

UNDP/GEF Funded Project on Reclassification and Sustainable  
Management of Zambia's Protected Area Systems

# **A Financial and Economic Analysis of the Costs and Benefits of Managing the Protected Area Estate**

In fulfillment of Extension of Subcontract No. 3  
Ministry of Tourism, Environment and Natural Resources

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## 1. EXECUTIVE SUMMARY

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The purpose of this document is to provide a financial and economic analysis of the costs and benefits of managing Zambia's protected area estate. There is almost no readily available information on the economics and finances of tourism and protected areas in Zambia. Therefore, this study required a significant amount of primary data collection and collation (annex 2) including:

- The costs of managing national parks in Zambia, with data from ZAWA and estimates of law enforcement costs (i.e. core business) compared with regional norms.
- The size of the park based tourism sector in Zambia, which required surveys to be done of Lower Zambezi, South Luangwa and Livingstone (updated) supplemented by estimates for other areas. This is compared to regional norms, and used as the basis for developing an economic assessment of the status and potential of park based tourism, including tourism multipliers.
- The compilation of data for GMAs including quotas and hunting income. This is used to provide a description of the status and potential of the sector, estimates which are checked against regional norms.

Under good management, it will cost USD5-6 million to protect Zambia's national parks, and USD 9m to manage them well including ecological monitoring and tourism oversight. ZAWA currently earns USD1.7m from tourism. Park income can be increased by over USD0.5-1.0m within the next five years. Further growth in income, however, will be contingent on new capital investment in lodges, and especially in new areas like Kafue National Park and will take some seven to fifteen years to be realised. At this time, tourism can be expected to cover ZAWA's core operational costs, provided these are carefully controlled. Nevertheless, getting to this point will require that significant support be provided to ZAWA's recurrent budget to protect the resource base (say, USD50 million over ten years). It will also require substantial capital investment in buildings, roads and capacity-building (say USD100 million over ten years).

Park based tourism currently generates USD 40 million in direct turnover to tourism operations, 75% of which is in Livingstone and much of the remainder in South Luangwa (USD4m) and Lower Zambezi (USD 3m). Assuming an economic multiplier of 4, this still translates into USD 160 million of economic impact in Zambia (MTENR estimates USD 120m). The tourism industry is in its infancy, but growing steadily at about 10% per annum. Taking a conservative assumption that park-based tourism will triple in the next ten years implies:

- That national parks will be close to covering their core operational costs
- Direct tourism turnover of USD 120 million annually
- Economic impact of USD 500 million annually.

On a per area basis, Zambia's protected areas will be generating less than 20% of those in Zimbabwe and South Africa, suggesting that these estimates are technically realistic, and that the long term potential from growth of this "cluster" industry is even higher.

Safari hunting has been badly managed in the past. It currently generates USD 1.3 million to landholders, USD 4 million in direct outfitter turnover, and perhaps USD 8-16 million in economic impact. Good administration in the short term, especially the allocation of quotas to highest values and measures to encourage more spread out use of wildlife in GMAs, could triple these figures over night. Wildlife populations in GMAs are currently below 5-10% of carrying capacity. If measures are taken to internalize the costs and benefits of wildlife management in GMAs and on other land (i.e. the wildlife producer can retain full benefit), and to ensure sound governance, therefore, within twenty years the output of Zambia's hunting sector could be increased by five to ten times. This would generate:

- USD 20-40m in landholder income,
- USD 60-120 million in outfitter turnover, and
- more than USD 250 million in total economic impact.

Thus, economically speaking, the investment of USD 150 million in the wildlife sector in the next ten years is extremely sound.

At the current time, the sector is highly centralized and dependent on the performance of the Zambia Wildlife Authority. The performance of ZAWA is key to unlocking this potential, and is a high risk factor.

First, while the economic viability of park based tourism, even with USD 150 million in investment, is sound, less than 10% of outfitter turnover (perhaps 4% is a good estimate) can and should be captured by parks. This means that even if a park creates very significant economic impact, financially it may still not be viable, putting at risk the management of the resource base on which this economic activity depends.

Secondly, ZAWA's policy and management capacity is a major risk factor in the growth of Zambia's wildlife/tourism sector. Investors lack confidence in ZAWA's ability to provide infrastructure and a quality wildlife resource; to perceive them as genuine development partners; and to administer the sector in a manner that is even handed, positive and reduces bureaucratic transaction costs. While some progress has been made, opportunities to create a forward looking policy environment that encourages landholder and foreign investment is not being taken, and petty constraints that reduce (rather than add) value are retained, e.g. restricting game ranching to 5,000 hectares, insisting on fencing, and precluding game ranching from park buffer zones!

A further serious threat is the weakness of Zambia's human resource capacity in the sector. This includes the capacity to manage wildlife areas, with ZAWA struggling to find experienced park managers; a small and under-capitalized private sector; an inexperienced (and often inefficient in terms of deliverables) civil society; the lack of exposure to best practice; and the absence of pro-active mechanisms to improve leadership and human resource capacity. Weaknesses at local universities compound the human resource capacity problem.

In conclusion, if Zambia's wildlife resource is well managed it has the potential to generate economic activity of approximately USD one billion annually. While money is needed to

achieve this potential, it is not the most important constraint. The serious threats to the growth of the sector are over-centralization in one organization (i.e. ZAWA) that itself has performance constraints; a reactive and inward-looking policy environment; and, above all, the absence of a sound, long term strategy to develop the human resource capacity.

## **2. INTRODUCTION**

The Government of the Republic of Zambia, through the Ministry of Tourism Environment and natural Resources, is initiating a UNDP/GEF funded project on “Reclassification and sustainable management of Zambia’s protected area systems”. Development Services and Initiatives was one of four consultancies sub-contracted to provide background material for project design. DSI’s initial contract was to assess the effectiveness of the current participatory management systems for all categories of protected areas, and provide recommendations on how to improve this. This study is an amendment and extension of the initial terms of references. Its main purpose is to provide a financial and economic analysis of the costs and benefits of managing Zambia’s protected area estate, as background for justifying (or otherwise) further investment in the sector.

### **2.1 Tasks**

The specific tasks of this study (see annex 1) are<sup>1</sup>:

1. To estimate park management costs using different assumptions and scenarios
2. To provide a basic financial and economic analysis of tourism in Zambia
3. To provide a basic financial and economic analysis of game management in Zambia
4. To summarize the actual and potential financial sustainability of national parks
5. To suggest further economic analyses to be undertaken during project implementation to confirm the assumptions made in the various scenarios.

### **2.2 Methodology**

ZAWA provide raw data (pre audit preparation) for its 2003 financial year. Substantial effort was put into sorting and organizing this data, which is provided in annex 2.1. The costs of law enforcement for all national parks are calculated using the assumption provided in the ZAWA Emergency Strategic Framework (May, 2002), but the capital replacement of vehicles is added to the original calculations (annex 2.2). Martin (2003) developed models to estimate the recurrent and capital costs of managing protected areas in southern Africa, and these are used to calculate the “ideal” budget for Zambia’s national parks, assuming they are not depleted and are well and comprehensively managed (annex 2.3).

In annex 2.5, all the lodges in or around national parks in Zambia are listed, and as much information as is known about bed capacity, rates, turnovers and employment is included. Consultants were sub-contracted to undertake primary surveys of both South Luangwa (annex 4) and Lower Zambezi (annex 5), while DSI developed a summary of tourism in Livingstone (annex 6). Information of park based tourism is summarized in annex 2.6.

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<sup>1</sup> Note that in its negotiations with MTENR, DSI stated that it could not undertake a financial and economic analysis of fisheries management in the Bangweulu wetlands within the budget provided.

In annex 2.4, three park income scenarios are modeled, with the middle scenario being based on a “best guess” of the ten year potential for park based tourism. Using tourism multipliers from the Kenyan tourism industry (TTC, 1997), the economic impact of tourism is estimated, noting that care should be taken with these conclusions because of the crudeness of available data and the assumptions. Statistics describing the growth of Zambia’s tourism sector, as well as comparing it to regional trends, is provided in annex 2.7, while annex 2.8 presents a summary of the national statistics that are available, records which only go back as far as 1997.

Annex 2.9 compiles what information about GMAs is readily available. Population surveys are few and sporadic, so the quotas are used as the basis of a rough calculation of wildlife stocking rates. This is compared to a conservative estimate of carrying capacity, and indicates that most areas are depleted. The 2003 income from hunting concessions and trophy utilization is summarized, but information on costs is available for only one GMA (i.e. Mumbwa).

Annex 2.10 presents the 2003 GMA quotas and utilization, and also calculates the value of these quotas. The prices for various types of hunting are summarized in annex 2.11. In annex 2.12, trophy quotas are used to make the rough estimate of wildlife stocking rates in GMAs that is used in annex 2.9.

Tourism fees are summarized in annex 2.13

### 3. THE COSTS OF MANAGING PROTECTED AREAS IN ZAMBIA

This section assesses the costs of managing ZAWA’s national parks estate. It summarizes ZAWA’s financial situation using the 2003 financial information provided by ZAWA (annex 2.1). It provides an estimate of the costs of law enforcement in Zambia’s national parks (Child and van Dixhoorn, 2003) (annex 2.2). It also uses Martin’s (2003) models of park management costs in southern Africa as a benchmark (annex 2.3).

#### 3.1 Costs Incurred by ZAWA in Managing Zambia’s National Parks

ZAWA is a new organization. One of its strengths are the newly developed financial management systems. The full data in annex 2.1 is summarized in table 1. The total costs of running ZAWA are USD5.4 million but ....

**TABLE 1: SUMMARY OF ZAWA INCOME, COSTS AND ALLOCATION BY PARK AND FUNCTION (2003)**

Summary of ZAWA Income and Expenditure (2003)					
	Field	Regional	HQ	TOTAL	
Hunting	1,341,294	3,926	245,984	1,591,204	59%
Tourism	925,062	2,508	10,674	938,244	35%
Other	66,795	138	82,694	149,628	6%
<b>TOTAL INCOME</b>	<b>2,333,152</b>	<b>6,573</b>	<b>339,352</b>	<b>2,679,076</b>	
HR costs	2,215,863	18,432	-258,467	1,975,828	36%
Recurrent costs	308,115	14,879	4,358	327,353	6%
Overhead costs	1,134,394	310,174	1,600,359	3,044,927	55%
Admin reallocation	0	122,515	22,829	145,343	3%
<b>TOTAL COST</b>	<b>3,658,373</b>	<b>466,000</b>	<b>1,369,079</b>	<b>5,493,452</b>	
	<b>67%</b>	<b>8%</b>	<b>25%</b>		

1. Need to check SLAMU income
2. Need to check SLAMU costs
3. need to check what is included in overhead costs

#### 3.2 Modeling the Costs of Managing Zambia’s Protected Area Estate

Using Martin’s model, the total cost of managing all ZAWA’s protected areas to a high standard of management that includes both tourism and effective ecological research would be USD 9.2 million (table 2). Less money is required merely to protect parks, and given the depleted nature of many of Zambia’s national parks, this suggests a theoretical budget requirement of USD 6.3 to 7.7 million (using the assumption that deplete parks cost 25% to 50% of total costs respectively – see workings in annex 2.3).

If we assume that ZAWA’s primary function is to protect parks from poaching, and that tourism is self-funding, the costs of providing a high level of protection to Zambia’s national parks

(table 3) is approximately USD5.0 million (this excludes head office overheads but includes the purchase of vehicles, uniforms and patrol equipment on a replacement basis).

**TABLE 2: COSTS OF MANAGING ZAMBIA'S PROTECTED AREA ESTATE USING MARTIN'S MODEL**

THEORETICAL FINANCIAL REQUIREMENTS FOR ZAMBIA'S PROTECTED AREAS									
Name of Park	Area (km <sup>2</sup> )	Area (km <sup>2</sup> x 1000)	Number of Field Staff Required	Operating Costs US\$/km <sup>2</sup> /year	Total Operating Costs US\$/year	Capital Requirement US\$/km <sup>2</sup>	Total Capital US\$	Status of Biodiversity	% of Carrying Capacity
Kafue	22,400	22.4	150	86	1,929,930	628	14,066,432	Ok	8.4%
South Luangwa	9,050	9.1	95	111	1,003,748	721	6,529,161	Ok	65.20%
Sioma Ngwezi Lower Zambezi	5,276	5.3	73	134	708,343	812	4,286,477	Depleted	
Liuwa Plain North	3,660	3.7	60	156	569,967	898	3,286,556	Ok	
Luangwa Mweru-Wantipa	3,140	3.1	56	166	522,801	941	2,956,002	Ok	
Wantipa	3,134	3.1	56	167	522,247	942	2,952,155	Depleted	
Lukusuzi	2,720	2.7	52	178	483,386	987	2,684,621	Depleted	
Nsumbu	2,020	2.0	45	205	414,190	1,099	2,220,634	Ok	
West Lunga Lavushi Manda	1,684	1.7	41	225	378,854	1,182	1,990,845	Depleted	
Manda	1,500	1.5	39	239	358,712	1,242	1,862,372	Depleted	1.20%
Lusenga Plain	880	0.9	30	324	284,712	1,601	1,409,042	Depleted	
Isangano	840	0.8	29	333	279,477	1,641	1,378,258	Depleted	
Kasanka	470	0.5	22	482	226,335	2,293	1,077,783	Ok	16.60%
Blue Lagoon	420	0.4	20	520	218,211	2,462	1,034,037	Ok	
Lochinvar	410	0.4	20	528	216,547	2,500	1,025,156	Ok	
Luambe Nyika (Zambia)	254	0.3	16	741	188,298	3,461	878,992	Ok	
Mosi oa Tunya	80	0.1	9	1,830	146,426	8,518	681,421	Ok	
Tunya	66	0.1	8	2,149	141,836	10,022	661,452	Ok	357%
62,096		885		9,202,050		54,538,832			

Methodology: Martin (2003)

This suggests that conserving biodiversity in Zambia's national parks will cost about USD5-6 million annually, assuming that a high level of protection is provided to even depleted national parks.

If national parks are completely rehabilitated, and ZAWA takes on the full responsibility of managing tourism and ecological research as well as protecting the resource, the costs of protecting the entire national parks estate will be about USD 9 million.

**TABLE 3: COSTS OF PROTECTING ZAMBIA'S PROTECTED AREA ESTATE**

Source: Data supporting NORAD ZAWA Emergency Resource Protection Programme

<b>Estimate of Annual Cost of Resource Protection in Zambia's National Parks</b>								
Name of Area Management Unit	Requirements			Recurrent Expenditure			Capital Replacement (Equipment, Uniforms, Vehicles)	TOTAL ANNUAL COST
	Patrol Scouts	Support Staff	Vehicle Requirements	Cost of Patrols (year)	Bonuses and rewards	TOTAL RECURRENT EXPENDITURE		
Western AMU	72	8	4	\$288,036	\$28,804	\$327,878	\$79,144	\$407,022
West Lungu AMU	40	4	3	\$160,020	\$16,002	\$182,093	\$49,607	\$231,700
Chunga AMU	132	4	7	\$528,066	\$52,807	\$599,638	\$128,435	\$728,072
Ngoma AMU	132	8	8	\$528,066	\$52,807	\$600,190	\$142,762	\$742,952
Kafue Flats AMU	32	4	3	\$128,016	\$12,802	\$145,785	\$45,204	\$190,989
Lower Zambezi AMU	96	4	5	\$384,048	\$38,405	\$436,251	\$84,690	\$520,941
South Luangwa AMU	140	4	7	\$560,070	\$56,007	\$635,946	\$91,870	\$727,816
East Luangwa NP	72	4	6	\$288,036	\$28,804	\$327,326	\$106,916	\$434,242
Banweulu/Luapula AMU	120	8	10	\$480,060	\$48,006	\$545,727	\$123,425	\$669,153
Nsumbu AMU	48	4	4	\$192,024	\$19,202	\$218,401	\$59,042	\$277,444
<b>TOTAL REQUIREMENTS</b>	<b>884</b>	<b>52</b>	<b>57</b>	<b>\$3,536,442</b>	<b>\$353,644</b>	<b>\$4,019,235</b>	<b>\$911,097</b>	<b>\$4,930,333</b>

Source: Calculations for ZAWA's Emergency Resource Protection Programme

There is an argument that ZAWA should focus on key parks, and outsource the management of depleted parks, or in some cases even de-gazette them. Indeed, Martin (2003) suggests that there is a critical threshold budget for park management. When the budget drops below this threshold, it is impossible to protect parks. This is exacerbated by the common scenario that 80% or more of the budget is spent on salaries so staff have no operational capacity and are highly ineffective. In other words, it is best to emulate nature in the form of the stork which ensures that one chick is fed, and only feeds the others if food is abundant. Hard as it may be to accept, the stark but sensible strategy for a park agencies is focus what little money it has on priority parks, ensure that these are properly funded, and if there is not enough for the lower priority parks, these should be abandoned or alternative models applied to their conservation.

Spreading too little money over too large an area is likely to result in all parks being depleted.

#### 4. CURRENT AND POTENTIAL PROTECTED AREA INCOME

This section summarizes the income presently being generated from Zambia's national parks, and also makes projections regarding future income.

ZAWA's income data is extracted from annex 2.1, noting that income from South Luangwa, which is not included in these accounts, is added to the income estimates.

In 2003, ZAWA earned approximately USD 3.5 million. Approximately 45% of this revenue being from hunting in GMAs, where there is currently has an obligation to share 50% with communities (table 4). Tourism earned USD 1.77 million, equivalent to half of ZAWA's self generated income.

**TABLE 4: ESTIMATED ZAWA INCOME FOR 2003**

<b>ZAWA Income 2003</b>		
<b>Source of Income</b>	<b>2003</b>	
Hunting	1,591,204	45%
Tourism	1,770,688	50%
Other	149,628	4%
<b>TOTAL INCOME</b>	<b>3,511,520</b>	

Source: ZAWA financial records, modified by inclusion of SLAMU revenues

In 2003, tourism generated some USD1.7 million from national parks. Note that revenues from South Luangwa have increased by 72% over the past five years, due largely to a combination of improved Tourism Concession Agreements and new investment. Tourism bed nights to Lower Zambezi have increased by 69% over the same period. Between 1996 and 2003 (seven years) the number of tourism rooms in Livingstone increased by 358% from 367 to 1,681. Zambia has only 1.7% of the regional tourism market, although the sector is growing rapidly at 8-10% annually (annex 2.7). National Parks in the region earn, on average, at least ten times as much as Zambia's on a per area basis (annex 2.7).

**TABLE 5: ESTIMATED INCOME FROM KEY NATIONAL PARKS IN 2003**

<b>Tourism Revenues from National Parks (2003)<sup>2</sup></b>	
South Luangwa	832,444
Lower Zambezi	273,743
Mosi-oa-Tunya	374,938
Kafue NP	100,170
Other	194,246
<b>TOTAL</b>	<b>1,775,541</b>

<sup>2</sup> Data is indicative only. Figures are extracted from ZAWA's 2003 accounts. The revenues recorded for Lower Zambezi vary from an alternative data set (compiled from a survey of tour operators) by only USD5,000. Data from SLAMU is not recorded in the ZAWA accounts and is compiled from a survey of tour operators and SLAMU's 2003 records.

### **A Comment on the Funding of Protected Areas**

The application of hunting revenues is a point of dispute at the moment. The current policy, which has not been ratified, is that ZAWA retains half of the hunting revenues from GMA, with communities getting the other half.

However, there is a strong sentiment that CBNRM will not work effectively in Zambia (or elsewhere for that matter) unless communities have full entitlement to revenues generated in their areas. The economic argument underlying this statement is that extracting revenues from community wildlife disadvantages wildlife as a land use and, given that many land uses in non-agricultural areas are already marginal, may well make community wildlife management sub economic. It will certainly reduce the power of incentives needed to encourage community based wildlife management.

In terms of both economic efficiency and social equity, using community revenues to cross subsidize biodiversity conservation in protected areas is highly questionable. There is already an argument that one of the greatest threats to conservation is that costs are borne locally while benefits accrue nationally or globally.

The implication is that national parks should not be subsidized from wildlife enterprises on other land. It be funded in the following manner:

- Parks should fund themselves as far as possible out of own revenues, this being the financial return generated by the capital base that is in land and park infrastructure;
- Where benefits are national or global (and these are significant, as we will see below) there is a strong case that parks should be paid for these services. This is not actually a grant as is usually assumed (although in the nomenclature of the donor or Treasury it may be called a grant), but a payment for national and/or global benefits.

Given the status of public funding in Zambia, and other priorities (health, education, HIV), the practical outcome is that national parks will need to be funded largely out of their own tourism receipts. Many parks in the region struggle to become viable. However, several of the well managed lesser parks are viable (e.g. Madikwe, Pilanesburg, Addo Elephant)) and there are some 5-7,000 viable private conservation areas in the sub-region. This suggests that non-viability is more a function of inefficiencies in protected area agencies than the inherent financial potential of the protected areas themselves.

In the short term the biggest opportunity to increase revenues lies in:

- re-negotiating the agreement regarding the collection and sharing of income from the Victoria Falls with NHCC (say USD200-400,000 additional income to ZAWA),
- Growth in tourism numbers in Lower Zambezi where investments have been made but occupancies can still be improved.

The next step in revenues will then require the concessioning and construction of lodges, with Kafue National Park being the prime area for this. Even if investments are initiated now, it is likely to take five years before revenues flow in a meaningful way. However, it is estimated that with some 500-1,000 tourism beds, Kafue National Park should generate USD 0.5-2.1 million in park fees within ten years provided the park and its commercialization process are managed competently.

**TABLE 6: SENSITIVITY ANALYSIS OF DIRECT INCOME FROM KAFUE NATIONAL PARK<sup>3</sup>**

<b>Sensitivity Analysis: Potential Income from Kafue National Park</b>				
<b>Number of Beds</b>	<b>Occupancy</b>	<b>Bed nights</b>	<b>Total Income</b>	<b>Park Fees</b>
Daily charges			\$75	\$10
500	30%	54,750	4,106,250	547,500
1000	30%	109,500	8,212,500	1,095,000
			\$75	\$10
500	40%	73,000	5,475,000	730,000
1000	40%	146,000	10,950,000	1,460,000
			\$150	\$15
500	40%	73,000	10,950,000	1,095,000
1000	40%	146,000	21,900,000	2,190,000

Source: DSI and Deloittes (2003) Kafue national Park Draft Project Document, Prepared for ZAWA for submission to the World Bank.

Table 7 provides a conservative best guess of the likely revenue from national parks in ten year's time, noting that tourism to both South Luangwa and Lower Zambezi has expanded by about 70% in the previous five year period and that tourism to Zambia is growing (albeit from a low base) by some 10% or more a year.

**TABLE 7: SENSITIVITY ANALYSIS OF DIRECT INCOME FROM KAFUE NATIONAL PARK<sup>4</sup>**

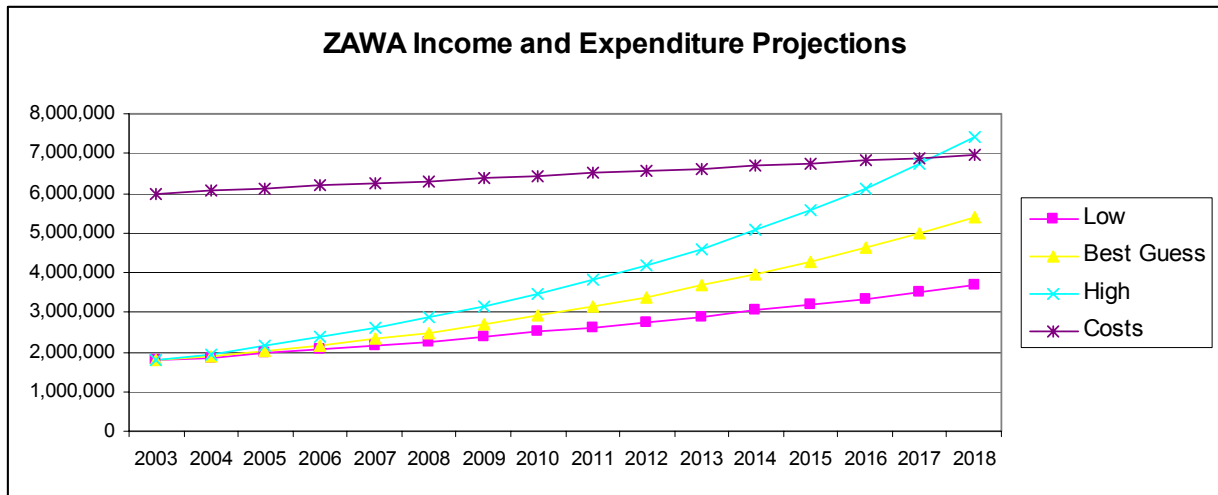
<b>Tourism Revenues from National Parks (2003)</b>			
<b>Park</b>	<b>2003</b>	<b>Best Guess 5-10 years</b>	<b>Assumptions</b>
South Luangwa	832,444	1,040,555	25% increase
Lower Zambezi	273,743	465,363	75% increase
Mosi-oa-Tunya	374,938	774,938	Earn \$400,000 more
Kafue NP	100,170	1,000,000	See Project Document
Other	194,246	388,492	Income doubles
<b>TOTAL</b>	<b>1,775,541</b>	<b>3,669,348</b>	

<sup>3</sup> Depending on the assumptions used (see table 5), Kafue National Park can generate park fees from USD 0.5-2.0 m, and direct income of between USD 4 – 21m per annum once it is developed to a reasonable level (i.e. 500-1,000 beds). Source: Child, et al (2003) Kafue National Park, Draft Project Document, prepared for ZAWA/World Bank

## 5. FINANCIAL VIABILITY OF PROTECTED AREAS IN ZAMBIA

The ten year “best guess” estimate of revenues from Zambia’s National Parks can be modeled with an assumption of a 7% increase in revenues in years 1-5 with an 8% increase thereafter. Figure 1 illustrates this projection, and estimates of low (5%) and high (10%) tourism growth. This is compared to an estimate of ZAWA recurrent expenditure assuming that this is well controlled and increases at 1% per annum from USD 6m. The calculations and data behind this figure are provided in annex 2.4.

**FIGURE 1: PREDICTED INCOME FROM ZAMBIA’S NATIONAL PARKS**



Under these assumptions, ZAWA will approach financial viability in about fifteen years, requiring an average annual grant of between USD 3.6 – 4.4 million in the next ten years to support recurrent expenditure (see annex 2.4). Consequently, ZAWA’s recurrent expenditure will need to be support to the tune of approximately USD39-65 million over the next fifteen years. Note that the replacement costs of vehicles and other equipment are included within this recurrent budget, which does not include initial recapitalization of ZAWA (i.e. vehicles, housing, roads, etc.).

This recapitalization will need substantial expenditure, largely for the purchase of a non-existent vehicle fleet (USD 2 million), construction of buildings for staff, park roads and roads to provide access to these parks. The infrastructure in most parks has never been developed or has seriously deteriorated. Using Martin’s formula, an investment requirement of USD 50 million is required to rehabilitate the entire national parks estate. However, this is probably a substantial under estimate, especially given the requirement for road infrastructure, and a figure of USD75-100 million over the next fifteen to twenty years may be a better estimate.

The best developed national park in Zambia is South Luangwa, and its track record (figure 2) and investment plan (table 8) is presented. This park has suffered from the excess donor

funding and the bad habits associated with funding poured in from the top, and with little accountability for performance. Nevertheless, with the introduction of performance-based management from 1996, costs have been steadily cut, and performance of all aspects except law enforcement improved as illustrated by the revenue curve (figure 2). By 2003, the park was approaching financial viability, despite significant capacity constraints and transaction costs.

**FIGURE 2: TRACK RECORD OF FINANCIAL PERFORMANCE OF SOUTH LUANGWA NATIONAL PARK**

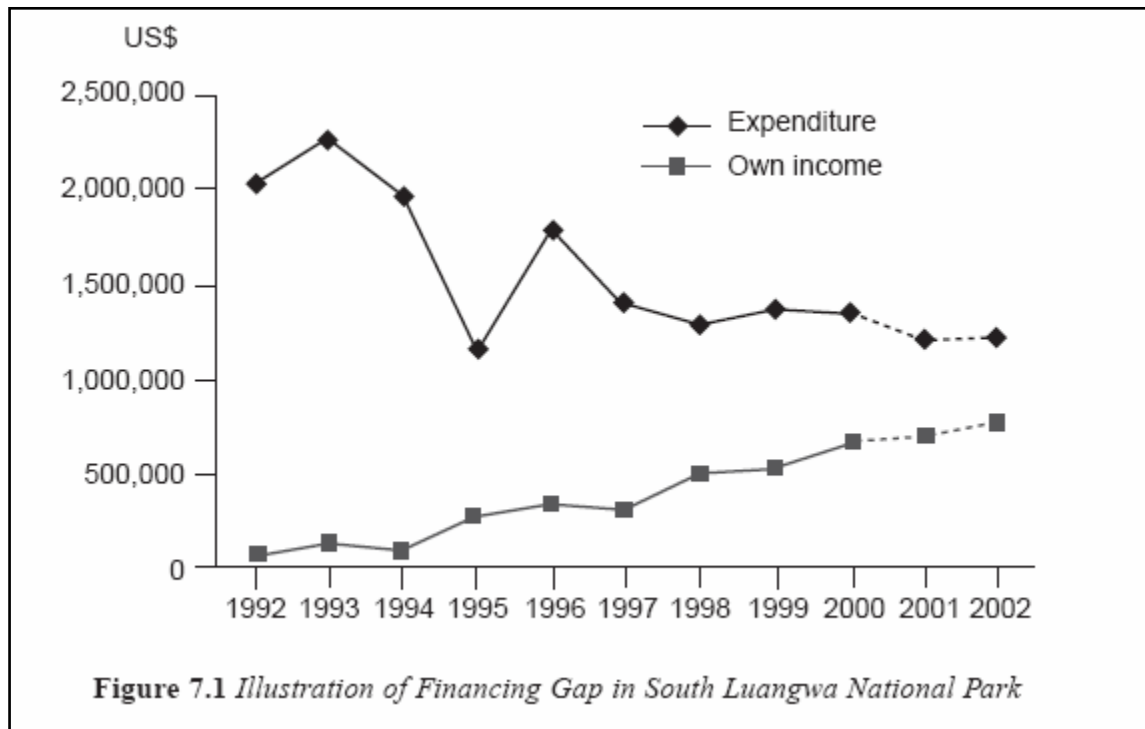


Table 8, which is responsibly conservative about anticipated revenues and has erred on the lower side, suggests that South Luangwa is close to achieving financial viability. However, economically speaking, the park has a strong positive net economic return. This dichotomy between financial viability and economic viability is a point to which we will return later.

**TABLE 8: REVENUE PROJECTIONS FOR SOUTH LUANGWA NATIONAL PARK (2003-2006)**

<b>South Luangwa National Park Revenue Projections (2003–2006)</b>	
<i>Economic assessment</i>	
	US\$
Tourism income to Zambia	34,000,000
Recurrent costs	4,617,033
Capital investment (assume longer lifespan than project)	3,526,813
<b>Net (economic) profit</b>	<b>30,473,187</b>
<i>Financial assessment</i>	
<b>Revenue projection</b>	<b>4,050,000</b>
Tourism	3,400,000
NORAD subsidy	650,000
<b>Core operational costs</b>	<b>4,617,033</b>
Administration and overheads	1,103,240
Law enforcement	1,340,108
Resource monitoring	204,276
Road maintenance	860,913
Capital equipment	1,108,496
<b>Surplus (deficit)</b>	<b>(567,033)</b>
<b>Capital investment</b>	<b>7,053,626</b>
Infrastructure	5,755,700
Other (CBNRM, technical assistance, etc)	1,297,926

Source: Moinuddin (2002)

## 6. ECONOMICS OF TOURISM IN ZAMBIA'S PROTECTED AREAS

There is very little data available describing tourism operations in Zambia's protected areas. Even the national data base contains only recent data and measures only a few key variables (annex 2.8). The tourism industry is said to be worth USD 117 million including accommodation, travel, tours, car hire and other.

Therefore, for the purpose of this study, surveys were undertaken for Lower Zambezi and South Luangwa, a previous survey of Livingstone operators by DSI was updated, and an attempt was made to compile a rough indication of tourism operations in other national parks. Individual lodges and activities are listed and described in annex 2.4, with as much detail as is available.

**TABLE 9: SUMMARY OF TOURISM INDICATORS FOR NATIONAL PARKS IN ZAMBIA**

Summary of Tourism Performance Indicators for National Parks in Zambia							
	Livingstone	South Luangwa	Lower Zambezi	Kafue NP Area	Other National Parks	Total	Notes
<b>Investment</b>	74,422,000	-	-	-	0		
<b>Capacity (rooms)</b>	1,676	-	194	-	0		
<b>Bed Capacity (1998)</b>	-	263	-	-	0		
<b>Bed Capacity (2003)</b>	3,352	352	388	282	172	4,546	
<b>Capacity (other)</b>	56,608	-	-	-	-		
<b>Beds sold (1998)</b>	-	-	11,550	-	0		
<b>Beds Sold (2003)</b>	-	32,590	19,515	-	0		
<b>Managers</b>	-	46	41	-	0		
<b>Zambian Guides</b>	-	54	41	-	0		
<b>Foreign Guides</b>	-	11	19	-	0		
<b>General Staff</b>	-	527	435	-	0		
<b>Part Time Staff</b>	-	-	119	-	0		
<b>Employees</b>	1,808	638	655	305	473	3,879	Jobs for KNP and other estimated
<b>Wage Bill</b>	-	904,160	645,000	-	-		
<b>Estimated Turnover</b>	<b>30,053,721</b>	<b>4,125,000</b>	<b>2,667,000</b>	<b>1,442,685</b>	<b>1,689,720</b>	39,978,126	
<b>Park Fees (2003)</b>	374,938	832,444	268,800	125,009	194,246	1,795,437	
<b>Other Income to Zambia (flights etc)</b>		-	706,000	-	-		
<b>Materials Purchased Locally</b>		-	7,300,000	-	-		

This information is summarized in table 9 (see also annex 2.6). The annual direct turnover from park based tourism in Zambia is USD 40 million, of which 75% is attributable to attractions in Victoria Falls. Park based tourism creates direct employment of nearly 4,000 people.

Little information is available describing tourism multipliers in Zambia, and even in the region. The best (only?) study available of a similar industry is of the Kenyan tourism industry. Therefore the economic multipliers painstakingly developed by this detailed study are used to estimate the impact of park-based tourism on the Zambian economy. As described in table 10, there are a range of tourism multipliers. Including all of these, suggests total economic impact of park-based tourism in Zambia (and excluding the aircraft industry) is USD 160 million.

**TABLE 10: ECONOMIC MULTIPLIERS RELATED TO PARK BASED TOURISM IN ZAMBIA**

<b>Economic Multipliers Related to Park Based Tourism in Zambia</b>			
	<b>Tourism multiplier</b>	<b>Impact of Tourism on GNP</b>	<b>Definition of Economic Multipliers</b>
Direct		<b>39,978,126</b>	Direct receipts from tourism in parks
Direct + Indirect	1.62	<b>64,821,245</b>	Impacts from supply other inputs to tourism
Direct + Indirect + Induced	2.57	<b>102,749,210</b>	Impacts from expenditure of disposable income
D+I+I+ Government Interacting	4.01	<b>160,274,296</b>	Impact of government spending tourism related taxes
Source: Using multipliers calculated for Kenya, TTC International (1997) The Impact of Tourism on the Economy of Kenya - 1996			

The Zambian tourism industry is still in its infancy. Only three parks are developed to any significant extent (South Luangwa, Lower Zambezi, Victoria Falls area), and even these are under-developed. For example, the tourism industry on the Zimbabwean side of the Victoria Falls was three times the size of the Zambian side in 1995, and Lower Zambezi does not even have all weather access. Large parks like Kafue and North Luangwa remain almost completely undeveloped, as do small high potential parks like Lochinvar and Blue Lagoon. There is therefore considerable potential for growth, provided that park infrastructure, wildlife protection and the investment climate is improved.

To estimate the potential impact of park-based tourism on the Zambian economy, we have made the simple assumption that park-based tourism triples in the next ten years. These growth rates seem reasonable given the growth of the sector in the past five years, and also when compared to regional performance (table 11), with the income from parks in Zimbabwe and South Africa being 15 to 23 times higher than in Zambia. Also, this is approximately the point at which ZAWA will become financially viable.

**TABLE 11: COMPARISON OF COVERAGE AND REVENUES FROM NATIONAL PARKS IN ZAMBIA COMPARED TO THE REGION**

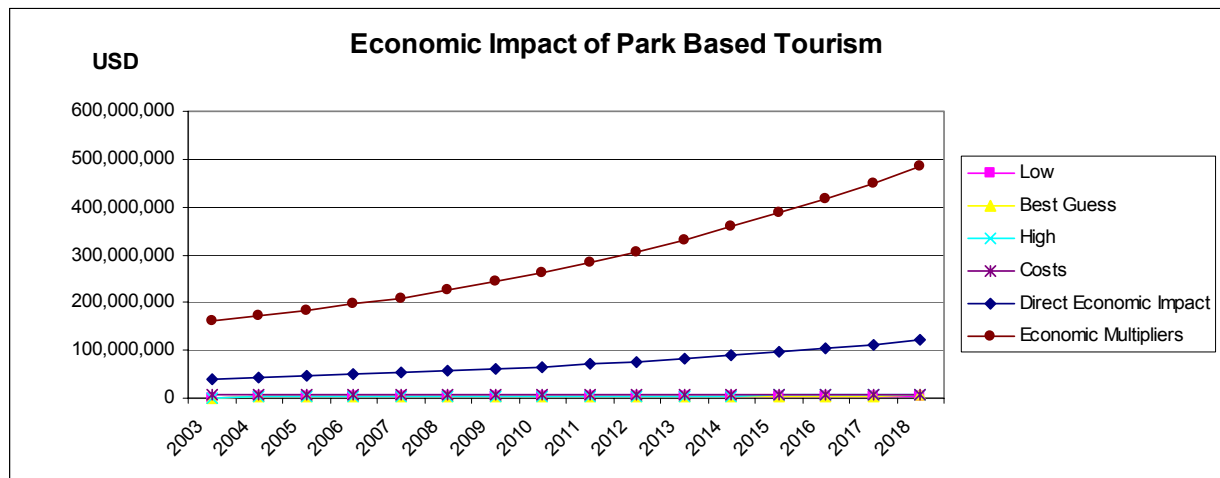
<b>Comparison of Protected Area Coverage and Revenues</b>		
Country	Protected Area Coverage (ha x 1,000,000)	Revenues/Acre US\$
South Africa	11.5	17.5
Zimbabwe	10	11.5
Zambia	16	0.75
Source: World Bank, SEED project		

In 2003, the direct income from tourism was some 22 times park fees charged by ZAWA. The estimate of the direct impact of tourism uses the same “best guess” growth assumptions for park tourism presented in figure 1 (above), and the same park-fees-to-turnover ratio (i.e. 22). The estimate of total economic impact used the total economic multiplier (i.e.  $D+D+I+GI=4.01$ ) as given in table 10. Detailed workings are provided in annex 2.4.

If park based tourism triples, and following the assumptions of a 1:22 relationship between park income and tourism turnover and a tourism multiplier of 4.01, the impact on the Zambian economy will approach USD half a billion annually.

Figure 3 compares the economic viability of tourism in Zambia to the financial viability of ZAWA. It is based on the crude assumptions given above and must therefore be treated cautiously, except as regards the gross conclusion that can be drawn from it.

**FIGURE 3: ECONOMIC IMPACT OF PARK BASED TOURISM IN ZAMBIA**

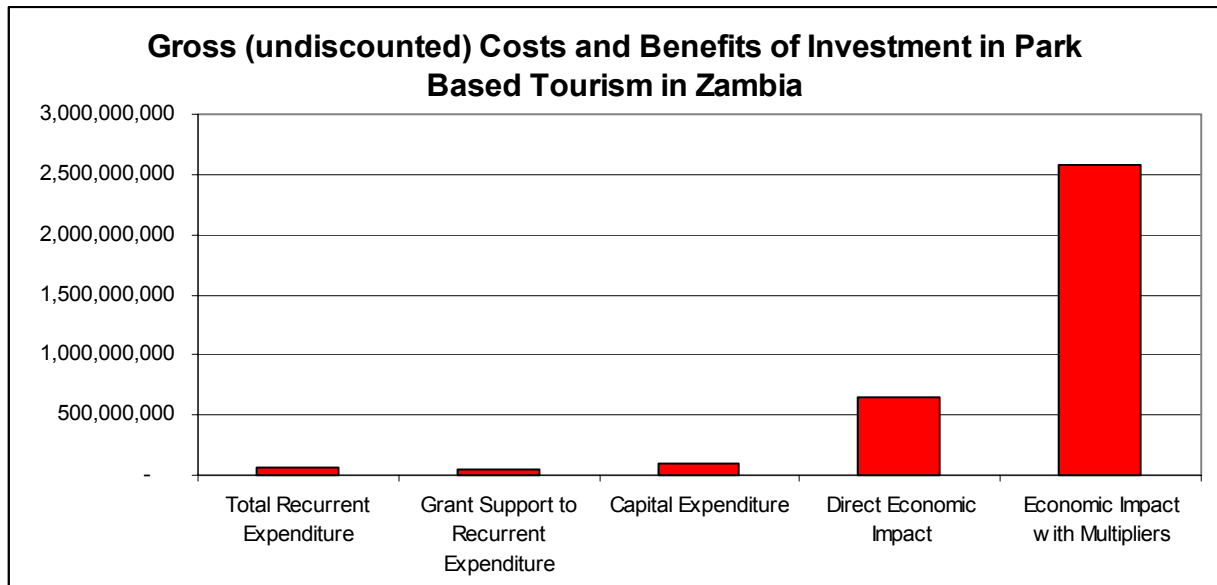


A comparison of the economic and financial impacts of park based tourism suggests that the costs of managing ZAWA, economically speaking, are almost irrelevant and that it would pay Zambia to invest in the rapid upgrading of protected areas on the basis of economic growth alone.

However, while costs may be of limited consequence, the effectiveness and investor friendliness of ZAWA is of critical concern. This is because the magnitude of the opportunity costs of bureaucratic inefficiencies or delays is multiplied one hundred fold in the economy compared to park revenues (i.e.  $22 \times 4.1$ ). Poor management by, say, a park warden with a tour operator, reverberates up through the economy.

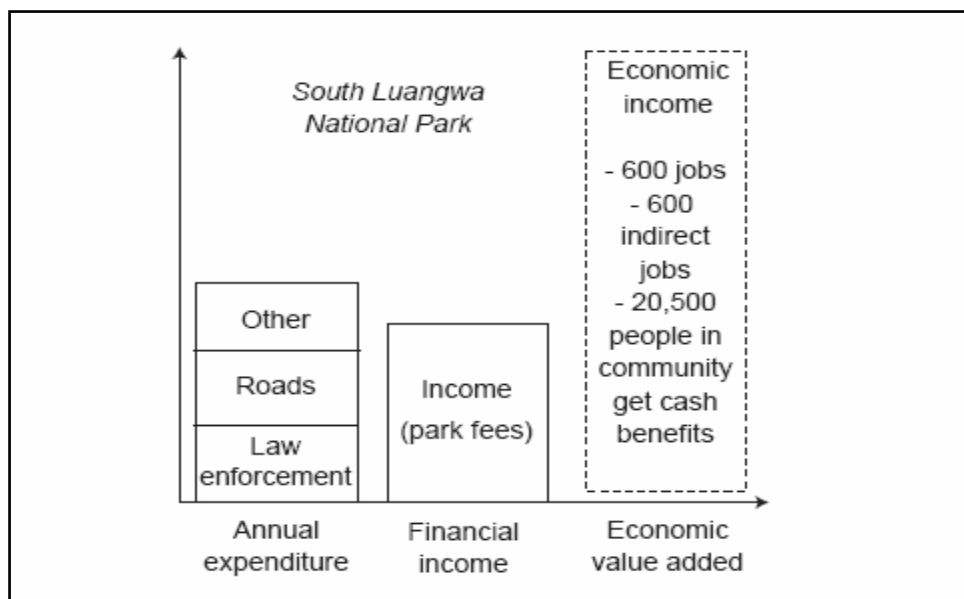
Figure 4, similarly, shows that grant/capital investments in rehabilitating Zambia’s national parks of USD 50 million and USD100+ million for recurrent and capital investment is easily recouped by economic impact in the economy. In terms of sensitivity analysis, even if we halve investments in the wildlife sector, the general conclusion still holds.

**FIGURE 4: ILLUSTRATION OF ECONOMIC COSTS AND BENEFITS OF INVESTING IN PARK BASED TOURISM IN ZAMBIA**



We return to the specific example of South Luangwa to illustrate this point (figure 5). While the park is marginal financially, viewed from an economic perspective annual expenditure of USD 1.2 million compares to tourism turnover of USD 4.1 million (table 9) and an impact on the economy of some USD 16m. This also creates 1,200 direct jobs, about the same again in indirect jobs, and conserves considerable biodiversity.

**FIGURE 5: A COMPARISON OF THE FINANCIAL AND ECONOMIC VIABILITY OF SOUTH LUANGWA NATIONAL PARK**



There are two policy implications:

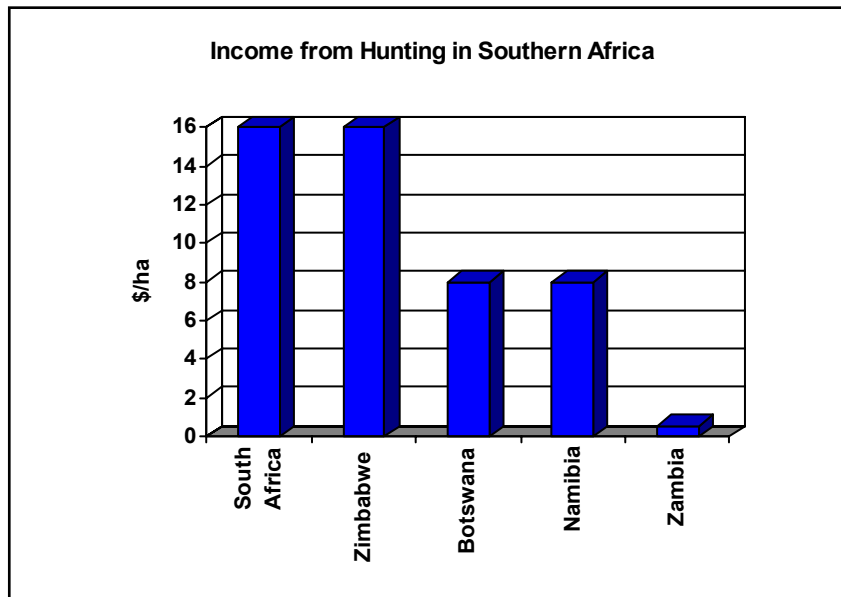
- Zambia and its cooperating partners should invest heavily in rehabilitating the park based tourism sector in Zambia
- The cost of any inefficiencies in ZAWA on the economy as a whole are huge, and ZAWA's managerial capacity should be rapidly and firmly upgraded.

## 7. THE ECONOMICS OF GAME MANAGEMENT AREAS

Zambia has 33 gazetted GMAs with a total area of 162,311km<sup>2</sup> (annex 2.9). There is little comprehensive or systematic data describing wildlife populations in GMAs. However, in most areas, with the possible exception of Lupande and Munyamadzi GMAs, wildlife populations<sup>5</sup> are at less than 10% of carrying capacity, and in some cases even lower (annex 2.9).

The primary source of income in GMAs is from safari hunting. In the past, this has not been managed well, and Zambia has significantly under performed compared to its neighbours. Contributing factors have been the lack of transparency in the allocation of hunting blocks, poor allocation of quotas with a large percentage going to low value uses such as special and national licenses, the failure to convert wildlife into direct incentives for conservation at the local level leading to informal hunting (i.e. poaching), and weak law enforcement in general. In 2001, hunting was banned for political reasons at the same time that ZAWA was under going a traumatic transformation process, and with no presence in hunting blocks for two years, considerable damage was caused to wildlife populations.

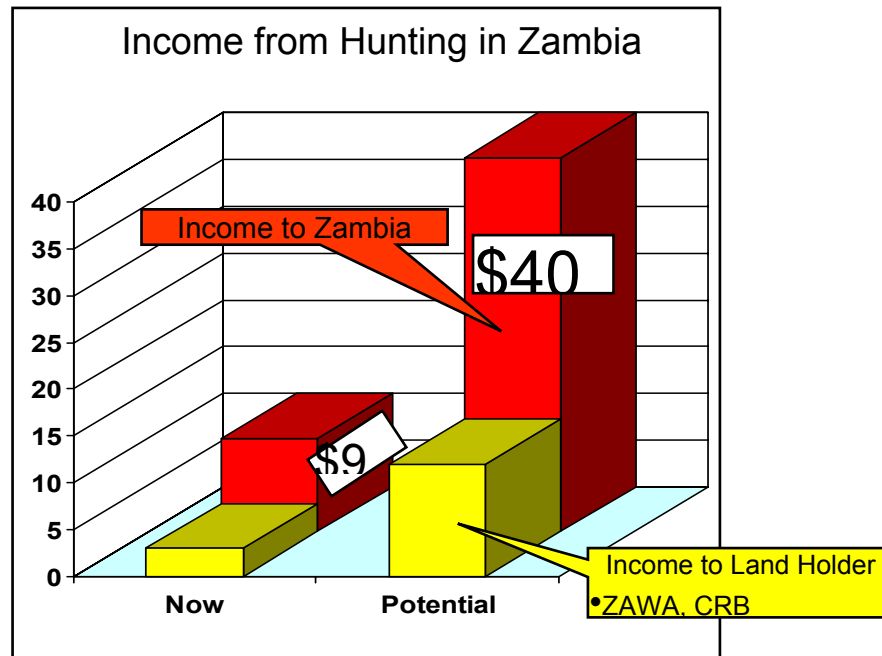
**FIGURE 6: COMPARATIVE INCOME FROM SAFARI HUNTING IN SOUTHERN AFRICA**



Source: SCI (2002) Assessment of Hunting in Southern Africa of the situation in about year 2000

<sup>5</sup> Annex 2.9 provides what data on GMA wildlife populations that is available. In the absence of this, populations have been calculated roughly using quotas and standard offtake rates. Stocking rates are calculated using standard live masses for each species (annex 2.12). With a rainfall of 800mm, which is what applies in many GMAs, one LSU requires 6 hectares. Given the lower productivity of miombo woodland, we have used a figure of one LSU per ten hectares in calculations of carrying capacity. This data is ROUGH but, given the lack of real data, is a best approximation.

**FIGURE 7: AN ILLUSTRATION OF HUNTING ECONOMICS IN THE LATE 1990'S**



Source: DSI (2002) Strategic Framework for Emergency Support to ZAWA

Prior to the hunting ban, it was estimated that hunting was worth USD 3m to landholders, (although records suggested that only USD 1-1.5 million was collected). This translated into gross outfitter turnover of some USD 9m. It was also suggested that by simply re-allocating quotas to highest valued uses, the sector could provide communities with USD 10 million equating to a turnover approaching USD 40m.

In 2002, ZAWA made a considerable effort to reallocate hunting blocks. The general impression is that the allocation of hunting blocks was done more professionally and transparently than previously, with little political interference. Nevertheless, the 2003 hunting season had a late and rocky start because of problems related to the hunting ban, and to the reallocation of hunting concessions. Therefore the financial performance in 2003 was well under potential, but is the only real data that we have available to us.

The data available for 2003 is provided in annex 2.10. This includes safari quotas, the actual trophy offtake in 2003, an estimate of the value of these quotas, and the income earned in 2003. Putting aside questions about the sustainability of the quotas that have been set, approximately one third of the quota was used in 2003. This generated USD 1.3 million in trophy and concession fees (i.e. the income collectable by the landholder, or wildlife producer) from one third of the quota (table 12).

A landholders usually get one third of outfitter turnover under competitive market conditions. Therefore this equates to approximately USD 4m in direct economic activity in Zambia. No

economic multipliers have ever been calculated for safari hunting, but it can be assumed that the total economic impact is at least twice that of outfitter turnover and possibly more (given a tourism multiplier of four – see above).

**TABLE 12: SUMMARY OF HUNTING IN ZAMBIA’S GMA’S IN 2003**

<b>Summary of GMA Hunting in 2003</b>	
Total number of animals available	2,268
Total number of animals hunted	773
Percentage utilization (by number)	34%
Total value of quota	2,483,110
Total value of quota hunted	748,920
Percent use (by value)	30%
Animal fees	725,624
Concession fees	541,023
Total income paid	1,304,568

There have been suggestions that the safari quotas are too high, and have been set to raise money rather than to be sustainable<sup>6</sup>. Even given these reservations about the quotas, it is likely that hunting revenues from presently available safari quotas can be doubled in the near future. If the sub-economic allocation of prime trophy animals to low value uses (e.g. district, national and special licenses) is controlled, it is quite possible that the income from safari hunting can be tripled. Furthermore, most hunting blocks are too large, causing inefficient use of wildlife with a natural concentration of use in the vicinity of outfitters camps and under utilization in less accessible areas. With improvements in quota allocation, and in the boundaries of concessions, the industry has the potential to generate some USD 4m to landholders (i.e. ZAWA and communities) in the short term. This equates to approximately USD 12m in operator turnover<sup>7</sup>. Even if we halve the tourism economic multipliers used above, hunting would generate USD 24m in economic activity in Zambia. This income is generated from fourteen GMAs, with no hunting taking place in the remaining 19 in 2003.

This illustrates the immediate impact that administrative improvements can have on the hunting sector. However, as noted above, hunting areas have long been mismanaged and most GMAs are stocked at less than 10% of wildlife carrying capacity, and a figure of 5% may be closer to the mark (annex 2.9). The primary threat to Zambia’s wildlife in the past has been mismanagement, misalignment of incentives and poaching, and Zambia has the tremendous advantage that wildlife does not face significant human population pressures, both in GMAs and in large areas of potential wildlife habitat outside GMAs.

<sup>6</sup> Counter intuitively, mis-managing trophy quotas imposes little risk to wildlife populations. The offtake of trophy males is usually limited to 2-3% of populations that grow at 10%, or even 20%, annually, and moreover removing males has little impact on population growth rates. Secondly, if quotas are too high, trophy quality will fall, and the extremely well informed client market will soon avoid such areas until trophy quality has recovered. While the biological risks are low, the commercial consequences of poor quota-setting can be severe, because of loss of confidence by consumers.

<sup>7</sup> Under competitive marketing conditions in Zimbabwe’s CAMPFIRE programme, winning bids paid between 30-40% of gross turnover to the landholder.

Where effective CBNRM programmes have been implemented, and specifically where communities get direct benefits the use of which is governed reasonably well, wildlife populations have doubled and even quadrupled within a decade (e.g. CAMPFIRE in Zimbabwe and Namibia’s CBNRM programmes). Yet these countries have been constrained by high human population densities (Zimbabwe) or low ecosystem productivity (Namibia’s arid lands). Zambia has more and better wildlife areas. As a rough indicator of the long term potential of a well governed and managed wildlife sector in Zambia, we assume that wildlife populations in GMAs can grow five to ten fold from present levels. Under this scenario, safari hunting in GMAs could generate USD20-40 million to landholders, USD 60-120 in direct turnover, and probably twice as much in economic impact. Thus, safari hunting conservatively has the potential to become a quarter billion dollar sector. However, if the industry is managed well, it is likely to spread well beyond the boundaries of GMAs, and is likely to diversify and innovate, which will further raise economic impact.

If this seems over-optimistic, a comparison of the situation in Zambia with that in Zimbabwe’s CAMPFIRE areas (table 13), which have a far higher human density and are stocked at less than 50% of carrying capacity, suggests that a five to ten fold improvement in the hunting sector would bring Zambia into line with the earning capacity of Zimbabwe’s communal lands. Given that Zambia’s GMAs have higher rainfall and far lower human populations than Zimbabwe’s communal lands, the suggestion that safari hunting in Zambia could generate USD250 million in economic activity is technically feasible. As with tourism, the constraints remain in outdated and un-innovative policies, over-centralization (i.e. lack of economic liberalization) and implementation capacity.

**TABLE 13: INDICATIVE GROWTH POTENTIAL OF THE GMA HUNTING SECTOR IN ZAMBIA**

<b>Hunting Potential In GMAs</b>			
	<b>Area km2</b>	<b>Landholder Income</b>	<b>Income /km2</b>
Zambia (current)	162,311	1,304,568	8.04
Zambia (near future)	162,311	4,000,000	24.64
Zambia (LT potential)	162,311	20,000,000	123.22
CAMPFIRE Zimbabwe	19,529	2,000,000	102.41

## **8. RECOMMENDATIONS FOR FURTHER FINANCIAL AND ECONOMIC RESEARCH**

## References

- Child, B. and van Dixhoorn, F. (2002) Performance Based Resource Protection Strategy, Presentation to ZAWA, May 2002.
- IUCN (1996) Strategic Environmental Assessment of Developments Around Victoria Falls, IUCN, Regional Office for Southern Africa.
- Martin, R. (2003) Conditions for effective, stable and equitable conservation at the national level in southern Africa, Paper presented to PLASS/ART Workshop on Local Communities, Equity and Protected Areas, 24-26 October, 2003, Durban.
- Moinuddin, H., Child, B., Jones, M., Dunham, K., Pope, C., Kemp, I., Sichilongo, C., Simukanzye, A., Mushinge, R. (2002) Project Document for Continuing Norwegian Support to SLAMU Phase V, Zambia Wildlife Authority, Zambia 77pages plus annexes
- Tenner (2002) Strengthening Tourism, A Partnership Approach. The Livingstone Tourism Association 's Response to the Hon. Minister Michael Mabenga, MP's request for issues affecting tourism in Livingstone
- ZESCO (1997) Environmental Assessment and Management Plan for the Victoria Falls Power Station Rehabilitaiton and Refurbishment Program, KOMEX International Ltd.

## Annex 2.3

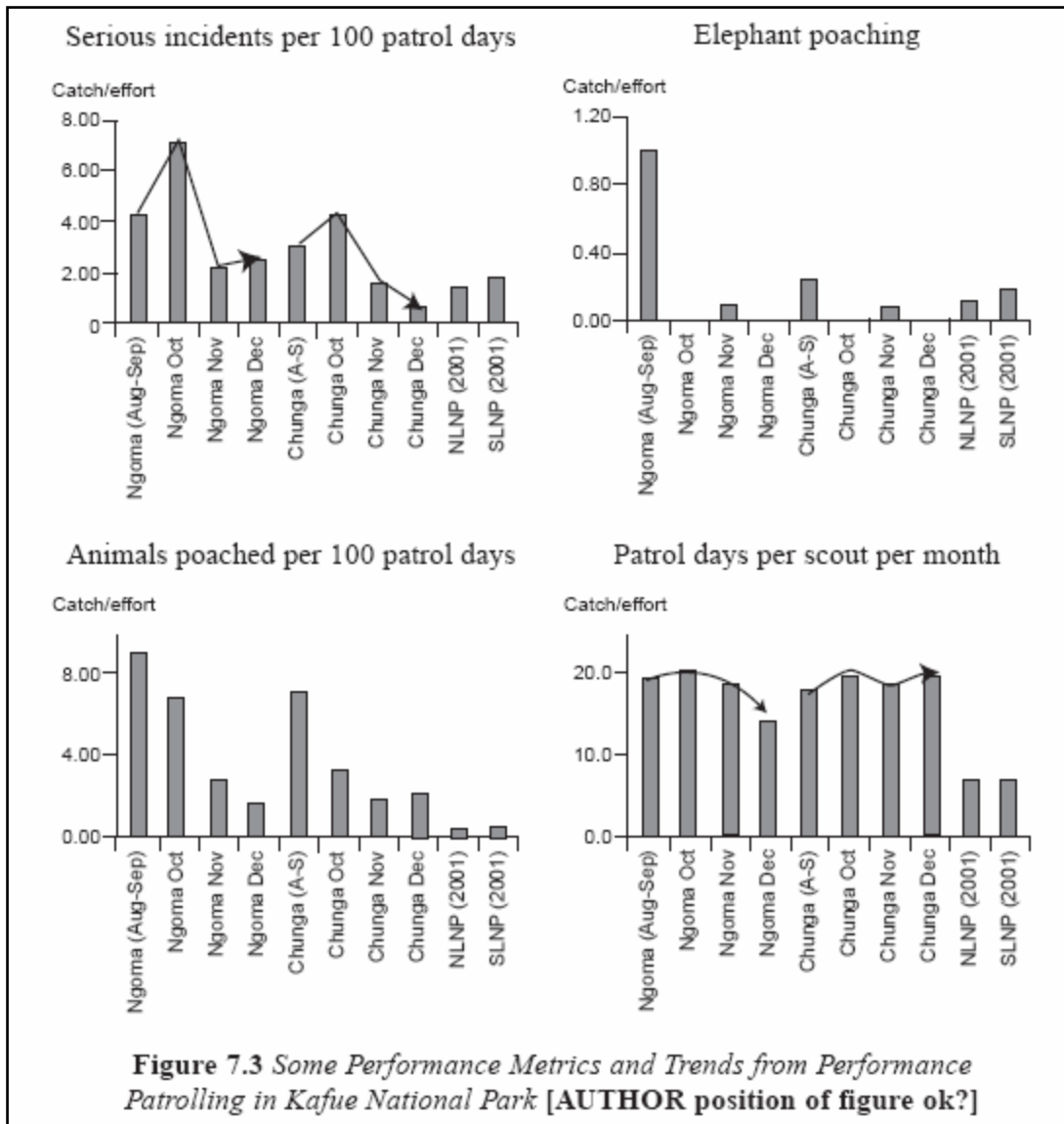
### Paying for Service: Emergency Resource Protection in Kafue National Park

In 2002, the newly established ZAWA was in a perilous position. Most senior staff were new, and the organization could not afford salaries. Staff had been cut to one third of former levels, and poaching was rife, with Kafue being cited as particularly bad. After years of political intrigue, donors were unwilling to invest heavily in the organization, and tended to fund conservation through other channels such as NGOs. Only NORAD, having been involved in the sector for many years through South Luangwa, had the knowledge, flexibility and willingness to participate in a risky and unavoidably political situation. Seeing the dangers of dumping money onto a new organization with little capacity, a history of centralization and vulnerability to political manipulation, NORAD agreed to pilot a project with three critical innovations. First, it would pay explicitly for each patrol day (US\$10 for pay and rations). Secondly, additional money would flow upward to cover park overheads (US\$5 per patrol day) and then to headquarters (US\$2) in direct proportion to patrol performance. Thirdly, performance would be the key criteria for each tranche of funding, and the development and monitoring of performance systems would be incorporated into the project with a ‘backstopping’ arrangement to a firm trusted by both NORAD and ZAWA.

This avoided the problems of dumping too much money centrally (ie the problems of budget-funded organizations) and enabling a highly centralized sector to bloat-up without delivering real results. At an important time strategically, the programme also demonstrated the power of decentralizing operational management to cost/profit centres: given clear and simple targets, relatively weak park managers were nevertheless able to deliver highly satisfactory results. Thirdly, external facilitation and monitoring was critical. For an additional cost of 5 per cent, consultants developed patrol monitoring and financial systems, audited performance monthly, and provided the donor and others with greater confidence in the programme.

*Relative Efficiency of the Performance-Based Patrol System  
(Rough Comparison of Patrol Costs)*

<i>Cost</i>		<i>Patrol days</i>	<i>Cost per day (US\$)</i>
South Luangwa <sup>12</sup>	400,000	19,128	20.91
South Luangwa	400,000	8,500	47.06
North Luangwa	300,000	10,000	30.00
Kafue Performance Patrolling	46,991	2,625	17.90



The results were positive and informative. The pilot initiated in Kafue National Park cost US\$40,000 per month. At US\$18 per square kilometer, the programme was effective (Figure) yet cost less than half of the best-managed systems in Zambia (Table), and well under the costs predicted by Martin (2003) despite the high cost of operating in Zambia. The halving of direct costs is immediately obvious, yet scouts actually took home 53 per cent more pay on average: they patrolled for 20 days each month, three times the average even in ‘well-managed’ parks. Probably the most important cost reduction was in overhead and capital, with the demand for housing and other support services also being halved.

Performance and motivation improved dramatically (Figure) because scouts were paid directly according to how many days they spend in the bush patrolling. This process was used to introduce and develop performance-monitoring systems for patrolling (ie patrol monitoring

forms) and also for finances, converting the park into a cost centre. The results in the Figure benchmark performance against the two Luangwa projects. Poaching was reduced to one-sixth of previous levels within five months. Catch/effort indicators provided a quick and clear indicator of effectiveness, whereas mapping of patrols and incidence enabled rapid improvements in tactics, especially the placement of patrols, and probably doubled effectiveness. The programme also confirmed the value of intelligence.

Although ground coverage will always be important, the cost of catching a poacher on patrol is expensive. However, if the information obtained from this poacher is used for follow-up operation, and intelligence is carefully managed, poaching and marketing rings can be smashed at a fraction of the cost of controlling poaching through ground coverage alone.

If we return to the theoretical argument about accountability, this financing arrangement converted Kafue National Park from a budget-based organization to one where income was directly related to payment for value added through a clearly defined product (ie patrol days, and bonuses related to patrol targets and apprehended criminals). For the major cost activity of many parks, this halved costs. It was also an important step in changing the entire character of the park agency. At this time ZAWA's finances were highly centralized, with all the symptoms of such systems. To manage the US\$5 overhead for each patrol day, park-level financial and management systems were necessary, including monthly budgets and variance analysis, purchase of supplies and equipment, and payment of scout salaries. Relatively easy to develop, this internalized performance accountability, and ZAWA's top management immediately recognized its value. It also broke the logjam of central purchasing and administration so common with wildlife agencies.

**Annex 1: Terms of Reference**

## Annex 2: Statistics and data used in the paper

### 2.1 Wildlife Prices

<b>Hunting Fees and Licenses in Zambia (2003)</b>				
	<b>District Residents (ZK)</b>	<b>Zambian Citizens (ZK)</b>	<b>Zambian Residents (ZK)</b>	<b>Foreigners (US\$)</b>
Application fee	10,080	10,080	10,080	-
National Game Licence Basic fee	18,000	90,000	125,100	-
Permit to hunt in GMA	25,020	50,040	62,640	-
Bird Licence fees	54,000	81,000	112,500	100
<b>Animal Fees (2003)</b>				
Species (Game Animals)	<b>District Residents (ZK)</b>	<b>Zambian Citizens (ZK)</b>	<b>Zambian Residents (ZK)</b>	<b>Foreigners (US\$)</b>
Baboon	9,000	18,000	25,200	50
Buffalo	270,000	486,000	675,000	1,000
Bushbuck	30,060	54,000	75,240	320
Bushpig	15,120	27,000	37,620	270
Crocodile	18,000	324,000	450,000	1,000
Duicker, Blue	-	50,400	72,000	350
Duiker, Common	15,120	45,000	62,640	230
Duiker, Yellow Back	-	54,000	75,240	310
Eland	-	1,170,000	1,625,400	1,500
Grysbok	10,080	27,000	37,620	210
Hartebeest	80,100	135,000	187,740	650
Hyena	-	36,000	50,220	210
Impala	30,060	63,000	87,480	100
Jackal	-	36,000	50,220	220
Kudu	-	810,000	1,125,000	1,000
Leopard	-	1,800,000	2,500,000	1,750
Lion	-	2,250,000	2,500,020	2,750
Oribi	-	31,500	43,920	210
Otter	-	18,000	25,200	160
Porcupine	15,120	18,000	25,200	160
Puku	40,140	90,000	125,100	350
Reedbuck	45,000	90,000	125,100	300
Warthog	50,040	90,000	125,100	300
Waterbuck, Common	-	315,000	437,580	700
Waterbuck, Defassa	-	324,000	450,000	1,000

Wildebeest, Blue	-	144,000	201,600	650
Wildebeest, Cookson's	-	153,000	225,000	850
Zebra	-	450,000	624,960	600
<b>Protected Animals</b>				
Caracal	-	40,500	56,340	570
Civet	-	40,500		570
Genet	-	40,500		570
Hippopotamus	-	1,350,000	1,875,060	1,000
Klipspringer	-	63,000	87,480	570
Lechwe, Black	-	135,000	187,560	1,100
Lechwe, Kafue	-	153,000	212,580	1,050
Lechwe, Red	-	130,500	181,260	1,000
Monkey, Blue	-	13,500	18,900	260
Monkey, Colobus	-	31,500	44,100	260
Pangolin	-	100,080		260
Roan Antelope	-	1,800,000	2,100,240	3,500
Sable Antelope	-	1,350,000	1,875,060	2,700
Steinbok	-	45,000	62,640	260
Tsessebe	-	225,000	312,480	1,000
Sitatunga	-		312,480	1,800

put in ZAWA park fees  
Annex 1: Park Fees

<b>National Park</b>	<b>Citizens (K)</b>	<b>Est. Residents (K)</b>	<b>Non-Residents (US \$)</b>
<b>Category A</b>			
South Luangwa	25,020/Person/day	31,320/Person/day	20/Person/day
Lower Zambezi	25,020/Person/day	31,320/Person/day	20/Person/day
Victoria Falls Island	25,020/Person/day	31,320/Person/day	20/Person/day
<b>Category B</b>			
Mosi-oa-Tunya	15,120/Person/day	18,900/Person/day	5/Person/day
Kafue	20,160/Person/day	25,200/Person/day	15/Person/day
North Luangwa	20,160/Person/day	25,200/Person/day	15/Person/day
<b>Category C</b>			
Kasanka	15,120/Person/day	25,020/Person/day	10/Person/day
Sumbu	15,120/Person/day	25,020/Person/day	10/Person/day
Lochnivar	15,120/Person/day	25,020/Person/day	10/Person/day
Blue Lagoon	15,120/Person/day	25,020/Person/day	5/Person/day
<b>Category D</b>			
Liuwa	10,080/Person/day	25,020/Person/day	5/Person/day
Other National Parks	10,080/Person/day	12,600/Person/day	5/Person/day
<b>Category E</b>			
School Parties	5,040/Student/day	5,040/ Student /day	5/ Student/day

Aircraft Landing/Angling/Camping/Mooring/Vehicle Entry/Vessel Entry

	<b>Locally Registered (K)</b>	<b>Foreign Registered (US \$)</b>
Vehicle < 3 tones net weight	12,600/vehicle/day	15/Vehicle/day
Vehicle > 3 tones net weight	25,200/vehicle/day	30/Vehicle/day

Vessel < 50 Horse Power	12,600/vessel/day	15/Vessel/day
Vessel > 50 Horse Power	25,200/vessel/day	30/Vessel/day
Aircraft	75,060/aircraft/day	30/aircraft/day
Mooring in the National Park	25,200/vessel/day	30/Vessel/day
Boating	31,320/vessel/day	20/Vessel/day
Canoeing/Rafting	25,200/trip/day	20/trip/day
	<b>Citizens/Residents (K)</b>	<b>Non-Residents (US \$)</b>
Camping	18,900/person/day	5/person/day
Angling	18,900/person/day	5/person/day

Table 12: Tourism Revenue Projections - Kafue National Park : 2004 and Beyond							
Name of Facility	Type of Facility	Bed Capacity	Operator	Location (KNP / GMA)	Status of Facility	Fixed Lease Fees (USD)	Anticipated Min Variable Fees 2004
<b>Operational in 2003</b>							
Lufupa	Lodge	48	Busanga	NP	Operating	17,373	Turn over
Kafwala	Camp	16	"	NP	Operating	3,600	Turn over
Busanga	B/camp	8	AfricanExperiences	"	Operating	2,784	
Hippo	Camp	12	Hippo Lodges	"	Operating	4,800	12,600
Lubungu	Camp	12	Lubungu (2001) Ltd	NP	Operating	0	9,600
Shumba	F/Camp	8	Busanga	"	"	1,800	6,300
						<b>30,357</b>	<b>28,500</b>
<b>Newly Approved Facilities</b>							
Mukombo	Lodge	20	Mushitu Safaris	NP	Construction	3,000	0
Mayukweyukwe	B/camp	8	Pro-Afr.Tou	NP	Construction	2,400	0
Dundumwezi	C/site	30	Siachitema CRB	Np	Construction	800	0
Mapunga	B/Camp	8	Ikayi	NP	Construction	2,000	0
Ntemwa	Lodge	16	Chilongozi	"	Collapsed	2,012	0
Chunga	Camp	12	ZAWA	NP	Construction	7,200	0
Kapili	Lodge	24	Outnet		Construction	8,400	0
Ngoma	Lodge	32	Pamodzi		Construction	19,200	0
Shishamba	C/Site	30	Chinderera		Construction	800	0
Hornbill	Lodge	8	Hornbill Saf.	"	Operating		0
						<b>45,812</b>	<b>0</b>
<b>GMA Lodges taking Clients inside the Park**</b>							
Leopard	Lodge	12		GMA	Not operating		0
Kapinga	F/Camp	6	"	"	"		0
Njovu	Lodge	12	Njovu Safaris	"	Not operating		0
Lunga Cabin	Lodge	12	AfricanExperiences	GMA	Operating		1,500
Puku Pan	Lodge	16	Frank van Dixhoohn	"	"		1,500
Musungwa	Lodge	72	Musungwa	"	"		1,500
Mukambi	Lodge	26	Real Afr. Saf.	Mumbwa W.	Operating		5,670
New Kalala	Lodge	12	Acacia Saf.	GMA	Operating		1,500
Dav.Shepherd	Camp	12	WECSZ	GMA	Operating		1,500
Heron	Lodge	20	Heron Saf.	Mumbwa W.	Operating		1,500
Mbizi	Camp	12	Mbizi Saf.	Lunga Luswishi	Not operating		5,670
					<b>Total Fixed Charges</b>	<b>77,969</b>	
					<b>Total Variable Charges</b>		<b>47,970</b>
					<b>Grand Total</b>	<b>125,939</b>	
* Newly allocated sites and no variable fees are charged during construction, fixed fees however, are charged upon signing the TCA							
** Lodges outside the park, taking clients into the Park for Game drives.							

Estimated Park Entry fees based on US\$ 15 at 100 International clients per Season for 6 months operation season





## **Annex 3 Paying for Service: Emergency Resource Protection in Kafue National Park**



## **Annex 4: Primary investigation of the status of tourism in South Luangwa**

### **1 REPORT ON TOURISM FIGURES FOR THE SOUTH LUANGWA**

PREPARED BY NICK ASLIN

### **2 INTRODUCTION**

I have been involved in tourism in the South Luangwa since 1991 and currently run Norman Carr safaris, one of the country's leading photographic safari companies.

The South Luangwa National Park is approximately 9,000 km sq. and is predominantly surrounded by a series of game management areas. The Luangwa Valley itself also contains the North Luangwa and Luambe National Parks but the only areas considered for this project were the South Park and its immediate environs. I have only looked at the photographic industry and not considered the earning potential of the hunting industry, which is of course quite significant

Photographic tourism started in the Luangwa Valley in 1960 when Norman Carr established Nsefu, the first photographic tourist camp, for 30 years the industry expanded organically and slowly. The past decade has seen a faster rate of increase in the numbers of camps and available beds. It is generally regarded that the main Mfuwe area has reached saturation point with regard to the number of beds it can sustain but that there is considerable room for developing outlying areas, any future development in this vein would need to be supported by a program of infrastructure development.

### **3 METHODOLOGY**

I planned to show the capacity of the industry in 2003 compared to 1998 with regard to the number of available beds, this information would be supported by figures showing the revenue earned by ZAWA in each of these years. I obtained further operation figures from safari companies relating to 2003 but decided not to alienate them by asking for detailed figures from 5 years ago.

I compiled a questionnaire which was distributed to all safari operators in the area, (a copy of the questionnaire is attached to this report). Where figures were submitted to me in Kwacha I converted them to US\$ using exchange rates of 1,900 for 1998 and 4,500 for 2003. All figures were rounded in order to make their interpretation a little easier.

Basic and non sensitive information should be regarded as more accurate than figures for bednights sold and also for expected turnover. Some companies had accurate figures easily to hand and these people tended to be quite happy to supply this information, there were a couple of cases where I suspected that firstly, accurate figures had not been calculated and secondly, that if they had been available they would not have been provided happily, in these cases the individuals have given me estimates that they felt happy with. With the knowledge I have of

the operations in question I am happy with the figures that have been represented in the spreadsheet.

Estimated turnover figures relate to safari turnover only and not to ancillary revenues except for the 2 self catering / camping operations, in these 2 cases the figure of \$45 as an average nightly rate is their estimate of the average total spend of a guest. Obvious ancillary revenues that would be earned by most companies include, bar and shop sales but these tend to be very low compared to safari turnover (many of the safari camps do not charge extra for drinks).

The largest category of ancillary revenue that was not considered is that of packaging tours. Most of the largest and busiest companies not only sell accommodation in their own camps but also sell flights around Zambia and often accommodation in other National Parks as a package. These packaging revenues can become quite high and, with the increase in internet marketing directly to the general public, they are becoming increasingly important to those companies that are involved.

Other operating costs beyond those of wages and Park Fees were not investigated, to have attempted to get accurate breakdowns of all expenditure would have been too complicated for this particular investigation.

I approached ZAWA Mfuwe command for assistance in collating their revenue figures, they were happy to help and had accurate records going back to 1998 so a comparison of the two years was quite simple.

#### **4 RESULTS & CONCLUSIONS**

The 3 spreadsheets tell their own story but I believe that the most interesting statistic to be gleaned by comparing them all is that on average safari operators can expect to pay approximately 20% of their turnover to ZAWA. When it is considered that ZAWA are not the only government body that are taxing the tourism industry (there are also local councils, ZNTB and of course ZRA) it can be seen that the private sector is operating under a heavy burden of financial commitment.

It is for this reason, in my opinion, that the tourism industry has struggled to survive in recent years, there have been a number of companies that have failed to stay in operation and many, many more than have failed to turn a profit from year to year. This has resulted in a lack of re-investment in the industry, lest we not forget that tourism is an industry that needs always to change and keep up with its market. It is apparent that most of the serious, recent investment in Zambian tourism has come from outside of the country and that there is no purely Zambian company that has been able or willing to invest heavily in their own industry.

On the flip side, this same situation has created a strong and resilient industry, those that have survived should be in a good position when visitor numbers start to increase as they are bound to do. It is important that Government does not continue to increase the tax burden on the industry and that it allows the industry to expand from within and to flourish.

NAME OF OPERATION					
NAME OF CAMP					
LENGTH OF SEASON IN MONTHS					
HOW MANY BEDS					
HOW MANY MANAGERS					
HOW MANY ZAMBIAN GUIDES					
HOW MANY NON ZAMBIAN GUIDES					
HOW MANY GENERAL STAFF					
ESTIMATE OF MONTHLY JNR WAGE BILL					
ESTIMATOE OF MONTHLY SNR WAGE BILL					
AVERAGE RATE PER BED NIGHT					
ESTIMATED NO OF BEDNIGHTS IN 2003					
ESTIMATED TURNOVER IN 2003					

## **Annex 5: Primary investigation of the status of tourism in Lower Zambezi**

### **Viability of the LZNP/Surrounding GMA's and Impact on the Zambian Economy**

Prepared by Grant Cumings on behalf of DSI & Brian Child, for UNDP

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#### **INTRODUCTION**

**The following is a brief history of the tourism development in the Lower Zambezi, a summary of data collected from some of the safari operators, and my assessment of the state of the tourism industry in the Lower Zambezi.**

The Lower Zambezi National Park is situated in the south east of Zambia opposite Zimbabwe's Mana Pools National Park, and is flanked by Chiawa Game Management Area to the west and Rufunsa Game Management Area to the East.

The Park has spectacular scenery – the mighty Zambezi River to the south and the Muchinga Escarpment to the north. It is home to numerous elephant, buffalo, hippo, crocodile, lion, leopard and assorted plains game. Rhino, which were once prolific, were wiped out by poachers in the 1970's. The surrounding GMA's boast most of the same species but in fewer numbers.

The area is under the management of the Zambia Wildlife Authority, whose operations are supported (logistics, anti-poaching and research) by Conservation Lower Zambezi (CLZ) – a registered NGO whose aim is to “Conserve the wildlife and habitat of the Lower Zambezi”. CLZ is currently developing an Environmental Education Program in an effort to promote more environmentally sensitive population in the surrounding communities.

Before the advent of tourism in the area, the local people lived by means of subsistence farming, fishing and hunting. Some were employed in the commercial agricultural sector by an international company known as Masstock, since purchased by a company known as Chiawa Estates.

Tourism development in the LZNP commenced with the opening of Chiawa Camp in 1989, followed shortly by two camps opened by Safari Par Excellence, one in the LZNP and one in Chiawa GMA. At the time there was no safari hunting in Chiawa GMA, unlike Rufunsa GMA.

In 1996 an Outline Management Plan was ratified to better manage activities in the LZNP, simultaneously with a Public Tender for sites earmarked for tourism development in the LZNP. Since 2001 a new document has guided tourism development in the Lower Zambezi – the General Management Plan for LZNP and Surrounding GMA's. This document is currently under review subject to a recently approved EIA for the area. It must be noted that tourism development in the surrounding GMA's, particularly Chiawa GMA, has been largely uncontrolled.

At this time there are 6 safari camps operating in the LZNP and approximately 30 assorted tourism ventures in the surrounding GMA's. Average occupancy in these camps – less than 20%; some camps do significantly better than that whilst most do worse.

Few of these enterprises are Zambian owned and managed, some are owned by foreigners based in Zambia, whilst others are run by foreign companies without Zambian bases.

Safari camps based in the LZNP hold renewable leases with ZAWA, and annual fixed and variable fees are paid direct to ZAWA.

Camps based in Chiawa GMA hold title to their land, and have entered into agreement with ZAWA and the Chiawa Community where fees are paid to ZAWA, who in turn are to pass on some of these revenues to the community, in return for no-hunting, no-fishing, no settlement and no-wood cutting in the Chiawa GMA, east of Zambezia Wildlife Farm, a privately owned tract of land on the banks of the Zambezi. To the west of Zambezia Wildlife Farm, ZAWA and the Chiawa Community have entered into another agreement with a foreign safari hunting company (Royal Zambezi Wildlife) to develop safari hunting in that area to the west of Zambezia Wildlife Farm. It is unknown what arrangement for non-consumptive tourism development has been made in the Rufunsa GMA however this area was made available by ZAWA for tender as available for Safari Hunting.

## **DATA**

The information included in the attached spreadsheet was provided to me via a questionnaire which I completed whilst interviewing Directors of the companies. Some questionnaires were completed and submitted to me via email. Many, including all those in Rufunsa GMA are only my best estimates based on my experience and what information was available to me. However information for the major operators in both LZNP and Chiawa GMA was collected by myself from the relevant Company Directors and in my opinion is applicable for the purposes of this paper. I have used this information to pro-rata estimates for those camps that did not complete the questionnaire.

*It must therefore be noted that the information is not precise, nor is it substantiated, and is at best an informed estimate of the economic activity in the Lower Zambezi.*

*NO DATA HAS BEEN COLLECTED FROM ZAWA NOR HAS ANY DATA BEEN PROVIDED TO ME AS TO HOW MUCH GMA OPERATORS HAVE PAID TO ZAWA FOR "LAND USER FEES", AND HOW MUCH OF THIS HAS BEEN PASSED ON TO THE LOCAL COMMUNITY.*

Not included in the spread sheet is the economic activity created by the conservation bodies active in the Lower Zambezi – namely Conservation Lower Zambezi and the Zambia Wildlife Authority. Both organizations spend significant funds in Zambia in their endeavours to achieve their objectives.

## **RESULTS**

The development of tourism in the Lower Zambezi has brought significant investment to Zambia, and the industry is the largest employer in the area (435 permanent jobs) and which contributes in excess of US\$3 million to the Zambian economy per annum. However few of these ventures are a commercial success with occupancies averaging below 20% and this requires addressing. Perhaps too many enterprises have been awarded tourism rights in the

Lower Zambezi although should Zambia become better known as an international tourism destination, occupancies ought to improve.

### **STRENGTHS OF LOWER ZAMBEZI TOURISM**

- Beautiful scenery
- Relatively unspoilt National Park
- Excellent wildlife
- Large variety of safari activities on offer
- Large variety of safari operations – from budget to exclusive
- Some internationally acclaimed safari operations
- Area already world renowned as a low-volume/high-revenue destination, and for the above
- Safari operators generally support conservation activities
- Safari operators generally lobby for protective measures and for improved conditions
- Area receives comparatively high level of protection through ZAWA/CLZ
- Development of tourism industry already in place hence capacity available for improved international conditions
- Near proximity to Lusaka means cheaper access than other options
- Agreements in place with operators, ZAWA, and community

### **WEAKNESSES OF LOWER ZAMBEZI TOURISM**

- River front of Chiawa GMA overdeveloped and uncontrolled
- River front of LZNP said to be already at capacity for development
- Road and air access poorly developed
- Only a small geographical area particularly attractive for tourism development
- All development currently squeezed into this small area
- An even smaller area of the LZNP is the attraction for all the development
- Poaching remains prevalent but suppressed. Rhino wiped out; elephant under threat.
- ZAWA provides inadequate conservation and management measures
- Tripartite relationship between ZAWA, operators and local community inconsistent and contradictory
- Sandstone and alluvial soils are fragile and cannot sustain much vegetation, or visitor activity.
- ZAWA revenues from LZNP subsidize a massive area of operations for the Area Warden. This means LZNP and Chiawa GMA are not as well funded for protection and management as they ought to be as funds from this area are taken to support Siavonga and Luano etc.
- Near proximity to Lusaka means area could be overrun with casual visitors unless strict controls put in place

### **OPPORTUNITIES**

- Zambia is currently “hot property” especially in the UK, and is currently having its best tourism year for many years.
- Zimbabwe, Zambia’s chief tourism competitor, continues to remain unpopular with tourists given its current political climate

- The Zambian government has identified Tourism as a key sector for development and support in the economy, with regards to its poverty alleviation strategy.
- NORAD is currently providing aid to ZAWA for its operations. The benefits of this assistance should be maximised whilst it is available.
- Conservation Lower Zambezi provides some logistical support to ZAWA for conservation activities. The benefits of this assistance should be maximised whilst it is still available.
- The LZNP and its safari operators are already held in high regard by the international tourism community – all should be done to maintain this

### **THREATS TO LOWER ZAMBEZI TOURISM**

- Over development and mismanagement of industry
- Mismanagement of natural resources, incl. operation of Kariba Dam
- Proposed reclassification of parts of LZNP into Hunting Concessions
- Proposed safari hunting in Chiawa GMA east of Zambezia Wildlife Farm
- Proposed safari hunting of the trophy bull elephants which LZ is renowned for
- Poor global security and economy
- Poaching
- Potentially disenfranchised community

### **CONCLUSIONS**

- There is significant capacity for tourism to grow **WITHOUT** having to license more safari camps. It would be quite feasible to increase tourism revenues by 200% without adding any more beds to the area – i.e. achieve an average occupancy of only 40% for existing developments.
- The area appears to be suitable for low volume / high revenue tourism only. It could not sustain a mass market tourism industry
- A short term, quick profit view must be discouraged of ZAWA, the surrounding communities, and of the operators
- Tourism will grow as Zambia encourages more international visitors – ZNTB should be assisted with this task
- Tourism will grow if ZAWA takes care of its partners with whom it has entered commercial agreements – more dialogue between ZAWA and the operators should be encouraged, and ZAWA should give more due consideration to the input of the operators' association.
- Agreements between operators, community, and ZAWA should be strengthened and better enforced. Improved co-operation and transparency between all parties would be required to achieve holistic and effective management and conservation of the area.
- Operators need to be confident in the integrity of Lease Agreements, of other agreements with ZAWA & Community, and that the integrity of LZNP's borders is not jeopardised.
- Encourage non-consumptive eco-tourism development of the plateau area of LZNP
- GRZ should improve incentives for existing or successful safari operators.

- Unutilised sites or those in the possession of inadequate operators be closed to further development
- Improved air strips and road infrastructure would reduce costs and increase efficiency and capacity
- Tourism will grow if the care & management of the natural resource improves. ZAWA could consider private-public partnerships in this regard, particularly if government are unable to provide additional funding to ZAWA.
- Improve the distribution of revenue derived from the Lower Zambezi tourism industry, taking into account the immediate requirements of the LZNP (the primary attraction and source of revenue), surrounding GMA's, and the local community.
- Implement an effectively managed and sustainable safari hunting industry within Rufunsa GMA and Chiawa GMA, west of Zambezia Wildlife Sanctuary. Ensure quotas are scientifically based, substantiated, maintained and enforced.

**The above are my findings and opinions, based on my personal experience of operating a tourism venture in the LZNP since 1989, and on information provided to me by other safari operators.**

**Grant Cumings  
30th June 2004**

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#### **SUMMARY DOCUMENT OF SPREADSHEET ANALYSES ON LOWER ZAMBEZI TOURISM ECONOMIC ACTIVITY**

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<b>NUMBER OF BEDS:</b>	<b>388</b>
<b>NUMBER OF ROOMS:</b>	<b>194</b>
<b>NUMBER OF MANAGERS:</b>	<b>41</b>
<b>NUMBER OF ZAMBIAN GUIDES:</b>	<b>41</b>
<b>NUMBER OF NON-ZAMBIAN GUIDES:</b>	<b>19</b>
<b>NUMBER OF FULL TIME WORKERS:</b>	<b>435</b>
<b>NUMBER OF PART TIME WORKERS:</b>	<b>119</b>
<b>TOTAL ANNUAL WAGE BILL:</b>	<b>US\$705,000</b>

<b>AVERAGE RATE:</b>	<b>US\$101</b>
<b>NO. OF PAX 2003:</b>	<b>5785</b>
<b>NO. OF PAX 1998:</b>	<b>5180</b>
<b>PARK FEES FOR 2003:</b>	<b>US\$268,800</b>
<b>ANNUAL TURNOVER:</b>	<b>US\$2,172,000</b>
<b>OTHER INCOME TO LODGE:</b>	<b>US\$495,000</b>
<b>OTHER INCOME TO ZAMBIA:</b>	<b>US\$706,000</b>
<b>TOTAL INCOME TO ZAMBIA:</b>	<b>US\$3,373,000</b>
<b>MATERIALS PURCHASED LOCALLY:</b>	<b>US\$7,300,000</b>
<b>AVERAGE OCCUPANCY 2003:</b>	<b>15%</b>
<b>AVERAGE OCCUPANCY 1998:</b>	<b>11%</b>

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## Annex 6: Primary investigation of the status of tourism in Livingstone

### 1. General Description

The tourism industry is dominated by the Sun hotels, which comprise two-thirds of the value of the tourism sector in Livingstone, estimated to be \$30m annually<sup>8</sup>. Of this, lodges sited on the river earn some \$5m annually. Backpackers and low budget tourists contribute approximately \$2m, if we combine the income from budget accommodation and adventure activities. Some 1,800 people are employed directly in tourism. The major tourism attractions are the Falls and river activities, followed by adventure tourism, with game viewing being a distant third. Most game viewing takes place in Zimbabwe or Botswana.

Table 6.1: Summary of Tourism operations in Livingstone (2002)

Summary Of Tourism Operations in Livingstone				
Type of Operation	Capacity		Employees	Turnover (\$)
Adventure Trips	56,408	Trips	373	1,783,680
Lodges/Hotels	994	Rooms	1,013	25,545,292
Backpackers/campsite	319	Rooms	110	277,035
Guest houses	195	Rooms	176	487,071
Hostels/Hotels (local)	173	Rooms	131	450,052
<b>Total</b>	<b>1,681</b>	<b>Rooms</b>	<b>1,803</b>	<b>28,543,129</b>

Source: Raw data collected by the Consultants and Livingstone Tourism Association

### 2. Lack of Tourism Information and Data

A full list of tour operators in Livingstone has been compiled by the Consultants and the Livingstone Tourism Association, and an attempt has been made to quantify investments, capacity, occupancy rates, employment and turnover (annex 2.5). This indicates that the sector is worth some \$30m and creates 1,800 direct tourism jobs, but the data is indicative and conservative. It is extremely difficult to get comprehensive or accurate data on tourism in Livingstone. This makes planning, investment decisions, sales and marketing decisions, etc. difficult. Note, for instance, that the Livingstone Development Plan (1995-2010) contains no data on tourism, tourism economics, investment, etc.! The best basic data we can find is that:

- In 1997, Zimbabwe had 220,000 tourist staying in Victoria Falls compared to 66,000 (30%) in Zambia<sup>9</sup>;
- International Tourism in Zambia is growing (from a tiny base) at about 10-25% annually, with 25% of 574,000 tourism arrivals (2000) for holiday purposes<sup>10</sup>.
- The following people have visited the Zoological Park (table 6.2) and the Victoria Falls (table 10), while ZAWA earns over \$200,000 annually from the area (table 6.3).

<sup>8</sup> This data is based on rough estimates of the size of tourism operations in Livingstone, and appears to be conservative. A list of all lodges is provided in annex 2.5

<sup>9</sup> Source, ZESCO (1997); IUCN 1996

<sup>10</sup> Source: International Executive Services Corps (2002) and SLAMU V, quoting WTO and ZNTB data

Table 6.2: Tourism Statistics & Visitors to Zoological Park

<b>Tourism Statistics &amp; Visitors to Zoological Park</b>		
Year	Local	Foreign
2000	6,124	8,871
2001	8,979	6,991
2002	10,387	8,105

Source: ZAWA Annual Reports

Table 6.3: Tourist Visitation and Income to the Falls (2002)

<b>Tourist Visitation and Income to the Falls (2002)</b>			
	Number of Visitors	Fees	Income (estimate)
Local	23,950	2,160	ZMK 51,732,000
International	50,126	10	\$501,260
TOTAL	74,076		\$512,756

Source: NHCC, pers comms and file records and reports, 2002.

Table 6.4: Income to ZAWA in Mosi-oa-Tunya (2002)

<b>Income to ZAWA (2002) in Livingstone Area</b>		
	ZK	US\$
Park Entry	382,264,603	84,948
Angling	1,678,700	373
Motor Vehicles	8,614,000	1,914
Boats	75,712,250	16,825
Bunji Jumps	7,885,225	1,752
Aircraft	36,271,571	8,060
Rafting	1,778,183	395
Other	5,010,302	1,113
Waterfront		17,734
Sun and Waterfront		66,500
Waterfront (fixed costs)		24,850
Mwembeshi (HQ)		3,200
Variable Costs		5,979
Star of Africa		34,689
Livingstone Island		2,450
TOTAL		270,783

Source: Warden's Annual Report (2002)

Quality information, and regular communications, could play a powerful role in improving tourism cooperation and adding value, including:

- Name and description of tourism operation (including ZAWA and NHCC)
- Capacity (visitors, beds, boats, flights, etc.)
- Occupancy
- Turnover
- Employment and wages

If possible

- Total value of investment
- Assessment of profitability, economic impact, etc.

#### Tourism Capacity and Growth Rates

IUCN (1996) indicates the level of tourism in Zambia or Zimbabwe before tourism's rapid recent expansion (table 6.5), which under-estimates the current size of the sector by a factor of two to four given recent growth patterns.

*Table 6.5: Summary of Hotel and Visitor Activities in Victoria Falls Area in 1995*

<b>Summary of Hotel and Visitor Activities in Victoria Falls Area in 1995</b>			
	<b>Zimbabwe</b>	<b>Zambia</b>	<b>Total</b>
Visitors Staying each Year	220,000	66,000	286,000
Visitors per day	603	181	784
Rooms	1,453	372	1,825
Beds	2,906	751	3,657
Large Hotels 150-250 rooms	2	-	2
Medium Hotels (75-150 rooms)	6	1	7
Small Hotels (25-74 rooms)	5	4	9
Lodges (<25 rooms)	9	12	21
Campsites	2	4	6
Employment Hotels	1,701	581	2,282
Employment Tourism	1,351	445	1,796
Indirect Employment (tourism)	5,517		5,517
Boat cruisers	105,120	31,390	136,510
Canoe Pax	22,800	6,864	29,664
Rafting Pax		50,000	50,000
Falls flight Pax	44,372		44,372
<b>Total Direct Expenditure (1995) (\$159/visitor)</b>			<b>45,592,000</b>
Source: IUCN (1996)			

Tourism to Livingstone doubled between 1996 and 2002 (table 6.6), which corresponds roughly with the estimated 10-27% growth rate of Zambian tourism mentioned in the main text. Thus, tourism is now worth at least \$30m in direct income in Livingstone (calculated from our data on tourism) and at least \$100m in Zimbabwe.

*Table 6.6: Comparison of Tourism Rooms and Employment in Livingstone between 1996 and 2003*

<b>Comparison of Tourism Rooms and Employment in Livingstone between 1996 and 2003</b>		
	1996	2003
Number of Rooms	367	1,681
Number of Beds	713	
Employment	577	1,800+
Source: IUCN, 1996; own data 2003		

Tourism to Zambia and Zimbabwe doubled between 1994/5 (the period from when IUCN data was drawn) and 1999. Certainly, in Victoria Falls, tourism was greatly diversified during this period, with the expansion of adventure tourism (white-water rafting, bunji-jumping, canoeing, river boarding, elephant back riding, etc.). This conforms to the primary data collected for Livingstone (see table 6.6).

### 3. Costs and Regulations

Livingstone, indeed Zambia, is a high cost destination. In addition to diseconomies of scale (e.g. insufficient tourism numbers to support regular flights), tourism faces high operating costs, and excessive (non value-adding) regulation and procedure – this makes investment and tourism uncompetitive, when competitiveness must be Zambia’s primary aim (Tanner, 2002). Table 14 indicates that operating in Zambia costs roughly twice as much as elsewhere in the region. Zambian operators are also subject to significantly more government regulations and procedures, permissions and licenses, and spend more time chasing these non value-adding activities, than in neighbouring countries<sup>11</sup> (table 6.7). Note that many of these are imposed by institutions trying to raise money to survive, rather than for the purpose of regulating the sector by creating an enabling environment for growth.

Thus, despite being a high cost destination, many operators are marginal or sub-viable, and do not make sufficient profit to expand their business in **Zambia**. **Livingstone Tourism Association** (2001) report 149 operations going out of business between 1998 and 2001.

Zambia has a very positive image in terms of quality of service and product (especially the Falls, South Luangwa and Lower Zambezi). Negative factors are deteriorating infrastructure

<sup>11</sup>In one example, a relatively small operator required some seventeen different license and permissions, and paid a total of K17m for these against a turnover of about K54m (31%).

(roads), poor yet expensive transportation (air, car hire), and lack of quality or up-to-date information.

Table 6.7 : Comparison of Tourism Costs in Livingstone, Zambia with Regional Competitors

<b>Comparison of Tourism Costs in Livingstone, Zambia with Regional Competitors</b>				
<b>Item</b>	<b>Zambia</b>	<b>Zimbabwe</b>	<b>Botswana</b>	<b>South Africa</b>
Diesel (per litre)	0.66	0.18	0.38	0.28
Petrol (per litre)	0.85	0.21	0.39	0.28
Electricity (unit)	0.03	0,01	0.08	
Telephone (min)	2.10	0.12	0.88	
VAT	17.5%	15%	10%	14%
E-mail (month)	48.54	8.06	15.00	15.00
Wine	5,00	2.00	2.00	2.00

#### 4. Park Sustainability And Revenue Retention

##### (a) Income and Expenditure

Using visitor statistics provided by NHCC and ZAWA, the revenue generating potential of Mosi-oa-Tunya in the short term is estimated to be \$500-1,000,000. From the Falls, NHCC earns somewhere between USD500,000 (table 6.8) and USD800,000 (an independent estimate provided to ZAWA, Mushinge, pers. comms.) However, the data is inconsistent and unreliable (compare tables 6.8 and 6.9) and as a matter of priority need to be improved because of the large amounts of money involved. ZAWA earns some USD 225,000 annual from the Zoological Park and other activities (table 6.8).

Table 6.8: Revenue Generating Potential of Mosi-oa-Tunya National Park

<b>Tourist Visitation and Income to the Falls (2002)</b>				
	<b>Number of Visitors</b>	<b>Charge</b>	<b>Income (ZK)</b>	<b>Income (US\$)</b>
<b>VICTORIA FALLS (NHCC)</b>				
Local	23,950	5,000 ZMK	119,750,000	\$26,611
International	50,126	10		\$501,260
<b>NHCC</b>	<b>74,076</b>			<b>\$527,871</b>
<b>ZAWA</b>				
Local	10,500	5000 ZMK	52,500,000	\$11,667
Foreign	8,500	5		\$42,500
Adventure				\$28,146
Concession Fees				\$155,402

		\$237,715
<b>TOTAL INCOME</b>		<b>\$765,586</b>

Table 6.9: Visitation to Victoria Falls

<b>Visitation to Victoria Falls</b>						
Year	Zambian Residents		Non Residents		Rafting	Total
	Adult	Child	Adult	Child		
2001	16,754	3,397	22,688	619	9,260	52,718
2002	19,051	4,899	13,573	1,421	11,245	50,189
<b>Income Fees</b>						
	\$1	\$0.5	\$10	\$5	\$3	
2001	16,754	1,699	226,880	3,095	27,780	<b>276,208</b>
2002	19,051	2,450	135,730	7,105	33,735	<b>198,071</b>

Source: NHCC records (note that his data differs from that presented in table 15).

Managing Mosi-oa-Tunya will costs ZAWA USD420,000<sup>12</sup> annually. Accurate costs of managing the World Heritage Site are not available although NHCC indicated a cost of USD150,000 annually with an additional USD50,000 for maintenance. To ensure that the park is sustainable, including both recurrent costs and maintenance, a commitment to retain USD620,000 to cover these costs is essential. This leaves an annual surplus of USD110,000 to USD410,000. In other words, there is a high likelihood of long term sustainability provided at least 70% of ZAWA revenue is retained in the project area. This assumes some USD 5 million investment in capacity building and upgrading of park infrastructure, including the removal of much unsightly and dilapidated infrastructure, and the burying of the ZESCO power lines.

Table 6.10: APPROXIMATE INCOME and Expenditure for Mosi-oa-Tunya National Park

<b>Income and Expenditure</b>	
<b>Income</b>	
ZAWA	230,000
NHCC	500-800,000
<b>Recurrent Expenditure</b>	
ZAWA	420,000
Falls	200,000
<b>Total Expenditure</b>	<b>620,000</b>
<b>Balance</b>	<b>110-410,000</b>

<sup>12</sup> If the number of patrol scouts is increased from 24 to 36 (as originally proposed) this rises by USD50,000 to USD470,000

