that these be formerly adopted for restoration works in support of Guizhou’s sustainable heritage tourism strategy.

C2: Intangible Cultural Heritage Damaged or Altered

Benefits and Impacts

In many parts of the world modernisation and changes in the economies of rural communities is causing the rapid disappearance of traditional culture. Although Guizhou’s traditions and lifestyles are relatively well preserved compared to other provinces in China, employment and income disparities between rural and urban areas have caused a tendency for younger and lower middle-aged people to migrate to urban areas in search for work. In rural areas, young villagers are gradually embracing modern life and traditions, often perceived as backwards, are only kept alive by the elders.

The uniqueness of ethnic cultures depends greatly on the environmental closure. If the closure is “opened up” for tourism development, preservation of ethnic culture may be compromised. The GTA acknowledges that traditional lifestyles and production methods, languages and rites, songs and dramas have changed in many places and are under threat in many more. “Opening up” of previously inaccessible minority areas for tourism poses a risk that ethnic heritage will be commercialised, homogenised or otherwise altered.

Of particular concern are the use of song and dance as a tourist attraction under both the MP and RTDP. Ceremonies were traditionally conceived as festivals to mark particular events in the calendar and took place on a limited number of occasions. This is still the case for the various annual festivals of the
ethnic minorities. However, today many of these ceremonies are performed regularly in the villages for the frequent benefit of organized groups of tourists and at present constitute the main sources of tourism related revenues in minority villages.

The use of traditional culture as a tourism resource can help invigorate a sense of cultural identity among ethnic minorities, contribute to inter-ethnic and inter-religious understanding and promote the long-term viability of traditional cultures. Tourism in Guizhou has contributed to raising the status of women and the elderly in society since they are the main inheritors of culture and benefit most from employment opportunities within the service sector. Examples of community-based initiatives to protect and promote intangible heritage include the Village Protection Regulations developed in the Langde Miao Village and the Cultural Research and Protection Centre in Jiuxi, an ancient Han village in Anshun (1).

Recommendations

The creation of a Cultural Heritage Management Observatory to provide expertise for the sustainable management, conservation and preservation of Guizhou’s heritage and to guard against inappropriate commercial exploitation is key to addressing the benefits and impacts identified above. In addition specific recommendations to safeguard intangible heritage include:

- **A Code of Ethics for the use and interpretation of intangible heritage:** This would comprise a comprehensive set of principles to guide public and private stakeholders involved in the use of intangible heritage as a tourism resource. The Code of Ethics would provide a common voluntary framework to respect and preserve vulnerable heritage and to avoid it being homogenised or degraded as a result of tourism development.

- **Guidelines for the Use and Interpretation of Intangible Heritage:** The guidelines would ensure that those developing tourism products involving minority customs and traditions understand the importance of preserving authenticity and avoiding rampant commercialisation. The guidelines would empower local communities to decide which aspects of their cultural heritage may be used for tourism and which parts shall be safeguarded for traditional use. It would also ensure that local communities maintain control over the development of interpretative material concerning minority culture, under the technical guidance of the proposed Provincial Observatory.

8.1.4 Socio-Economic Impacts

S1: Economic Benefit and Living Standards

Benefits and Impacts

Using tourism for generating economic benefit, including poverty alleviation in Guizhou’s rural areas, is a key Government priority reflected in both the

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(1) Research into the Sustainable Use of Cultural Tourism Resources in China’s Guizhou Province, GTA
The diversification of Guizhou’s economy to include tourism, fits within the national government’s policy of “building a new socialist countryside” and is seen by policy makers as a way to allow rural residents to “leave the farm, without leaving the countryside”\(^{(1)}\). While all forms of tourism in will contribute to Guizhou’s economic development, rural tourism such as homestay accommodation and other activities in the poorer rural areas, offers the greatest potential for economic benefit.

### Poverty Alleviation

The GTA estimates that between 2001 and 2005, 630,000 people living in the 9 prefectures have been lifted out of poverty partly as a result of their participation in tourism-related activities \(^{(2)}\). The positive impact of tourism-related activities in poverty reduction has been significant in prefectures like for example Zunyi where 38.4% of the total poor have been lifted out of poverty. Similarly, Qianxian Buyi and Miao Autonomous Prefecture in Southwest Guizhou (40%) and Liupanshui Northwest Guizhou (37.5%). Its impact has also been important in Qiandongnan Miao and Dong Autonomous Prefecture in Southeast Guizhou (21.4 %) and Qiannan Buyi and Miao Autonomous Prefecture in South Guizhou (18%).

#### Table 8.2 Population Lifted out of Poverty from Tourism 2001-2005

<table>
<thead>
<tr>
<th>Prefecture</th>
<th>Population lifted out of poverty (person)</th>
<th>Percentage of total poor by prefecture (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guiyang</td>
<td>15,776</td>
<td>6.59</td>
</tr>
<tr>
<td>Zunyi</td>
<td>144,142</td>
<td>38.4</td>
</tr>
<tr>
<td>Anshun</td>
<td>54,465</td>
<td>1.23</td>
</tr>
<tr>
<td>Qiannan</td>
<td>14,400</td>
<td>18</td>
</tr>
<tr>
<td>Qiandongnan</td>
<td>21,4226</td>
<td>21.36</td>
</tr>
<tr>
<td>Tongren</td>
<td>13,450</td>
<td>0.35</td>
</tr>
<tr>
<td>Bijie</td>
<td>33,260</td>
<td>14.24</td>
</tr>
<tr>
<td>Liupanshui</td>
<td>1,550</td>
<td>37.5</td>
</tr>
<tr>
<td>Qianxinan</td>
<td>9,400</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>630,269</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Poverty Alleviation through Tourism in Guizhou (10th Five Year Plan), GTA, 2006

### Employment

Employment is one of the major ways in which tourism can contribute to quality of life in host communities. The priority to develop rural tourism is expected to create significant employment opportunities for those living in rural areas. Current visitor and revenue figures are encouraging (see Section 3.2). The RTDP estimates that 2.1 million people will participate in tourism-related activities by 2010. This should promote the establishment of small and micro enterprises (i.e. guest houses, home-stays, restaurants, small shops, handicraft workshops, and transport) managed by self-employed individuals and households. This can be expected to significantly reduce Guizhou’s rural

\(^{(1)}\) As described in the Guizhou Charter for Rural Tourism, 2006

\(^{(2)}\) Poverty Alleviation Through Tourism (10th Five Year Plan), GTA (2006)
labour surplus (1) and outward migration to urban areas in Guizhou and elsewhere in China.

The GTA reports that 968,480 people were directly or indirectly involved in tourism activities in Guizhou in 2005 (see Table 8.3). These figures include full-time and temporary work in different sectors. However there are significant regional disparities, with tourism-related employment concentrated in the central and northern part of the province in Guiyang, Zunyi and Anshun Prefectures.

### Table 8.3 People Involved in Tourism Activities (2005)

<table>
<thead>
<tr>
<th></th>
<th>Directly (persons)</th>
<th>Indirectly (persons)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guiyang</td>
<td>43,577</td>
<td>75,928</td>
<td>119,505</td>
</tr>
<tr>
<td>Zunyi</td>
<td>46,370</td>
<td>208,807</td>
<td>255,177</td>
</tr>
<tr>
<td>Anshun</td>
<td>64,738</td>
<td>150,389</td>
<td>215,127</td>
</tr>
<tr>
<td>Qiannan</td>
<td>123,000</td>
<td>150,000</td>
<td>273,000</td>
</tr>
<tr>
<td>Qiandongnan</td>
<td>11,013</td>
<td>55,614</td>
<td>66,627</td>
</tr>
<tr>
<td>Tongren</td>
<td>2,084</td>
<td>5,658</td>
<td>7,742</td>
</tr>
<tr>
<td>Bijie</td>
<td>5,990</td>
<td>11,208</td>
<td>17,198</td>
</tr>
<tr>
<td>Liupanshui</td>
<td>587</td>
<td>5,017</td>
<td>5,604</td>
</tr>
<tr>
<td>Qianxinan</td>
<td>2,500</td>
<td>6,000</td>
<td>8,500</td>
</tr>
<tr>
<td>Total</td>
<td>299,859</td>
<td>668,621</td>
<td>968,480</td>
</tr>
</tbody>
</table>

Source: Poverty Alleviation through Tourism in Guizhou (Tenth Five Year Plan), GTA, 2006

### Income and Standard of Living

In an effort to ensure that rural and ethnic people capitalise on economic benefits from tourism, policy-makers have devised a comprehensive investment plan (20) that includes infrastructure improvements, support to rural households to set up guesthouses and training and capacity building programs in eleven demonstration villages clusters that include a total of 150 villages by 2008. These should result in a significant improvement in the quality of life of residents, as well as facilitate tourism.

These measures are expected to result in a swift reduction of economic disparities within the province by raising incomes and living standards in rural areas (3). However, the concentration of tourism related employment in three prefectures Guiyang, Zunyi and Anshun is a sign that geographical imbalances might be widening.

It is difficult to estimate the associated average increase in incomes derived from tourism-related activities but examples from tourism villages throughout the province and elsewhere in China show significant increases in household income. It is estimated that a family operating a homestay would generate RMB 4,000-5,000 in gross revenue per year. The GTA reports that in Tianlong Village, Anshun City, the per capita annual disposable income of rural households was RMB 2,180 compared to RMB 1,765 before the start of tourism activities (4). These amounts are significant compared with

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(1) According to the 11th Five Year Plan rural labour surplus by the end of 2010 will be reduced by 1.8 million people.
(2) These are described in detail in the RTDP (2006).
(3) Guizhou’s rural per capita GDP in 2003 was RMB 2,042 compared to 8,573 for urban residents.
Guizhou’s per capita annual disposable income for rural households of RMB 1,565 (2003).

Contribution to Local Economy
In 2005, tourism revenue in Guizhou amounted to RMB 25 billion, of which rural tourism accounted for RMB 2 billion (8%). This represents close to a fourfold increase over the RMB 6.5 billion in tourist revenues generated in 2000. When the earnings of the informal sector and multiplier effects, particularly in rural areas, are factored in, economic benefits may be considerably higher.

Recommendations

Review Programmes and Policies to Maximise Economic Benefits
It is recommended that a study be undertaken to explore and provide guidance on innovative approaches to support the development of tourism-related micro and small enterprises (MSEs) in rural areas and to understand the mechanisms that ensure the maximisation of economic benefits from tourism in a way that avoids leakage. MSEs could form the foundation of the rural tourism development model for Guizhou but this needs to be better understood and supported. The study should review existing polices and programmes in support of MSEs in the province; recommend actions to streamline government resources; explore effective approaches to promoting local linkages between private sector and communities in a way that considers the full range of options as described in the previous section; and identify capacity building needs.

S2: Community Participation/Marginalisation

Benefits and Impacts
One of the overarching goals of the tourism development strategy in Guizhou is to contribute to local economic development by allowing communities to capitalise on opportunities presented through increased tourism in the province. It is widely acknowledged that both social and economic benefits can be greatly enhanced by adopting a community-driven participatory approach in all aspects of policy design and implementation. In this regard, participation is considered to be of utmost importance in ensuring that benefits accrue to the local population, particularly to the poor and ethnic minority groups.

Failure to adopt a participatory approach for tourism development risks marginalising local communities, which would inevitably undermine the long-term viability of Guizhou’s tourism industry. The types of activities and developments that pose the greatest risk in this regard are the ecological and cultural museums proposed under the RTDP.

Marginalisation from Decision-making
Mechanisms for participation of host communities in the tourism development and planning process in Guizhou are in their infancy. The
proposed establishment of village tourism associations under the *Rural Tourism Development Proposal* (June 2006) outlined in Section 4.2 are a further attempt to strengthen the participation of local communities in rural tourism development and their access to decision-making. Under this approach, elected village tourism associations will represent the interests of the local community and have a say in the strategic direction of tourism development in their village. The experience in Bala River can be considered a best practice in the province but results have shown that these village tourism associations have required a significant amount of support over time to function and reach maturity (1).

A further concern is the marginalisation of vulnerable groups and women from decision-making and training programmes. The “Community-Based Cultural Heritage Tourism Systems: End of Project Report” (2), describes how women in the Bala River villages continue to be under-represented in village structures. Although they carry much of the responsibilities for day-to-day tourism activities, this involvement does not often translate into access to tourism planning and decision-making. Ethnic Miao women in Bala River provide food, cleaning services and performances to tourists but represent a small percentage of decision-making teams for village tourism and comprise a small proportion of trainees in tourism-related training programmes.

**Marginalisation from Economic Benefits**

After trialling several models of community participation and private-sector cooperation in rural tourism development, the GTA has developed a three-way development model (3), involving village tourism associations (comprised of local residents), an expert team and “socially responsible” private investors, under the direction of local government. While this model represents an improvement over previous models, the equitable distribution of economic benefits remains an issue. There is an urgent need to regulate private sector investment for concession arrangements to charge entry fees into rural villages that will be converted into “Ecological and Cultural Museums”.

Although the proposed three-way cooperation model for rural tourism development is considered a positive step in promoting cooperation between the government, the private sector and local communities in tourism development, it is important that the GTA explores alternative private sector-community partnerships models that ensure a flexible approach and a maximisation of benefits for local communities.

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(3) The proposed model for the demonstration projects, shown in Figure 2.2, involves Villagers’ organizations, an expert team and “socially responsible private investors, under the direction of local government. The three-way development model calls for the private developer to invest most of the start-up capital (accessing a substantial proportion of funds from the proposed World Bank loan), the Expert Team (sometimes also referred to as a NGO workstation) providing technical support, capacity building and local training and the Villagers’ Organisation-a collective village tourism association-providing goods (farm produce, handicrafts) and labour to the developer.
Cooperation between the private sector and local communities should be encouraged, especially in the initial stages of development in Guizhou’s rural areas, where the capacity of the local community in tourism services is low. Experience from elsewhere shows that the effectiveness of such arrangements requires flexible and diversified approaches to partnership. By being too prescriptive policy makers may inadvertently limit opportunities for local communities to participate in the economic development of their villages.

Restriction of Access to Natural Resources

Addressing the competing use of natural resources among local communities, government and private business as the result of concessions for the management of parks and scenic areas has not been clearly articulated in the Provincial Government’s plans and policies.

Recommendations

The proposed establishment of village tourism associations under the Rural Tourism Development Proposal (June 2006) aims to involve local communities in decision-making processes for developing and managing tourism. Under this approach, elected village tourism associations will represent the interests of the local community and have a say in the strategic direction of tourism development in their village. In principle, the Consultants support such an approach but highlight several challenges.

Firstly, there needs to be a strategy to ensure that the economic benefits generated by tourism are spread throughout the province. Second, policies and programmes that support local employment, particularly in rural areas, need to be implemented to allow residents that currently have little experience in the tourism sector to capitalise on potential economic benefits. Finally, private sector investment in the rural tourism sector requires regulation in order to ensure that local residents benefit from collectively owned heritage resources which comprise the key attraction in Guizhou’s rural tourism sector. Otherwise, there is a risk that private sector operators will benefit disproportionately if they are offered concessions to operate rural villages as tourist sites.

The next International Conference on Rural Tourism in Guizhou could be devoted to debating the role of private sector and small and micro enterprises in rural development in Guizhou. The objective of the conference would be to establish a dialogue between rural communities, government, experts and socially-responsible tourism operators and investors to explore pro-poor partnerships and innovative approaches to maximizing the economic, social and environmental benefits of tourism.
Benefits and Impacts

Traditional values refer to those beliefs, moral codes, and mores that are passed down from generation to generation within a culture, subculture or community. Traditional beliefs and moral codes held by indigenous communities are fragile and highly influenced by outside pressure, economic development, migration movements and political changes. Modernisation and the search for progress have brought about many changes, both positive and negative, to traditional and indigenous cultures around the world. In this regard, tourism is increasingly becoming one of the main forces shaping the lives of traditional communities.

The RTDP describes how tourism development in rural areas will add new values to traditional culture; enhance the confidence and pride local people have in their own culture to encourage conservation; and improve the social status of vulnerable groups including women and elderly. However, it does not propose measures to assist communities in dealing with modernisation, other than the preservation of their heritage.

Tourism is uncritically accepted as a panacea for the poor in rural Guizhou. However, “opening up” of long-preserved cultures such as the ethnic minority cultures of Guizhou, runs the risk of creating social and psychological distress to local residents. The confrontation with unbalanced development, disparities between urban and rural life and the eagerness to shake off poverty places immense pressure on such communities. The sudden arrival of large numbers of visitors demanding tourism products and services may cause severe shock to previously isolated communities. Values and attitudes that ensured the preservation of local culture over centuries may be compromised by the desires of consumerism for money and the comforts of modern life. However the issue is complex and preservation of traditional culture must be balanced by communities’ rights for self-determination in their development.

Measures need to be put in place to ensure that communities are aware of not only the economic benefits of tourism, but also the potential negative impacts, before they embark on transforming their villages into tourism attractions. Potential risks include consumerism and the desire to “modernise” as well as illegal activities such as prostitution, and alcohol or drug abuse that may be passed on from tourists.

Recommendations

As a way to enhance intercultural understanding and communication between visitors and local communities, it is recommended that the GTA, in collaboration with tour operators, travel agencies and communities, develops a campaign to educate visitors about the need to be respectful of local values, culture and the environment. In addition to improving the quality of tourism
in Guizhou, the campaign would serve as a way of distinguishing Guizhou from other destinations through reinforcing responsible tourism behaviour.

8.2 **SCENARIO 2- BUSINESS-AS-USUAL**

8.2.1 **Physical Environment**

Tourism development in Guizhou continues with little cross-sectoral planning and the GTA and Cultural Heritage Bureau have limited influence on industrial zoning. With its abundance of mineral resources, Guizhou’s economic development policy shifts towards the mining sector in order to capitalise on a global rise in commodity prices. Mining and other industrial facilities are planned and developed locally without considering the potential value of tourism and heritage resources, leading facility siting that detracts from the visual amenity and environmental quality of some tourism sites.

The increasing living standards of urban residents in Guizhou, coupled with a boom in domestic tourism originating from larger cities along the eastern seaboard, places increased pressure on Guizhou’s more accessible tourist areas for sightseeing, relaxation activities and, to a lesser extent, adventure tourism (which has grown rapidly in neighbouring Yunnan and Guangxi). Without planning on preservation of sensitive areas, tourists are largely unrestricted in where they can go and are generally unaware of the potential impact of their activities. Tourism to nature reserves is largely uncontrolled and even with limited tourist numbers, has detrimental effects on ecology and biodiversity. Impacts on the more remote, ecologically sensitive areas are generally lower than Scenario 1 since few roads link the trunk road network to these areas and consequently tourism induced impacts are minimal.

Visitor flow management does not become a critical issue over the short and medium term and the risk of adverse environmental or cultural effects as a result of large numbers of tourists is lower than Scenario 1.

Under the “Western China Development Strategy” that has been in place since 2000, improvements are made in Guizhou’s trunk road transportation network despite the lack of a provincial tourism development strategy. Transportation improvement projects cover the larger cities within Guizhou and also connect Guizhou with neighbouring provinces. However the average 3.37% increase in annual tourist arrivals under this scenario does not encourage investment in secondary and tertiary roads, particularly to remote villages. Not all of the 25 tourist sites at which the MP identified road improvements as necessary receive the necessary upgrades by 2010 and a large number of rural villages remain unconnected to provincial trunk roads. This in turn impedes rural economic growth as those employed in the agricultural sector remain isolated from markets and have little opportunity to benefit from the rural tourism proposals under Scenario 1.
8.2.2 Cultural Heritage

Tourism to remote rural areas remains low as a result of poor infrastructure such as secondary roads linking to minority villages. As a result, rural communities lack both reason and resources to preserve traditional architecture and monuments and existing government policies and regulations to protect such resources are not widely implemented. Moreover, local authorities lack guidance on what should be preserved and technical guidance on doing so. While there is little incentive for communities to preserve physical cultural heritage, continuing isolation of these villages reduces the risk of changes to traditional values and the desire for communities to modernise as may be the case under Scenario 1.

Areas such as Bala River that receive relatively more of tourists intensify efforts to improve the appearance of their villages and small towns. The pressure to accommodate the demands of mass tourists sees this area develop along the lines of an ethnic minority theme park rather than a living “cultural museum” as proposed under Scenario 1. Folk and dance are approached as commodities to satisfy tourists’ demands for entertainment bringing little benefit to local residents and affecting the authenticity of traditional local culture.

Conditions under Scenario 2 are not conducive to invigorating a sense of cultural identity among indigenous communities that are important for the long-term viability of traditional cultures.

8.2.3 Socio-Economic

Without implementation of the MP, there continue to be limited options for rural development. Government’s effort to restructure the agricultural sector remains the key priority for rural development. However Guizhou’s mountain terrain restricts such efforts. The goal of "leaving the farm without having to leave the countryside" is not achieved and there remains a surplus labour pool of some 1.5-2 million rural workers by 2010. The rural to urban migration that has taken place over the last twenty years continues unabated resulting in a large unemployed population in Guiyang and other cities.

Average incomes, particularly of rural residents, are generally lower and poverty alleviation is not realised to the same extent as under Scenario 1. Mass group tourism remains limited to the larger scenic areas such as Libo and Huangguoshu and to some of the better known cultural sites such as Bala River. Most rural communities are unable to rely on tourism for their income and agriculture remains the dominant sector.

Tourism benefits are geographically concentrated around a few areas: Guiyang, Anshun, Tongren and Kaili. This exacerbates economic disparities between urban and remote rural areas. Poverty is perpetuated in mountainous regions where most minority people live. The benefits under Scenario 1,

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including increased employment opportunities, alternative income sources and improved living standards, are realised in a very limited number of places. In the absence of a strategy to prioritise and distribute government investments throughout the province, most people in Guizhou are excluded from the benefits.

Lack of development opportunities and infrastructure investments provides little incentive for private sector investment. Hotels and other tourist infrastructure remain of a low standard that does not attract high spending tourists from outside the province. Training of the labour force in the tourism sector is very limited and Guizhou’s human capital is increasingly unable to compete with the services offered by other destinations in China. Tourism arrivals continue to grow at rate of around 4%, less than half the rate of China’s average, meaning that tourists continue to choose alternative destinations in preference to Guizhou.

In the absence of a policy and specific guidance for community participation in tourism planning and development, local authorities continue ad hoc development without consulting local residents. This marginalises people from decision-making and restricts their ability to share economic benefits. Without implementation of the MP and RTDP communities are not encouraged to develop village tourism associations and other structures to articulate their needs and concerns.

8.3 SCENARIO 3- HIGH GROWTH

8.3.1 Physical Environment

The most important aspect of this scenario is the explosive growth in tourist arrivals over the short term. By 2007 \(^{(1)}\), there are 36 million tourist arrivals compared with the 28 million arrivals forecast in the MP, or 27% more than that forecast. By 2008, Scenario 3 predicts 43 million arrivals compared with 30 million forecast under the MP, a surplus of over 40%. It is worth highlighting that the growth trajectory of tourist arrivals in Guizhou from 2005 to July 2006 has roughly followed that outlined in Scenario 3 and consequently the short-term impacts described below reflect those actually observed in Guizhou.

Such massive growth in tourism numbers inevitably stretches the carrying capacity of Guizhou’s tourist sites. Guizhou’s most popular tourism sites including Libo and Huangguoshu Waterfall can physically accommodate no more visitors during the Golden Week periods. Severe traffic jams occur outside the entrance gate to Libo and the narrow walkways that lead from the carpark to the Huangguoshu Waterfall are overcrowded to the point where they become dangerous. While the MP assessed these sites to be operating at close to capacity in 2002, the situation observed during the 1 May 2006 Golden Week holiday was unprecedented in its severity.

\(^{(1)}\) The scenario analysis assumes 2005 as the starting point at which tourism growth rates begin to diverge.
The potential returns from the tourism sector attract large amounts of domestic private investment in hotels, entertainment venues and other ventures which sacrifice environment and heritage conservation for financial gain. Mass tourism to ecologically sensitive sites is causing environmental degradation. At Red Maple (Hong Feng) Lake wastewater discharged from restaurants and tourist hotels along the banks pollute the water to an extent that it becomes unpleasant for visitors. Travel agencies begin to strike this site from their tours. By the end of 2006, developers are pressing to construct hotels at the top of Fanjing Shan to service the increasing demand for overnight accommodation from hikers and adventure tourists who have made the 3-5 hour hike to the mountain top. In response, the Fanjing Shan Reserve administration decides to construct a cable car to enable visitors to travel up and down the mountain comfortably in one day without the need for overnight accommodation on top of the mountain (1). Poorly controlled construction in ecologically sensitive areas is feature of Scenario 3.

Under Scenario 1, the MP describes rural tourism as one of several development strategies for Guizhou. However under Scenario 3, rural tourism is of much greater importance since it becomes Guizhou’s only realistic strategy to disperse visitors away from the most popular sites.

Many restaurants and small guesthouses in rural villages do not have even the most basic facilities to treat domestic wastewater, which is discharged to surface waters. This not only affects water quality but effects human health since surface waters are used as a drinking water supply in many areas. It is possible that wastewater discharges from restaurants and rural lodgments will lead to a serious deterioration in surface and groundwater quality in the medium term and become the most serious environmental issue associated with rural tourism.

Even under the high growth scenario, the volume of solid waste generated by tourists is small compared with the combined capacity of the landfills planned to be constructed under the Eleventh Five Year Environmental Plan (2006). Assuming that each of the 70 million tourists that are forecast to visit Guizhou in 2011 under Scenario 3 generate 1kg of waste for 3 days, the treatment capacity required would be around 575 tonnes per day. By 2011, Guizhou will have a total solid waste disposal capacity of 14,077 tonnes per day. Consequently, the solid waste generation from the tourism sector is estimated to represent around 4% of this capacity by 2011. However, the waste disposal sites proposed are unlikely to incorporate adequate environmental controls and runoff and leachate from these sites has the potential to cause surface and groundwater quality impacts.

On the positive side, tourism is recognised as a strategically important industry for Guizhou under the high growth scenario. It is feasible that the sector is widely prioritised over the development of other more-polluting industries, such as mining, which are incompatible with tourism. However strict management and monitoring of private sector investment is critical to

(1) This was reported by Fanjing Shan Reserve Management, November 2006
ensure that projects are carried out in accordance with relevant standards. For example, the implementation of environmental management systems for hotels and other developments would be appropriate.

8.3.2 **Cultural Heritage Impacts**

Unsustainable rural tourism leads to systematic degradation of ethnic minority villages. After an intense phase of popularity at each village, the number of visitors to begins to decrease because people perceive the destination as being too commercialised. New and increasingly remote villages are “opened up” to satisfy the growing demand, which feeds the boom and bust cycle of tourism growth and decline and causes irreversible damage to heritage and traditions.

Responding to the demands of mass tourism, private investment is geared towards providing entertainment in the form of folk performances and dance. The replication of entertainment venues and other ventures to cater for the recreational needs of mass tourists increases the demand for ethnic performances. In the short-term this situation creates employment for local villagers as performers. Over the longer-term however, commercialization of traditional performances may lead to a loss of their cultural significance, which does not promote their preservation.

8.3.3 **Socio-Economic Impacts**

By 2012, 80 million visitors arrive in Guizhou each year, twice what was planned for under the MP. The RMB 60 billion forecast annual revenue earnings predicted by 2020 under Scenario 1 are realised by around 2008. The booming tourism sector provides increased employment opportunities and alternative sources of income that leads to improved standards of living, particularly for Guizhou’s rural residents. Over the short-term the economic benefits of accelerated growth under Scenario 3 outweigh negative impacts.

In the medium-term (5-10 years), problems begin to appear. Rural tourism, envisaged as one of the pillars of Guizhou’s tourism strategy, becomes unsustainable as a result of the massive influx of uncontrolled investment in rural areas. The development of infrastructure and tourism services outlined in the RTDP and the 12 village demonstration areas did not foresee the uncontrolled construction of hotels and entertainment venues to cater for such large number of visitors. Economic benefits accrue disproportionately to private investors rather than local residents leading to local tension and possibly resentment towards tourists. Up front regulation of private sector investments in rural villages would have avoided this situation. Indeed, control of tourism growth in the short term would have been appropriate to allow authorities time to develop and implement regulations to this effect.

The phased development of rural villages as detailed in the RTDP calls for strengthening the participation of local communities in tourism planning processes to ensure that economic and social benefits are realised. The creation of village tourism associations is one of the key features of the strategy set by
the GTA. However, the participation of communities in the planning process is likely to be compromised under Scenario 3 because of the need to accelerate plans and procedures to accommodate the influx of visitors and the demands of private investors. Without the participation of local communities in the short-term (0-5 years) it is feasible that conflicts between residents and developers will intensify during the medium-term (5-10 years). The lack of tangible benefits to local communities from the granting of private concessions over rural villages and nearby scenic areas may, in the long-term (10-20 years), cause the collapse of Guizhou’s rural tourism sector.

8.4 SCENARIO 4- CONTROLLED GROWTH

8.4.1 Physical Environment

Under Scenario 4, Government adopts a precautionary approach to environmental conservation and heritage protection, with strict controls on the number of tourists allowed into ecologically and culturally sensitive sites. Consequently, adverse impacts as result of tourism activities are relatively lower than under the alternative scenarios considered.

Controlled access to popular sites eases the stress on key attractions such as Libo and Huangguoshu Waterfall, especially during peak periods. The carrying capacity issues observed under Scenario 3 at these sites in the first half of 2006 are not realized under Scenario 4 until 2011.

Guizhou’s reputation as a pristine travel destination is maintained and enhanced, attracting a greater proportion of international and high-spending domestic tourists.

Fewer gate receipts at tourist sites generate lower revenue than under all other options. Since many protected areas are facing serious financial constraints, this may discourage investment in conservation and capacity building. This is partially offset under Scenario 4 with a “conservation tax” on all accommodation in the Province that is used to support environmental and heritage conservation programmes.

The lower number of tourists encourages less development in rural guesthouses and restaurants and wastewater issues are of less concern than under alternative development scenarios.

Government authorities actively publicise the Province’s stringent environmental protection policies and enacts policy measures to promote responsible tourism. Over the medium-term, Guizhou would earn a reputation for environmental awareness and sustainable tourism which it is able to leverage to attract higher spending tourists over the medium to long-term.
8.4.2 Cultural Heritage Impacts

Under Scenario 4, only a portion of the rural villages proposed for tourism development in the MP are initially promoted as tourist destinations. This controlled approach would allow authorities to trial a variety of revenue sharing models to ensure that economic benefits are shared between developers and local communities. In this way, the long-term sustainable use of heritage resources would be prioritised over short-term economic gain.

8.4.3 Socio-Economic Impacts

Significantly lower tourism growth than that proposed under the MP means that over the short-term, economic benefits do not accrue to the same extent as under all other scenarios. Beyond the pilot village tourism sites, there is considerably less economic benefit than under alternative development scenarios in the short-term. Only those destinations with the capacity to attract tourists without government intervention or those that receive external support develop into competitive destinations, leaving behind the poorest and most vulnerable communities that do not have the capacity to compete. These communities continue to rely on agricultural production and since there are few employment opportunities in the rural tourism sector. By 2010 there is a surplus rural labour pool of 2-5 million. As a result, the widespread rural to urban migration is exacerbated in the short-term.

Guizhou’s reputation as a pristine travel destination is best-preserved under this scenario. The GTA and private sector are able to better leverage this to attract a smaller number of higher spending tourists in some areas and there is a focus on boutique, high-end, eco-lodges that compete with similar developments in Thailand, Malaysia and elsewhere in Southeast Asia. The measures outlined in this scenario trade-off greater environmental and heritage conservation at the expense of economic development.

8.5 CUMULATIVE AND SYNERGISTIC EFFECTS

Cumulative effects are changes to the environment or society that are caused by an action in combination with other past, present and future actions. Although effects for many individual projects may not be significant, the collective effects from them all may be significant. Where the combined effect is greater than the sum of the individual components, the effect is said to be synergistic.

Current and future developments that may have cumulative and synergistic effects with the MP have been identified from the provincial development plans, including RTDP and Eleventh Five Year Plan (2006). These development sectors are outlined as follows:

- Transportation infrastructure, including highways, railways, and airports;
- Other public infrastructure: electricity, water supply and wastewater treatment, solid waste collection and disposal;
- Development of tourism related facilities: hotels, restaurants, resorts, entertainment; and
- Land use planning and industrial zoning, including mining and refining (for aluminium and phosphorus) and paper manufacturing.

The wide variety of these proposed developments, coupled with the integrated nature of the proposals included in the MP, result in substantial overlap of environmental and social effects and hence the potential for cumulative and synergistic effects by some or all of these proposals. While a detailed assessment of these effects is beyond the objectives of this SEA, some general observations can be made.

8.5.1 Transportation

Transportation sector developments are potentially highly synergistic with the proposals detailed in the MP, both in terms of direct intrinsic links and the indirect social and environmental effects produced by transport development. The proposed construction of transport infrastructure in the MP complements that contained in the Eleventh Five Year Plan (2006). The infrastructure in the Eleventh Five Year Plan is focussed on trunk and secondary roads, whereas the MP proposes smaller roads linking remote rural villages to the secondary road network. Such effects are likely to be synergistic. On the one hand, improvements to inter-provincial highways connecting Guizhou’s larger cities with cities such as Guilin and Kunming in neighbouring provinces will bring more visitors into the province; while on the other hand, construction of smaller roads will improve access to remote villages. The effects of this may be positive (eg facilitating rural tourism to remote areas and improving access to rural communities) or negative (exposure of isolated cultures to “modernisation”). The risk of negative effects has been described in previous sections of the SEA.

The construction of transportation infrastructure is essential to the development of the tourism sector in Guizhou. Conversely, the need for expansion of transportation infrastructure may also be triggered by greater numbers of tourists. The SEA has not attempted to quantify this linkage.

Recommendation

The following measures are recommended to manage the cumulative effects between the transportation and tourism sectors:
- Incorporate consideration of tourism supply and demand during the preparation of transportation plans for the province;
- Tourism authorities should be consulted during the development of transport plans.
- Consent from the proposed Cultural Heritage Management Observatory should be obtained where road construction is likely to facilitate access to communities that are sensitive or have fragile heritage;
- Carrying capacity assessment should be conducted at the project level if transport development has a high potential for increased tourism flow or to affect fragile cultural heritage; and
• Access restrictions or other preventative measures for sensitive sites should be developed during planning of transportation development.

8.5.2 Development of Tourist Facilities

Upgrading of tourist facilities including hotels, restaurants and entertainment venues will result in increased tourist numbers. Conversely, increasing tourist numbers may trigger increased investment in such developments. For example, small private hotels are often built in areas surrounding popular tourist sites. A vibrant tourism economy may also cause inflation in the price of residential and commercial real estate.

The extent and severity of cumulative environmental effects from the construction of tourism facilities such as hotels and restaurants with the proposals in the MP depend on their size, location and characteristics. The greatest environmental effects are likely to be related to wastewater and solid waste disposal.

Recommendation

When real estate development within or on the outskirts of tourism areas is planned, tourism authorities should be consulted and due consideration given to the potential temporal and/or spatial overlap between real estate development plans and tourism plans. It is important that local government develop land use controls for real estates and other facilities within and surrounding proposed tourism sites to safeguard against inappropriate development (both in terms of type and amount of development).

8.5.3 Land Use Planning and Industrial Zoning

Mining and other industrial developments may have much greater environmental and social effects than the proposals contained in the MP. While the provision of utility infrastructure such as electricity and water supply for mining or industrial uses is considered a linkage to tourism development, tourism-related demand is minor compared with the demands of industrial development.

Inappropriate zoning of an industrial development upstream of Malinghe Gorge that caused downstream water quality impacts in an used for water-based tourism activities is an example of an externality (unintended affect) that has affected Guizhou’s tourism assets.

The tourism sector is of considerable strategic importance to the Provincial Government. Tourism’s contribution to Guizhou’s GDP is expected to rise from some 4.4% in 2000 to 10.7% in 2020. It is therefore important that decisions on land use planning and industrial zoning are made with due consideration to tourism assets.
Recommendation

While it is acknowledged that the burden of the cumulative impact assessment should be put on these industrial projects rather than on the assessed tourism plan, this SEA exercises recommends the following:

- Require assessment of impacts to tourism resources as part of planning and regional EIA for industrial developments in Guizhou; and
- Assess the cumulative impacts from planning, zoning and land use proposals that affect tourism resources during the EIA process.

8.6 COMPARISON OF IMPACTS AND BENEFITS OF ALTERNATIVE SCENARIOS

Table 8.4 and Table 8.5 summarise the relative impacts and benefits of the alternative scenarios considered.
<table>
<thead>
<tr>
<th>Scenario 1: Planned Development</th>
<th>Pros</th>
<th>Cons</th>
<th>Observations &amp; Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Balance between heritage conservation, environmental protection and sustainable use for economic benefit.</td>
<td>• Relatively lower short-term economic gain compared to Scenario 3.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wastewater and solid waste management issues not specifically addressed in relation to rural tourism</td>
<td>• Requirement for basic wastewater effluent treatment at rural restaurants and guesthouses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk that private investors will benefit disproportionately if concessions granted over collectively-owned assets such as villages</td>
<td>• Replace a large number of small landfills proposed with a smaller number of regional landfills with proper environmental controls. Adopt waste collection services and use waste transfer stations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improvement of tertiary roads will help achieve goal of providing vehicle access to all of Guizhou’s villages by 2011.</td>
<td>• Regulate private sector investment in rural tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “Opening-up” of remote ethnic minority villages to tourism can cause community shock and threaten traditional values.</td>
<td>• Revenue sharing model to ensure equitable distribution of economic benefits between developers and communities to be developed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Conflict between mining and industrial development and tourist resources.</td>
<td>• Phased implementation of rural tourism plan.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No specific requirement to consider tourism in EIA process.</td>
<td>• Code of ethics developed for tour operators, developers and visitors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need to focus on alternative development, possibly mining or industry that would have greater environmental impacts than tourism.</td>
<td>• Strengthening enforcement of existing regulations related to protected areas required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Without the focus on rural tourism, there is little incentive to upgrade tertiary roads to provide access to remote villages.</td>
<td>• EIA Guidelines need to include consideration of tourist assets beyond protected areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Less interest from private developers that may exploit cultural resources.</td>
<td>• Unlikely to create carrying capacity pressure on any tourist sites in the short-term.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Little impetus to conserve traditional architecture/lifestyles when these cannot be used to generate economic benefit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Little incentive to promote pride in minority cultures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Surplus labour pool of some 1.5-2 million rural workers by 2010 due to a lack of employment opportunities in rural areas.</td>
<td>• Effect of slowing rural to urban migration less than Scenario 1.</td>
</tr>
</tbody>
</table>

### Scenario 2: Business-as-Usual

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
<th>Observations &amp; Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Surplus labour pool of some 1.5-2 million rural workers by 2010 due to a lack of employment opportunities in rural areas.</td>
<td>• Effect of slowing rural to urban migration less than Scenario 1.</td>
<td></td>
</tr>
</tbody>
</table>
### Pros
- By 2008, 40% more visitors than Scenario 1.
- Many employment opportunities for rural residents, reducing agricultural dependence.
- Economic benefits greater than all other scenarios in short-term.
- Booming rural tourism sector provides justification for investment in roads, utilities and other infrastructure that benefits remote communities.
- Attracts large amount of private investment, creating employment opportunities and attracting more visitors.
- Tourism prioritized over other potentially more polluting industries such as mining.
- Environmentally-preferred alternative
- Carrying capacity issues observed under Scenario 3 in 2006 do not materialize until 2011 under this alternative.
- Potentially more polluting industries, such as mining prioritized over tourism.

### Cons
- Most popular tourist sites including Libo and Huangguoshu are operating beyond capacity by the 2006 Golden Week holidays.
- Pressure on ecologically sensitive sites greater than Scenario 1.
- Urgent pressure to open up increasingly more remote villages to meet visitor demand for “untouched” ethnic minority destinations.
- Economic benefits may accrue to private investors rather than local communities.
- May lead to tensions between developers and communities over medium-term.
- May lead to resentment towards tourists.
- Trades off economic development for environmental protection.
- Limited employment opportunities in the tourism sector throughout the Province.
- Less rural employment adds to surplus labour pool of over 2 million by 2010.
- Without the focus on rural tourism, there is little incentive to upgrade tertiary roads to provide access to remote villages.
- Measures act to reduce mass tourism, resulting in less economic benefit.
- Potentially more polluting industries, such as mining prioritized over tourism.

### Observations & Recommendations
- Carrying capacity and visitor flow controls are required urgently compared with Scenario 1.
- Insufficient time to adopt the phased approach to rural tourism proposed in Scenario 1 that involves pilot village tourism projects and trialling of revenue-sharing models.
- Regulation of private sector investment, particularly for concession arrangements over rural villages, recommended.
- Sustainable over the long-term but far less economic benefits over the short and medium-term
- This would be part of a deliberate strategy to discourage large numbers of low-spending tourists and focus on higher end of market
- Best preserves the province’s natural and heritage assets, allowing policy-makers time to decide strategic direction for tourism in the province.
### Table 8.5 Predicted Impacts and Benefits

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Scenario One (Master Plan)</th>
<th>Scenario Two (Business-as-usual)</th>
<th>Scenario Three (High Growth)</th>
<th>Scenario Four (Controlled/ Low Growth)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Benefit</td>
<td>Impact</td>
<td>Benefit</td>
<td>Impact</td>
</tr>
<tr>
<td><strong>Physical Environment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E1 Ecology and biodiversity</td>
<td>✓</td>
<td>x</td>
<td>√</td>
<td>xx</td>
</tr>
<tr>
<td>E4 Traffic and transport</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>E5 Zoning, planning and protected areas</td>
<td>✓</td>
<td>x</td>
<td>xx</td>
<td>✓</td>
</tr>
<tr>
<td>E6 Solid waste handling and disposal</td>
<td>✓</td>
<td>xx</td>
<td>√</td>
<td>xx</td>
</tr>
<tr>
<td>E2 Landscape and visual impacts</td>
<td>✓</td>
<td></td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>E3 Solid waste handling and disposal</td>
<td>✓</td>
<td>xx</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>E4 Water quality</td>
<td>✓</td>
<td>xx</td>
<td></td>
<td>xx</td>
</tr>
<tr>
<td>E5 Carrying capacity and visitor flow</td>
<td>✓</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>E6 Environmental awareness</td>
<td>✓</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>E7 Others and linkages</td>
<td>✓</td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

| **Cultural Heritage** |          |        |          |        |          |        |          |        |
| C1 Built Heritage | ✓✓ | | x | ✓ | xxx | | ✓ | | xx |
| C2 Intangible Cultural Heritage | | | | | | | | |

| **Socio- Economic** |          |        |          |        |          |        |          |        |
| S1 Economic benefit and living standards | ✓✓✓✓ | | x | ✓ | xx | | ✓ | | xx |
| S2 Community participation | ✓✓ | | x | ✓ | xx | | x | | |
| S3 Changes to traditional values | | | | | | | | |

<table>
<thead>
<tr>
<th>Extreme Impact</th>
<th></th>
<th>High Impact</th>
<th>Moderate Impact</th>
<th>Low Impact</th>
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<tr>
<td>⬠ ⬠ ⬠ ⬠</td>
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<td>⬠ ⬠</td>
<td>⬠ ⬠</td>
<td>x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immense Benefit</th>
<th></th>
<th>High Benefit</th>
<th>Moderate Benefit</th>
<th>Low Benefit</th>
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<td>⬠ ⬠ ⬠ ⬠</td>
<td>⬠ ⬠ ⬠</td>
<td>⬠ ⬠</td>
<td>⬠ ⬠</td>
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</tbody>
</table>

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**Environmental Resources Management** | **World Bank**
The SEA has assessed the environmental, cultural heritage and socio-economic impacts of implementing the MP and related PPP. The SEA determined that the socio-economic benefits of the MP outweigh negative impacts including environmental degradation, particularly related to surface water quality and solid waste disposal, and negative effects on intangible cultural heritage resources.

In addition to assessing the effects of implementing the MP, the Consultants developed three additional scenarios and compared the predicted benefits and impacts with those of the MP, which was designated as Scenario 1. The three alternative scenarios included:

- **Scenario 2**: Business-as-usual (without implementation of the MP);
- **Scenario 3**: High growth; and
- **Scenario 4**: Controlled/Low growth.

The purpose of the scenario analysis was to identify possible policy alternatives to implementation of the MP that would result in a more optimal outcome in terms of social, cultural or environmental benefit or long-term sustainability.

### 9.1 SCENARIO 1: MASTER PLAN

The SEA found that the MP and related PPP, including the RTDP (2006), represent the most robust and sustainable tourism strategy of the alternatives considered. Expected benefits, particularly socio-economic ones, outweigh the predicted negative impacts.

The MP represents a balance between natural and cultural heritage conservation and its sustainable use to generate economic benefit. Implementation of the MP and the RTDP is anticipated to bring sustainable economic benefits to the poorer rural areas of Guizhou by providing an opportunity to diversify incomes beyond agriculture. This is consistent with central Government policy to stem the nation-wide rural to urban migration. Policy makers in Guizhou describe this as allowing farmers to “leave the farm without leaving the countryside”.

The main environmental impacts include surface and groundwater pollution from uncontrolled wastewater discharge from restaurants and hotels, and the arrangements for solid waste management in rural areas. While the MP promotes both active and passive tourism activities in nature reserves and other ecologically sensitive sites, an assessment of carrying capacity suggests that the expected growth in tourism arrivals will not pose serious issues beyond a small number of popular sights such as Red Maple Lake, Caohai, Fanjing Shan and Libo.
The effect on intangible heritage including traditional song and dance performances, weaving, batik and other cultural products and practices is of particular concern. While responsible tourism incorporating appropriate safeguards can help to ensure the long-term viability of these customs, there is also a risk that uncontrolled development results in mass commercialization of intangible heritage, detracting from its traditional value.

The SEA has made a number of recommendations to minimize the predicted impacts of implementing the MP and to enhance the expected benefits. The most important recommendations include:

- Ensuring a minimum standard of wastewater treatment at restaurants and guesthouses in rural areas to avoid surface and groundwater pollution;
- Reducing the large number of low-capacity solid waste disposal sites proposed and replacing these with a smaller number of regional landfills that incorporate adequate environmental controls. This would require waste collection and the construction of waste transfer stations;
- Implementing visitor flow controls where deemed necessary based on an assessment of carrying capacity at popular and environmentally or culturally sensitive sites;
- Regulation of private sector investment in the rural tourism sector to ensure the equitable distribution of revenue generated from collectively owned assets; and
- Establishment of a Cultural Heritage Management Observatory with responsibility for the overall management of Guizhou’s material and intangible heritage and for guarding against inappropriate commercial exploitation. The Observatory would work with a wide range of institutional and private sector stakeholders and would oversee development of a Code of Ethics for responsible tourism in the Province.

**Scenario 2: Business-as-Usual**

Scenario 2 represents the least favored of the alternatives considered. Under this scenario, tourism continues to grow with little planning, albeit at a rate lower than neighboring Provinces and China as a whole. Tourism is not considered to be a strategically important priority and consequently government focused on alternative development strategies, possibly mining or other industry, that would likely have greater environmental impacts than tourism.

Without the focus on rural tourism, there is little incentive to upgrade tertiary roads to provide access to remote villages. Rural communities are not encouraged to preserve traditional architecture and lifestyles when these cannot be used to generate income. Conditions are not conducive to promoting pride in ethnic minority cultures.

Compared to Scenario 1, there is a surplus labour pool of some 1.5-2 million rural workers by 2010 due to a lack of employment opportunities in rural areas and the rural to urban migration continues unabated.
9.3 **Scenario 3: High Growth**

It is important to recognise that since the MP was approved in November 2003, tourism growth has far exceeded that forecast at the time (and assessed in Scenario 1). In fact, as of July 2006, tourism growth roughly follows that forecast in Scenario 3. As such, the assessment of this scenario should be of specific interest to policy makers.

Such massive growth in tourism numbers presents an unprecedented opportunity for poverty alleviation in Guizhou’s poorest areas. In the short-term, economic benefits accrue rapidly as employment opportunities emerge in rural areas and farmers are able to supplement traditional livelihoods with new sources of income. While the tourism market is immature, visitors are prepared to sacrifice a lower standard of service for an “untouched” and authentic experience. This is indeed what is observed in Guizhou today.

However such massive growth in tourist arrivals inevitably stretches the carrying capacity of Guizhou’s attractions. Guizhou’s most popular tourism sites including Libo and Huangguoshu Waterfall can physically accommodate no more visitors during the Golden Week periods. Tourism is causing environmental impacts at a number of protected areas, such as at Caohai, where visitors are disturbing birdlife during the breeding season. There is an urgent need to disperse visitors away from the most popular sites. As a result of the sudden and unexpected growth in tourist arrivals, rural tourism shifts from being one of several tourism development strategies under the MP to becoming Guizhou’s only realistic strategy to manage the flow of visitors in Scenario 3.

Under the scenario assessed, Guizhou is unprepared in several areas for the unexpected boom in tourism. Without adequate preparation and planning for large numbers of visitors to rural areas, serious problems begin to appear over the medium-term (5-10 years). There is a massive influx of uncontrolled investment as developers seek to cash-in on this emerging tourism market. Failure to regulate private sector investment in rural villages results in economic benefits accruing disproportionately to private investors rather than local residents. This leads to tension between developers and local communities and may manifest itself in resentment towards tourists. Ongoing failure to this issue may, over the long-term (10-20 years), ultimately lead to the collapse of Guizhou’s rural tourism sector.

In order to capitalise on the opportunity presented by the high growth scenario, two things are needed. Firstly, communities must be provided basic training in tourism and related services, as well as capacity building to strengthen village tourism associations. It is too much to expect Guizhou’s rural, agricultural dependent communities to develop the necessary skills to benefit from service employment in the tourism sector without government support. Second, there is an urgent need for regulation of private sector investment to ensure the equitable distribution of economic benefits from tourism to ensure the long-term sustainability of the sector.
9.4 **SCENARIO 4: CONTROLLED/LOW GROWTH**

Under the controlled growth scenario, Guizhou trades off economic growth for environmental and heritage protection. Government adopts a range of “hard” and “soft” measures to control the numbers of visitors to sites that are either sensitive or operating at close to their assessed carrying capacity.

This scenario best preserves the province’s vulnerable natural and heritage assets in the short term, giving policy-makers breathing space to prepare and plan for future tourism development in the province. Guizhou’s reputation as a relatively pristine destination is maintained and enhanced and it is able to leverage this reputation to attract higher spending tourists over the medium to long-term.

Tourism growth is lower than that proposed under the MP and the objective of poverty alleviation in some areas would not be achieved. There would be limited employment opportunities in the tourism sector, particularly in rural areas. Fewer job opportunities results in ongoing agricultural dependence and would likely contribute to a surplus rural labour pool of 2-5 million by 2010. Rural to urban migration is exacerbated and this scenario does not sit well with government’s policy of rural economic development.

While the benefits of environmental and heritage conservation under the low growth scenario are greater than other alternatives, this policy alternative is considered inappropriate since it results in few economic benefits to poor and ethnic minority communities in the short-term, which is an immediate government priority.

9.5 **SYNTHESIS OF CONCLUSIONS AND RECOMMENDATIONS**

*Table 9.1 details the recommendations for fine tuning the MP and related plans in order to minimize environmental, social and heritage impacts and to maximize the expected benefits. These recommendations are mainly technical in nature and are related to the features and activities proposed under the MP, RTDP and related plans and policies.*

In addition to these recommendations, the SEA also made a number of policy-related findings from the consideration of alternative tourism development scenarios. These findings are outlined below and explained in detail in the *Policy Note* that accompanies this SEA Report.

*Risks from Unexpectedly High Tourism Growth*

Since the MP was approved in 2003, tourism growth has far outpaced that forecast. While the underlying strategy of the MP remains sound with larger numbers of visitors to Guizhou, certain aspects of the plan should be given more emphasis, while others should be given less.

Specifically, recommendations in the MP relating to carrying capacity assessments and implementing visitor flow controls at certain sites are of
critical importance. Rural tourism, which the MP includes as one of several strategies for tourism development in Guizhou, has become the only realistic strategy to disperse visitors away from the most popular sites. While this represents an enormous opportunity, the SEA has highlighted the risks to the long-term sustainability of the rural tourism sector if measures are not taken to ensure that local communities are able to participate in, and benefit from, such tourism.

The GTA has initiated pilot studies at a number of rural villages and results are being incorporated into the latest policy documents(1). In order to give policy makers breathing space to fine tune these measures and to implement them thorough the Province, the GTA may wish to consider temporary suspension of tourism promotion or even adoption of some of the measures described in Scenario 4 to discourage tourism to certain areas or at certain times of the year. Even without active promotion, it is likely that tourism will grow at levels above that forecast in the MP (6.3-6.5%) and Eleventh Socio-Economic Five Year Plan (8-10%) but will be less than the growth rates observed in 2004-5 (20%) and in the first half of 2006 (60%). Short-term economic losses resulting from temporary “soft” controls on tourism numbers are likely to be far outweighed over the longer-term by the benefits of implementing measures to promote long-term sustainability.

**Risks to Intangible Heritage and Changes to Traditional Lifestyles**

Ethnic minority culture is one of the main attractions promoted in the MP. While responsible tourism incorporating appropriate safeguards can help to ensure the long-term viability of these customs, there is also a risk that uncontrolled development results in mass commercialization of intangible heritage, detracting from its traditional value. A Cultural Heritage Management Observatory and Code of Ethics for the use and interpretation of heritage resources have been proposed to minimise the risk of adverse effects on cultural heritage.

**Consideration of Tourism Assets in EIA Process**

Given the strategic importance of the tourism sector to Guizhou’s economy, it is recommended that the impact of construction projects on all tourism assets (including both protected and unprotected areas) be incorporated into EIA procedures. Since Guizhou’s natural and cultural landscapes are an important tourism asset, it would be also be prudent to require landscape and visual impact assessment under EIA procedures in Guizhou. The State Environmental Protection Law empowers Guizhou EPB to issue such administrative procedures for the implementation of EIA within their jurisdiction.

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(1) For example, the Guizhou Rural Tourism Development Plan, 2006
Equitable Distribution of Economic Benefits

Policies and programmes that support local employment, particularly in rural areas, need to be implemented to allow residents that currently have little experience in the tourism sector to capitalise on potential economic benefits. This will require rolling out of community training programmes.

It is recommended that a study be undertaken to support the development of tourism-related micro and small enterprises (MSEs) in rural areas. MSEs could form the foundation of the rural tourism development model for Guizhou but this need to be better understood and supported. The study should review existing polices and programmes in support of MSEs in the province, recommend actions to streamline government resources, explore effective approaches to promoting linkages between private sector and communities in a way that considers the full range of options as described in the previous section; and identify capacity building needs.

Finally, private sector investment in the rural tourism sector requires regulation in order to ensure that local residents benefit from collectively owned heritage resources which comprise the key attraction in Guizhou’s rural tourism sector. Otherwise, there is a risk that private sector operators will benefit disproportionately if they are offered concessions to operate rural villages as tourist sites.
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Issue/Risk</th>
<th>Activity or Feature of Policy or Plan</th>
<th>Recommended Action</th>
<th>Benefit or Mitigated Risk</th>
</tr>
</thead>
</table>
| E1   | Ecology and Biodiversity         | • Infrastructure development in nature reserves, geoparks and ecologically sensitive areas such as Red Maple Lake, Caohai, Fanjing Shan, Leigong Shan and Libo  
• Active, nature-based tourism proposed under the MP (eg trekking).  
• Behaviour of visitor enjoying passive, nature-based activities such as sightseeing at nature reserves and sensitive sites. | Promotion of Eco-tourism and Enhancing Environmental Awareness  
• Provide visitors to ecologically sensitive areas guidance on appropriate behaviour to minimise impacts on flora and fauna.  
• Training for tour guides at nature reserves so that environmental awareness and education are a key part of the message to visitors; and  
• Adopt “hard” and “soft” measures to restrict visitor numbers to sensitive sites or during sensitive times of the year (e.g. breeding seasons).  
  • Hard measures include requiring visitors to be accompanied by a restricted number of tour guides  
  • Soft measures include raising entrance fees or removing references to sites from marketing materials | • Protection of sensitive biodiversity  
• Raising environmental awareness  
• Enhance Guizhou’s reputation for sustainable tourism |
| E2   | Landscape and visual impacts     | • Road construction under the MP.  
• Construction of hotels, restaurants, tourist reception facilities and entertainment venues within and outside classified scenic areas. | Consideration of Landscape and Visual Impacts in Construction Projects  
• Include landscape and visual impact assessment in EIA procedures in Guizhou. | • Establish regulatory protection for Guizhou’s natural and cultural landscapes that are a major tourist attraction |
| E3   | Solid waste disposal            | • Handling and disposal of solid waste generation by tourists under the MP and 11th Five Year Plan are inappropriate. | Reconsider Arrangements for Solid Waste Management  
• Construct a smaller number of landfills of greater capacity that incorporate environmental controls such as lining, leachate collection and treatment and stormwater diversion.  
• Collect solid waste from larger villages and transport to waste transfer stations by road and then to large, regional landfills. | • Economies of scale offered by larger landfills allow for incorporation of improved environmental controls.  
• Prevent secondary surface water and groundwater contamination from landfill runoff and leachate. |
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Issue/Risk</th>
<th>Activity or Feature of Policy or Plan</th>
<th>Recommended Action</th>
<th>Benefit or Mitigated Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4</td>
<td>Surface and groundwater contamination</td>
<td>• Domestic wastewater discharges from informal, homestay accommodation and restaurants in rural areas under the RTDP.</td>
<td><strong>Wastewater Treatment</strong>&lt;br&gt;• Hotels and guesthouses should be equipped with septic tanks as a minimum form of biological treatment of domestic wastewater.&lt;br&gt;• Residents and visitors to rural villages should be encouraged to boil all non-bottled water.</td>
<td>• Control surface and groundwater pollution&lt;br&gt;• Avoid human health risk</td>
</tr>
<tr>
<td>E5</td>
<td>Carrying capacity and visitor flow control</td>
<td>• Marketing and promotion under the MP has resulted in a substantial increase in the number of visitors to Guizhou.&lt;br&gt;• Passive nature-based tourism, particularly sightseeing, at the most popular sites such as Huangguoshu and Libo.</td>
<td><strong>Carrying Capacity and Visitor Flow Controls</strong>&lt;br&gt;• Undertake detailed carrying capacity assessments at popular and sensitive sites.&lt;br&gt;• Control visitor numbers (e.g. by limiting ticket sales or tour group sizes).&lt;br&gt;• Where appropriate, restrict private vehicle access to sites that are environmentally sensitive or unable to accommodate large numbers of vehicles. Transport people through sites by shuttle buses, battery operated vehicles or other means.&lt;br&gt;• Disperse tourists to less visited sites (using promotions or pricing controls).&lt;br&gt;• Seasonal restrictions to sensitive sites, e.g. during breeding seasons.&lt;br&gt;• Developing site level transportation management plans to avoid traffic congestion.</td>
<td>• Reduce pressure on most popular sites.&lt;br&gt;• Reduced environmental impacts at sensitive sites&lt;br&gt;• Enhance Guizhou’s reputation for sustainable tourism</td>
</tr>
<tr>
<td>E6</td>
<td>Environmental awareness</td>
<td>• Promotion of tourism at ecologically sensitive sites under the MP coupled with a general lack of understanding of the concept of ecotourism.</td>
<td><strong>Enhance Environmental Awareness</strong>&lt;br&gt;• Institutional training at provincial, prefecture/municipal and county level to ensure that environmental considerations are incorporated into development plans;&lt;br&gt;• Develop site specific environmental awareness booklets for private operators and guides, who can pass on relevant information to tourist groups; and&lt;br&gt;• Educate local communities about the importance of natural resource conservation.</td>
<td>• Maintain and enhance Guizhou’s reputation for sustainable eco-tourism and reinforce appropriate visitor behaviour&lt;br&gt;• Maintain the attractiveness of tourism assets, which is critical to long-term sustainability.</td>
</tr>
<tr>
<td>Ref.</td>
<td>Issue/Risk</td>
<td>Activity or Feature of Policy or Plan</td>
<td>Recommended Action</td>
<td>Benefit or Mitigated Risk</td>
</tr>
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<td>------</td>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>C1</td>
<td>Built heritage damaged or destroyed</td>
<td>• Restoration of built heritage and architecture under MP.</td>
<td>Safeguard built heritage</td>
<td>• Enhance the Guizhou’s capacity to manage its cultural heritage;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construction of new tourist infrastructure such as roads, car parks, accommodation, restaurants, under MP.</td>
<td></td>
<td>• Maintain the attractiveness of its built heritage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Construction of ecological and cultural museums under RTDP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C2</td>
<td>Intangible cultural heritage damaged or altered</td>
<td>• Opening up of pilot villages under the RTDP for cultural tourism.</td>
<td>Safeguard intangible heritage</td>
<td>• Maintain the authenticity and attractiveness of intangible heritage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cultural-based activities such as ethnic minority performances under both MP and RTDP</td>
<td></td>
<td>• Raise awareness of the value of intangible heritage both as a tourism asset and as living heritage.</td>
</tr>
<tr>
<td>S1</td>
<td>Unequal distribution of benefits</td>
<td>• Ecological and cultural museums to be piloted under RTDP</td>
<td>Measures to ensure the equitable distribution of tourism benefits</td>
<td>• Avoid geographical disparities in economic development.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Issuing of concessions to private investors to charge entrance fees to visitors to heritage sites, particularly ethnic minority villages</td>
<td></td>
<td>• Ensure economic benefits accrue to poor rural communities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lack of regulation of private sector investment in rural tourism sector.</td>
<td></td>
<td>• Enhances the capacity of policymakers to understand the needs of rural residents.</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Safeguard built heritage**
- Create a Cultural Heritage Management Observatory to provide expertise for the effective sustainable management, conservation and preservation of built heritage.
- Develop building and restoration standards for minority villages.
<table>
<thead>
<tr>
<th>Ref.</th>
<th>Issue/Risk</th>
<th>Activity or Feature of Policy or Plan</th>
<th>Recommended Action</th>
<th>Benefit or Mitigated Risk</th>
</tr>
</thead>
</table>
| S2   | Marginalisation of local communities | • Ecological and cultural museums to be piloted under RTDP  
• Issuing of concessions to private investors to charge entrance fees to visitors to heritage sites, particularly ethnic minority villages | **Facilitate the participation of local communities**  
• Consult communities throughout all project phases with special emphasis on ensuring the participation of vulnerable groups.  
• GTA to establish a unit to coordinate and implement community-based tourism development programs in rural Guizhou.  
• Devote the next International Conference on Rural Tourism in Guizhou to debating the role of private sector and SMEs in rural tourism development.  | • Institutional capacity to facilitate participation strengthened.  
• Improved capacity for local residents to participate in the planning process.  
• Promote dialogue between rural communities, government, experts and responsible tourism investors/operators. |
| S3   | Traditional values affected        | • Opening up of remote villages under the RTDP for cultural tourism.  
• Introduction of domestic and international tourists to previously inaccessible areas.  
• Cultural-based activities such as ethnic minority performances under both MP and RTDP. | **Promote respect for traditional values**  
• The GTA, in collaboration with tour operators, travel agencies and communities to develop a campaign to educate visitors about the need to be respectful of local values, culture and the environment. | • Maintain and enhance Guizhou’s reputation for sustainable eco-tourism and reinforce appropriate visitor behavior. |
Annex A

Stakeholder Engagement
A1.1 INTRODUCTION

It is common in international practices to encourage stakeholder participation throughout the project design, planning, implementation, monitoring and evaluation phases. The term “stakeholder” includes those who are affected by the project, or have the ability to affect the project, as well as anyone who is interested or has concerns over the tourism plans and policies. Stakeholders therefore include government officials, private industry and the community.

A1.2 OBJECTIVES

The key objectives of the consultation programme are to:

• Inform stakeholders about the tourism development plan and the SEA project;
• Obtain feedback on potential concerns on environmental and socio-economic impacts of tourism development;
• Obtain feedback on how to minimize impacts and maximize benefits; and
• Identify capacity building needs.

The information gathered from the consultation was incorporated into the development of scenarios (Chapter 7) and the impact assessment (Chapter 8).

A1.3 INTERNATIONAL AND CHINESE PRACTICES

Different countries and systems require varying degrees of stakeholder engagement. Consultation and engagement with affected communities as described here is a relatively new concept in China, although various international standards and the corporate requirements of multinational investors are encouraging international consistency in the standard and degree of consultation that is undertaken.

A1.3.1 International Standards on Public Consultation

International standards and benchmark practices that apply to stakeholder consultation include guidelines prepared by the World Bank Group. The IFC’s Good Practice Manual focuses on the benefits that early and effective consultation can offer a project. The World Bank’s Environmental Assessment Policy requires that project-affected groups be consulted during the ESIA process about the project’s potential environmental and social impacts.

In summary, the requirements and guidelines (which help a project reduce risk) include early consultation with affected people and NGOs, early disclosure of information, and providing information in a way that allows informed consultation with stakeholders and project-affected people.

A1.3.2 Chinese Standards on Public Consultation

The Environmental Impact Assessment Law (2003) stipulates requirements for public consultation or stakeholder engagement at the stage of preparing the EIA report for construction projects:
Except for confidential cases, in construction projects with significant influence on the environment that require an EIA, the project sponsor should hold an open discussion and auditing session (or in other forms) to seek the opinions from relevant institutions, experts and the general public.


In February 2006, SEPA established the Public Participation Measures in Environmental Impact Assessment (Provisional). This sets the general framework for public consultation and explicitly states that public consultation should be included in EIA of all projects that have potential significant environmental impacts. EIA reports submitted for approval shall attach an explanation of the reason(s) for acting on (or failing to act on) the opinions of relevant institutions, experts, or the general public.

A1.3.3 Guizhou Government’s Commitment to Consultation

The GTA and PMO were proactive in coordinating consultation activities. Most government authorities that were invited to consultation workshops for the SEA participated enthusiastically. Details of attendees are provided in Table 1.1 to Table 1.4.

A1.4 METHODOLOGY

Consultation for the SEA comprised the following main activities:

- **Interviews with Government Authorities**: Preliminary interviews were conducted with key government authorities for the purpose of data gathering;

- **Specialist Consultation**: Various contracted or independent consultants were consulted on key environment and social issues;

- **Workshop with Government Authorities**: Formal workshops were undertaken with provincial and municipal/prefecture government authorities; and

- **Workshop with Community Representatives**: Comprising a selection of local community representatives from proposed project villages.

A1.4.1 Government Interviews

*Table 1.1* details the interviews with government authorities that were carried out during the kick-off mission in March 2006.
## Table 1.1 Government Interviews

<table>
<thead>
<tr>
<th>Name of Organisation</th>
<th>Date</th>
<th>Interviewee</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Provincial Government Authorities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provincial Cultural Heritage Bureau</td>
<td>02 March 2006</td>
<td>Mr Wang Jiang</td>
<td>Cultural Heritage Department</td>
</tr>
<tr>
<td>Provincial Administration of Culture</td>
<td>02 March 2006</td>
<td>Mr Jian Quijia, Ms Liu Hui, Mr Wang Yufei</td>
<td>Deputy Director, Deputy Director, Economic Development Department</td>
</tr>
<tr>
<td>Provincial Ethnic Minority Committee</td>
<td>02 March 2006</td>
<td>Mr Wang Guowen</td>
<td>Financial Control Department</td>
</tr>
<tr>
<td>Provincial Construction Bureau</td>
<td>03 March 2006</td>
<td>Ms Zeng Jing</td>
<td>Research Staff</td>
</tr>
<tr>
<td>Provincial EPB</td>
<td>03 March 2006</td>
<td>Mr Liu Jiahong</td>
<td>Ecological Environmental Protection Department</td>
</tr>
<tr>
<td>Provincial Forestry Bureau:</td>
<td>03 March 2006</td>
<td>Mr Li Mingjing</td>
<td>Wildlife Department</td>
</tr>
<tr>
<td><strong>Prefecture Government Authorities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qiandongnan Tourism Bureau</td>
<td>06 March 2006</td>
<td>Mr Wang, Mr Chi</td>
<td>Planning Department, Administration</td>
</tr>
<tr>
<td>Qiannan Tourism Bureau</td>
<td>08 March 2006</td>
<td>Mr Zhou Wendong</td>
<td>Administration</td>
</tr>
</tbody>
</table>

All the government authorities that were consulted expressed their support for this project. Key issues and concerns raised by the government authorities interviewed include:

- Institutional arrangements for protection of nature reserves and scenic areas; specifically, lack of inter-departmental corporation;
- Deforestation: due to infrastructure construction without proper planning;
- Water pollution: absence of wastewater treatment facilities;
- Wildlife protection;
- Cultural conflict: traditional culture is likely to be influenced by tourism development, causing changes to or loss of intangible cultural heritages;
- Equitable distribution of project benefits: making sure local communities benefit economically from tourism development;
- Private sector regulation: to avoid illegal and uncontrolled construction, and management of tourism assets.
A1.4.2  
Specialist Consultation

Table 1.2 details the consultation undertaken with local specialists.

Table 1.2  
Details of Consultation with Local Specialists

<table>
<thead>
<tr>
<th>Date</th>
<th>Interviewee</th>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td>09 March 2006</td>
<td>Prof Zhang Xiaosong</td>
<td>Rural Village Tourism Expert</td>
</tr>
<tr>
<td>09 March 2006</td>
<td>Prof Zhang Shijun</td>
<td>Director of Expert Panel</td>
</tr>
<tr>
<td>21 July 2006</td>
<td>Prof Ren Xiaoquan</td>
<td>NGO Representative</td>
</tr>
</tbody>
</table>

Professor Zhang Xiaosong led the compilation of the Guizhou Rural Tourism Development Plan (2006), and Professor Zhang Shijun was the head of the external expert panel working for the PMO. Professor Ren Xiaoquan led projects in Fanjing Shan area regarding wildlife protection.

Input from these specialists was incorporated into the impact assessment and development of mitigation.

A1.4.3  
Stakeholder Workshops

Three stakeholder workshops were conducted; two comprising government officials at the provincial and prefecture/municipal level and one comprising rural village representatives.

Government Stakeholder Workshops

Government stakeholder workshops were conducted on 18 and 19 July 2006. Details are provided in Table 1.3.

Table 1.3  
Government Stakeholder Workshops

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop 1: SEA Methodology</td>
<td>Provincial Environmental Protection Bureau:</td>
</tr>
<tr>
<td>18 July 2006 AM</td>
<td>Mr Jiang Chuan, Ms Wang Lin</td>
</tr>
<tr>
<td></td>
<td>Provincial Tourism Bureau:</td>
</tr>
<tr>
<td></td>
<td>Mr Li Sanqi</td>
</tr>
<tr>
<td></td>
<td>Provincial Cultural Heritage Bureau:</td>
</tr>
<tr>
<td></td>
<td>Mr Wang Jiang</td>
</tr>
<tr>
<td></td>
<td>Provincial Development and Reform Bureau:</td>
</tr>
<tr>
<td></td>
<td>Mr Zhang Chao</td>
</tr>
<tr>
<td></td>
<td>International Project Consultation Centre.:</td>
</tr>
<tr>
<td></td>
<td>Mr Xu Qian</td>
</tr>
<tr>
<td></td>
<td>Project Management Office Expert Panel:</td>
</tr>
<tr>
<td></td>
<td>Professor Zhang Shijun from Guizhou University</td>
</tr>
<tr>
<td>Workshop 2: SEA Consultation</td>
<td>Qianxinan Tourism Bureau:</td>
</tr>
<tr>
<td>19 July 2006 AM</td>
<td>Mr Gao Cai Zhong</td>
</tr>
<tr>
<td></td>
<td>Qianxinan Construction Bureau:</td>
</tr>
<tr>
<td></td>
<td>Mr Xiao Yonglin</td>
</tr>
<tr>
<td></td>
<td>Qianxinan Environmental Protection Bureau:</td>
</tr>
<tr>
<td></td>
<td>Mr Li Xiucai</td>
</tr>
</tbody>
</table>
Community Stakeholder Workshops

Local communities are the most direct stakeholders in the development of Guizhou’s rural tourism sector. Community representatives from Langde and Jixi Villages were invited to Guizhou for a half-day workshop as detailed in Table 1.4.

Table 1.4  Community Stakeholder Workshop

<table>
<thead>
<tr>
<th>Workshop Detail</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshop 3: SEA Consultation</td>
<td>Qiandongnan Leishan Langde Village Representative: Mr Chen Minhui,</td>
</tr>
<tr>
<td>19 July 2006 PM</td>
<td>Qiandongnan Kaili Jidao Village Representatives: Ms Chen Qin, Mr Pan Nianwu</td>
</tr>
<tr>
<td></td>
<td>Anshun Jixi Village Representatives: Mr Gu Haijiang, Mr Song Shengbin, Ms Zhang Wenshun, Ms Li Xueyin</td>
</tr>
</tbody>
</table>

Figure 1.1 presents photos of those workshops.

Consultation Workshop

Government Consultation Workshop, 18 July 2006

Community Consultation Workshop, 19 July 2006
A1.5  OUTCOMES OF CONSULTATION

In general, government authorities were supportive of tourism development in Guizhou, and believe that it will bring economic benefits to the province as a whole as well as to local communities. However, loss of intangible cultural heritage and environmental degradation due to development were raised as impact of particular concern. The lack of inter-departmental coordination during planning was raised by several departments. There was a consensus among workshop participants that conditions in Guizhou are improving as a result of economic development and that the tourism sector is contributing to this, for example through the provision of infrastructure such as roads. Water pollution is considered to be the key environmental issue for Guizhou.

Community representatives were also satisfied with the economic benefits that tourism development had brought to their villages. Improvements in road, rail and air transport infrastructure were cited as one of the key benefits of tourism development. However, concerns were raised about private sector development and the lack of investment that followed through once developers had been given concessions to develop certain sites. Waste management at almost all villages comprises rudimentary open dumps on the outskirts of villages and wastewater is discharged directly into nearby surface waters.

A1.6  CONSULTATION WORKSHOP I – GOVERNMENT CONSULTATION

Participants:
- ERM: Ms Elisa Xiao, Ms Esmeralda Francisco, Ms Grace Zhu
- Deputy Director Provincial Tourism Administration: Mr Li Sanqi 李三旗
- Director of Expert Panel: Prof Zhang Shijun 张世俊教授
- Provincial Tourism Planning Centre (PMO): Mr Jiang Dan 姜丹 and Ms Wang Yuanyan 王媛媛
- International Project Consultation Centre: Mr Xu Qian 许谦
- Provincial EPB: Mr Jiang Chuan 江川
- Provincial Cultural Heritage Bureau: Mr Wang Jiang 王江
Mr Xu Qian

A budget for intangible cultural heritage protection has been added to the Proposal which will be finalized in September. However, no protection measures or implementation plans are available yet.

Mr Li Sanqi

Insisted that the SEA should follow the Chinese Planning SEA as much as possible. Apart from the MP (2002) and RTDP (2006), the following plans should also be considered:

- Red Tourism Plan;
- Cultural Heritage Protection Plan;
- Forest Park Plan;
- The Six Branch Airport Plan;
- Tourism Routes Plan; and
- Traffic Plan.

Professor Zhang Shijun

The number of tourists to Guizhou has increased by 50% in 2005, much higher than the 15% estimated in the MP (2002).

Tourism revenue has increased by 35%; investment has increased by 25%. Significant impacts on the environment have resulted from this dramatic increase in tourism.

There is currently a lack of supporting policy, systematic improvements, and measures to ensure allocation of benefits to local communities, infrastructure, services and human resources.

For example:

During the 2006 May holiday, tourists were stuck on the highway to Libo for 6 hrs due to traffic jams as a result of the large number of tourists. Also, the quality of water bodies in the Yangtze River valley has been affected by the large amount of wastewater directly discharged.

Cultural Heritage Bureau:

There are 20 newly upgraded national level cultural heritage sites, 62 newly upgraded provincial level cultural heritage sites.

There are 31 national level intangible cultural heritage sites and 91 provincial level intangible cultural heritage sites.

In addition, there are 20 Historical Ancient Towns and 20 Classified Ethnic Minority Villages.
Participants:
- ERM: Elisa Xiao, Esmeralda Francisco, Grace Zhu
- Prefecture/municipal Tourism Bureau, EPB, Cultural Heritage Bureau and Construction Bureau from Qiandongnan, Qiannan, Qianxinan and Anshun

Venue: Zilin Hotel 紫林宾馆, Guiyang, 19 July 2006

Qiandongnan

*Implementation Status of MP (2002)*

Tourism Bureau

There are two tourism routes being promoted: the south route and the north route.

The south adheres to the MP (2002) whereas there are some issues with a lack of approval for private sector investment on the northern route.

Bala River pilot project is currently at the review stage by the GTA.

Liping Airport recently received safety approval.

In 2005, Qiandongnan prefecture received 2.5 million tourists, which is an 18.3% increase compared to 2004.

At the moment, hotels in Qiandongnan area can accommodate 14,800 guests, including 800 beds in village guest houses.

And there are 76 public toilets newly constructed in the whole of Qiandongnan prefecture.

*Environmental and Socio-economic Impacts*

Construction Bureau

- Biodiversity in forest parks has been affected by tourists, eg disturbance of animals by tourism activities
- Investment in waste management infrastructure lags that of other sectors. Many construction projects do not meet the “Three Synchronies” requirements for construction completion inspection and registration of pollutant discharges.
- Many hotels are constructed without approval.
- Wastewater from toilets is discharged directly into nearby surface waters without any treatment
- Much valuable cultural heritage exists in closed and remote areas and the opening of these areas will lead to a loss of intangible cultural heritage.

Environmental Protection Bureau
• The quality of surface waters in and near to urban areas has deteriorated as a result of domestic and industrial wastewater effluent discharge.

• The capacity of solid waste management is insufficient

• Air quality has deteriorated in urban areas.

An important problem is the route planning for road construction, improper road construction has resulted in the loss of topsoil, leaving the underlying bedrock exposed.

**Qiannan**

*Implementation Status of the MP (2002):*

**Environmental Protection Bureau**

The number of hotels has increased from 19 to 42 since 2004

2.9 million tourists visited QN in 2005, the number of tourists has increased by 40% in 2005. Currently, only 0.7% of the tourists are from overseas (including HK, Macau and Taiwan), the rest are domestic tourists.

New tourism sites are being developed rapidly.

Traffic infrastructure is insufficient for the current tourist demand.

Libo airport will start operating end of 2006.

*Environmental and Socio-economic Impacts:*

Tourism development has had the following positive effects:

• The general public realizes that good ecological environment will attract more tourists, therefore there has been a decrease in tree logging.

• After tourism development, more funds flowed into these areas and benefit the construction of waste management infrastructures.

**Construction Bureau**

• The amount of solid waste and wastewater has increased

• The cultural impacts on local people are also significant, their clothes and everyday life have been affected by modern development, especially young people

• The construction of infrastructure, especially roads, car parks and buildings, has had a significant impact on the physical environment (Karst landscape)

• In Libo, many local residents in scenic areas have been reallocated. According to CB, they are compensated and offered jobs to work in the scenic area.

• Since Libo is a candidate for the UNESCO’s world natural heritage list, power plants and hotels have been removed from the area.

**Cultural Heritage Bureau**
• Local people have modified some of their traditions according to tourist
demands and tastes. For example, some marriage customs are long
processes which are difficult to present to tourists, and they are gradually
neglected

Qianxinan
Implementation Status of the MP (2002):
Tourism Bureau
Xingyi airport has been operating for two years.
There are 8 star-rated hotels and 15 unrated hotels in QXN
12 travel agencies (including 1 international agency), of which 6 were opened
since 2004
The number of tourist in 2005 was 1.2 million, and 2006 by now, there have
been 1.2 million tourist, the estimation for 2006 is 2.5 million.
In 2005, RMB 200 million tourism revenue was generated.

Environmental and Socio-economic Impacts:
Environmental Protection Bureau
Tourism development has accelerated construction of waste management
infrastructure
Industrial and domestic wastewater effluent discharges are the most
significant environmental issue and affect surface water quality, for example
Wanfengfu (water catchment):
• Municipal wastewater directly discharged into the water catchment
• Industrial wastewater (from phosphor plant, coal mining, factories)
discharged without meeting corresponding standards
• Vegetation around the bank has been affected
• Intrusion of foreign species (water plants)
Another problem is that Wanfenghu straddles three provinces namely
Yunnan, Guangxi and Guizhou and there is a lack of cross-border
coordination.
Another example Maling River
• Wastewater from coal mine, chemical plants and domestic wastewater is
discharged directly into the upper reaches of Maling River, causing the
quality of water to fall below Class III for at least 4 months in 2005.
• Tourism has little impacts on environment

Construction Bureau
Most tourism attractions in QN are natural physical assets.
The ecology in QN is very sensitive
Desertification is a significant problem, caused by clearance of forest to create
land for farming and wood to burn.
Malinghe site has total area of 200km², of which 2km² is classified as core area. Only the core area is under supervision of CB. Other areas are managed by different departments and there is no systematic management. There are many unapproved constructions with in scenic area.

Wastewater pollution is significant as upstream industries have only one surface water body to discharge into.

Recommendation that when planning for industrial zones /district, surrounding environmental sensitivity should be considered.

### Anshun:

*Implementation Status of the MP (2002):*

**Tourism Bureau**

In 2005, 4.8 million tourists visited Anshun generating RMB 2 billion in revenue.

Tunpu alone attracted 280,000 visitors.

There are 23 star-rated hotels and 13 travel agencies in Anshun.

**Construction Bureau**

There are 3 national, 3 provincial and 4 municipal level scenic sites in Anshun. They all have Scenic Area Plans developed and approved.

Since Anshun lies on the route of several inter-provincial highways, the Karst landscape has been significantly affected by the construction of the road network, resulting in serious desertification.

**Environmental and Socio-economic Impacts:**

- The unique architectural style in Tunpu has been affected by local people’s preference towards modern styles. Tourism development actually helped to preserve the remaining heritage
- Urbanization causing loss of traditional languages, costume and opera

**Environmental Protection Bureau**

Impacts on water quality, municipal wastewater directly discharged into surface water.

**Suggestions for environmental mitigation:**

Pollution control equipment and facilities should be installed simultaneously with site development, as per regulatory requirements.

Industrial layout planning should consider impacts on scenic areas and other tourist sites

Enhance control on access to different zones.

Road/railway routes planning should minimize impacts on physical environment.

Construction should be in harmony with local surroundings.

Demarcate areas that may and may not be developed.
Participants:
- ERM: Elisa Xiao, Esmeralda Francisco, Grace Zhu
- Mr Pan Nianwu: Jidao Village, Bala River pilot project, secretary of Village Tourism Commission
- Ms Chen Qing: Jidao Village, Bala River pilot project, tour guide
- Mr Chen: Deputy Director of Village tourism Commission, Langde Village
- Anshun Xixiu District, Daxiqiao, Jiuxi Village: 4 Tourism company members

Venue: Zilin Hotel, Guiyang, 19 July 2006

**Jidao Village:**

Mr Pan:

Bala River has 7 villages characterised by poor economic conditions and living standards. The average annual income per household is about RMB 1,000. It is common for young people to leave these villages for larger towns.

Jidao Village received approximately 1,000 guests in 2005 which were mainly foreigners and domestic tourists from Beijing, Shanghai and Shenzhen.

Currently, the following products are offered: ancient singing performances, costume shows, handcrafts, and villagers may offer other services.

Mr Pan suggested that since Jidao does not receive a large amount of visitors, environmental impacts are minimal.

Ms Chen:

Miao people used to dance only at festival occasions, whereas now they dance almost every day. People feel tired of the dance, which has lost some of its importance, and locals are less excited to dance at festivals.

Solid waste is currently transferred away from the village and dumped in remote areas where nobody lives.

Wastewater is collected and used as fertiliser for farming.

**Tunpu:**

Mr Zhang:

Tourism development has raised cultural preservation awareness of local communities. Previously, traditional costumes were only worn by people age 50 and above, now it is common practice.

Jiuxi village has a population of 4,000, in 2005 they received about 10000 visitors.

Annual household income in 2,000: RMB 1,800, 2003: RMB 2,080, 2005: RMB2,480.

The tourism company has invested RMB 130, 000 for infrastructure construction, and restoration of the traditional roads.

The minimum amount of money to invest in the company is RMB100.
At the moment, wastewater is discharged untreated directly into Jiuixi River. Solid waste is dumped in an area around 300 m from the village. He expressed concerns over the lack of clear government regulation which holds investors back from further investment.
Annex B

Ecological Baseline Information
ECOLOGICAL BASELINE

B1.1 FLORA

B1.1.1 Overview of Flora in Guizhou

Guizhou lies on the eastern edge of the Yunnan botanical zone, one of the richest regions of botanical diversity in the world. In consequence, over 5,590 species of vascular plants may be found in the Province. The major vegetation type in Guizhou is the subtropical evergreen broad-leaved forest, which is mainly distributed in the normal landform region in the east and southeast, below 1,400 metres above sea level and in the Danxia landform region. These regions include, Doupeng Mountain in Qiannan, Leigong Mountain in Qingdongnan, as well as Jianhe county, Congjiang county, Rongjiang county, Fanjing Mountain in Tongren, Chishui and Xishui scenic areas in North Guizhou. In the evergreen broad-leaved forest region, below 1,400 metres, the conifers *Pinus massoniana*, *P. armandii* and *Cunninghamia lanceolata* are also found.

On acid soils (mainly yellow brown earth), at elevations of 1,400 to 2,100 metres, is distributed the mixed evergreen deciduous broad-leaved forest in Fanjing Mountain, Leigong Mountain and Doupeng Mountain. In the areas with an elevation of 2,100 to 2,350 metres, there is a sub-alpine coniferous forest, in which *Tsuga sinensis* and *Abies fanfingshanensis* are widely distributed.

Along riversides, below 1,100 metres, there grows a kind of ‘beach shrub’, mainly composed of *Distilium dunianum*, *Ficus stenophylla* and *Cornus paocinervis*. They form a special natural beauty in some scenic areas, for example, Tianxing scenic area at Huangguoshu, Nanjiang Valley in Kaiyang and Sidonggou Valley in Chishui.

The predominant karst landform has allowed the growth of a special variety of karst vegetation. This unique vegetation, in terms of its ecological structure and composition, has an important place not only in China but also in the world. Representative trees of the karst forest in Guizhou Province include, for the monsoon subtropical zone in the south, *Ficus microcarpa*, *Sterculia lanceolata*, *Cipadessa cinerascens*, *Churasia tabularis var. velutina*, *Syzygium* sp., *Gosampinus malabarica*, *Miliusa sinensis*, and *Raphis exselsa*.

The mixed evergreen-deciduous broad-leaf forest of the mid-subtropical zone on karst includes the evergreens, *Cupressus funebris*, *Cyclobalanopsis glauca*, *Cinnamomum glanduliferum*, *C. bodinieri*, *Lindera communis*, *Meliosma henryi*, *Photinia davidsoniae*, *Ligustrum lucidum* and the palm *Trachycarpus fortunei*. Deciduous trees in this group include, *Quercus fabri*, *Q. acutissima*, *Celtis sinensis*, *C. juliana*, *Platycarpus strobilacea*, *P. longipes*, *Gleditsia sinensis*, *Toona sinensis*, *Koelreuteria sp.*, *Carpinus pubescens* and *Pistacia chinensis*.
**B1.1.2 Protected Flora Species**

The Province has 66 rare species of plants at state-level protection listed in the Rare Plants in Danger in China. There are also 41 species of plants at provincial-level protection. Preliminary statistics shows there are some 29 species of rare plants distributed in the scenic areas of Guizhou. Among them, the dove or handkerchief tree, (*Davidia involucrata*) is placed under the State’s first level of protection. Ten species are under the State’s second-level protection, including the tree fern, *Alsophila spinulosa* and *Liriodendron chinensis* (Chinese tulip tree). The principal rare plants are listed in **Table 1.1**.

**Table 1.1 List of Rare Plants in Danger in Scenic Areas**

<table>
<thead>
<tr>
<th>Name</th>
<th>Protection Level</th>
<th>Number</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Alsophila spinulosa</em></td>
<td>State, Class 1</td>
<td>Many</td>
<td>Sidonggou Valley in Chishui, Jinshagou, Tianxing Scenic Spot, Huangguoshu</td>
</tr>
<tr>
<td><em>Cephalotaxus oliveri</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Mt. Yuntai at Shibing, Nanjiang Valley Park in Kaiyang</td>
</tr>
<tr>
<td><em>Amentotaxus argotaenia</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Mt. Yuntai in Shiben, Chishui scenic area</td>
</tr>
<tr>
<td><em>Keteleeria davidiana var.</em></td>
<td>Provincial, Class 2</td>
<td>Many</td>
<td>Qingyan Waijiao scenic spot in Huaxi, Guiyang</td>
</tr>
<tr>
<td>Chien-pei</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Calocedrus macrolepis</em></td>
<td>State, Class 3</td>
<td>Few</td>
<td>Mt. Gaowang in Maolan forest and Xiaojikong scenic spot in Libo</td>
</tr>
<tr>
<td><em>Tsuga chinensis var.</em></td>
<td>Provincial, Class 3</td>
<td>Few</td>
<td>Gaopo scenic spot in Huaxi</td>
</tr>
<tr>
<td>tsckekangensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Camellia luteoflora</em></td>
<td>Provincial, Class 1</td>
<td>Few</td>
<td>Sidonggou Valley in Chishui, Shizhangdong Waterfalls</td>
</tr>
<tr>
<td><em>Davidia involucrata</em></td>
<td>State, Class 1</td>
<td>Few</td>
<td>Kuankuoishui scenic spot in Suiyang</td>
</tr>
<tr>
<td><em>Handeliodendron bodinieri</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Daqikong scenic spot in Libo, Gaoyang Wangsheng mountain at Maolan</td>
</tr>
<tr>
<td><em>Liriodendron chinensis</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Sidonggou Valley in Chishui, Hongfeng Lake in Qingzhen</td>
</tr>
<tr>
<td><em>Pteroceltis tatarinowii</em></td>
<td>State, Class 2</td>
<td>Many</td>
<td>Tianxing scenic spot at Huangguoshu, Feiyun Cliffs in Huangping, Getu River in Ziyun</td>
</tr>
<tr>
<td><em>Phoebe bournei</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Nanjiang Valley Park in Kaiyang, Getu River at Ziyun, Puchang Daqiao Village in Suiyang</td>
</tr>
<tr>
<td><em>Parakmeria lotungensis</em></td>
<td>State, Class 2</td>
<td>1</td>
<td>Gaopo scenic spot in Huaxi</td>
</tr>
<tr>
<td><em>Gossampinus malabarica</em></td>
<td>Provincial, Class 3</td>
<td>1</td>
<td>Tianxing scenic spot at Huangguoshu</td>
</tr>
<tr>
<td>Name</td>
<td>Protection Level</td>
<td>Number</td>
<td>Location</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------</td>
<td>--------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td><em>Ormosia henryi</em></td>
<td>Provincial, Class 3</td>
<td>2</td>
<td>Huangguoshu scenic spot</td>
</tr>
<tr>
<td><em>Cyclocarya paliurus</em></td>
<td>Provincial, Class 1</td>
<td>4</td>
<td>Gaopo Jiading scenic spot in Huaxi, Puding karst scenic spot</td>
</tr>
<tr>
<td><em>Ormosia Saxatilis</em></td>
<td>Provincial, Class 1</td>
<td>Many</td>
<td>Qianling Park in Guiyang</td>
</tr>
<tr>
<td><em>Ormosia Cathayensis</em></td>
<td>Provincial, Class 1</td>
<td>1</td>
<td>Qianling Park in Guiyang</td>
</tr>
<tr>
<td><em>Ammamocarya sinensis</em></td>
<td>Provincial, Class 1</td>
<td>Few</td>
<td>Xiaoqikong scenic spot in Zhangjiang scenic area</td>
</tr>
<tr>
<td><em>Emmenopterys henryi</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Qingyan scenic spot in Huaxi, Mt. Yuntai in Shijing</td>
</tr>
<tr>
<td><em>Zenia insignis</em></td>
<td>State, Class 3</td>
<td>Few</td>
<td>Xiaoqikong scenic spot in Zhangjiang scenic area</td>
</tr>
<tr>
<td><em>Rhododenron Irroratum</em></td>
<td>Provincial, Class 3</td>
<td>Few</td>
<td>Azalea Belt</td>
</tr>
<tr>
<td><em>Altingia multinervia</em></td>
<td>Provincial, Class 3</td>
<td>Many</td>
<td>Mt. Tiantai scenic spot in Chishui, Shizhangdong Waterfalls</td>
</tr>
<tr>
<td><em>Tetracentron sinense</em></td>
<td>State, Class 2</td>
<td>Few</td>
<td>Kuankuoshui scenic spot in Suiyang</td>
</tr>
<tr>
<td><em>Manglietia Insignis</em></td>
<td>Provincial, Class 3</td>
<td>Few</td>
<td>Kuankuoshui scenic spot in Suiyang</td>
</tr>
<tr>
<td><em>Pterostyrax psilophyllus</em></td>
<td>State, Class 3</td>
<td></td>
<td>Kuankuoshui scenic spot in Suiyang</td>
</tr>
</tbody>
</table>


Several of these flora are very rare and date from during or before the Tertiary Period. Some of the gymnosperms such as, *Amentotaxus argotaenia*, and *Alsophila spinulosas* (the tree fern), lived even earlier during the Jurassic period. Some flora is only found in China. For example, *Davidia involucrata*, (also called ‘the Dove Tree of China’), *Pteroceltis tatarinowii*, *Semiliquidambar cathayensis*, *Ormosia henryi*, *Handeliodendron bodinieri* and *Manglietia insignis*. There are also flora species only found in Guizhou, including *Keteleeria davidiana var. Chien-peii*, *Ormosia saxatilis* and *Altingia multinervia*.

### B1.4 Flora of Historic and Culturally Value

There are over 100 known ancient trees growing within the proposed tourism development areas detailed in the MP (2002) (1). They are classified into 26 species under 22 different families.

These ancient trees are of significant historic value that enhances both the cultural and physical landscape for their value in scientific research and for the appreciation of visitors. In addition, many of these trees have been protected in the past for *feng shui* reasons.

*Table 1.2* lists some famous old trees in scenic areas.

---

## Table 1.2 List of Famous Antique Trees in Scenic Areas

<table>
<thead>
<tr>
<th>Name</th>
<th>Number</th>
<th>Max. b.d.h (i) (cm)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keteleeria davidiana var. chien-peii</td>
<td>Many</td>
<td>197</td>
<td>Huaxi scenic area</td>
</tr>
<tr>
<td>Cephalotaxus fortunei</td>
<td>1</td>
<td>60</td>
<td>Getuhe scenic spot at Ziyun</td>
</tr>
<tr>
<td>Calcededrus macrolepis</td>
<td>1</td>
<td>65</td>
<td>Xiaoqikong scenic spot in Zhangjiang scenic area of Libo</td>
</tr>
<tr>
<td>Zelkova serrata</td>
<td>2</td>
<td>96</td>
<td>Zhenshan ethnic village in Huaxi, Getuhe scenic spot in Ziyun</td>
</tr>
<tr>
<td>Bischofia javanica</td>
<td>Several</td>
<td>160</td>
<td>The scenic spot of the lower reaches of Wuyang River, Xiaoqikong scenic spot in Zhangjiang scenic area of Libo.</td>
</tr>
<tr>
<td>Castanopsis eyrei</td>
<td>2</td>
<td>210</td>
<td>Gaopo village in Huaxi scenic area</td>
</tr>
<tr>
<td>Cunninghamia lanceolata</td>
<td>1</td>
<td>233</td>
<td>Zhengba village in Xishui scenic area</td>
</tr>
<tr>
<td>Cladastris sinensis</td>
<td>1</td>
<td>172</td>
<td>Zhangjiang scenic spot in Libo</td>
</tr>
<tr>
<td>Pistacia chinensis</td>
<td>4</td>
<td>90</td>
<td>Longgong scenic spot in Anshun, Getuhe scenic spot</td>
</tr>
<tr>
<td>Ficus virens var. sublanceolata</td>
<td>14</td>
<td>446</td>
<td>Huashishao village in Huangguoshu scenic spot, Hongyan holiday resort</td>
</tr>
<tr>
<td>Sabina chinensis</td>
<td>3</td>
<td>60</td>
<td>Linjia Buyi ethnic village in Nanjiang scenic spot of Kaiyang,</td>
</tr>
<tr>
<td>Meliosma henryi</td>
<td>2</td>
<td>45</td>
<td>Outside the Hongfu Temple in Qianling Park, Guiyang</td>
</tr>
<tr>
<td>Cinnamomum glanduliferum</td>
<td>4</td>
<td>140</td>
<td>Qianling Park</td>
</tr>
<tr>
<td>Diospiros kaki var. sylvestris</td>
<td>2</td>
<td>85</td>
<td>Zhulin village at Getuhe scenic spot in Ziyun</td>
</tr>
<tr>
<td>Liquidambar formosana</td>
<td>Several</td>
<td>95</td>
<td>Qianling park, Guiyang, Xiaoqikong scenic spot in Libo</td>
</tr>
<tr>
<td>Castanopsis fargesii</td>
<td>1</td>
<td>80</td>
<td>Getuhe scenic spot in Ziyun</td>
</tr>
<tr>
<td>Semiliquidambar cathayensis</td>
<td>1</td>
<td>94</td>
<td>Qianling Park</td>
</tr>
<tr>
<td>Pinus massoniana</td>
<td>Several</td>
<td>96.7</td>
<td>Qianling Park</td>
</tr>
<tr>
<td>Choerospondias axillaris</td>
<td>Several</td>
<td>170</td>
<td>Huawu Miao ethnic village in the Dongfeng Lake scenic spot in West Guizhou, Mt. Yuntai in Shibing</td>
</tr>
<tr>
<td>Cyclobalanopsis thorelii</td>
<td>2</td>
<td>70</td>
<td>Huawu village of Miao nationality in the Dongfenghe scenic spot</td>
</tr>
<tr>
<td>Ternstroemia nitida</td>
<td>1</td>
<td>20</td>
<td>Mt. Yuntai in Shibing</td>
</tr>
<tr>
<td>Ginkgo biloba</td>
<td>8</td>
<td>90</td>
<td>Mt. Tiantai in Pingba, Feiyun Cliff in Huangping, Yangming Temple in Guiyang, Toule in Panxian</td>
</tr>
<tr>
<td>Cyclocarya paliurus</td>
<td>3</td>
<td>95</td>
<td>Gaopo village in Huaxi scenic area, Puding karst scenic spot</td>
</tr>
<tr>
<td>Pteroceltis tatarinowii</td>
<td>1</td>
<td>65</td>
<td>Feiyun Cliff in Huangping</td>
</tr>
<tr>
<td>Cupressus funebris</td>
<td>Several</td>
<td>61</td>
<td>Feiyun Cliff at Huangping, Yangming Temple in Guiyang</td>
</tr>
<tr>
<td>Michelia alba</td>
<td>2</td>
<td>26.6</td>
<td>Xiawutun ethnic marriage custom museum in Xingyi</td>
</tr>
<tr>
<td>Sophora japonica</td>
<td>2</td>
<td>99</td>
<td>Yangming Temple in Guiyang</td>
</tr>
</tbody>
</table>

Note: (i) refers to the diameter breast height of the tree.
Man-made Forests

The main types of tree in man-made forests in Guizhou are *Pinus massoniana* and *Cunninghamia lanceolata*, which are widely distributed and are planted to combat erosion. There is no longer any commercial production forestry in the Province. Bamboo forests are of *Phytostachys pubescens* and *Sinocalamus affinis*. The former mainly grow in Chishui and south-east Guizhou while groves of *Sinocalamus affinis* can be often seen around farmers’ houses in villages. *Sinocalamus affinis* forests are most widely distributed in Chishui scenic area.

Many species are used to control erosion and farmers are encouraged by grants to take sloping land out of production and to plant trees instead. The Tung oil tree, *Aleurites*, is grown in the south-east of the Province for oil production. Poplars are commonly planted alongside roads.

Overview of Fauna in Guizhou

While the botanical resources of the province are well known, there has been less research on its fauna, especially birds. Bird watching is not well developed in China, although there is a growing interest. There are three wildlife areas in Guizhou of international importance. These areas are Fanjingshan Mountain Nature Reserve, which is an international UNESCO Man and the Biosphere (MAB) reserve, Maolan Forest Nature Reserve in the south-east (also an international MAB reserve, and Caohai lake at Weining in the west which is a national MAB reserve of international value for its migratory birds.

Fanjingshan in Tongren Prefecture is the main part of the Mount Wuyishan range and covers an area of 567 square kilometres. Its highest point reaches an elevation of 2,572 metres. It was listed as a national nature reserve in 1978 and then as a part of the internal MAB network in 1986. Over 2,000 species of vascular plants are found in the reserve including the Dove tree, *Davidia involucrata*, the Chinese tulip tree, *Liriodendron chinense*, the Chinese hemlock, Crape myrtle and the Ormosia. There are also 500 kinds of medical herbs as well as over 500 species of larger fungi. There are 382 species of animals, including fourteen rare species. The reserve is famous for its rare golden monkeys, *Rhinopithecus roxellanae burchelli*, of which 760 remain in the wild in five natural groups. This is the only place in the world where they are found. The mountain is also home to the monkey owl and the Golden pheasant, all under state protection. Fanjingshan is one of the four Buddhist holy mountains with many historic cultural relics.

Table 1.3 illustrates the birds of importance as regarded by BirdLife International.
### Table 1.3  
*BirdLife International Important Bird Areas*

<table>
<thead>
<tr>
<th>Species</th>
<th>IUCN Red List Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cao Hai Natural Reserve</strong></td>
<td></td>
</tr>
<tr>
<td>Baer's Pochard (<em>Aythya baeri</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Imperial Eagle (<em>Aquila heliaca</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Black-necked Crane (<em>Grus nigricollis</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td><strong>Fanjing Shan Natural Reserve</strong></td>
<td></td>
</tr>
<tr>
<td>Elliot's Pheasant (<em>Syrmaticus ellioti</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Reeves's Pheasant (<em>Syrmaticus reevesii</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td><strong>Maolan Natural Reserve</strong></td>
<td></td>
</tr>
<tr>
<td>Fairy Pitta (<em>Pitta nympha</em>)</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Silver Oriole (<em>Oriolus mellianus</em>)</td>
<td>Vulnerable</td>
</tr>
</tbody>
</table>

Source: *BirdLife International, 2006*
### B2.2.2 Important Bird Areas

The following areas are important bird areas as regarded by BirdLife International.

Maolan Karst Virgin Forest lies in Libo County in the Buyi and Miao Autonomous Prefecture of South Guizhou and covers an area of 20,000 hectares. The reserve is a classic example of a karst virgin forest landscape that is almost unique in the world as most other karst forests have been destroyed. The area also includes waterfalls, caves and rivers.

Caohai Nature Reserve in Weining Yi County in the west of Guizhou, covers the whole of the Caohai watershed, an area of 96 square kilometres. The reserve was established to protect the plateau wetland ecosystem and rare birds. The lake is the largest natural freshwater lake in Guizhou. It is an important wintering area of the Black-necked crane (*Grus nigricollis*), an endangered species. The lake also serves the general environmental purposes of water conservation and local climate amelioration. A management process has been developed with local farmers through the intervention of the International Crane Foundation and the Guizhou Environmental Protection Bureau (2001) and is a classic example of a low key partnership producing both environmental and social benefits to local people. The reserve contains one of the largest populations of the Black-necked crane, a first class State protected bird with about 400 wintering at Caohai.

A total of 179 bird species have been recorded at Caohai. There seven species of first class State protected birds, including the Black-necked crane, Hooded crane, White stork, Black stork, Golden eagle, Imperial eagle and White tailed sea eagle. There are twenty species of second class State protected birds, including the Common crane, White spoonbill, Black-faced spoonbill, Northern sparrowhawk, Besra sparrowhawk, Steppe eagle, Hen harrier, White-crowned Long-tailed pheasant, Chinese copper pheasant, Eagle owl, Barred Owlet and Short-eared owl. Black-necked cranes, Common cranes, Bar-headed geese, Ruddy shelducks, Coots, Eurasian widgeon and Common pochard are the dominant winter bird species at Caohai, which is reputedly one of the best bird-watching sites in Asia.

The Chishui National Nature Reserve in Chishui County covers an area of 32 square kilometres in the north-west of the province. The reserve was established to protect the rare Spinulose tree fern, *Alsophila spinulosa*, a relict of the Jurassic period. The core of the reserve covers around 13,300 ha. and is surrounded by 10,000 ha. of virgin forest that provides the fern forest with the necessary conditions of humidity and shelter. The reserve lies close to the Chishui Scenic area, with its spectacular gorge, bamboo forest and many waterfalls, the Chishui bamboo forest park with over 40 species of bamboo and the Xishui National Nature Reserve.

The latter reserve of evergreen broadleaf forest lies in Xishui County in the north-west. The reserve covers an area of 48,666 hectares. Xishui lies in the transition area between the Guizhou plateau and the Sichuan basin, with a
warm and humid subtropical climate. The reserve contains around 1,500 species of higher plants including a dozen rare species, such as the dove tree, *Davidia involucrata*, the Spinulose tree fern and the Fujian cypress. There are also 27 rare animal species including spotted leopards, rhesus monkeys and pangolin.

The Leigonshan National Nature Reserve covers 473 square kilometres. On the border of Leishan, Taijing, Jianhe and Rongjiang Counties in the east of the Province and was established in 2001. The reserve was set up to protect the conifer *Taiwania cryptomerioides*.

Other potential sites for the development of nature-based ecotourism include the Mayang River Natural Protection Area in the Yanhe Tujia Ethnic Autonomous County in the far north-east, which protects the Black Leaf Monkey (*Presbytis franecoisi*). The other population of the Yezhong Black-leaf monkey is in a nature reserve that covers over 13 square kilometres of forested karst at Shuicheng in Liupanshui Prefecture.
Annex C

Carrying Capacity

**C 1.1 INTRODUCTION**

The carrying capacity, as defined by the World Tourism Organisation (WTO), is the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction (1).

The MP (2002) carried out a brief study on carrying capacity in key tourism areas by using the method called the Limited Acceptable Change (LAC) which adopted several assessment indicators, including number of tourists, site infrastructure status, traffic status and significance of environmental impacts. The information from remainder of this annex is referenced from the MP (2002).

**C 1.2 INDEX FOR VULNERABILITY ASSESSMENT**

A subjective attempt has been made to try to grade the degree of vulnerability of some tourism sites.

The scores are based upon:

1. the size of the protected area, in the belief that the smaller the site the greater its vulnerability to outside pressures;
2. the number of major environmental pressures on the site. A weighting of +2 has been given to tree felling, as this has a greater impact than other pressures, such as air or water pollution.
3. the existing protection level, as it is assumed that an International UNESCO MAB reserve will have greater resources than a Provincial or County level reserve. Scenic areas are given the lowest score as these have been designated primarily for recreation and landscape protection and are thus assumed to have a degree of resilience by virtue of this designation, even though they may contain protected species.

*Table 1.1 presents details of the scoring mechanism.*

<table>
<thead>
<tr>
<th>Score</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size in ha.</td>
<td>&lt; 10,000</td>
<td>10,000 - 20,000</td>
<td>20,000 - 30,000</td>
<td>30,000 - 40,000</td>
<td>&gt; 40,000</td>
</tr>
<tr>
<td>Number of major pressures</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Degree of Protection</td>
<td>Provincial/County</td>
<td>State</td>
<td>State MAB</td>
<td>International MAB</td>
<td>Scenic Area</td>
</tr>
</tbody>
</table>

Scores are then aggregated to give a simple assessment of:
- Low vulnerability: score 3 to 6,
- Medium vulnerability: score 7 to 10
- High vulnerability: 11 to 15.

(1) [http://www.biodiversity.ru/coastlearn/tourism-eng/con_capacity.html](http://www.biodiversity.ru/coastlearn/tourism-eng/con_capacity.html), (UNEP/MAP/PAP, 1997)
It is acknowledged that this simple scoring gives a higher rating to nature reserves than to scenic areas but it is felt that this is justified on the basis outlined above. The scores for individual sites are given in brackets below.

### C 1.3 CARRYING CAPACITY

Limited Acceptable Change (LAC) system is a framework for establishing acceptable and appropriate resource and social conditions in recreational settings (1) (Stankey et al., 1985). The LAC has been developed in response to the need of managers for a means of coping with increasing demands on recreational areas in a viable, logical fashion. The LAC also represents a reformulation of the recreational carry capacity concept, with the primary emphasis now on the conditions desired in the area rather than on how much use an area can tolerate. The LAC is the latest step in a continuing effort to improve wild land recreation management through definition of more explicit, measurable objectives. The MP (2002) adopted is based on the recognition that:

1. Specific objectives are needed to identify what it is that management is required to protect.
2. Change is always present in natural systems.
3. Any recreational use leads to some change.
4. Management is therefore confronted with the question of how much change is acceptable.
5. Monitoring of the outcomes is needed to determine if actions have been effective.

LAC tool is used to help in a discussion of site management, proposed developments and the need for investment within the concept of a strategic analysis of the tourism resources in Guizhou. The concept of visitor saturation is proposed in which four key variables are included. These include:

- the numbers of visitors,
- the condition of the access facilities: paths, steps, viewpoints, uncontrolled commercial development, public safety and risk assessment,
- vehicular traffic congestion (number of coaches at peak periods): parking, organization, vehicle/people conflicts; and
- environmental impacts (number of issues and severity): vegetation loss, litter, and water pollution on site caused by visitors, geotechnical issues (slope failure).

These variables are assessed on a one to five scale and the final scores are summed to give a figure approximating to the carrying capacity of the site, with a low score of four approximating to good carrying capacity and a maximum score of 25 denoting that visitor saturation has been reached and that serious problems will arise without a fundamental redesign of the site. Only those sites that have been visited by project staff have been assessed. Table 1.2 presents the scoring mechanism.

---

(1) The Limits of Acceptable Change System for Wilderness Planning, Stankey et al, 1985
Table 1.2  
Scoring for Carrying Capacity

<table>
<thead>
<tr>
<th>Score</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitor volume (,000)</td>
<td>&lt; 100</td>
<td>100 - 200</td>
<td>200 - 300</td>
<td>300 - 400</td>
<td>&gt; 400</td>
</tr>
<tr>
<td>Condition of access and risk assessment</td>
<td>Good</td>
<td>Acceptable</td>
<td>Problems arising</td>
<td>Poor</td>
<td>Deteriorating</td>
</tr>
<tr>
<td>Vehicular traffic congestion</td>
<td>None</td>
<td>Well planned</td>
<td>Acceptable</td>
<td>Problems arising</td>
<td>Chaotic</td>
</tr>
<tr>
<td>Environmental impacts</td>
<td>None</td>
<td>Few</td>
<td>Some</td>
<td>Many</td>
<td>Priority action needed</td>
</tr>
</tbody>
</table>

C 1.4  
ASSESSMENT RESULT

The Table 1.3 listed the assessment results for major natural reserve areas and scenic areas of Guizhou as described by above exercises. It’s worth noting that Fanjing Mountain, Huangguoshu Waterfall and Hongfeng Lake are all considered reached their carrying capacity that need priority actions immediately.

Table 1.3  
List of Vulnerability and Carrying Capacity for Some Major Tourism Sites

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Level</th>
<th>Area (ha.)</th>
<th>Vulnerability</th>
<th>Carrying Capacity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Reserve Areas (NCAs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Fanjing Mountain</td>
<td>State</td>
<td>41,900</td>
<td>Medium</td>
<td>21</td>
<td>Already reached carrying capacity</td>
</tr>
<tr>
<td>2.</td>
<td>Maolan Natural Reserve</td>
<td>State</td>
<td>21,185</td>
<td>Medium</td>
<td>6</td>
<td>Karst forest</td>
</tr>
<tr>
<td>3.</td>
<td>Chishui Spinulose Tree Fern Natural Reserve</td>
<td>State</td>
<td>23,300</td>
<td>High</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Xishui Natural Reserve</td>
<td>State</td>
<td>48,666</td>
<td>High</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Caohai</td>
<td>State</td>
<td>12,000</td>
<td>Medium to High</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Mayanghe River</td>
<td>State</td>
<td>4,120</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Yezhong Natural Reserve</td>
<td>State</td>
<td>4,600</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Lengshui River</td>
<td>State</td>
<td>2,830</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Tuoda</td>
<td>State</td>
<td>4,267</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenic Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Huangguoshu</td>
<td>State</td>
<td>11,500</td>
<td>Medium</td>
<td>25</td>
<td>Already reached carrying capacity</td>
</tr>
<tr>
<td>11.</td>
<td>Zhangjiang in Libo</td>
<td>State</td>
<td>27,310</td>
<td>Medium</td>
<td>10-11</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Chishui</td>
<td>State</td>
<td>32,800</td>
<td>Low</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Wuyang River</td>
<td>State</td>
<td>62,400</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Zhijing Cave</td>
<td>State</td>
<td>28,500</td>
<td>Low</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Longgong (Anshun)</td>
<td>State</td>
<td>5,000</td>
<td>Medium</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Hongfeng Lake</td>
<td>State</td>
<td>20,000</td>
<td>Low</td>
<td>16</td>
<td>Badly polluted, no tourism development should be planned</td>
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<tr>
<td>17.</td>
<td>Malinghe Valley</td>
<td>State</td>
<td>34,400</td>
<td>Low</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Kuankuoshui</td>
<td>State</td>
<td>18,888</td>
<td>Medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Level</td>
<td>Area (ha.)</td>
<td>Vulnerability</td>
<td>Carrying Capacity</td>
<td>Remarks</td>
</tr>
<tr>
<td>-----</td>
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</tr>
<tr>
<td>19.</td>
<td>Shiqian Hot Springs Provincial</td>
<td></td>
<td>27,300</td>
<td>Medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Xifeng</td>
<td>Provincial</td>
<td>8,002.5</td>
<td>Medium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Azalea Forest</td>
<td>Provincial</td>
<td>10,655</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Jianjiang</td>
<td>Provincial</td>
<td>18,500</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Maotai</td>
<td>Provincial</td>
<td>10,000</td>
<td>Low</td>
<td>Medium 7</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Kaiyang</td>
<td>Provincial</td>
<td>14,500</td>
<td>Low</td>
<td>Medium 7</td>
<td></td>
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<tr>
<td>25.</td>
<td>Loushanguan (in Zunyi)</td>
<td>Provincial</td>
<td>26,900</td>
<td>Low</td>
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<td></td>
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<tr>
<td>26.</td>
<td>Jiulongdong</td>
<td></td>
<td>10,000</td>
<td>Low</td>
<td>Low</td>
<td>9</td>
</tr>
<tr>
<td>27.</td>
<td>Huaxi</td>
<td></td>
<td>22,000</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Other Areas*

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Level</th>
<th>Area (ha.)</th>
<th>Vulnerability</th>
<th>Carrying Capacity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td>Mt. Sun--Mt. Moon Primeval Forest</td>
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<td>5,000</td>
<td>High</td>
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<tr>
<td>29.</td>
<td>Miaotiaohe Karst Vegetation</td>
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<td>Unknown</td>
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<tr>
<td>30.</td>
<td>Qingshui River Provincal</td>
<td>Provincial</td>
<td>12,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**C 1.5 DETAILS OF THE ASSESSMENT**

**C 1.5.1 Natural Reserves**

(1) Name: The State-level Natural Reserve of Fanjing Mountain  
Location: Jiangko, Yingjiang and Songtao counties  
Area (ha.): 41,900  
Features and key protection objects: Typical eco-system of evergreen tropical forest in Central Asia, the only location in the world of Guizhou golden monkey, 20 kinds of rare plants under state protection and uniquely living on Mt. Fanjing, including *Davidia involucrata* and *Abies fanningshanensis*; pure environment; an important biological protection base and international UNESCO man and biosphere site.  
Vulnerability: Medium (7)  
Carrying capacity (21) Carrying capacity is reaching saturation because the only designated tourism zone in the reserve is a strip 15 meters wide along the only access path across the mountain, the high annual visitor numbers and loss of ambience at the summit.

(2) Name: Maolan State-level Natural Reserve  
Location: Libo county  
Area (ha.): 21,185  
Features and key protection objects: Typical eco-system of karst forest; natural scenes are: karst vegetation, waterfalls; rare animals and plants are: *Lophura nycthemera*, *Viverricula indica*, *Zenio insignis*, *Tsuga chinensis var. tscekeangensis*, and *Emmenopterys henryi*; well-preserved environment; an important biological protection base and member of international UNESCO man and biosphere, known as the perfect karst forest in the world.
Vulnerability: Medium (7)
Carrying capacity: (6)

(3)
Name: The State-level Natural Reserve of Spinulose Tree Fern in Chishui
Location: Chishui city
Area (ha.): 23,300
Features and key protection objects: Chishui Spinulose Tree Fern with primeval environment and natural vegetation, rare animals and plants unique in Chishui: Spinulose Tree Fern, Cyathoa spinulosa, Bretschneidera sinensis, Camellia luteoflora, Fokienia hodginsii, Liriodendron bodinieri, Manglietia insignis, Macaca mulattce, Chrysolophus pilus and Lophura nycthemera; pure primeval environment; an important biological protection base and member of man and biosphere protection network in the world; Danxia landform, waterfalls.
Vulnerability: High (11)
Carrying capacity (10)

(4)
Name: Xishui State-level Natural Reserve of Central-Asian Tropical Evergreen Broad-leaved Forest
Location: Xishui county
Area (ha.): 48,666
Features and key protection objects: Primeval vegetation of the Central-Asian tropical Evergreen Broad-leaved forest, rare plants and animals, Danxia landform, water scenery on Swan Lake, Sancha river gorge, Cedar (ancient trees) scenic spot
Vulnerability: High (11)
Carrying capacity (12)

(5)
Name: Caohai State-level Natural Reserve
Location: Weining county
Area (ha.): 12,000
Features and key protection objects: Wet-land eco-system, 17 kinds of rare including the black-necked crane, an over-wintering place for more than 170 kinds of birds and the largest number of black-necked cranes, acclaimed by international specialists as one of the 10 bird-observing bases in the world
Vulnerability: Medium to High (10)
Carrying capacity: (10)

(6)
Name: The Natural Reserve of Presbytis francoisi on Mayanghe River
Location: Yuanhe county
Area (ha.): 4,120
Features and key protection objects: The Black leaf monkey, Presbytis francoisi, karst eco-environment, one branch of the Wujiang River; it can link with the tourism development of the trunk stream of the Wujiang River
Vulnerability: High (12)

(7)
Name: Yezhong Natural Reserve in Liupanshui
Location: Shuicheng county
Area (ha.): 4,600
Features and key protection objects: Presbytis francoisi, the eco-environment; it can link with the bird observing activity in the Caohai natural reserve
Vulnerability: High (13)
C6

(8)  
Name: The Natural Reserve of the Lengshui River in Jinsha  
Location: Jinsha county  
Area (ha.): 2830  
Features and key protection objects: Evergreen broad-leaved forest, rare plants and animals, a large stand of *Fokienia hodginsii*; beautiful mountains, forests and rivers  
Vulnerability: High (14)

(9)  
Name: The Natural Reserve of Tuoda in Weining  
Location: Weining county  
Area (ha.): 4,267  
Features and key protection objects: White-combed and long-tailed pheasant, eco-environment; it can link with the bird observing activity in the Caohai natural reserve.

C 1.5.2  
Scenic Areas

(1)  
Name: Huangguoshu State-level Scenic Area  
Location: Anshun prefecture  
Area (ha.): 11,500  
Features and key protection objects: The Grand Fall, diversified waterfall groups, Water-Curtain Cave, karst stone forest and karst vegetation, the rare plants under protection are: *Pteroceltis tatarinowii, Gossampinus malabarica, Orrmosia henryi* and the tree fern *Alsophila spinulosa*, high-quality environment.

Vulnerability: Medium (7)  
Carrying capacity: (25) This key site has already reached saturation and a fundamental reassessment of visitor circulation, traffic management and means of access is urgently needed.

(2)  
Name: Zhangjiang State-level Scenic Areas in Libo (Three scenic areas together)  
Location: Libo county  
Area (ha.): 27,310  
Features and key protection objects: Karst vegetation, Xiaoqikong water forest, karst lakes, multi-staged waterfalls, natural arch, the clean water in the Zhangjiang Karst River, high-quality environment, plants under protection are: *Calocedrus macrolopis, Handeliodendron bodinieri* and *Annamocarya henryi*, scenic landscapes.

Vulnerability: Medium (8)  
Carrying capacity - Daqikong (11)  
- Xiaoqikong (10)

(3)  
Name: Chishui State-level Scenic Area  
Location: Chishui city  
Area (ha.): 32,800  
Features and key protection objects: Danxia landform, natural scenes: primeval forests, Shizhangdong Grand Waterfall, Sidongghou waterfall groups and bamboo forest; the ecological environment is very good and plants under protection are: the tree fern *Alsophila spinulosa, Altingia multinervia*, scenic landscapes.

Vulnerability: Low (6)  
Carrying capacity: (7)
(4) Name: The State-level Scenic Area of the Wuyang River
Location: Zhenyuan and Shibing county
Area (ha.): 62,400
Features and key protection objects: Upland lakes, karst forests and rivers; well-known historical and cultural county of Zhenyuan; rafting on Shanmu River; Yuntai Mountain with unique features; karst primeval forests; high-quality environment, pleasing natural beauty; rare plants under protection are: *Amentotaxus argotaenia, Cephalotaxus oliveri* and *Emmenopterys Henryi*
Vulnerability: Low (5)

(5) Name: The State-level Scenic Area of Zhijing Cave
Location: Zhijin county
Area (ha.): 28,500
Features and key protection objects: Large-scale karst caves with internationally unique features, karst vegetation
Vulnerability: Low (6)
Carrying capacity: (7)

(6) Name: The State-level Scenic Area of Longgong (Dragon Palace)
Location: Anshun city
Area (ha.): 5,000
Features and key protection objects: Karst water caves, cave waterfalls, rivers; natural karst vegetation, the Whirlpool of special features, with the lowest natural irradiation quantity, and high-quality environment
Vulnerability: Medium (7)
Carrying capacity: (10) This site could reach capacity during peak periods, during which visitor noise would detract from the ambience of the caves.

(7) Name: The State-level Scenic Area of Hongfeng Lake
Location: Guiyang city
Area (ha.): 20,000
Features and key protection objects: Natural scenes: man-made lake with over 100 islets, natural vegetation; good regional conditions, a water resource reserve
Vulnerability: Low (5)
Carrying capacity: (16) While the lake may accept more visitors around its shores, some individual sites may reach capacity during peak periods. The water is badly polluted. The lake is now the main water supply for Guiyang and for this reason further tourism development should be limited.

(8) Name: The State-level Scenic Area of Malinghe Valley
Location: Xingyi city
Area (ha.): 34,400
Features and key protection objects: Deep-cut karst valley, peak forests, rivers and vegetation; rafting; the upland karst Wanfeng Lake.
Vulnerability: Low (5) The site is highly sensitive to visual impacts from major development projects, such as power stations and the creation of a dam and reservoir.
Carrying capacity: (6)

(9) Name: Kuankuoshui Provincial-level Scenic Area in Suiyang
Location: Suiyang county
Area (ha.): 18,888
**Features and key protection objects:** It is also a county-level natural reserve, having primeval vegetation of subtropical Evergreen Broad-leaved Forest; rare plants under protection are: *Davidia involucrata* and *Tetracentron sinense*.
**Vulnerability:** Medium (7)

(10)
**Name:** The Provincial-level Scenic Area of Shiqian Hot Springs  
**Location:** Shiqian county  
**Area (ha.):** 27,300  
**Features and key protection objects:** Natural vegetation of the protected forest on the upper reaches of the Yangtze River; rare animals and plants; hot springs  
**Vulnerability:** Medium (7)

(11)
**Name:** Xifeng Provincial-level Scenic Area  
**Location:** Xifeng county of Guiyang city  
**Area (ha.):** 8,002.5  
**Features and key protection objects:** Hot springs, Xishan Mountain, and primeval vegetation of the Xifeng Hot Spring Forest Park  
**Vulnerability:** Medium (7)

(12)
**Name:** The Provincial-level Scenic Area of Azalea Forest  
**Location:** Dafang and Qianxinan counties  
**Area (ha.):** 10,655  
**Features and key protection objects:** Azalea Forest, rare species of azalea, watershed (including the Azalea-belt Forest Park)  
**Vulnerability:** Low (6)

(13)
**Name:** Jianjiang Provincial-level Scenic Area  
**Location:** Duyun city  
**Area (ha):** 18,500  
**Features and key protection objects:** Mt. Doupeng, Lusike water-conserving forest (natural reserve), man-made reservoir  
**Vulnerability:** Low (6)

(14)
**Name:** Maotai Provincial-level Scenic Area in Renhuai  
**Location:** Renhuai city  
**Area (ha.):** 10,000  
**Features and key protection objects:** Chishui River, vegetation scene, water-quality protected zone, liquor culture  
**Vulnerability:** Medium (7)  
**Carrying capacity:** (7)

(15)
**Name:** Kaiyang Provincial-level Scenic Area  
**Location:** Kaiyang county of Guiyang city  
**Area (ha.):** 14,500  
**Features and key protection objects:** Natural karst vegetation, mountainous forests, valley rivers, rafting, rare plants: *Cephalotaxus oliveri*, etc.  
**Vulnerability:** Medium (7)

(16)
**Name:** Loushanguan Provincial-level Scenic Area in Zunyi
**Location:** Tongzhi and Zunyi counties, Honghuagang district in Zunyi city  
**Area (ha.):** 26,900  
**Features and key protection objects:** Mt. Fenghuang, natural vegetation in Loushan (including 2 forest parks, revolutionary site and Heilongtung Castle).  
**Vulnerability:** Low (5)

(17)
**Name:** Juiulongdong (Nine Dragons Cave)  
**Location:** Tongren city  
**Area (ha.):** 10,000  
**Features and key protection objects:** Spectacular dry cave system, mountain karst landscape and natural forest, bamboo forest, river views  
**Vulnerability:** Low (6)  
**Carrying capacity:** (9)

(18)
**Name:** Huaxi Scenic Spot  
**Location:** Guiyang city  
**Area (ha.):** 22,000  
**Features and key protection objects:** Mountains, rivers, reservoir, farming fields; rare plants are: *Keteleeria davidiana var. Chien-peii*, *Parakmeria lotungensis* and *Cyclocarya paliurus*; good regional conditions and high-quality environment  
**Vulnerability:** Low (6)

**C 1.5.3 Other Areas**

(1)
**Name:** Mt. Sun–Mt. Moon Primeval Forest  
**Location:** Congjiang county  
**Area (ha):** 5,000  
**Features and key protection objects:** Central-Asian evergreen broad-leaf forest. It is one part of the Congjiang scenic spot. Due to the poor transportation conditions, its infrastructure construction has not begun, yet it boasts potential resources to develop eco-tourism because of the high-quality environment. 
**Vulnerability:** High (11)

(2)
**Name:** Miaotiaohe Karst Vegetation  
**Location:** Xiuwen county  
**Features and key protection objects:** Eight hydroelectric power stations of different size have been built up along the 50-kilometer-long Miaotiao River. The area has well-preserved karst vegetation of appreciation value. But at present it is under no protection. It boasts potential resources to develop eco-tourism.  
**Vulnerability:** Unknown at present, already impacted by hydro-scheme.

(3)
**Name:** The Provincial-level Scenic Area of the Qingshui River  
**Location:** Jianhe county  
**Area (ha.):** 12,000  
**Features and key protection objects:** Beautiful scenery of lakes, hot springs, islets, mountains and forests will come into being with the construction of the Sanbanxi Power Station. Jianhe county is a newly emerging tourism city with well-preserved high-quality environment and can be developed into a state-level tourism destination.
ERM has over 100 offices
Across the following
countries worldwide

<table>
<thead>
<tr>
<th>Argentina</th>
<th>Malaysia</th>
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<td>Australia</td>
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