
Economics without markets: Policy inferences from nature-based tourism studies in Namibia

Michael Nokokure Humavindu



Directorate of Environmental Affairs, Ministry of Environment and Tourism,
Private Bag 13306, Windhoek, Namibia
Tel: + 264 (0)61 249 015 Fax: + 264 (0)61 240 339 email: contact@dea.met.gov.na
<http://www.dea.met.gov.na>

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Contact details:

Michael Humavindu, Resource Economist, Directorate of Environmental Affairs, Ministry of Environment and Tourism,
Private Bag 13306, Windhoek, NAMIBIA. Tel: +264-61-249 015;
Fax: +264-61-240 339; email: mh@dea.met.gov.na

Edited by Directorate of Environmental Affairs
Cover illustration by Helga Hoveka

Table of contents	
Acronyms	2
Acknowledgements	2
Abstract	3
1. INTRODUCTION	4
2. SPECIFIC OBJECTIVES OF THE STUDY	5
3. DEFINITIONS OF BASIC CONCEPTS	5
4. WHAT ARE ECONOMIC RENTS?	9
5. ECONOMIC APPROACHES OF VALUING THE ENVIRONMENT	10
6. EMPIRICAL EVIDENCE	11
7. CAPTURING ECONOMIC RENTS	15
8. ALLOCATION OF RENTS	17
9. CONCLUSION	18
10. REFERENCE	20
APPENDIX 1: RESULTS OF NATURE TOURISM WILLINGNESS-TO-PAY STUDIES	30
Tables and figures	
Table 1 Papers reviewed for this study	5
Table 2 Empirical results from studies carried out in Namibia	12
Table 3 Categories of fees and charges in nature-based tourism	16
Figure 1 Demand function for an environmental goods showing consumer surplus	7
Figure 2 Categories of economic values attributed to environmental assets	8

Acronyms

EEU	Environmental Economics Unit
MET	Ministry of Environment and Tourism
DEA	Directorate of Environmental Affairs
WTP	willingness to pay
CVM	contingent valuation method
TCM	travel cost method
OECD	Organization for Economic Co-operation and Development

Acknowledgements

I thank all the people who assisted with comments and research assistance. Of particular assistance were Simon Masirembu, Ndeutalala Haimbodi, Jesper Stage, Jon Barnes and Helen Suich. The usual disclaimer applies.

Abstract

This work documents policy inferences from valuation studies carried on nature-based tourism in Namibia. It is found that nature-based tourism in Namibia is not optimally priced and that significant resource rents do exist. Thus efforts are needed to ensure that Namibia's natural assets are priced optimally and that the resource rents are captured. In capturing the resource rents, a combination of methods (user fees, indirect taxation schemes and environmental voluntary funds) should be pursued. Pricing policies adopted should at best reflect the costs of providing the environmental good/service.

1. INTRODUCTION

This paper serves to review empirical work on non-market valuation or benefit estimation research in Namibia. The purpose of the review is to draw the policy implications of the work for nature based tourism. By non-market valuation we imply deriving monetary measures of un-priced environmental goods.¹ The work was undertaken to provide information to policy- and decision-makers about the value of Namibia's natural resources, and to show that investment in the environment is essential for the country's economic and social welfare.

Much of the work under review here is shrouded in technical and analytical complexity in its original form. This situation might render the work inaccessible to important (non-economist) parties involved in the process of environmental decision-making.² A review of the empirical work will bring us to the underlying objective of the work: that of extracting policy guidelines for sustainable tourism and environmental management in Namibia. The provision of useful and reliable information on the public's values for environmental goods can be a useful aid in resource allocation decisions.

The paper is structured as follows: section 2 outlines the specific objectives of this paper. In section 3, we introduce the basic concepts of environmental economics and especially economic values for environmental goods. Section 4 discusses the concept of economic rent. Section 5 is a brief exposition on economic approaches to valuing the environment. A review of the literature of non-market valuation in Namibia comprises section 6. In the same section, brief references to results of non-market valuation in other countries are made as well. The methods to capture and allocate economic rents are detailed in sections 7 and 8 respectively. Section 9 provides concluding remarks.

¹ In this work, a good is used inclusively, incorporating services.

² Although economic research involves rigorous analysis and empirics, it is usually driven by a central objective: that of defining the opportunity set available to society through the explanation of different consequences of alternative choices. The political process should then select the points on the opportunity set it prefers. See Stiglitz, 1998.

2. SPECIFIC OBJECTIVES OF THE STUDY

The objectives of this work are:

- To review existing empirical work on non-market valuation in Namibia and extract policy inferences from their results;
- To suggest any policy measures to improve sustainable tourism and environmental management in Namibia.

Table 1 Papers reviewed for this study

Author/s	Year	Title of study
Barnes, J.I., Schier, C. and van Rooy, G.	1999	Tourists' willingness to pay for wildlife viewing and wildlife conservation in Namibia
Krug, W.	1998	Etosha environment and tourism study: An analysis of tourists' willingness to pay and the demand structure for nature tourism: A summary of preliminary results,
Stoltz, A-K.	1996.	Wildlife- and nature tourism in Namibia: A study of willingness to pay,
Kirschner, C.H., Sakko, A.L. and Barnes, J.I.	1999	An economic valuation of the Namibian recreational shore-angling fishery
Zeybrandt, F. and Barnes, J.I.	2001	Economic characteristics of demand in Namibia's recreational marine shore fishery.
Zeybrandt, F.	1999	An economic valuation of coastal tourism in Namibia.

This work has been prepared to help the reader gain insights into the demand for nature-based tourism in Namibia. Such knowledge is most likely to be useful in carving out an effective sustainable tourism strategies for Namibia.

3. DEFINITIONS OF BASIC CONCEPTS

Economics is concerned with the efficient allocation of scarce resources in order to maximize societal welfare. Environmental economics is a set of tools for incorporating pollution, resource exploitation and environmental amenity into economic analysis and decisions. A central concern of environmental economics is to devise ways by which it will be possible to ascertain the 'value' of natural resources and the services they provide.³ Many environmental goods/services are not traded in the market and thus have no prices. A good example is air, which is obviously important but has no price. The absence of market prices for environmental good/services can lead to environmental degradation. Communal lands for example, would experience less overgrazing and poor farming practices had they been tradable in the markets. The presence of low prices or no prices provides strong incentives for people to over-exploit the environmental resources.

³ See Dasgupta, 2000.

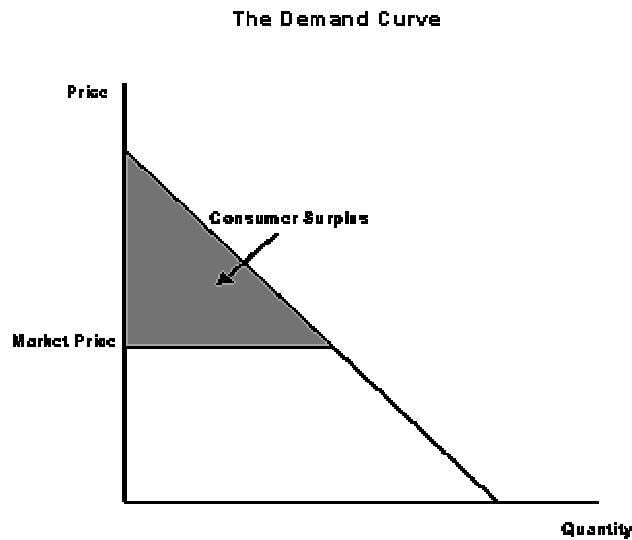
In environmental economics, market failure is caused by the presence of externalities, public goods and/or the absence of property rights. Externalities occurs when the production/ consumption activities of one person(s) affects others not directly involved in the said activity. Externalities can be either positive or negative. An example of a positive externality is the benefits accruing to society as whole through the education of individuals. An example of a negative externality would be a factory pumping waste into a river, negatively affecting fisherman along the river. Public goods are commodities for which the cost of extending the services to an additional person is zero or virtually nil, and for which it is impossible or expensive to exclude individuals from enjoying the good.

Environmental valuation is a branch of environmental economics that involves giving monetary values to environmental problems or effects. The concepts that are central to environmental valuation are consumer sovereignty, willingness to pay, and consumer surplus. In economic analysis, the consumer is sovereign, meaning that their preferences count in decision-making and resource allocation. Willingness to pay refers to the amount actually paid for an environmental good, plus the amount that the consumer is prepared to pay above the market price (the consumer surplus). Figure 1 below illustrates the concepts above hypothetically.⁴ To make resource allocation decisions based on economic values, the net economic benefits from a good or service need to be measured. For individuals, this is measured by the consumer surplus.⁵ The market price may only be the minimum amount that people are willing to pay and is thus not always a reflection of total economic value. In case of tourism sites, the consumer surplus may be substantial if entry fees are low.

⁴ Figure 1 shows a demand curve. A demand curve relates the price of a good to the quantity demanded by consumers. The demand curve is normally down sloping– implying the higher the price, the lower the quantities demanded. This is referred to as the law of demand – people demand less of something when it is more expensive (assuming prices of other goods and peoples’ incomes have not changed).

⁵ Consumer surplus can also be interpreted as forgone revenue that could have been captured in the presence of optimal set of prices.

Figure 1 Demand function for an environmental goods showing consumer surplus



A part of the consumer surplus accrues to Namibians, and thus benefits the nation, while another part accrues to foreigners, and is lost to the nation. The consumer surplus that benefits foreigners is normally higher because foreign tourists are normally willing to pay more than domestic tourists. The income disparity between foreign and Namibian tourists is one good explanation for the differences in willingness to pay.

A concept closely related to willingness to pay and income is price elasticity of demand. Price elasticity of demand indicates how the quantity demanded of a tourism product would change as a result of changes in the price of the product. When a particular good or service is price elastic (greater than one) demand for that good decrease proportionally more than the increase in price. If demand is price inelastic (less than one), an change in price results in a proportionally smaller change in demand. Tourism demand is generally considered to be price inelastic. That means an increase in the price of a tourism product does not change the demand with same degree; indeed it might even be insensitive to price changes. Tourism demand is also considered to be income elastic. This means that as income rises, the demand for tourism also increases but faster than income.

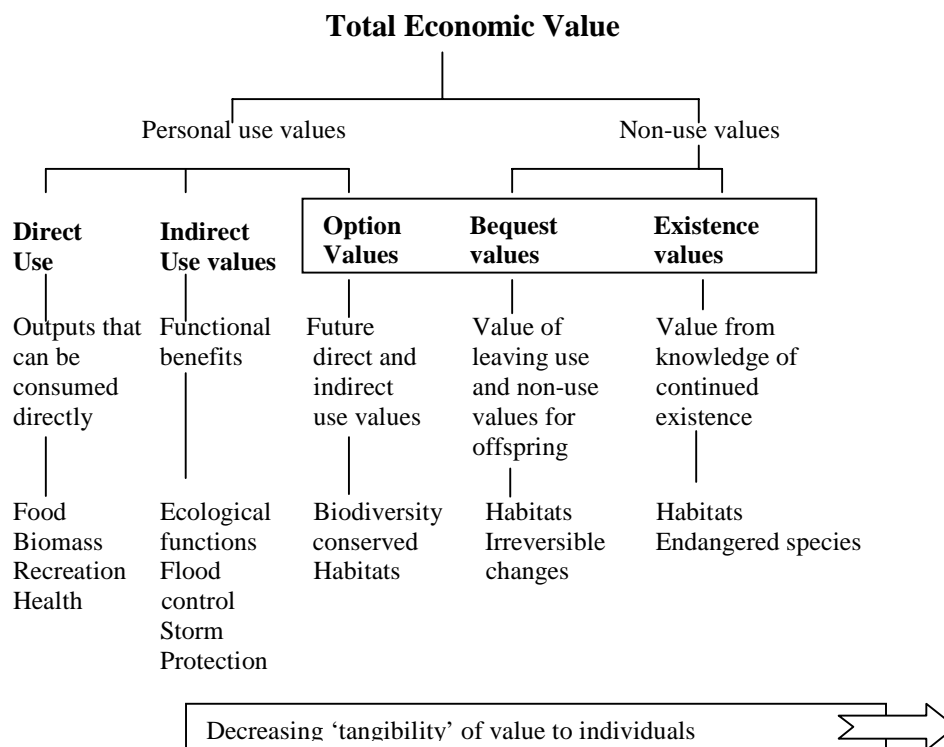
Pearce and Turner (1990) define economic value as applied to the environment and natural resources under the umbrella of 'total economic value'. Total economic value mainly comprises use, option and existence values.⁶ Use value refers to the value or satisfaction gained by utilizing environmental goods. The use of the environmental goods can be both through commercial and leisure activities. Use values are normally divided into consumptive and non-consumptive values. The recreational pursuit of fishing and hunting are examples of

⁶ See Winpenny, 1993; Pearce and Turner, 1990; and Hufschmidt et al., 1983.

consumptive values, while bird-watching or snorkelling provides non-consumptive values. Option values are those ascribed to a good by an individual in order to have the option of using it in the future; It includes the option of use by future generations, sometimes separately identified as the bequest value. Existence value is the value placed by an individual on an environmental good which is unrelated to its use or the option to use it. The individual regards the very existence of the environmental good as providing them with a benefit. Such values are the hardest to define and can only be estimated by indirect methods. Examples include the existence of animal species and untouched wilderness areas.

The total economic value of a good depends not only on the uses to which it is put, but its potential uses, the passive enjoyment of that good and the knowledge of the existence of that good. Total economic value is important in valuing natural environments since it provides a perspective on various kinds of benefits that accrue from environmental preservation and improvement.⁷ Figure 2 below outlines the categories of total economic value clearly.

Figure 2 Categories of economic values attributed to environmental assets



Source: OECD, 1995

⁷ A nature park (e.g. Etosha National Park) potentially provides several different types of economic value; use values for visiting tourists and bequest/existence/option values for the whole world. One argument for pricing and taxation policies to capture tourism rents is that charging higher entry fees for foreigners making use of the resource helps fund the public good properties which the Namibian government is providing for the rest of the world and does not receive funding for.

In general, non-use values of environmental goods/services tend to be very low in developing countries. This is due to the fact that the needs of the present generation are more immediate than those of the future generations in poorer societies. Economic theory will suggest that the allocation of resources over time (between generations) should strive to be fair and equitable. However in developing nations, pressing needs can induce governments (who want to be elected again) to allocate more resources to present to the generation. However non-use values should be explored where possible in developing countries, especially where there is a potential to tap into tourists' willingness to preserve or communities willingness to bequeath. Finally, it should be noted that 'total economic value' is less than the total system value of an environmental asset/good. Total system value takes into account the life-support functions and other dimensions of environmental values. The arguments for capturing the total economic value of an environmental good can be made through the concept of economic rent. The next section will explore this concept.

4. WHAT ARE ECONOMIC RENTS?

An economic rent is the excess return to an asset, a profit above normal market rates of return.⁸ Rents normally arise from assets that are fixed in supply, and are payments for the use of the resource. A good example of economic rent is the higher room rent charged for an ocean front room. Where the assets that generate rents are not properly managed, the rents will be lost. If in our example of the ocean front room, the ocean is polluted or the beach destroyed, then there is no 'premium' for the room and thus the rent is lost. Tourism assets are normally fixed in supply, and thus ensure that economic rents can be appropriated from them. The potential size of economic rents from tourism assets will depend on their abundance. Thus for assets that are unique, such as the game parks of Eastern and Southern Africa, the potential rents per person are large. For other resources such as the sea-sand-sun class, the economic rents per person might be small due to the multitudes of substitutes in the world. Travel costs will make these alternative destinations less than perfect substitutes, so economic rents per person may be low in these destinations but may be substantial in aggregate if there are large numbers of visitors per year to the sites.

A key point about economic rents is that they should accrue to the owners of the resource – i.e. the Namibian people – and not to foreign tourists or operators who should not expect above market rates of return. A potent issue in tourism development is about who should capture the rents – the country or the tourism developers/entrepreneurs. Usually, there is some form of 'sharing' of the rents between the two. If the rents do exist and are large in aggregate, then the policy question for government is which mechanisms can best capture the rents. In addition, the policy question also needs to address the extent to which government gives incentives (i.e. giving away part of the rent) to actors in the tourism industry. The next section explain economic approaches of valuing the environment (and thus provide evidence of consumer surplus)

⁸ This section and sections 7 and 8 draws heavily from Dixon et al., 2001.

5. ECONOMIC APPROACHES OF VALUING THE ENVIRONMENT

Generally, for non-marketable items, those that cannot be sold or bought, two methods of valuation are employed. The first method is the 'revealed preference approach' in which consumer behaviour towards environmental goods is analysed and values are inferred. There are two widely used methods of revealed preference approach. The first approach is the travel cost method (TCM). In the travel cost method, the costs of travel are used as the substitute of what people would be willing to pay for the opportunity of using a public environmental good such as a park or open area. The application of the travel cost method has been extended into the 'random utility modelling' methodology. The second method of the revealed preference approach is 'hedonic pricing'. Hedonic pricing postulates that the price of a good is related to its characteristics. Therefore, variations in demand for a good (such as a house) can be statistically related to its attributes (e.g. local air quality, amenity). Revealed preference approaches are useful where consumers are making real decisions about environmental goods and services. However such approaches are of little assistance when consumer behaviour towards environmental goods cannot be observed.

In the event that economists have to find the value people will place on a reduction on air pollution, the valuation process gets complicated because there is no associated good whose demand will reveal people's preferences. The solution then is to apply what is termed the 'hypothetical preferences approach'. This approach is the second method of non-market valuation methodology. The approach rests on the simple premises of putting hypothetical questions to people/consumers (through the 'contingent valuation technique – CVM). In contingent valuation, surveys are used to ask respondents how much they would be willing to pay to ensure a given environmental improvement. For example, the citizens of Windhoek might be asked on how much they would be willing to pay to secure the existence of public recreational areas such as the Avis and Goreangab dam sites. This process can also be reversed sometimes, where respondents are asked about the smallest amount of money they would accept as compensation for the loss of a valued feature.

In concluding this section, a brief reference should be made with regard to criticism of the valuation methodology. Criticisms of environmental valuation are rooted in both technical and theoretical issues.⁹ Technical problems are related to data limitations and inherent biases in valuation techniques. Such problems might lead to inaccurate values. The second category has to do with theoretical, philosophical and ethical objections to environmental valuation. Notable objections are distributional issues across and between generations, problems of using human preferences as the basis of environmental values, and the difficulties of arriving at values when effects are irreversible or when environmental risks are unquantifiable. Nevertheless, economists believe that having some information is better than having none.

⁹ The debate on the use of environmental valuation techniques is extensive. For the sake of space and time, the interested reader is advised to read Hufschmidt et al., 1981.

The valuations of environmental goods can assist us in understanding the importance of resources and conveying this understanding to the public and to the political process.

6. EMPIRICAL EVIDENCE

Over the past years, several studies have been carried out investigating the willingness to pay for nature tourism and demand for environmental goods in Namibia. Most studies concentrated on areas such as wildlife viewing and recreational pursuit of hunting and fishing. In addition, for comparison reasons, some references will be made to international findings of non-market valuation studies. This section is ultimately driven by two central queries: do the findings from the demand for tourism studies exhibit significant consumer surplus; and can we conclude that tourism in Namibia not optimally priced, and thus call for a more effective strategy to maximize tourism revenue?

For tourism, the aggregate consumer surplus refers to the yearly forgone revenue from tourists due to under-pricing the tourism product/good. Consumer surplus is an economic benefit to Namibia only if it accrues to Namibians. That accruing to foreigners is of no value to the Namibian economy unless it can be captured through for example angling licences, taxes and donations. Although CVM and TCM were used in most of the studies, the figures for consumer surplus were derived from the CVM sections. The TCM was mostly used to derive at costs incurred in travelling to the sites or destinations.

There are practical and policy implications for a significant consumer surplus in the tourism industry. Firstly, it will give credence to new developments such as The Environmental Investment Fund of Namibia. One of the aims of the fund is to investigate the possibility of deriving more revenue from the tourism industry. The existence of a significant consumer surplus will open way for more research into tourism taxation issue in Namibia. At the end of the day, we will need to know the practical and simplest methods available to implement taxes that can be adopted efficiently.

All studies reviewed here produced aggregate consumer surplus figures from tourists over a period of one year. The studies main findings are reported in subsequent paragraphs as well as in Table 2.

Table 2 Empirical results from studies carried out in Namibia

Study	Area of study	Valuation methods employed	Significant Consumer surplus?	Price elasticity ¹⁰	Any other policy inference
Barnes et al., 1999	Wildlife-viewing trips	CVM and TCM	Yes (N\$151 million). This CS is 29% of direct expenditure.		Tourists are willing to contribute to a conservation fund.
Krug, 1998	Demand for nature tourism (Etosha National Park)	CVM and TCM	Yes (in total N\$6.4 million).		
Stoltz, 1996	Wildlife and nature tourism in Namibia	CVM	Yes, but varies according to local, African and foreign tourists. CS figures average 12–20% of direct expenditure.		One way to capture the consumer surplus would be through a conservation fund.
Kirchner, Sakko and Barnes, 2000	Demand for recreational marine shore fishery	CVM	Yes, it was estimated to be N\$979 per angler and the aggregate value was N\$8.6 million. This study used data from Barnes et al., 1997 – CS figure is 29% of direct expenditure.		Bag limits are high therefore the need to limit them to reduce fish stock depletion. Consumer surplus accruing to foreigners can be retained locally through angling licences, taxes and donations.
Zeybrandt and Barnes, 2001	Demand for recreational marine shore fishery	CVM and TCM	Yes, aggregated annual CVM and TCM values were estimated to be N\$23.7 and N\$26.9 million respectively. These CS figures are 111% and 75% of direct expenditures respectively.	Ranges from – 0.16 to – 1.03 depending on the model used	Anglers were willing to contribute to a conservation fund.
Zeybrandt, 1999	Demand for coastal tourism and recreational marine shore fishery	CVM and TCM	Yes, the total was about N\$123 million of which N\$27 million accrues to the local economy. CS is 35–39% of direct expenditure.		About 53% and 74% were willing to contribute a conservation fund and fishing license respectively.

¹⁰ The sign is negative, since price and quantity demanded move in opposite directions. For example a elasticity of -3 means that a 10 per cent rise in the price leads to a 30 per cent decline in quantity demanded.

Barnes et al., used the contingent valuation method to survey tourists viewing wildlife in Namibia (1999). A questionnaire survey was carried out among wildlife viewing tourists in Namibia between December 1994 and July 1995. The study determined some expenditure characteristics and the willingness to pay of tourists. Of major importance were the categories on willingness to pay for wildlife viewing trips, park admission, a wildlife conservation fund and a community fund. The study found that wildlife-viewing tourists contributed N\$250 million to national income in the tourism sector at economic prices. The study also found tourists' willing to pay N\$151 million in excess of what they were paying for wildlife viewing.

Krug (1998) also used the contingent valuation method to survey tourists visiting the Etosha National Park in 1997. The objective of the study was to ascertain the willingness to pay for a daily entrance fee for viewing and conserving wildlife in the park. The results indicated aggregate consumer surpluses of N\$1.4 million and N\$5.0 million for local and foreign tourists respectively. There were two reasons for the large difference in the two aggregate consumer surpluses. Firstly, foreign tourists indicated a higher willingness to pay than local tourists, and there were more foreign than local tourists visiting the park.

Stoltz (1996) conducted a questionnaire that was designed and distributed in three main tourists areas of Namibia during 1994-1995.¹¹ Data on tourists' preferences, costs of travel and recreation and their willingness pay were elicited. The result of this study indicated that a significant consumer surplus exists for tourists to Namibia. Tourists to Namibia have on average a consumer surplus that ranged from N\$1,031 to N\$1,672 (or 12 to 20 per cent of their total travel costs).

Kirchner, Sakko and Barnes (2000) evaluated the economics of recreational shore-angling fishery as well as the impact the fishery has on the Namibian economy. The numbers and daily expenditures of shore-anglers were determined in three regions of the Namibian coast: the West Coast Recreational Area, Torra Bay and Terrace Bay. Sampling was undertaken between October 1996 and September 1997. The study found evidence of consumer surplus, which was estimated to be N\$979 per angler and N\$8.6 million in aggregate value.

Zeybrandt and Barnes (2001) aimed to measure further economic characteristics Namibian recreational marine shore fishery in 1998. The paper's objective was to determine consumer surpluses and value added for the angling tourists, as well as elasticity of demand. A sample of 626 anglers was surveyed to determine the expenditures, consumer surpluses and elasticities of demand associated with the Namibian recreational marine shore fishery. The main finding was that anglers spent between N\$23 million and N\$31 million on angling trips in Namibia. The anglers were also willing to pay N\$24–27 million above what they actually paid. The study also found that angling contributed between N\$11 million and N\$15 million on average to national income.

¹¹ The areas are: Sossusvlei (including Swakopmund and Henties Bay); central inland (Waterberg Plateau Park and former Damaraland); and the North (Etosha National Park and Caprivi).

Zeybrandt's 1999 study was based on Zeybrandt and Barnes (2001), though the 1999 study focused on assessing the economic value of coastal tourism in Namibia. The main objectives were to determine the consumer surpluses and direct use value associated with the sightseeing (ordinary coastal tourism) and angling tourism along the Namibian coast. The study indicated that coastal tourism contributes about N\$89 million to the country's gross national income. The total economic value that can be generated is approximately N\$116 million annually. The results also indicated that total consumer surplus from coastal tourism to be around N\$123 million, of which about N\$27 million accrued to the local economy.

It appears from these studies that the demand for nature-based tourism in Namibia incorporates significant consumer surplus. Interestingly, most studies reveal the preference of tourists for a conservation fund (instead of other means such as taxes) as a method to capture this consumer surplus. It also appears that nature based tourism is under-priced, reflected by the significant consumer surplus that remains uncaptured.¹² Although consumer surplus resulting from nature based tourism is large, this is not a peculiar case when considering other African and developing countries. Empirical evidence shows that consumer surplus emanating from wildlife-based tourism is large for a number of countries. Barnes (1996) reports an annual consumer surplus of US\$20 million for wildlife-viewing trips in Botswana. In Kenya, Moran (1994) estimated annual consumer surplus for nature-based tourism at some US\$450 million. Various other studies have focused on the WTP for wildlife viewing in natural parks and other protected areas.¹³ All of the studies showed significant consumer surplus, as well as a disparity between foreign and local tourists' consumer surplus.¹⁴

In addition, tourists' income elasticity of demand for tourism has been found to be high. A study on wildlife viewing in Lake Nakuru National Park in Kenya found price elasticities of demand between 0.17–0.084 for foreigners and 1.77–2.99 for locals.¹⁵ Another study in Costa Rica estimated price elasticities of demand at three nature bases tourism sites. The results at the three sites found tourists demand price inelastic. All these results imply that developing countries may be able to benefit from increasing real income in the developed countries. These studies also indicate that higher entry prices can be charged without affecting tourists' incomes.

A disturbing fact from the studies is that nature based tourism policies adopted in many developing countries fail to capitalise on potential.¹⁶ Although nature tourism is a good

12 One explanation for large consumer surplus is the relatively low entry fees to game parks in Namibia and the rest of Africa (see Krug et al., 2002).

13 See Krug et al., 2002 for a review of all WTP studies for wildlife-viewing trips in and around Africa. Appendix 1 contains a table for most WTP studies carried out around the world. The table is adapted from Wells, 1997.

14 The parks reviewed in this study were Mana Pools and Hwange National Park (Zimbabwe), Lake Tarangire National Park (Tanzania) and Etosha National Park (Namibia).

15 See Herath, 2002

16 See Herath, 2002.

investment, its economic value is not adequately captured by governments. The current situation of low protected area entry fees for international tourists is judged inefficient – in fact, developing countries could be seen as subsidising foreign visitors through less than optimal entry fees. The adoption of adequate capture mechanisms for the significant consumer surplus in nature-based tourism should take centre stage. Capturing the consumer surplus would help to offset the management costs of the sites. A study in Belize showed that implementing a modest fee programme would generate sufficient finance to run its tourists sites.

It is important that developing countries focus on issues surrounding rent existence/capture in tourism in order to design optimal pricing policies. The next section will explore some mechanisms to capture the rents.

7. CAPTURING ECONOMIC RENTS

In a framework where access to a particular environmental resource can be controlled, charging user fees is one of the best methods to capture part of the rents. The logic behind this is simple: visitors to the resource derive some benefit from its use, so it is not unreasonable to ask them to help pay some of the costs associated with managing and conserving the resource. A good example of an user fee is the one charged to divers in Bonaire (in the Caribbean). The marine park in Bonaire charges US\$10 per diver per year. Tour diver operators collect the fee and enough was collected in 2001 to cover the management costs of the marine park. In addition, the fee demonstrates an effective private-public partnership, which promotes improved resource management. Other examples of user fee charges are environmental and hotel levies, bed night and visitor attraction taxes.

The application of user fees becomes obsolete in cases where the environmental resources are public goods. In these cases, other practical means of capturing the rents generated are required – mostly taxation schemes. In this scenario governments have two choices about how to tax tourists: taxing goods used primarily by tourists; or taxing tourists on arrival or departure.

The taxation of goods primarily used by tourists, such as hotels, can be one way to maximise benefits from tourism. A hotel tax for example, is roughly proportional to the use of the tourism resource, and thus can be a good source of rent capture.¹⁷ Although arrival or departure taxes do not possess the same features of hotel taxes, they are very simple to administer. In certain instances, arrival taxes represent the only practical means of rent capture.¹⁸

Great caution should be exercised to prevent excessive taxation. An increase in taxes on tourism may expand revenues in the short term, but tax increases generally lead to price

¹⁷ Remember that the total hotel tax paid varies with trip length.

¹⁸ A example here is cruise ship passengers whose expenditure and duration of stay are often minimal.

increases, which could mean fewer sales and fewer tax dollars collected in the long run. Ultimately the businesses involved could reduce their work force, perhaps leading to other costs to government. The fact that tourist numbers fluctuate is not necessarily an argument for low tariffs, but more an argument for flexible tariffs, which can be adjusted regularly.

A final remark in this section is that if taxes were to be imposed, they should be acceptable to tourists. This can be done through ingenious marketing – providing brochures to arriving tourists explaining the sensitive nature of our environment and the need for funds to manage it. In addition the name of a tax also matters – a room tax is likely to appeal more to tourists if it is called a ‘resource conservation fee’. Table 3 below summarizes the various categories of fees and charges that can be applied to nature based tourism.

Table 3 Categories of fees and charges in nature-based tourism

Fee type	Observation
General entrance fee	Gate fees allow access to facilities beyond the entry point.
Fees for use	Examples: fees for visitors centres, camp sites, guide services, boat use, trail shelters, emergency rescue, etc.
Concession fees	Charges (or revenue shares) on individuals and businesses which sell food, accommodation, transport, guide services, souvenirs and other goods and services to nature based tourism visitors.
Royalties and profit shares	Can be charged on sales of guidebooks, postcards, t-shirts, souvenirs, books, films, etc.
Licenses and permits	For tour operators, guides, researchers, wildlife collectors, mountain climbers, river rafters, etc. The concept can be extended to individual campers, bikers, etc.
Taxes	Examples: room taxes, airport taxes, vehicles taxes, excise taxes on sports and outdoor equipment, etc.
Voluntary donations	Include cash and in kind gifts, often through ‘friends of the park’ organisations.

Source: Laarman and Gregersen, 1996.

8. ALLOCATION OF RENTS

There are two issues when it comes to rent allocation. Fees charged from the users of a park/tourism site should at least cover the costs the users cause. Additional rents that are captured should be seen as general government revenue. It may be sensible to use this for conservation costs, which are not closely related to international tourism, if this makes the high prices more palatable to tourists. Empirical analysis has shown that tourists are willing to pay more for environmental management, if they believe that the money they pay will be allocated for that biodiversity conservation and protected area management. Thus, the costs for maintaining public goods can be funded through fees from those who use the private good aspects of the park(s). Also, such revenues could be used to help maintain areas which are considered important, but that do not attract many tourists (e.g. the Skeleton Coast Park). The point here is that if all tourist revenue is used directly on tourist-related activities, then rents are not really being captured. Thus it is vital to understand the two types of revenues that can be generated:

- a) revenue used to cover costs related to the tourists (i.e. revenue from marginal cost pricing for that number of tourist); or
- b) additional revenue from tourism (tourism rents).

It maybe a good marketing strategy to make the tourists think that the two are closely related, but in reality they are two different revenue types.

In concluding this section, three approaches of rent allocation can be identified.¹⁹

- A part of total funds from the national treasury are earmarked for specific activities such as environmental resource management (e.g. a mandatory 60 per cent of room taxes being spent on resource management).
- A separate entity is created to collect and manage funds (economic rents) and in some cases help to provide management services. In this scenario the funds would be allocated wholly to environmental management (e.g. the Environmental Investment Fund).
- Certain types of income are earmarked for specific uses (e.g. room taxes used locally on environmental management and marketing and/or departure taxes returned to central treasury for other purposes). There are problems with this approach of limited cross-subsidisation – certain areas might generate a lot of income, while others generate very little even if their management needs are large.

Generally, the first two approaches are preferable. They offer the advantages of guaranteeing certain levels of income and that cross-subsidization is possible. The two approaches are also quite transparent and easy to explain to those being taxed.

¹⁹ See Dixon et al., 2001.

9. CONCLUSION

We arrive at the following conclusions flowing from preceding analysis:

- There is an argument to be made for the existence of resource rents in Namibia. Although these rents may be modest per visitor, empirical analysis shows that they can be substantial in aggregate. Thus there should be efforts to structure taxation/pricing schemes to capture these rents.
- In certain cases (such as national parks) the issue is not valuation of goods that don't have prices at all; it is valuation of goods where prices do not reflect market factors. The problem is that current prices may not be closely related to willingness to pay or to marginal costs. To determine optimal prices for national parks, more research is needed, which should aim to calculate the socio-economic costs created by tourists visiting the parks. Consequently the pricing of national parks then would include the marginal costs associated with providing the parks.
- Some combination of hotel taxes, entry/departure charges should be further explored as means to collect resource rents. Research into these taxes should investigate the need to harmonize them with existing value added taxes. (Efforts should also be made to ensure that such taxes/prices are harmonized with Namibia Wildlife Resorts' prices/charges in the case of national parks.)
- It is important to sell some of the taxes as environmental or resource conservation fees/charges. In addition, such proceeds should be allocated to environmental management efforts.
- An argument can be made to devote the proceeds of the rents captured to building and sustaining the tourism industry in Namibia. Though tourism is a predominantly private sector driven industry, budget allocations from government are always welcome. The allocations are needed to eliminate the problem of market failure in tourism. There will always be problems related to the funding of a generic tourism campaign by the private sector. In terms of the benefits that arise from the promotion of a destination brand, it is not possible to exclude organisations that do not fund the brand from accessing these benefits. There is, therefore, little incentive for individual firms to invest in the brand when they can effectively free ride off the work of others. As a result of this market failure, the operation of a private sector driven and funded brand would be likely to lead to a sub-optimal level of promotional spending and lower export earnings. It can be argued that spending tourism rents on tourism marketing makes them part of the long term cost recovery and not rents. Thus in correcting for market failure in tourism, government should devote treasury funds to environmental management and tourism marketing.
- In charging user fees for some environmental resources, differential pricing should be explored. Empirical analysis has shown that willingness to pay differs considerably between local and foreign tourists (largely due to income differentials). Different fees for domestic and foreign tourists are not only an issue of who has high willingness to pay. Social equity considerations should also ensure that domestic tourists are only charged marginal cost prices, while foreign tourists should be charged revenue-maximising prices.

- Finally, where feasible some resource rents should be captured by non government entities such as voluntary conservation funds or the Environmental Investment Fund of Namibia.

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Appendix 1: Results of Nature Tourism Willingness-to-Pay studies

Study and scope	Year studied	Number of visitors	Elements of economic value			Annual budget (\$US)	Area of site (ha)	Comments
			Consumer surplus		Collected in entry fees			
			Per visitor	In aggregate				
Barnes 1996 PAs in Botswana	1992	64,000.00	\$307 (CV) Total \$437 (CV) Foreigners	\$20 million	\$7-15 per visitor	na	na	All visitors surveyed (mainly international)
Brown et al., 1994 All Pas in Kenya	1993	na	\$499-858 (TC) \$332-550 (CV)	na	na	na	na	International visitors surveyed
Brown et al., 1995 2 NPs in Zimbabwe	1993	20,000.00	\$326-485 (TC + CV)	\$6.5-9.7 million	\$250,000	na	na	International visitors surveyed
Chase et al., 1996 3 NPs in Costa Rica	1995	na	\$21-25 (CV)	na	na	na	na	International visitors surveyed
Clark et al 1995 Tarangire NP, Tanzania	1993	14,911 NR 15,409 NNR	\$16.63 NR (CV) \$6.37 NNR (CV)	\$243,944 NR \$98,155 NNR	\$298,220 NR \$154,090 NNR	na	260,000	Deducted use fees from authors' CS estimates
Extrapolated across all NPs in Tanzania	1993	na na	na na	\$2.0 million NR \$0.8 million NNR	\$2.4 million NR \$1.2 million NNR	\$2.6 million	Na	NR = Non resident NNR = Non-national resident
Dixon et al., 1995 Bonaire Marine Park	1991	18,700.00	\$17.40 (CV)	\$325,000	\$187,000 (\$10/visitor)	\$668,000	na	International visitors surveyed
Echeverria et al., 1995 Monteverde PR, Costa Rica	1991/92	32,213.00	\$121 (CV)	\$2,380,000 (39% had CS of zero)	na	\$3-600,000 (Aylward, 1996)	10,000	Costa Rican and international visitors surveyed

Study and scope	Year studied	Number of visitors	Elements of economic value			Annual budget (\$US)	Area of site (ha)	Comments
			Consumer surplus		Collected in entry fees			
			Per visitor	In aggregate				
Kaosaard et al., 1995 Khao Yai NP, Thailand	199?	600,000.00	\$34.80 (TC) \$0.68 (CV) (diff. unexplained)	\$20,880,000 \$408,000	\$120,000 (\$0.20/visitor)	Na (see full study)	217,000	Thais surveyed. Option (\$7/non-visitor) and existence (\$29/visitor) values estimated.
Kramer et al. 1995 Mantadia NP, Madagascar	1990	3,900.00	\$24 (RD) \$65 (CV)	\$93,600 \$253,500	na	na	9,875	International visitors. Non-use values est. at \$24-31 per US household
Maille and Mendelsohn, 1993 Besa Mahafaly SR, Madagascar	1991	na	\$276-360 (TC)	Na	\$11/visitor	na	640	International visitors surveyed

PAs- Protected Areas; NPs-National Parks; CV-Contingent Valuation method; TC-Travel Cost method; RD-Random Utility model
Source: Wells, 1997.

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