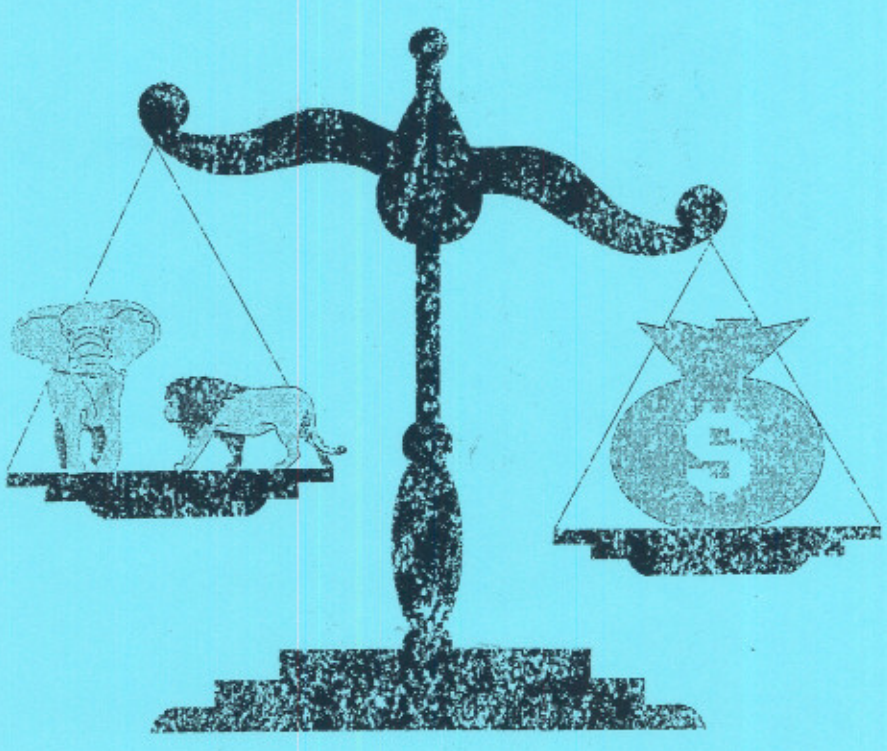
AFRICAN
WILDLIFE
FOUNDATION

The Economics of Tourism, and Wildlife Conservation in Africa

Lucy Emerton



AFRICAN WILDLIFE FOUNDATION DISCUSSION PAPERS SERIES
Applied Conservation Economics Discussion Paper No. 4
ACE-DP-4
February 1997

THE ECONOMICS OF TOURISM, AND WILDLIFE CONSERVATION IN AFRICA

Introduction: the economics of wildlife tourism

Wildlife tourism can generate significant profits. It has long been a major foreign exchange earner for many African governments through the revenues accruing from state-owned protected areas and national park networks. In recent years the participation of the private sector in wildlife tourism, and its incidence on private and communal lands in Africa has also increased rapidly.

Much of the wildlife in east and southern Africa lies on private and communal lands and its survival or destruction depends on the activities of these landholders. Wildlife tourism is commonly seen as a mechanism for providing incentives to landholders in wildlife areas to conserve wildlife - by creating a demand for wild animals and generating cash revenues it makes wildlife into a resource that it is in the economic interests of landholders to conserve. It is also seen as a way of increasing income for the residents of wildlife areas who have few alternative income-earning opportunities. Simultaneously, a range of factors discriminate against wildlife tourism as a profitable land use, including wider policy and legislation in the wildlife sector and other areas of the economy, the mechanisms through which wildlife tourism is implemented and tourism benefits distributed, and the availability of support to wildlife enterprise development - also have an important influence on whether landholders decide to engage in wildlife tourism.

We look at the economics of wildlife tourism for landholders in Africa. We argue that conventional models of the financial returns to alternative land uses present an overly simplistic view of the profitability of wildlife tourism. We outline how landholders' participation in wildlife tourism depends on a wide range of factors including the returns of wildlife tourism compared to agriculture or livestock ranching, the proportion of wildlife tourism revenues which actually accrue to them and on-going trends in land tenure, land use and livelihood patterns which impact on wildlife and their habitat.

The contribution of wildlife tourism to the national economy

Tourism forms an important component of national income in many east and southern African countries, generating direct income as well as tax revenues. In 1995 receipts from tourism totaled between US$ 150 million and US$ 1.6 billion in major wildlife-holding countries of Africa, contributing between 1% and 7% of Gross Domestic Product, as described in Table 1.

Table 1: The national value of tourism in selected African countries 1995

Country	Tourist receipts (1995 US$ m)	Tourist arrivals ('000)	% of GDP
Kenya	500	691	7.29
Namibia	146	300	5.06
South Africa	1595	4676	1.31
Zimbabwe	165	1297	3.04

(From: WTO 1996, Ashley and Barnes 1996)

Wildlife-based activities comprise a major share of the tourism market in these countries. For example in Botswana, it has been estimated that wildlife viewing accounted for approximately half of total overseas' tourist expenditure and generated up to US$ 3 million income to the government in 1990, of which about half was from entry fees and about a fifth from tax revenues (Modise 1990).

In Kenya, gross income from tourism was worth about US$ 500 million in 1995 of which approximately 70% or US$ 350 million - can be attributed to wildlife tourism, representing about 5% of GDP (Republic of Kenya 1996). This constitutes a significant net gain to the Kenyan economy, as illustrated in Table 2, of US$ 45 million or 13% of the gross tourist revenues accruing within the wildlife sector.

Table 2: Gross revenues and net returns to the wildlife tourism sector in Kenya 1995

	Rate	1995 US$ m
Gross revenues from tourism 1995		500
Tourism revenues attributed to wildlife sector	(70%)	350
Foreign exchange retention	(82.4%)	288
Operating surplus	(30% of retained foreign exchange)	87
Gross capital charges	(12.5%)	97
Foreign exchange premium	(20%)	58
Net returns to wildlife tourism sector		45

(From: Norton-Griffiths and Southey 1995, Republic of Kenya 1996, EIU 1979)

The economic importance of wildlife tourism extends beyond its contribution to national income. Although largely unquantifiable, wildlife tourism forms the basis of a range of informal sector activities and relies on goods and services provided from secondary and support industries such as food, beverages, fuel, textiles, furniture, construction, handicrafts and other consumables. In Namibia it has been estimated that additional services provided to game-viewing tourists are worth up to eight times as much as on-site expenditure (Ashley and Barnes 1996).

Wildlife tourism also contributes to other national economic goals such as employment and foreign exchange generation. For example, it has been estimated that game-viewing directly creates over I 000 full-time employment opportunities in Botswana (Barnes 1990) and accounts for just under a tenth of national wage employment in Kenya (JICA 1995). In Kenya, foreign exchange earnings from tourism have since 1987 exceeded the combined earnings of coffee and tea, the country's major traditional export crops and foreign exchange earners (Ouko and Marekia 1996) and now contribute over a third of total annual foreign exchange earnings in the country (Republic of Kenya 1996).

The private profitability of wildlife tourism

Wildlife tourism also generates substantial profits for a wide range of private sector entrepreneurs. In Botswana, private sector earnings from game viewing were worth more than eight times as much as government revenues in 1990, involving some 32 companies and 45 mobile operators (Modise 1990) and Generating gross output in excess of US$ 25 million (Barnes 1990), as outlined in Table 3.

Table 3: Private sector aggregates for game viewing tourism in Botswana 1990

	1990 US$'000				
	Mobile safari operators	Safari lodges/camps	Tourist motels	Others	Total
Current Investment					
Fixed assets	827	8 952	332	3 307	13 419
Gross output					
Turnover	2 337	15 299	497	9 295	27 428
Gross value added					
Wages/salaries	309	3 004	143	1 084	1 567
Directors' emoluments	108	302	7	9	426
Interest and amortisation	90	417	34	109	649
Depreciation	212	726	33	282	1 252
Income tax					
Licenses, duties	74	186	2	26	288
Rent	35	191	5	96	326
Net income	0	154	13	199	366
Total	828	2 090	242	1 912	5 072
Intermediate consumption	1 509	10 236	254	7 383	19 383

(From: Barnes 1990)

It is virtually impossible to gauge the typical returns to wildlife tourism enterprises as they include such a wide range of income-earning possibilities - such as lodges, campsites, wildlife viewing, trophy hunting, handicraft sales and cultural activities - at varying levels of scale, in different areas for different groups and individuals.

A major form of income generation through wildlife tourism enterprise is from accommodation and related services. It has been estimated that an established medium-scale wildlife viewing tented camp in Kenya may earn net revenues in the region of US$ 135 000 a year for its owner-operator, or generate about US$ 13.5 per hectare of land (adapted from Mwau 1996). As illustrated in Table 4, this represents a substantial return on initial investment.

Although of the same broad level, returns to wildlife viewing tourism vary in other parts of Africa. In Botswana it has been estimated that a medium to large-scale wildlife viewing enterprise may generate annual net returns of US$ 188 000 overall or US$ 9 per hectare (Barnes 1990) and that a similar enterprise in Namibia may be worth US$ 35 000 overall or US$ 2.5 per hectare for a game ranch, and US$ 524 923 overall or US$ 5 per hectare under a conservancy arrangement (Barnes and de Jager 1995).

Table 4: Financial model of typical medium-scale wildlife viewing camp in Kenya

Concession extent	10 000 ha
Occupancy rate	65%
Total capital requirement	US$ 276 000
Net returns (1995 US$/ha)	13.5

	Units	Price	Total ($/yr)
Accommodation	25	150	3 750
Gross income	(65% of bednights)		889 668
	Units	**Price**	**Total ($/yr)**
Depreciated capital costs			84 150
Lounge/mess buildings	1	3 0000	3 750
Camp tentage	1	40 000	8 000
Camp equipment	1	39 000	7 800
Passenger vehicles	4	52 000	41 600
Lorry	1	85 000	17 000
Generator	1	15 000	3 000
Staff quarters	1	15 000	3 000
Fixed operating costs			141 300
Manager	365	50	18 250
Core staff	300	120	36 000
Concession/land rent		75 000	75 000
Repairs and maintenance	1	5 000	5 000
License fees	1	1 000	1 000
Fuel generator	9 600	1	4 800
Uniforms	25	50	1 250
Variable operating costs			280 385
Vehicle operating costs	144 000	1	72 000
Casual staff	16	50	800
Food and drink	5 931	35	207 585
Other costs			249 106
Marketing/booking office costs	(1O% of gross income)		88 966
Accommodation and food tax, training levy	(3% of gross income)		26 690
Concessions	(15% of gross income)		133 450
Net revenues ($/year)			**134 728**

(From: adapted from Mwau 1996)

Factors affecting the profitability of wildlife tourism for landholders

We have described above how wildlife tourism generates significant profits both at the national economic level and at the level of the private entrepreneur. Because much of the wildlife in east and southern Africa lies outside protected areas and national parks - for example in Kenya it is estimated that between 65-80% of wildlife lies on private and communal lands (Ouko and Marekia 1996) - the decision to maintain land under wildlife largely lies in the hands of these landholders. They can make this decision either through actively conserving wildlife or indirectly through engaging in land uses which are based on,

or compatible with, wildlife. The degree to which landholders themselves profit from wildlife tourism is a major determinant of whether wildlife will be conserved.

We have seen that wildlife tourism can - at least in theory - generate significant revenues. There are however a number of wider factors which affect the profitability of wildlife tourism for landholders on private and communal lands. Some provide disincentives to wildlife tourism and conservation. They most importantly include policy distortions, distributional inequities and inadequacies in mechanisms for supporting enterprise development. We will look at these factors, and their possible impacts on landholders, below.

The opportunity costs of land in wildlife areas

Tourism is only one of a range of possible land uses in wildlife areas. Decisions to engage in wildlife tourism are influenced by the relative profitability of these different land uses, and to what extent they are compatible with wildlife. Much of the remaining wildlife in east and southern Africa are found in arid and semi-arid areas, where the predominant land use is livestock ranching as well as limited irrigated and rainfed arable agriculture. Although wildlife tourism is not incompatible with extensive livestock production, it is largely excluded by the presence of arable agriculture.

In general, although wildlife tourism can compete with subsistence-based agricultural land uses and can be combined with livestock production, its profits are far less that those accruing from land under commercial arable agriculture. This is clearly illustrated in the case of Kenya, where the profits from large-scale wheat farming and irrigated horticulture in indicative semi-arid wildlife areas are far in excess of those from wildlife tourism, as outlined in Table 5.

Table 5: Returns to alternative land uses in and semi-arid wildlife areas of Kenya

Land-use option	Returns to landholder (1995 US$/whole land unit)	Returns to landholder (1995 US$/ha)
Wildlife-based tourism		
Wildlife viewing camp	134 728	13.5
Land rent	75 000	7.5
Viewing fees for a camp	118 625	11.85
Large-scale commercial farming		
Large-scale wheat farming	117 297	126
Large-scale commercial ranching	21 195	1
Smallholder agriculture		
Pastoralist livestock production	75 294	3
Smallholder irrigated horticulture	716	344
Smallholder rainfed mixed agriculture	13	4

(From: Mwau 1996)

An examination of the relative returns to different land uses suggest that profit-maximising landholders in wildlife areas would choose to engage in commercial arable agriculture over either livestock production or wildlife tourism, where land, soils and climate permit it. In reality, landholders are constrained in their access to rents from both wildlife tourism and agricultural land uses, and are not always able to access the full profits from large-scale commercial agriculture.

Policy distortions

Policy distortions significantly alter the economic return to different land uses, their use can also modify private profits. Although financial profitability primarily affects landholders' choice between engaging in alternative land uses, a range of policy and legal instruments can, and have, discriminated against wildlife tourism as a land use, most importantly by encouraging agriculture and by limiting the ability of landholders to profit from the wildlife living on their lands.

Throughout east and southern Africa there has been a movement in land tenure systems towards consolidation and individualisation. Many wildlife regions lie in formerly large or communally owned areas which are now being sub-divided into small, individually owned farms. The extensive tracts of open land required to support wild animal populations are being physically demarcated and split into separate units which are too small to support wildlife populations. Most of these units are smaller than the estimated minimum area of 10 000 ha required for wildlife viewing (Mwau 1996), or the 700 ha per bed carrying capacity of wildlife tourist areas (Barnes 1990). In Kenya, popular areas such as the Lewa Downs Conservancy and the Maasai Mara National Reserve, average 500 ha per bed and 200 ha per bed respectively.

Land-use policy is also heavily biased towards agriculture. For a combination of food security, economic and political reasons the agricultural sector has been protected in most African countries. Agricultural and economic policies in Kenya contain a range of measures aimed at stimulating domestic crop and livestock production such as duty and tax exemptions on imported agricultural inputs, low interest credit facilities, agricultural price-fixing, protection against imported commodities and heavy spending on agricultural research and technology development. Similar levels of protection exist in other cast and southern African countries in terms of national policies favouring commercial crop production and subsidies to the livestock sector. Although the agricultural sector has, over the last decade, been undergoing liberalisation throughout sub-Saharan Africa, it is still protected in comparison with wildlife. Wildlife inputs are more expensive in market terms because they are subject to taxes from which agricultural inputs are exempt and lack many of the subsidies agricultural inputs have

The wildlife sector itself has also been highly regulated. A range of controls on wildlife ownership and use have prejudiced against landholders utilising or benefiting from wildlife, and have thereby limited wildlife tourism possibilities. Wildlife has, for most of this century, been the property of the state in many east and southern African countries which, although allowing limited use rights to landholders, has retained monopoly rights of ownership and control over wildlife. These restrictions have recently started to be dismantled, particularly in southern Africa, and wildlife use and management rights transferred to private landholders or to other institutions designated as 'appropriate authorities'. This devolution of rights to use and manage wildlife has undoubtedly encouraged landholders to engage in wildlife tourism.

The distribution of wildlife tourism benefits

A range of players are involved in wildlife tourism. Even where the overall profits from wildlife tourism are high, only a small proportion typically accrue to landholders themselves. Landholders have in the main part been involved in wildlife tourism enterprises only as employees or as the recipients of limited revenue-sharing, ground rents or charges rather than as full owners or entrepreneurs. The primary profits from wildlife tourism have tended to accrue to large commercial operators or to the state. Few landholders are directly involved in wildlife tourism as the owners or operators of enterprises. A major reason for the marginalisation of landholders in wildlife tourism enterprise is that they lack access to the finance, training and market knowledge necessary to engage in wildlife tourism as owner-operators.

Little has been done in terms of support to enable landholders to become the sole owner-operators of wildlife tourism enterprise. There has however recently occurred a diversification of both forms of wildlife tourism enterprises and revenue-sharing arrangements throughout eastern and southern Africa. Landholders have become more directly involved in wildlife tourism, either as joint operators or through a range of innovative revenue sharing and partnership arrangements with commercial operators.

A range of possible mechanisms aside from direct ownership exist through which landholders can generate direct income from wildlife tourism, as outlined in Table 6. These revenues are highly variable, but can be substantial. For example, it has been estimated that in Namibia revenue sharing and partnerships between landholders and tour operators can generate US$ 15 000-20 000 in wages for employees drawn from landholders, US$ 4 000-20 000 in other local income and between US$ 150-250 per household from handicrafts and souvenirs (Ashley 1995).

Table 6: Different types of revenues from wildlife tourism on communal land in Namibia

Private concession
Lodge employing local staff
Private investor voluntarily shares revenue with community
Luxury lodge pays bednight levy
Safari operators pay entry levy
Partnership between investors and local community
Lodge established as joint venture
Safari company includes community enterprise in package and pays for services/start-up investment
Locally-controlled enterprise
Community campsite
Cultural centre
Craft centre
Local tourism guides
Bed and breakfast in traditional home

(From: Ashley 1995)

Conclusions

Wildlife tourism is clearly profitable. However, to what extent landholders in wildlife areas choose to engage in wildlife-based and wildlife compatible land uses depends on far more than overall profitability. High overall returns are a necessary but not sufficient condition for wildlife tourism to be carried out, and for it to act as an incentive for conservation.

Multiple factors influence decisions to engage in wildlife tourism. Of primary concern is the returns from wildlife tourism to landholders themselves, and to what extent the profits they receive adequately compensate for other land uses foregone or diminished by the presence of wildlife. In turn, this depends on a range of institutional, policy and legal measures which support wildlife tourism and ensure the distribution of tourism rents to landholders. Unless these conditions are met, and explicitly set in place, pure financial profitability is unlikely to be a sufficient guarantee that tourism will take place or will encourage the conservation of wildlife.

Increasingly it is the case that far from there being too little money to make wildlife-based tourism attractive to the landowner, it may be a case of there being too much, and insufficient mechanisms to ensure its proper distribution. As wildlife comes to take its proper place in the economies of many African countries, perhaps the time has come to work on the most appropriate methods of ensuring that landholders continue to see it as an economic benefit and not a liability.

References

Ashley, C., 1995, *Tourism, Communities, and the Potential Impacts on Local Incomes and Conservation,* Research Discussion Paper No. 8, Directorate of Environmental Affairs, Ministry of Environment and Tourism, Government of Namibia, Windhoek

Ashley, C. and Barnes, J., 1996, *Wildlife Use for Economic Gain.- the Potential for Wildlife to Contribute to Development in Namibia,* Research Discussion Paper No. 12, Directorate of Environmental Affairs, Ministry of Environment and Tourism, Government of Namibia, Windhoek

Barnes, J. and de Jager, J., 1995, *Economic and Financial Incentives for Wildlife Use on Private Land in Namibia* and the Implications for Policy, Research Discussion Paper No. 8, Directorate of Environmental Affairs, Ministry of Environment and Tourism, Government of Namibia, Windhoek

EIU, 1979, *Study of Pricing Policy for Tourism,* Economist Intelligence Unit, London

Douglas-Hamilton and Associates, 1988, *Identification Study for the Conservation and Sustainable Use of the Natural Resources in the Kenyan Portion of the Mara-Serengeti Ecosystem,* 1. Douglas-Hamilton and Associates, Nairobi

Mwau, 1996, *Wildlife Utilisation Study: Report no. 2, Economic Analysis,* Kenya Wildlife Service and African Wildlife Foundation, Nairobi

Norton-Griffiths, M, 1993, 'The long term conservation of wildlife on the rangelands of the Serengeti ecosystem', in Sinclair, A. and Arcese, P. (eds.), *Serengeti II.- Research and Management for Ecosystem Conservation,* University of Chicago Press, Chicago

Norton-Griffiths, M., 1995, 'Property rights and the marginal wildebeest: an economic analysis of wildlife conservation options in Kenya', *Biodiversity and Conservation*

Norton-Griffiths, M, and Southey, C., 1995, 'The opportunity costs of biodiversity conservation in Kenya', *Ecological Economics* 12: 125-139

Ouko and Marekia, 1996, ' Land tenure and wildlife management', in Juma, C. And Ojwang, J., (eds.), *In Land We Trust,* Zed Books, London

Republic of Kenya, 1996, *Economic Survey,* Government Printers, Nairobi

WTO, 1996, *International Tourism Overview*, World Trade Organisation, Madrid