



PRICEWATERHOUSECOOPERS 

Manfred-Hermesen-Stiftung

Sustainable Investments for Conservation

The Business Case for Biodiversity



A study on behalf of the WWF
Executive Summary

Foreword

Conservation of biological diversity is considered a global mission to which all nations are committed. This is all the more true since the Rio Earth Summit of 1992. Since then, international efforts to conserve biological diversity have increased, but the destruction of nature has also continued apace, especially in developing countries. According to the World Conservation Union (IUCN), some 30,000 conservation areas covering a total area of 13.25 million square kilometres worldwide existed in 2000. Tight state budgets mean that the governments of many developing countries usually have priorities ahead of nature conservation. Many national parks and other conservation areas therefore lack financing and protection. In addition, destruction has been greatest in countries where resources such as forests and game are urgently needed to sustain the livelihoods of the local people. The sustainable use of these resources is all too often undermined by poverty and overuse and a desire to make short-term profits.

The basic assumption of this study is that the sustainable use of nature in conformity with the principles of the Convention on Biological Diversity (CBD) can be an attractive alternative to forms of land use that destroy nature, such as the over-exploitation of tropical rainforests, overgrazing and agricultural monocultures. This is not a new idea. This study goes further, however, by asking the question: Is it possible to combine nature conservation with private investment in a way that produces a satisfactory return on the capital invested? This is an unusual question since the conservation of nature is almost always associated with state agencies or non-governmental organisations. The WWF Germany is interested in this question as a way of finding new ways and means of providing long-term financing for nature conservation projects in selected ecological regions.

The analysis produced by PricewaterhouseCoopers is the first study in the world to analyse the possibility of combining ecological financial products with international financing of nature conservation based on case studies and to propose an appropriate company structure. The aim of the study is to inform potential investors and opinion multipliers about the opportunity of investing in nature conservation.

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List of abbreviations

A/R	Afforestation / Reforestation Project
AG	Aktiengesellschaft
AHK	German Chamber of Foreign Trade
AktG	German Stock Corporation Law
ANC	African National Congress
AO	German Tax Code
approx.	approximately
AstG	German Law on External Tax Relations
AvdB	A. van den Berg B. V. Nieuwerbrug, Netherlands
B.V.	Besloten Vennootschap
BBC	British Broadcasting Corporation
BFN	Bundesamt für Naturschutz
BGB	German Civil Code
BMU	Federal German Ministry of the Environment, Nature Conservation and Reactor Nuclear Safety
BMZ	Federal German Ministry of Economic Co--operation and Development
C	(Absorption) capacity
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CERs	Certified Emission Reductions
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
COMESA	Common Market for Eastern and Southern Africa
CSA	Canadian Standards Association
CUT	Central Unica dos Trabalhadores
DB Research	Deutsche Bank Research
DEG	Deutsche Investitions- und Entwicklungshilfegesellschaft
DTA	Double Taxation Agreement
e. V.	Registered association
e.g.	for example
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
EBT	Earnings Before Taxes
EEC	European Economic Community
EIU	Economist Intelligence Unit
EstG	German Income Tax Law
ET	Emission Trading
EU	European Union

FAO	Food and Agricultural Organisation
FDI	Foreign Direct Investment
FO	Foreign Office
FSC	Forest Stewardship Council
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GewStG	German Trade Tax Law
GmbH	Gesellschaft mit beschränkter Haftung
ha	hectare
HDI	Human Development Index
HGB	German Commercial Code
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis
IIF	Institute of International Finance
IMF	International Monetary Fund
ISO	International Standards Organization
ITTA	International Tropical Timber Association
IUCN	The World Conservation Union
JI	Joint Implementation
KG	Kommanditgesellschaft
KStG	German Corporation Income Tax Law
ICER	long-term CER (see CER)
Lisboa	Lisboa Madeira Ltda.
Ltd.	Limited (Corporation)
MERCOSUL	Mercado Común del Sul
MI	Metre of length
Monte Verde	Monte Verde Madeiras Ltda.
MST	Movimento Sem Terra
MWel.	Installed electrical output in Megawatts
N\$	Namibian Dollar
n.i.	no information
o.o.	other operating
OECD	Organisation for Economic Cooperation and Development
Para.	Paragraph
PEFC	Pan European Forest Certification
Plc	Public limited company

Precious Woods Pará	Precious Woods do Pará S. A.
Precious Woods	Precious Woods Holding AG
Pty	Proprietary
S. A.	Sociedad Anonyma
SAFRI	Southern Africa Initiative of German Industry
SARS	Severe Acute Respiratory Syndrome
SDI	Spatial Development Initiative
SFI	Sustainable Forestry Initiative
SIC	Status Investment Certificate
SWAPO	South West Africa Peoples' Organisation
tCER	temporary CER (see CER)
TRAFFIC	Trade Records Analysis of Fauna and Flora in Commerce
UMNO	United Malay National Organisation
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
UNO	United Nations Organization
WTO	World Tourism Organisation
WTTC	World Travel and Tourism Council
WWF	World Wide Fund for Nature

1 Introduction

The continuing destruction of nature and loss of biological diversity have reached alarming proportions. Around the globe, important ecosystems are being destroyed, tropical rainforests are being cut down and an increasing number of species of wild animals and plants are threatened by extinction. Previous measures, such as extending conservation areas, have proven to be insufficient in halting this trend. First of all, the size of the existing nature reserves is much too small to preserve biological diversity in the long term. Secondly, many countries lack the financial resources and institutional capacity to upkeep their conservation areas.

Poverty and population growth mean that many developing countries are unable to avoid exploiting their natural habitats. In the apparent conflict of interest between conserving nature on the one hand side and economic development on the other, nature conservation usually comes off worse.

Loss of the diversity of species

In areas where it is not possible to make sustainable forms of land use economically attractive, natural habitats must frequently give way to agricultural monocultures. In many cases this causes the permanent destruction of biodiversity, which usually means that the possibility of environmentally compatible use is lost for future generations.



Fig. 1 The fauna of Lapa Rios

Over-exploitation and monocultures can only be prevented in those areas where sustainable forms of resource use, such as eco tourism or sustainable forestry, constitute a competitive form of land use that can provide the local people with an alternative source of income.

Innovative solutions for the long-term financing of conservation areas

This, and the concept of “sustainable development”¹ make innovative solutions for the long-term financing of conservation areas and the management of important natural resources more necessary than ever before. Many experts have drawn attention to the significant potential of private involvement in this respect.

¹ The World Commission on Environment and Development: Our Common Future, Oxford 1987. This report, which is also known as the “Brundtland Report”, defines sustainable development as development that meets the needs of the current generation without threatening the ability of future generations to meet their own needs and choose their own life-style. Environmental protection, economic growth and social justice therefore need to be reconciled with one another.



Fig. 2 NamibRand nature reserve

This study investigates profit-orientated projects that preserve biological diversity

This study investigates the extent to which projects - which, according to the WWF, conserve biological diversity - can be run in an economically profitable way, so that they attract the necessary capital from private investors ('sustainable investments'). The result is an innovative entrepreneurial concept for preserving biological diversity that invests in privately run, profit-orientated nature conservation projects worldwide.

Interesting investment opportunity

The study starts with the assumption that many nature conservation projects are economically viable, i.e. make a profit, and therefore constitute an interesting investment opportunity. This concerns in particular those nature conservation projects that are able to ensure the long-term protection of valuable natural areas and therefore biological diversity by means of strictly-controlled sustainable use of individual natural resources.

Protection through sustainable use'

The concept of 'protecting through sustainable use' is also one of the priority aims of the UN Convention on Biological Diversity and is regarded by all the big nature conservation organisations as a meaningful and necessary supplement to the usual conservation concepts. The World Bank, the OECD and the WWF have identified five natural land use concepts that are simultaneously fulfilling economic as well as ecological and social criteria: sustainable ecotourism, sustainable natural forest and plantation management, afforestation projects that generate CO₂ reduction certificates under the 'Clean Development Mechanism' (Kyoto Agreement), and the sustainable use of wild animals and organic farming.

Purpose of the study

This study focuses on the following questions:

- What is the market situation and competitive environment for sustainable investments?
- How can projects that promote nature conservation be designed to be profitable and what are the main factors that must be fulfilled in order to achieve this?
- What are the political, legal and macro-economic opportunities and risks that need to be observed in connection with such foreign investments and what measures are needed to take account of them?
- How can a company which is supposed to preserve biological diversity be structured under company and tax law considerations?

Three reference projects in Costa Rica, Namibia and Brazil

In order to assess the economic viability of conservation projects, three reference projects in Costa Rica, Namibia and Brazil on sustainable tourism and ecological forestry have been examined.



Fig. 3 Geographical location of the reference projects.²

Environmental objectives in conformity with the aims of the CBD

All projects have both environmental and economic objectives. The projects are financed solely by private investors. None of the projects investigated drew on other sources of financing such as donations, development aid, grants or state subsidies.

The WWF considers that the environmental objectives of the projects investigated match the sustainability criteria of the Convention on Biological Diversity (CBD).³ The contribution of projects to the conservation and regeneration of the areas used by them and the improvement of the living standards of the people in the respective regions was confirmed by the WWF in connection with this study.

In addition to an investigation into the economic profitability, the reference projects in question were also examined for the macro-economic, political and legal conditions prevailing in the relevant countries. This produces an assessment of the risks associated with foreign direct investment in these regions.

The study concludes with a description of the possible structure for this type of an enterprise in terms of company and tax law considerations.

² Source: PwC

³ The CBD is a convention negotiated at the United Nations Conference on Environment and Development in 1992, which has now been signed by 187 countries and the EU. By signing this convention, the countries in question undertook both to conserve species (biological) diversity in their own countries and to support the sustainable utilisation of biological diversity in developing countries. Biological diversity, or biodiversity, includes genetic diversity (within individual species), diversity of species and the diversity of eco-systems. Developed countries have a special responsibility towards the financing of the implementation of the Biodiversity Convention. See also the section on "Criteria for environmentally-friendly and socially compatible tourism".

2 The market for sustainable investments in Germany

Sustainable investment funds open to the general public have a total value of about EUR 13.8 billion

The market for sustainable investment funds has grown considerably in recent years: the total value of sustainable investment funds open to the general public in German-speaking countries is now five times greater than in 2002 and now stands at about EUR 13.8 billion.⁴ The number of such funds increased from 80 to over 129 over the same period.⁵ Over a third of these funds are offered by foreign issuers.⁶ In Europe, there are about 375 environmentally, ethically and socially orientated investment funds, which are open to the general public, with a total value of about EUR 25 billion.⁷

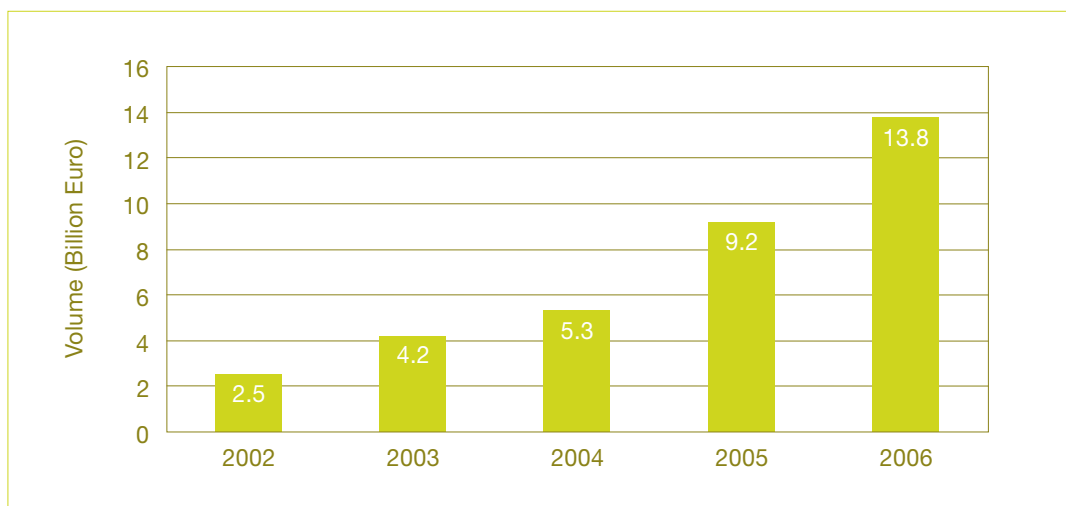


Fig. 4 Sustainable investment funds open to the general public in German-speaking countries.⁸

1% share of total market
(niche segment)

Despite this increase, it is currently estimated that sustainable investment funds open to the general public account for no more than about one percent of all investment funds open to the general public in Germany and therefore still constitute a niche segment.⁹ A comparison with other European countries, in which sustainable funds already account for a larger share, indicates that there might be room for further growth in Germany: their share is already 2 % in Belgium and 1.5% in the Netherlands, the United Kingdom and Switzerland.¹⁰ The total value of the European sustainable investment market is currently estimated at about EUR 1.3 trillion.¹¹

Five sustainable funds of funds

In general, strong marked growth is recorded in the whole area of sustainable financial products, both in terms of quantity and the range of products on offer. Specialist rating agencies provide non-monetary analyses, market indices such as the FTSE4Good¹² highlight both monetary and non-monetary factors, and non-governmental organisations analyse companies for their commitment to corporate citizenship. 92% of European fund managers believe that their commitment to sustainable investment will increase in future.¹³ Five sustainable funds of funds which invest in several sustainable mutual funds have recently been set up in Germany.¹⁴

⁴ Handelsblatt (03.11.06): "Gewinne mit gutem Gewissen" [Profits with a clear conscience], p. 30-31, no. 213.

⁵ Op. cit.

⁶ The increase in value is due to three factors: Authorisation of new funds in German-speaking countries, which contribute existing value, performance (i.e. appreciation of funds) and net inflows.

⁷ Handelsblatt (28.03.06): "Markt für Nachhaltigkeitsfonds wächst" [The market for sustainable funds is growing]. US\$ 153 billion have already been invested in "Socially Responsible Investment Funds" in the USA, amounting to a market share of 2.3% (Bauer, R/Koedijk, K./Otten, R: "International Evidence on Ethical Mutual Fund Performance and Investment", Stylek LIFE Working Paper No. 0259, University of Maastricht 2002).

⁸ Source: Sustainable Business Institute.

⁹ Bergius(2006): 'Der Markt rollt an' [The market is starting to move]

¹⁰ Handelsblatt (04.02.05): "Markt für Nachhaltigkeitsfonds boomt" [The market for sustainable funds is booming], Handelsblatt (01.12.05): "Über den Tellerrand blicken" [Looking outside the pot].

¹¹ Handelsblatt (03.11.06): "Gewinne mit gutem Gewissen" [Profits with a clear conscience], p. 30-31, no. 213.

¹² FTSE

¹³ Tagespiegel (23.12.2005): "Gut angelegt - in Deutschland ist ethisches Investment noch immer ein kleiner Markt - allerdings mit hohen Renditen" [A sound investment - ethical investment is still a small market in Germany, but with good rates of return]

¹⁴ Bergius (28.11.2005): "Der Markt rollt an" [The market is starting to move].

Providers of state-certified pension agreements, insurance policies and company pension funds

Out-performing the MSCI World, but higher risk structure

Growth in Germany is currently being boosted by new laws promoting sustainable investments. The providers of state-certified pension agreements for instance, direct insurance policies and company pension funds are obliged to report on the extent to which they take account of ethical, social and environmental criteria in their investment decisions (§ 1, Article 1 (9) AltZertG [pension certification law]). This enables private investors to also take account of these criteria in their investment decisions.¹⁵

Sustainable funds performed well in German-speaking countries in 2004, 2005 and 2006: At September 2006, the three-year average performance of the ten best-performing sustainable investment funds available on the German market showed an annual growth of between 18 and 23 percent, while the MSCI World Net Index gained only 13.49 percent annually over the same period. However, different risk structures make a comparison difficult: a large proportion of the remarkable performance of sustainable investment funds is due to the increased value of shares in the renewable energy sector and technology shares, which are industries with a higher risk than the average market.¹⁶

Fund	ISIN	Focus	Vol. Mio. euro	Man. Fee in %	Performance in %		
					6 Mon. (p.a.)	1 year	3 year (CGAR)
SEB Fund 1- SEB Ethical Europe Fund A	LU003 0166333	Ethical - social	13.55	1.40	2.22	20.96	23.66
KBC Eco Fund Water Cap	BE017 5479063	Ecological	97.41	1.00	-5.49	10.02	23.38
KBC Eco Fund Alternative Energy Cap	BE0175 280016	Ecological	64.05	1.00	-14.57	2.85	23.31
Pictet Funds - Europ. Sust. Equities P Cap	LU014 4509717	Ethical - social	77.60	0.80	4.24	19.62	20.67
Swisscanto (CH) Equity Fund Green Invest	CH000 9074300	Ecological - social	205.57	2.00	-2.56	12.86	20.32
UBS (Lux) Equity Fund - Global Innovators B	LU013 0799603	Ecological	190.31	2.04	-6.88	11.35	19.79
SAM Sustainable Water Fund B	LU013 3061175	Ecological - social	534.96	1.50	-0.47	14.26	19.43
Öko Vision	LU006 1928585	Ecological	314.3	1.76	-2.76	15.17	19.34
KBC Eco Fund Sustainable Euroland Cap	BE0175 718510	Ethical	12.63	1.25	2.67	18.19	19.03
Öko-Aktienfonds	LU003 7079380	Ecological	22.30	1.25	-0.98	16.00	18.73
Benchmark							
MSCI World Net Eur		Global			-0.71	8.68	13.49

Tab. 1 Change in value of sustainable investment funds available in Germany in comparison with the MSCI World Index (net) on 30 September 2006.¹⁷

Scientific opinion

Scientific opinions regarding the relative performance of sustainable investment funds in comparison to other investment opportunities diverge. An examination of equity yields from 1996 to 2001 by the ZEW has shown that investors who include sustainability criteria in their decision-making do not have to put up with a poorer performance than those who invest into the market as a whole.¹⁸ On the other hand, a study by Swiss private bank Pictet & Cie, private bankers based in Geneva, covering the period 1998 to June 2003, showed that the share prices of environmentally aware and socially active European companies underperformed the market.¹⁹

Taking into account the tension between the requirements of a mass product (liquidity requirement) and the need for credibility and in order to facilitate comparisons, there is the need to develop clear, generally recognised minimum standards that must be met by a 'sustainability' fund.

¹⁵ Süddeutsche Zeitung (28.11.2005): "Schub für nachhaltige Investments - Berichtspflicht für ethisch-ökologische Geldanlagen bei Betriebsrenten" [Boost for sustainable investments - obligation to report on ethical and environmental investment with regard to company pensions], p. 25.

¹⁶ Handelsblatt (03.11.06): 'Gewinne mit gutem Gewissen' [Profits with a clear conscience], p. 30-31, no. 213.

¹⁷ Source: Feri Rating & Research, Handelsblatt.

¹⁸ Schröder (2003): "Socially Responsible Investments in Germany, Switzerland and the United States - An Analysis of Investment Funds and Indices", ZEW Discussion Paper No. 03-10).

¹⁹ FAZ (20.11.2003): "Nachhaltigkeitsfonds sind in ihrer Marktnische gefangen" [Sustainability funds are caught in their market niche].

3 Profitability of sustainable projects

3.1 Ecotourism

In order to analyse the profitability of 'nature tourism' projects, two case studies in Namibia and Costa Rica were identified and analysed:

- NamibRand Safaris (Pty) Ltd., Windhoek, Namibia (abbreviation 'Wolwedans') and
- Lapa Rios S.A., Puerto Jiménez, Costa Rica (abbreviation 'Lapa Rios').



Fig. 5 Wolwedans - Dune house

Wolwedans: the biggest
nature reserve in
Southern Africa

Exclusive tourist accommodation is offered by Wolwedans on about 36,000 hectares (ha) of land in the NamibRand nature reserve in Namibia on the basis of a licensing agreement. The reserve (now covering approx 185,000 ha) was created by combining the land of nine land owners (including that of the operator of Wolwedans) and is now the biggest private nature reserve in southern Africa. The reserve is bounded on the west by the neighbouring Namib-Naukluft park and the Sossusvlei area. To the east, the Numbib Mountains form a natural boundary. Its special topography is created by a mixture of different desert landscapes. Outliers of the red, grass-covered dunes of the nearby Sossusvlei area run right through the reserve.

Helping to restore the
original wilderness

The operators of Wolwedans signed a pledge to observe the Code of Conduct of the nature reserve, limiting the maximum number of beds within the nature reserve, for example, and helping to restore the original wilderness by paying licence fees to the nature reserve. In order to ensure that the animals have freedom of movement, fences which were once built by farmers, were removed, about 500 km of the existing roads were closed and rangers watch over the animals and plants.



Fig. 6 Nature tourism in Lapa Rios

Lapa Rios: Conserving the tropical rainforest

Lapa Rios is a private nature reserve 20 km south of Puerto Jiménez on Playa Carbonera in south-western Costa Rica. It functions as a conservation area bordering on the nearby Corcovado National Park. The large rainforest area which covers a total of 1,000 ha contains 16 small lodges constructed from renewable raw materials and some of them have solar power.

To minimise the consumption of natural resources, Lapa Rios operates the first glass and plastic recycling system in the region and, for example, avoids using disposable containers. The capacity of the facilities is deliberately restricted. Park wardens ensure that the primeval tropical rainforest and fauna are preserved. Tourists and locals are informed about the conservation of the rainforest at a research and information centre and during guided tours. As well as creating jobs for the local population, the company supports social projects in the region, for example by building a school, and in doing so offers long-term alternatives to the destruction of the rainforest.

3.2 Sustainable forestry

For sustainable forestry, the profitability of a natural forest management project in Brazil was examined:

- Precious Woods do Pará S.A., Belém, Brazil (abbreviation 'Precious Woods Pará').



Fig. 7 Intact forest belonging to Precious Woods four years after the harvest

Precious Woods Pará: Natural forest management in Brazil

Precious Woods do Pará is owned by the Precious Woods Holding AG based in Zug, Switzerland, a company whose mission is to promote sustainable forestry in Latin America. Its objective is to meet existing demand for tropical timber with certified products and in so doing to replace timber produced from clear cutting or over-exploitation. To this end, Precious Woods Pará manages 76,000 ha of land²⁰ in accordance with the principles of sustainable forestry. An extension to the forest areas creating a total area of 300,000 ha or more is planned. The natural forest is managed according to the guidelines of the Forest Stewardship Council (FSC), which guarantee the sustainable management of the forest in line with ambitious environmental and social standards.

3.3 Economic viability

Project returns before tax of between 10% and 25% before tax

Our analysis²¹ showed that all three project concepts reviewed in this study promised a satisfactory level of projected long-term economic profitability. Calculated on a simplified basis, project returns before tax of between 10% and 25% were revealed for the project portfolio over a period of 50 years, assuming a total investment value of EUR 14.5 million and an utilised area totalling 217,000 ha.

The profitability of the projects was assessed on the basis of the data presented by the companies in 2003, in particular the annual statements, controlling documentation and budgets and on the basis of interviews with managers, external market assessments and forecasts. In general, the budgets presented by the companies were assumed to be useable for this purpose. This version was edited to remove confidential data, and revised and updated at the end of 2006.

Recent development of the three case studies

The three projects have developed in different ways recently. Both tourism projects have significantly exceeded their budgeted figures, so that we can assume a higher level of project return.

On the other hand, the conditions for sustainable natural forest management in Brazil have deteriorated considerably over the past two years: An increase of labour costs and an appreciation of the Brazilian currency led to a rise in production costs, resulting in the loss of ten thousands of jobs in the exporting forestry and wood industry. In addition, Precious Woods Pará suffered a severe disruption of business, when in 2005 permission to harvest was only granted after an eight-month delay. As a result, Precious Woods Pará suffered a 44% drop in sales and an operating loss in 2005. In 2006, Precious Woods Pará returned to profitability, which was mainly due to rising timber prices but also to cost cutting. The new Forestry Act, which was passed in 2006, envisages the granting of long-term forestry concessions. In the long-run the Act is thus likely to improve the conditions for sustainable forestry in Brazil.

In our view, the long-term project return shown in the table below therefore only seems to be maintainable over the long term if permission to harvest will be granted more freely by the Brazilian environmental agency in the future and the exchange rate of the Brazilian Real will drop to the previous years' level.

On the basis of the 2003 data, the investment volume, size of the protected area and the long-term project return before tax are as follows:²²

Tourism		Namibia	Costa Rica
Investment value	EUR million	1.05	1.90
Area used	ha	35,759	1,000
Project return before tax	%	10%	25%
Forestry		Natural forest management Brazil	
Investment value	EUR million	11.50	
Area used	ha	180,000	
Project return before tax	%	13%	

Tab. 2 Summary of budgeted project returns²³

²¹ Based on 2003 data.

²² An equity ratio of 100% was assumed for all four projects. In each case, the internal rate of return was determined on the basis of the actual initial investment and the expected results before tax. The country risk premiums, which must also be considered when assessing foreign investments, are discussed in the chapter "Country risks for investors".

²³ Source: PwC

3.4 Potential earnings from CO₂ emission rights

The operators of forestry projects can also potentially derive earnings from selling CO₂ emission rights.

Kyoto Protocol

In order to counter global warming, most industrial countries ratified the Kyoto Protocol and committed themselves to limiting or reducing their emissions of greenhouse gases such as carbon dioxide (CO₂). The protocol entered into force in 2005.

Emissions can be reduced either by measures in the home country or by saving greenhouse gases in other countries. Under the 'Clean Development Mechanism'²⁴ (CDM), investors in industrial countries finance projects in developing countries that help to reduce greenhouse gas emissions and promote sustainable development. For the reduction in emissions achieved, the investor is issued 'Certified Emission Reductions' (CERs), the price of which is freely negotiable and which can count towards the investor's obligations or be sold to other parties.

Forestry 'sink projects'

In addition to the use of environmentally-friendly technologies and fuels so called 'sink projects' can be used to generate CO₂ emission rights. 'Sinks' like forests, oceans and soils remove carbon from the atmosphere and bind it, at least for a certain period of time. Possible sink projects include in particular afforestation projects.

However, offsetting emissions through forest projects is subject to a number of restrictions under the Kyoto Protocol: as the increase in biomass (and therefore the binding of carbon on which the issue of emission rights is based) can be reversed by deforestation²⁵, the validity of emission rights from afforestation projects is time-limited to the respective duration of the forest project. The purchasers of emission rights therefore run the risk of having to cover themselves with new emission rights as replacements in future. The total volume of sink projects is also limited.²⁶ Moreover, a number of European countries, including Germany, do not grant permission to carry out CDM sink projects ('Investor's Country Approval'). The conditions and procedures for approving the performance of sink projects for the period following 2012 are currently under discussion.

European legislation is also restrictive: According to the EU Linking Directive and the corresponding German legislation, emission credits derived from CDM sink projects will not be accepted in the EU trading system until at least 2012²⁷: "The obligation to surrender allowances in the EU may not be complied with through the surrender of emission reduction units or certified emissions reductions from the areas of land use, land use change or forestry". This piece of legislation is currently being reviewed.²⁸

²⁴ Another tool is "Joint Implementation" (JI): industrialised countries carry out projects to reduce greenhouse gases in other industrial countries and credit such investments against their own reduction targets between 2008 and 2012.

²⁵ This problem constitutes the so-called "permanence risk"

²⁶ The total use of sinks is subject to an annual limit of 1% of the greenhouse gas emissions of industrial countries ("Annex 1 Countries") in the base year.

²⁷ Deutscher Bundestag (2005): "Act on the introduction of project-based mechanisms in accordance with the Kyoto-Protocol".

²⁸ European Commission (2006): "Errichtung eines globalen Kohlenstoffmarktes (KOM (2006) 676 from 13.11.2006)".



Fig. 8 Tree in Precious Woods forest

Total potential earnings
of 600 to 2,500€/ha
over a period of about
20 years

The earnings potential of emission rights from forest management projects is based on the volume of emission rights generated and the market prices obtainable for them. Current studies assume a total CO₂ reduction of about 300 to 500 t CO₂ per ha over a period of about 20 years.²⁹ The price for certificates from afforestation projects is probably below that of normal emission rights under the Clean Development Mechanism of the Kyoto Protocol, because of the time limit and other factors. Emission rights from afforestation projects are currently sold at prizes between 2€ and 5€/t CO₂ equivalent³⁰.

On the basis of these price assumptions and the volumes of emission reductions given as examples, total potential earnings of about 600 to 2,500€/ha are obtained over a period of about 20 years.

Precious Woods registered 221,700 metric tons of verified CO₂ offsets which originate from the reforestation of 4,638 ha of formerly degraded pastureland by its operations in Costa Rica for the years 2003, 2004 and 2005 on the Chicago Climate Exchange³¹ and has already started to sell these rights for a price of 2.10 to 4.10 USD per metric tonne of CO₂. The World Bank purchased 22,000 t of verified CO₂ offsets in order to offset 100 percent of its greenhouse gas emissions associated with its Washington, D.C. operations and business transportation tracked from its headquarters in the 2006 fiscal year.

²⁹ UNFCCC (2006): "Reforestation of severely degraded landmass in Khammam District of Andhra Pradesh, India under ITC Social Forestry Project".

³⁰ Cf. www.carbonfinance.org concerning the price of CERs. (Forward) prices for forest management CDM projects are available at: www.chicagoclimateexchange.com, and www.co2e.com/formsLogin.asp?trading/boards.asp?Board_type=Forward.

³¹ This corresponds to a volume of about 48 t CO₂ / ha. Further emission rights will be generated over the entire planning period.

In addition, Precious Woods announced its entrance into the European Emissions Trading Scheme with two agreements so sell Certified Emission Rights from their bio-energy project in Brazil: Precious Woods Amazon now supplies waste woods from its forest operations to a local renewable energy (biomass) plant, in which it acquired an 80% stake in 2005. The plant's switch from diesel to biomass resulted in carbon emission reductions and therefore qualifies for carbon credits under the Clean Development Mechanism. Additional emission reductions are also achieved by avoiding the methane which was previously released by stockpiled waste wood and from avoiding transportation of diesel into the Amazon. Precious Woods received approval from the CDM Executive Board in May and about 512,000 credits were issued on 15 September 2006.

Overall, energy sales from the renewable energy plant as well as the sales of the carbon credits provided Precious Woods with additional revenue of ca. 10 million USD in 2006, including carbon revenue in the region of 1 million USD realized from operations in Nicaragua and Costa Rica. On its carbon and energy business, Precious Woods expects to generate net profits of over 5 million USD in 2006.

4 Sustainability assessment

4.1 Criteria for sustainable tourism (WWF)

The case studies 'Wolwedans' (Namibia) and 'Lapa Rios' (Costa Rica) are tourist enterprises whose business concepts envisage the responsible use of the region's natural resources and responsible interaction with the social environment. They act in compliance with the criteria for environmentally friendly and socially compatible tourism set out below or they are striving to comply with these criteria.



Fig. 9 Wolwedans

All forms of tourism that are designed to enable people to experience nature and the landscape inevitably constitute an interference with the natural processes of environmental systems. In an age of globalisation moreover, long-distance travel also has negative effects on the environment. One particular impact is the pollution of the atmosphere by greenhouse gases. This is something that long-distance travellers must accept if they want to enjoy nature that includes landscapes and species they can't find at home. This dilemma has yet to be solved. Concepts that offer CO₂-neutral travel by offering an offset of the emissions through carbon-binding afforestation or CO₂ savings projects elsewhere constitute a possible solution that is gradually developing.

Despite this dilemma, and as long as it follows certain principles, ecotourism - sometimes also referred to as nature-tourism - can offer a huge potential for local nature conservation if the 'exploitation' of nature is also used as an opportunity to conserve it. This is all the more applicable to regions where nature has hitherto been regarded as an asset that has been subject to unrestricted exploitation at low prices, as in the case of destructive forest management in tropical countries. There is no single concept of sustainable tourism that can be applied to all regions worldwide. However, it is possible to define some principles that allow an assessment of the sustainability of certain tourism projects. Such principles can be derived from the requirements of the Convention on Biological Diversity, for example. The aims of this convention constitute three pillars, which also include protection, use and development:

- Biological diversity should be preserved
- The elements of biological diversity should be used in a sustainable way
- Benefits resulting from use should be shared fairly



Fig. 10 Landscape at Lapa Rios

Convention on Biological Diversity

The principle of sustainability therefore does not just demand the observance of environmental principles, but it also requires economic stability and social equilibrium. According to the WWF, there is at present no form of tourism that meets all the categories equally and which can therefore be described as truly sustainable. Greenhouse gas emissions are still the main problem. It would be better therefore to use the term 'responsible tourism' instead of the term 'sustainable tourism'. From a conservation viewpoint, responsible tourism should help to conserve or even improve the environment of the travel destination and provide additional benefits for the local economy. To date, only a few companies meet these criteria.

What principles can now be used to define responsible tourism? The WWF quotes the following five principles as priorities:

1. Tourism should be part of a sustainable development strategy and plan

Tourism should be seen as being part of forward-looking development. In developing countries in particular, this may mean, for example, that priority is given to other forms of economic activity and use (such as agriculture and forestry) if these represent a better opportunity for sustainable development of the region than ecotourism. Tourism should abide by international regulations (such as CITES) and national legislation. It must not infringe upon national legislation and must be integrated into existing regional planning relating to regional development and land-use. Prior to the start of the project, an ex-ante assessment of the effects on the natural environment should be carried out. Existing tourism projects must compensate for any damage to or impairment of the environment ('polluter pays' principle). Furthermore, the precautionary principle must be observed when developing regional and local tourism activities. Tourism projects must also be accepted by the local population. This applies in particular to cases where social and cultural changes caused by tourism risk resulting in serious conflict.

2. Natural resources should be used in a sustainable way

Tourism almost always requires people to be concentrated in one place, resulting in additional consumption of water, fuel and food. For certain activities, such as hunting and fishing, the capture and consumption of wild animals is actually the purpose of the journey. In addition to observing existing legislation on the protection of natural resources (including the fauna and flora) it is also necessary to avoid exceeding the natural capacity of the region. According to the precautionary principle, future

development must be anticipated. One example would be to assess if the number of visitors is expected to increase in future. Prior to the start of the tourism activities, investigations into the effects of additional consumption of water, fuels, building materials etc. should be carried out using scientifically viable methods. Hunting and fishing should only be carried in accordance with specific management plans.

3. Pollution and consumption should be kept as low as possible

Pollution mainly comprises refuse, waste water and noise. The additional consumption of fuel, especially as a result of the increase in traffic, also causes problems. Responsible tourism requires the use of efficient technology for saving and generating energy (e.g. solar thermal collectors, photovoltaic and wind power systems).

4. Tourism should respect the cultural values of the local population and enable them to participate in the economic prosperity

Local communities should have the right to participate in the planning of tourism activities, and the local economy should profit from investments. Staff should be recruited from the local population as far as possible. On-site training should be given if sufficiently qualified specialised staff are not available. The buildings and infrastructure should be designed so that they blend into the surrounding landscape. It is particularly important to observe traditional land use rights, which are frequently part of local customs, but which are not enshrined in national legislation. These areas may only be used if agreed by the local communities. Care must be taken to ensure adequate participation of all the socially relevant players.

5. Tourism should be informative and promote respect for local culture and environment

Tourism can only be as responsible as the behaviour of the tourists themselves. This means providing a minimum of information about the culture and society of the host country and the surrounding natural environment. Respecting the culture and traditions of the local people is essential. Tourism should also promote responsible behaviour through personal meetings with local people. Knowledge about the natural habitats and species encourages appropriate behaviour. In addition, tourists are multipliers and they can have considerable influence on public opinion about the destination and the value of biodiversity upon their return.



Fig. 11 Tent Platform - Wolwedans Dune Camp

4.2 Criteria for sustainable forest management (WWF)

The ‘forest management’ case study ‘Precious Woods’ complies with the strict sustainability criteria of the Forest Stewardship Council. The natural forest operation of Precious Woods in the federal state of Pará (Brazil) has already been certified according to these criteria. From a nature conservation viewpoint therefore, Precious Woods meets the requirements for environmentally and socially compatible forest management.



Fig. 12 Typical use of the Amazon forest to date: soy bean cultivation (fields adjacent to Precious Woods)

Forest certification

About 200 years ago, the concept of sustainability provided underpinning for the permanent economic use of the forests, i.e. by future generations. For a long time therefore, the concept of sustainability was defined as ensuring continuous new growth of timber and utilisation of its yield. It was at the United Nations Conference on Environment and Development (UNCED) in Rio in 1992, that the concept was expanded to include the addition of social and environmental aspects, and this has since determined the way in which the ‘wise’ use of forests is discussed. Protecting the tropical rainforest has always been given priority in such discussions. When it became obvious that neither a boycott of tropical woods nor the call for the creation of big state-funded nature reserves were realistic options for the protection of the remaining tropical rainforest, a start was made on developing the concept of forest certification at an international level.

Criteria and assessment methods

Forest certification is a tool that essentially combines two processes. First of all, it determines the targets for sustainable forest management in the form of generally applicable criteria. On the basis of these criteria, verifiable forest management requirements can be formulated. Secondly, forest certification determines the verification procedure that is meant to ensure that social, environmental and economic requirements are actually met by forest users. A quality label is attached to a product if environmental standards are observed along the entire chain of custody (i.e. during harvesting, transport, processing and distribution - from the forest to the end-user). It may be combined with non-certified goods under certain circumstances, but this must only occur in narrowly defined terms. The label thus provides an instantly recognisable proof of sustainable production for the end-user.



Fig. 13 Forest with blooming Ipé at Precious Woods, four years after harvest

Higher prices and
access to new markets
possible

This also shows the economic implications of forest certification: The certification process is initially associated with costs for the forest owner. Certification or a label that is not economically viable (e.g. because of requirements that are too demanding) would not have any chance at all among producers. The economic advantages of forest certification are now generally recognised. If it is credible and transparent, certified products can in general be sold at higher prices. To commodity products such as cellulose or plywood this only applies to a limited extent. The advantages of certification to businesses are not confined to higher prices, however. Access to new markets or improved protection against market restrictions are also advantages for producers, processors and distributors. An improved image of the forestry and the timber industry among various stakeholders will also pay dividends in the medium term. In the long term, sustainable forest management is also a crucial factor for ensuring that there will be enough timber available for harvesting in the future. However, counter-productive incentives such as short-term licensing agreements (concessions) remain.

Forest Stewardship
Council (FSC)

Globally, the number of certification systems is currently increasing. This is causing confusion even among well-informed consumers. The WWF and other important environmental organisations consider that the Forest Stewardship Council (FSC), founded in 1993, is at present the best system from an environmental and social viewpoint. The FSC is also the only system to formulate internationally uniform requirements that can be directly verified at an operational level. Other systems are either subject to regional restrictions, do not contain any on-site verification or work with process-orientated criteria, which have been previously determined by the business itself.

The FSC label guarantees compliance with ambitious environmental and social standards worldwide, such as the avoidance of large-scale clear-felling, the conservation of natural forests or of forests with a high conservation value and the observance of the rights of indigenous peoples. The standards are based on ten principles and 56 criteria set out by the FSC in the form of general guidelines. At a national level, national FSC working groups develop standards based on these principles. They adapt and refine the FSC standards in line with the country's social, economic and natural circumstances. The international standards are therefore supplemented by a large number of criteria and indicators.

The international FSC principles (not including criteria) are listed below to provide a general overview.

Principle 1: Compliance with laws and FSC principles

Forest management shall respect all applicable laws of the country in which they operate as well as international treaties and agreements to which the country is a signatory, and shall comply with all FSC Principles and Criteria.

Principle 2: Tenure claims, land use rights and responsibilities

Long-term tenure claims and use rights for land and forest resources shall be clearly defined, documented and legally established.

Principle 3: Indigenous peoples' rights

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories and resources shall be recognised and respected.



Fig. 14 Precious Woods staff member

Principle 4: Community relations and workers' rights

Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

Principle 5: Benefits from the forest

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

Principle 6: Environmental impact

Forest management shall conserve biological diversity and its associated values, water resources, soils and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

Principle 7: Management plan

A management plan appropriate to the scale and intensity of the operations shall be written, implemented and kept up-to-date. The long-term objectives of management and the means of achieving them shall be clearly stated.

Principle 8: Monitoring and assessment

Monitoring shall be conducted, appropriate to the scale and intensity of the forest management, to assess the condition of the forest yields of forest products, chain of custody, management activities and their social and environmental impacts.

Principle 9: Maintenance of high conservation value forests

Management activities in high conservation value forests shall maintain or enhance the attributes that define such forests. Decisions regarding high value forests shall always be considered in the context of a precautionary approach.



Fig. 15 Carefully dragging a trunk using a cable winch at Precious Woods

Principle 10: Plantations

Plantations shall be managed in accordance with Principles 1 - 9 above. While plantations can provide an array of social and economic benefits and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on and promote the restoration and conservation of natural forests.

5 Country risks for investors

In addition to the economic viability of the projects and their contribution to nature conservation, we have analysed the country specific risks associated with these investments. Our analysis revealed large differences in country risk faced by foreign investors in Brazil, Namibia and Costa Rica.³²

PwC Country Risk Model delivers risk premium

Investments in any emerging market should be calculated using a country specific risk premium. This risk premium should be sufficiently high to compensate for the average risks that are faced in the country as quoted above. Unfortunately, in reality country risk is rarely taken into account in the calculation of the Net Present Value or other ratios. Most financial analysts are no country risk experts, and cash flows are usually assembled using straightforward public or management accounting information without further adjustments. This results in a biased and incomplete picture of the risks faced by investors - and an overstatement of the value of foreign investments.

There are a number of ways to estimate a country risk premium. For the purpose at hand we have used our in-house country risk model, the PwC Country Risk Model.

The methodology used is straightforward: The yield of an emerging market bond denominated in US Dollars is compared to the yield of a 'risk-free' US government bond. The difference between the yields of the two bonds (calculated by means of regression analysis over a long period of time) equals the default risk of the emerging market bond.

This default risk corresponds to the 'country risk' for bonds. For countries where there are no bonds, ratings are used as an alternative and are then converted into risk premiums.³³ The risks for direct investments in the country in question are, however, significantly larger than the default risks for bonds on the international market. The following country risk premiums therefore constitute the lower limit of an appropriate risk premium. Actual country risk may deviate from these values, depending on the type, place and duration of the investment.

5.1 Namibia

Favourable investment climate despite some political risk



Our analysis of the political conditions in Namibia revealed a relatively favourable investment climate. Namibia's long-term economic growth potential is good.³⁴ Namibia is one of the most stable and economically successful countries of the region. The country benefits from its proximity to South Africa, the economic powerhouse of Sub-Saharan Africa.

Namibia enjoys a relatively high degree of political stability. The state of civil liberties has improved since the controversial former president Nujoma resigned.³⁵ Nujoma, infamous for his hate speeches against minorities and his threat to impose sanctions

on the EU³⁶, handed over office to the more moderate President Pohamba.

Namibia has recently received praise from a staff mission of the IMF for its economic policies.³⁷ The country has enjoyed robust growth and moderate inflation. Economic

³² The statements and analyses in this section generally related to data and information available in November 2006. Current developments could have changed the situation in ways of which we are unaware.

³³ If no bond data is available, Sovereign Credit Ratings can be used in a comparable methodology. The results are comparable. Cf. PricewaterhouseCoopers Economics (2005): "The PwC Country Risk Model"

³⁴ IMF (2006): "Namibia: Article IV Consultation with Namibia", November 2006

³⁵ Amnesty International, Report 2006

³⁶ The Daily Telegraph, 4. September 2002, "Namibian leader warns EU of economic war."

³⁷ IMF (2006): "Namibia: Article IV Consultation with Namibia", November 2006

growth is expected to accelerate slightly to 4.5% in 2006 from 4.25% in 2005. The continued support of the IMF is an important signal for investors. Foreign investors are subject to the same rules as local investors. However, farmland may only be acquired by foreign investors who have obtained a special permit. The unclear future of the highly controversial land reform is a risk that should be taken into account by foreign investors. Investments in the sectors affected by land reform, such as tourism, should therefore be analysed carefully and calculated with an appropriate risk premium. The PwC Country Risk Model currently estimates a risk premium of 1.1% for Namibia. In view of the political situation in the country, this value may be higher for a direct investment and should therefore be regarded as the lower limit for a risk premium.

5.2 Costa Rica

One of the safest investment locations in the region



Costa Rica is one of the safest investment locations in the region. As the oldest democracy in Latin America, the country has managed to sustain long-term economic growth while at the same time investing heavily in social improvements to a degree which is unheard of anywhere else in the region. Economic growth is expected to be around 5% in 2006. Analysts point to a number of structural challenges that might increase the economy's vulnerability to external shocks.³⁸

Nevertheless, Costa Rica is an open and free market economy making every effort to

increase its competitiveness and strike free-trade deals with the EU and the US.

It is a safe destination for tourists, offering abundant natural riches and an attractive climate. This sector is now the most important source of foreign currency for the country. Legislation guarantees foreigners an unlimited right to acquire land. There is also an investment protection agreement for German investors. Nevertheless, mainly because of the vulnerability of the small economy to regional disturbances, investments in Costa Rica should be calculated with a risk premium of at least 1.5%.

5.3 Brazil

Attractive market, but clouds on the horizon



Brazil continues to be one of the most attractive investment locations. To a large extent this can be traced back to successful democratisation, the success of the 'Plano Real' economic stability programme and the increasing integration of the country into the global economy. President Lula's economic policy has exceeded the (low) expectations of most observers, and investor confidence has returned after the 2002 crisis.³⁹

Lula has recently been re-elected in a landslide victory. Some risks however remain. The volatile currency constitutes a serious macro-economic risk for investors. The appreciation of the Real has hit profits of

exporting companies and decreased Brazil's attractiveness as a manufacturing location for the global market. Government interference in the energy sector has also been given a negative reception by investors. Nevertheless, the general investment climate is positive. An investment protection agreement was signed by Brazil and Germany and

³⁸ IIF(2006): "Costa Rica Report"

³⁹ EIU(2006): "Brazil Country Outlook"

came into force in 1998. Foreigners can set up companies or regional branches in Brazil or participate in Brazilian companies without significant restrictions.⁴⁰ Brazilian law guarantees the equal treatment of foreign and domestic investors. Unresolved land use disputes as well as the security situation in some regions continue to constitute investment risks. Investments in Brazil should be calculated with a risk premium of at least 1.5%.

5.4 Investment guarantees

Many countries, like the Federal Republic of Germany, offer long term investment insurance against political risks in emerging markets. The cost of this insurance is modest compared to the private political risk insurance market. For example in Germany, for an annual fee of 0.5% of investment costs plus a one time handling fee, this insurance provides cover against some of the most common risks faced by foreign investors.⁴¹

Investment guarantees
of the Federal Republic
of Germany

⁴⁰ It is possible to purchase minority and majority participations.

⁴¹ See www.agaportal.de for more details on fees and conditions.

6 Opportunities and threats

6.1 Ecotourism

Opportunities for projects in nature tourism arise as a result of the long-term growth in the tourism sector as foreseen by the World Tourism Organisation (WTO): with a workforce of about 234 million, this sector (directly or indirectly) employs about 9% of all employees worldwide. Between 2003 and 2004, the number of arrivals worldwide rose by almost 11% to 763 million. In 2005 the number rose again by 5.5% to a record of 800 million.⁴² The World Travel and Tourism Council (WTTC) predicts an annual growth of demand in the tourism sector of 4.2% in real terms over the next 10 years.⁴³ Results by region show that Africa recorded the highest growth in arrivals in 2005 (+9%), followed by Asia and the Pacific (+8%), the Middle East (+8%), the Americas (+6%) and Europe (+4%).⁴⁴



Fig. 16 Activities in the NamibRand nature reserve

Ecotourism becoming increasingly important

A steady rise in demand is continuously increasing the importance of ecotourism within the tourism sector. Heightened environmental awareness and an increasing interest in nature among travellers have assisted this development. For example, 78% of Germans, who form the third most important sending market in the world after the USA and Japan⁴⁵, regard experiencing nature as an important or very important reason for a holiday; 41% of them visit natural attractions during their holiday.⁴⁶ Ecotourism's share of international tourism is estimated at about 6%.⁴⁷ With annual growth rates of 20% on average, it is one of the fastest-growing segments of the international tourism market.⁴⁸

Developing countries as important destinations for ecotourism

Developing countries have become important ecotourism destinations. In 1950, the 15 most important tourist destinations, which were all in Western Europe and North America, still accounted for 97% of worldwide arrivals, but their share has now fallen to 62% in favour of developing and newly industrialising countries.⁴⁹

⁴² World Tourism Organization (2006): "Tourism Highlights. 2006 Edition"

⁴³ WTTC (2006): "The 2006 Travel and Tourism Economic Research", p. 14.

⁴⁴ Op. cit.

⁴⁵ Op. cit.

⁴⁶ F.U.R. (2001): "Reiseanalyse 2001" and World Tourism Organization (2002): "Tourism Highlights 2002"

⁴⁷ Op. cit..

⁴⁸ WTTC (2002): "Tourism Highlights 2002", p.18.

⁴⁹ WTTC (2002): "Industry as a partner for sustainable development".

Possible risks arise from deterioration in security in the respective region as a result of terrorist attacks, ethnic tensions and war and the appearance of diseases such as SARS and bird flu. Further risks for foreign investors include land reform (as in the case of Namibia) or land-use conflicts (as in the case of Costa Rica). A thorough analysis of the political risks is therefore critical for success.



Fig. 17 Oryx at Wolwedans

6.2 Sustainable forestry

Opportunities: Surplus demand for certified tropical timber

Opportunities in sustainable forestry mainly arise from the expected surplus demand for certified tropical timber. According to FAO estimates, the demand for industrial round wood will increase by about 25% from 1996 to 2010. According to information provided by UNECE and FAO, market price premiums of between 12% and 20% are obtained for FSC-certified sawn hard woods.

Extensive portfolio of harvestable types of wood

There is also an extensive portfolio of harvestable types of timber in the area of natural forest management. Companies can therefore react flexibly to market changes and switch to the production of goods with higher profit margins.



Fig. 18 Production site at Precious Woods

Risks: Political conditions and illegal logging

As in the case of ecotourism, risks mainly arise from the political conditions in the country. As the example of Precious Woods Pará shows, illegal logging and the resulting loss of sales constitutes a considerable risk for sustainable forestry.



Fig. 19 Measuring trees to determine growth rates at Precious Woods

Identification of all land use rights before acquisition

The risks associated with the acquisition of forests also include the possibility that it might not be possible to identify all land use rights before acquisition and that claims are asserted at a later date. The example of Precious Woods also shows that risks arise as a result of corruption and changes in administrative structures in the country, which could cause delays in the issue of official permits. FSC-certified companies that adhere strictly to the laws and regulations of the country are particularly badly affected by such delays.

Opportunities and threats arising from exchange rate fluctuations

Opportunities as well as threats arise from exchange rate fluctuations. If export sales are denominated in US Dollars and staff costs are paid in local currency, an appreciation of the local currency in relation to the US Dollar will have a negative impact on the margin, while a devaluation will have a positive impact.

Planning growth rates

Further opportunities and risks arise from the planning of growth rates. The targeted harvesting intensity implies a constant natural growth rate. Whether this rate can actually be achieved can only be determined later on the basis of operating experience.

7 Success factors

The case studies examined can be used to identify the factors affecting the performance of sustainable businesses and which are important for the successful implementation of comparable projects.

7.1 Ecotourism

Important factors affecting the performance of tourism-orientated concepts are described below.



Fig. 20 Landscape at Wolwedans

Attractiveness and accessibility of destination area

The attractiveness of the destination can be identified as an important success factor for tourism projects. The appeal to tourists may be due to the existence of eco-systems (such as forests and coral reefs in the case study in Costa Rica) or types of landscape (such as mountains and deserts in the case study in Namibia) or the opportunity to engage in certain activities (e.g. walking, observing animals, diving). Accessibility to the destination from the main sending regions and the number of time zone differences as well as a good climate are also important. Political stability of a region and tourist safety and security also play a significant role. The existence of primary medical health care also has a favourable impact.

Minimum size

The observance of a minimum size of the site was also identified as a factor affecting performance. Concepts based on the attractiveness of the eco-system and a high density of natural attractions require less space, hence smaller areas than concepts which are based on the experience of certain types of landscape (15 ha rainforest compared with 1,100 ha desert per visitor).

	Wolwedans	Lapa Rios
Area used (ha)	36,000	1,000
Visitor capacity (beds)	32 ⁵⁰	64
Area available per visitor (ha)	1,100	15

Tab. 3 Capacity and size of tourism reference projects.⁵¹

⁵⁰ A total of 36 since 2005.

⁵¹ Source: PwC

Combination of a number of areas to form one big private nature reserve

Economies of scale may, for example, be achieved by ensuring a connection to other areas that are also used in a sustainable way and by combining a number of areas to form one big private nature reserve (bigger habitat for wildlife, better visibility and marketing opportunities). In addition to the price per hectare for the land and the necessary investments in buildings, the size of the land to be purchased also determines the initial investment required.

Securing the necessary land use rights in the long term

Securing the necessary long-term land use rights is also important for the success of a tourism project. The associated strategic choice between purchasing the land or the corresponding land-use rights should be taken on the basis of local legal conditions, the funds available for the initial investment and the investors' cost of capital. If the land is owned by the state, linking the amount of the leasehold payments to the project sales may be advantageous if this increases the government's interest in the success of the project.

Exclusivity of the right of access and use

Depending on the planned tourism concept, the access rights may need to be exclusive in order to ensure the effectiveness of the nature conservation and thereby the attractiveness to tourists and the economic success of the business concept. The legal conditions must permit a corresponding contract to be drawn up and make the resulting claims enforceable. If this is not possible, the land must be purchased.

Site-specific differences between the examined project concepts are summarised below:

	Wolwedans	Lapa Rios
Tourism concept	Experiencing a wide, open landscape	Experiencing the rainforest eco-system
Area	Large area managed, little restoration	Small area managed, no restoration
Location, infrastructure	Infrastructure connection via road network (approx. 5 - 6 hours driving time from international airport), landing facilities available for small aircraft (shuttle service), very accessible for South African customers; otherwise fairly expensive to reach	Good infrastructure connection (close to airport), short travel time for North American customers, low travel costs
Land use right	The area is used in return for licence payments to structurally linked companies	Purchase
Investment value	Small investment in relation to area size	Large investment in relation to area size

Tab. 4 Site-specific differences between reference projects.⁵²

Long-term profitability

The projects examined differ in terms of their long-term profitability during the operating phase. The main factors affecting performance are the maximum capacity, average utilisation, average daily prices and additional sales per visitor (e.g. food and drinks, guides, tours and transfers).

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	Wolwedans	Lapa Rios
Average utilisation (long-term)	56%	70%
Average daily price (long-term)	165 Euro	200 Euro

Tab. 5 Utilisation and daily prices of reference projects.⁵³

Provision of high-quality tourism services

A strategic focus on providing high-quality tourism services, such as guided tours, will have a positive impact on the daily rates. The associated labour costs are comparably low in countries with low living costs. The example of Wolwedans shows that the placement of a brand name can also have a favourable impact. And finally, limiting the maximum number of beds in the reserve will ensure not just nature conservation, but also the exclusive nature of the accommodation.

Economies of scale

In terms of costs, economies of scale can also be achieved if accommodation capacity reaches a certain size and if it is used to capacity. Additional returns can be generated by keeping the start-up phase as short as possible, by paying leasehold instead of investing into a purchase of the land and by ensuring that staff costs remain as variable as possible in order to offset seasonal effects on utilisation.

⁵³ Source: PwC



Fig. 21 Service team in Lapa Rios

Additional services

The example of Lapa Rios shows that the profitability of pure tourism concepts can be increased by additional services and the associated earnings.

Know-how from the tourism sector

The success of the tourism projects is also affected by the ability of the management to recognise the requirements of the markets and to focus and manage the business accordingly. Supervising the actual provision of services also requires optimal know-how from the tourism and hospitality sector.

The differences between the operating features are shown in the following table:

	Wolwedans	Lapa Rios
Strategic alignment	High-quality / high-price tourism offering	High-quality / high-price tourism offering
Start-up phase	Fairly long start-up phase (7 years) with gradual increase in capacity	Short start-up phase through rapid implementation of the planned investments and rapid achievement of the necessary capacity and utilisation at the desired level
Profitability of the operating business	Relatively low daily prices and utilisation rates, relatively small earnings from additional offerings, developed marketing concept	High daily prices and utilisation rates, high earnings from additional offerings, management know-how
Project return	10%	25%

Tab. 6 Differences in the profitability of different tourism projects.⁵⁴

7.2 Sustainable forestry

As in the case of the tourism case studies, the choice of site is of great strategic importance for natural forest management. The following factors must be taken into account:

Factors affecting the selection of areas

- Natural features, such as climate conditions, soil quality and a small likelihood of losses due to forest fires or storms as a factor affecting the harvest volume and quality
- Existing infrastructure and connection of the forest to the processing industry and/or international markets and the availability of labour
- Long-term legal certainty regarding the purchase of land or the purchase of land use rights (as already explained in connection with tourism concepts)
- Political and economic conditions in terms of regional stability and the acceptance of the concept by stakeholders

The site-specific aspects that must be taken into account in forestry projects are summarized in the following table:

	Precious Woods Pará
Forestry use concept	Sustainable natural forest management in accordance with FSC standards. Processing harvested wood into sawn timber and small parts
Core skills	Assessment of forest Development of management plan Harvest of natural forest (low impact logging)
Location, infrastructure	Natural forest area in the federal Brazilian state of Pará Good climatic conditions, high quality of trunks Harvesting region located at a distance of about 350 km distant from processing sites
Area in ha	Tenure rights for over 76,000 ha of natural forest Use of further forest areas planned
Volume harvested m ³ / year	132,000 (output-related: 95,000)
Unit harvest volume m ³ /ha per year	Natural forest: 22 m ³ /ha / 30 a = 0.73 m ³ / ha*a (output-related)
Area use right	Progressive acquisition of tenure rights or licences after clarification of any existing use rights of third parties

Tab. 7 Site-specific features of forest projects.⁵⁵

As a natural tropical forest is usually characterised by a high diversity of species and a heterogeneous stock of marketable woods, natural forest management requires a much larger area than plantation management for comparable volumes harvested.

⁵⁵ Source: PwC

Adjustment of real net output ratio to the market conditions, connection to an export harbour

The real net output ratio should also be adjusted to the market. The higher the real net output ratio, the more flexibly the company can respond to changes in demand and market prices, since the product assortment can easily be adjusted accordingly. A structural link to the main customers is also a strategic advantage for the stability of the distribution channels. A good connection between the forest and an export harbour that is served by international shipping companies ensures access to a larger number of markets.

Forest management know-how

The ability to draw on existing forest management know-how when selecting the area and during management is also an advantage. If no previous projects have been managed before, this knowledge can be obtained either through co-operation with research institutions or by managing small reference areas prior to the start of the project. Reference projects also constitute a good opportunity to win the confidence of relevant competent authorities and certification agencies.

The profitability of the examined forest management project is essentially affected by the amount of the necessary initial investment, the duration of the start-up phase and the long-term profitability of the operational business.

Duration of start-up phase

If an existing natural forest is acquired, harvesting can already commence in the first year of operation, thereby ensuring early cash flows and low financing needs. On the other hand, in forest plantation projects, the period between planting and the first harvest lasts several years. The length of the growth phase of the plantings depends on natural growing conditions, the types of trees used and the products to be sold.



Fig. 22 FSC seminar at Precious Woods

Certification by the FSC

The attainable market prices and the costs associated with harvesting and further processing are crucial factors affecting long-term profitability. Certification by the FSC has a favourable impact on the achievable market price. The harvesting costs are lower in the plantation project because of the higher density of trees and the existing infrastructure.

Timing of cash flows

For the financial planning of forestry projects, it is important to consider the timing of cash flows. Natural forest projects for example, require a large initial investment with early returns resulting from the purchase of forested areas, while investments into plantation projects extend over the entire planting phase and returns are only generated in the main after the growth phase.

Risk structure

Different risk structures must also be considered. In the case of natural forest management it is possible to start marketing the harvested timber immediately. In the case of plantations, on the other hand, one of the main risks lies in forecasting the length of the period of growth of the trees and subsequent changes in the price of the timber. The main factors affecting the operating profitability of forest management projects are summarised in the following table:

Investment in trees	Purchase of existing forested areas approx. EUR 7.2 million
Further investment	Sawing mill and small parts production Infrastructure in the form of roads, paths and river port facilities Accommodation for forest workers and landing strip for small aircraft
Total investment value	EUR 11.5 million
Start-up phase	Operating profit from the second year of operation FSC certification from the second year of operation Long-term harvest level reached in the 19th year of operation
Sales per year	EUR 6.76 million after the desired harvest level has been reached
Selling prices	Round wood: EUR 25/m ³ Sawn wood locally: EUR 42/m ³ Sawn wood for export: EUR 341/m ³ Small parts: EUR 531/m ³ Ram piles: EUR 161/m ³
Profitability of the operating business	Long-term profitability of about 25% to 35% is reached in the second year of operation Factors affecting performance are: Lower unit harvesting volume Harvesting costs: EUR 20/m ³ (for round wood including transportation to the round wood store)

Tab. 8 Comparative summary of the planned profitability of forest management projects.⁵⁶

8 Possible corporate structure

The above analysis demonstrates that it may be useful for the WWF or other environmental conservation organisations to initiate projects that they consider to be beneficial for the conservation of biological diversity, and to operate these projects as a profitable business, so that the necessary capital can be obtained from investors ('sustainable investments').

On the basis of these results, a proposed company structure has been prepared to enable the worldwide implementation of such projects through private investment.

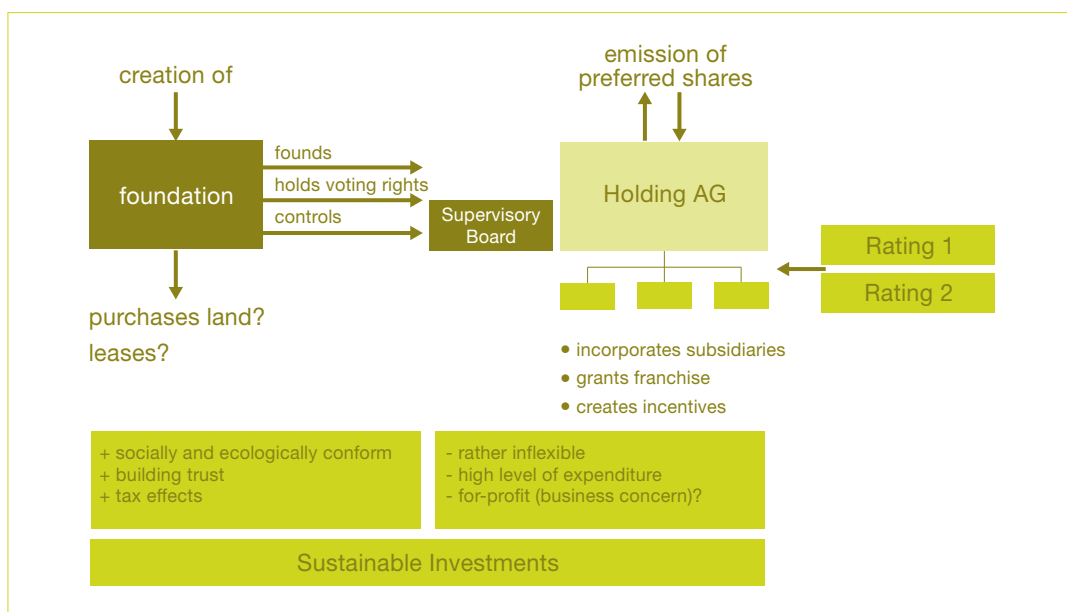


Fig. 23 Company structure for 'Sustainable Investments'⁵⁷

Central corporate body

The main corporate body for such investments could be a German corporation ('holding company'). The holding company may be controlled by a foundation set up by the environmental conservation organisation and/or the nature conservation organisation itself as shareholder. The organisation may also supervise the holding company via the supervisory board. The holding company does not carry out the projects itself. This is done by the individual operating subsidiaries in the respective countries. The holding company finances the subsidiaries' individual projects with equity and debt. Investors participate at holding company level by buying preference shares, for example, or via other forms of investments (e.g. convertible bonds, mezzanine capital etc.). It should be possible for investors to directly participate in individual project companies if necessary. The foundation's or conservation organisation's control of the holding company ensures that the environmental principles are always observed by the holding company as well as by individual subsidiaries.

While an expected positive effect on a company's brand value might play some role in the decision to co-operate with an environmental organisation, the willingness of investors to invest a certain amount of money depends essentially on the expectation of a favourable return on investment in the form of capital gains or future dividends or interest earnings. These expectations can be fulfilled via the planned structure.

Tax aspects

From a tax viewpoint, it is first of all necessary to determine whether the foundation will be not-for-profit or for-profit. In the former case, it is necessary to decide whether the investment in the holding company is to take the form of a so-called 'business concern'. This occurs when the foundation actually influences the current management of the holding company.

Public limited company or limited commercial partnership

The decision as to whether the holding company is to be a public limited company or limited partnership will have various effects on the taxes payable by the holding company. In view of the planned foreign subsidiaries or holdings, it is recommended to set up the holding company as a public limited company. This is advantageous as a public limited company normally enjoys the protection of double taxation agreements. Although start-up losses cannot be offset against tax via direct holdings, it can be offset via additional other arrangements.

Disposal of shares

For investors the possibility to sell their shares constitutes an important advantage of the public limited company. The sale of shares can also constitute a tax advantage for investors. Regardless of tax questions, the whole arrangement should offer investors the opportunity to sell their holdings within a medium-term investment period (5 to 10 years) from the outset.

In our opinion, the main structural and fiscal parameters for the nature conservation organisation and investors with regard to the structure of a company can be summarised as follows:

- Recognised legal structure of a company
- Balanced relationship between the continuous observance of environmental principles of the environmental conservation organisation and the rights of the investors
- Opportunity for (individual) investors to sell their shares upon achievement of individual investment targets
- Possibility of tax incentives (e.g. making tax-free capital gains or offsetting start-up losses against income)
- Availability of state-funded subsidies for co-financing individual projects

Extensive country and project portfolio

A comprehensive country and project portfolio is recommended in order to minimise project-specific and country-specific risks. The private-sector approach and expected return also permits financing via the capital markets. In view of the rapidly growing market for 'ethical' or 'green' financial products ('sustainable investments'), a promising demand for investments in international nature conservation is not unrealistic.

9 Conclusion

In conclusion, the companies analysed in this study and the structural and fiscal concept described show that privately organised and financed self-supporting projects can make a valuable contribution to nature conservation and the preservation of biological diversity.

The case studies examined are financially self-supporting and do not need public funds or donations so that more public funds are available for complementary purposes such as the protection of regions particularly at risk and where sustainable use is not possible. Therefore, government should consider setting up programmes for assisting or co-financing such 'sustainable investments' in order to promote the interest of the private sector and offer greater investment incentives.

'Sustainable investments' therefore constitute a very promising new way of implementing environmentally meaningful measures.

10 List of sources

1 Monographs and specialist articles

AHK (Deutsche Außenhandelskammer [German Chamber of Foreign Trade])
'Investitionsvorteile in Costa Rica' [Investment benefits in Costa Rica], 2002

Aretino, Barbara/Holland, Paula/Peterson, Deborah/Schuele, Michael
'Creating Markets for Biodiversity: A Case Study of Earth Sanctuaries Ltd.', Productivity Commission Staff Research Paper, Canberra, September 2001

Auswärtiges Amt [German Foreign Office]
'Costa Rica auf einen Blick' [Costa Rica at a Glance], 2005

Auswärtiges Amt [German Foreign Office]
'Costa Rica, Außenpolitik' [Costa Rica, Foreign Policy], 2005

Auswärtiges Amt [German Foreign Office]
'Costa Rica, Außenpolitik' [Costa Rica, Foreign Policy], 2003

Barnes, Jon I.
'Economic Aspects of Tourism in National Parks and Game Reserves: The Case of Botswana', CSERGE Working Paper GEC 92-21, 1992

Bauer, Rob/Koedijk, Kees/Otten, Rog r
'International Evidence on Ethical Mutual Fund Performance and Investment Style', in: LIFE Working Paper No. 02.59, University of Maastricht, 2002

Bergius, Susanne
'Der Markt rollt an' [The Market is Starting to Move], in: Sparkasse-Manager magazine for the Sparkasse financial group, April 2006

BFN (Bundesamt f r Naturschutz [Federal German Nature Conservation Agency])
'Biodiversit t und Tourismuskonflikte und L sungsans tze an den K sten der Weltmeere. Umweltvertr gliche Tourismuskonzepte f r K stenregionen' [Biodiversity and Tourism Conflicts and Possible Solutions on Ocean Coastlines. Environmentally Compatible Tourism Concepts for Coastal Regions], Springer Verlag, quoted in Strasdas 2001, p. 70, Berlin/Heidelberg 1997

BMZ (Bundesministerium f r wirtschaftliche Zusammenarbeit und Entwicklung [Federal German Ministry of Economic Co-operation and Development])
' kotourismus als Instrument des Naturschutzes?' [Ecotourism as an Instrument of Nature Conservation?], Arbeitsgruppe  kotourismus [Ecotourism Working Group], Weltforum Verlag, Cologne, 1995

Boo, Elizabeth A.
'The Ecotourism Boom', in: Wildlands and Human Needs (A Program of World Wildlife Fund), July 1992

Boo, Elizabeth A.
'Ecotourism: The Potentials and Pitfalls', Volume 1, WWF, Washington, 1990

Botswana Wildlife Management Association
'Economic Analysis of Commercial Consumptive Use of Wildlife in Botswana', UK, December 2001

Brinkmann, Klaus G/Kalbfleisch, Eberhard/K hler, Stefan/Kr ger, Dirk
'Zweckm  ige Wahl der Unternehmensform' [Appropriate Choice of the Legal Form of a Company], Para. 909, Stollfu , Bonn, 2001

BVI Bundesverband deutscher Investmentgesellschaften e.V. [Federal German Association of German Investment Companies]
'Jahrbuch' [Yearbook], Berlin, 2003

Campenhausen, Axel von/Seifart, Werner
'Handbuch des Stiftungsrechts' [Handbook of Foundation Law], 2nd edition, Munich, C.H. Beck, 1999

Capoor, Karan/Lecocq, Franck

'State and Trends of the Carbon Market 2005', Washington DC, May 2005

<http://carbonfinance.org/docs/CarbonMarketStudy2005.pdf>

Cattelaens, Heiner/Gottstein, Siegfried/Stegmüller, Hubert

'Körperschaftssteuer' [Corporation Tax], 13th edition, Stuttgart, Schäffer- Poeschel, 2002

CIA (Central Intelligence Agency)

'World Factbook', 2001

Contemporary Southeast Asia

'China's expanding maritime ambitions in the Western Pacific and the Indian Ocean',
Vol. 24, Issue 3, 2002

Contemporary Southeast Asia

'Tentacles of terror: Al Qaeda's Southeast Asian Network', Volume 24, Issue 3, 2002

DB Research

'Tourismus in Zeiten von Terror und Konsumschwäche' [Tourism in Times of Terror and
Low Consumption], Frankfurt am Main, 26 August 2003

Deutscher Bundestag

'Act on the introduction of project-based mechanisms in accordance with the Kyoto-
Protocol', 2005

Dresdner Bank Lateinamerika AG

'Perspektiven Lateinamerika' [Prospects for Latin America], September 2005

du Toit, Raoul

'Case Study of Policies that Support Sustainable Development in Africa: The Savé Valley
Conservancy, Zimbabwe', 22 April 2003

du Toit, Raoul

'Savé Valley Conservancy as a Model for the Conservation of Biodiversity in the African
semi-arid Savanna', Washington, 17 May 1999

Eber, Shirley

'Beyond the Green Horizon', WWF UK, 1992

Eberherr, Thomas

'Curriculum for a Basic Training of Eco-Tourism Guides in the Mount Cameroon Region',
Buea, March 1999

Euler Hermes-Kreditversicherungs AG/PwC Deutsche Revision AG WPG.

'Exportkreditgarantien der Bundesrepublik Deutschland, Jahresbericht' [Export credit
guarantees of the Federal Republic of Germany, Annual Report], 2002

European Commission

'Errichtung eines globalen Kohlenstoffmarktes' [Creation of a global carbon market],
(KOM (2006) 676 from 13.11.2006).

European Tropical Forest Research Network

'No. 26', December 1998 - February 1999

European Tropical Forest Research Network

'No. 32', Winter 2000/2001

European Tropical Forest Research Network

'No. 37', Winter 2002/2003

Eurosif (European Sustainable and Responsible Investment Forum)

'Socially Responsible Investment among European Institutional Investors', 2003

F.A.Z.-Institut/DEG/SAFRI/Deloitte&Touche (Hrsg.)

'Investitionsführer Südliches Afrika' [Investment Guide, Southern Africa], 2000

F.U.R (Forschungsgemeinschaft Urlaub und Reisen e. V.)

'Reiseanalyse' [Travel Analysis], 2001

Forest Stewardship Council

'Setting the Standard for Responsible Forestry', 1996

Förster, Hartmut

‘Praxis der Besteuerung von Auslandsbeziehungen’ [Practical Taxation of Foreign Relations], 2nd edition, Neuwied, Luchterhand Verlag, 2003

Forum Umwelt & Entwicklung [Environment & Development Forum]

‘Erneuerbare Energien’ [Renewable Energies], Circular 4/2002

Forum Umwelt & Entwicklung

‘Tourismus und nachhaltige Entwicklung’ [Tourism and Sustainable Development], in: Position Paper for presentation to CSD 7 (Commission on Sustainable Development), November 1998

Fraunhofer Institut für System- und Innovationsforschung [Fraunhofer Institute for Systems- and Innovations-Research]

‘Flexible Instrumente im Klimaschutz’ [Flexible Instruments in Climate Protection], Stuttgart 2005

Götz, Hellmut

‘Steuerliche Besonderheiten bei unternehmensverbundenen Stiftungen’ [Tax Features regarding Company-linked Foundations], NWB, Issue 4/ F 2, p. 7533- 7548, 2001

Gramlich, Dieter/Arbeitsgruppe Sustainable Investments/PwC

‘Mögliche gesellschaftsrechtliche Ausgestaltung von ‘Sustainable Investments for Conservation’ [Possible Corporate Structure for ‘Sustainable Investments for Conservation’] (unpublished), 2003

Große, Christine/Boye, Peter/Grimm, Ute/Haupt, Heiko/Martens, Harald/
Weinfurter, Monika

‘Trophäenjagd auf gefährdete Arten im Ausland’ [Trophy-hunting for Endangered Species in Other Countries], in: BfN-Skripte 40, Bundesamt für Naturschutz, 2001

Hart, Klaus

‘Größte lateinamerikanische Demokratie verurteilt Angriffskrieg einhellig’ [Biggest Latin American Democracy Unanimously Condemns War of Aggression], Reports from Brazil, April 2003

Heinrichs, Helmut

in: Palandt, BGB-Kommentar [Commentary on German Civil Code], 63rd edition, Munich, Beck, 2004

Heritage Foundation

‘Index of Economic Freedom’, 2003

Hofer, Doris

‘The Lion’s Share of the Hunt’, A TRAFFIC Europe Regional Report, Brussels, 2002

Hofmeister, Wilhelm, Konrad-Adenauer-Stiftung

‘Lateinamerika und die neuen Dimensionen internationaler Sicherheit - Aufgaben für Brasilien’ [Latin America and the New Dimensions of International Security - Tasks for Brazil], April 2001

Holz-Kemmler, Fee

‘Die Determinanten des Investitionsklimas im Neuen Südafrika und ihre Auswirkungen auf ausländische Direktinvestitionen’ [The Elements Determining the Investment Climate in the New South Africa and their Effects on Foreign Direct Investments], Berlin, 2001

IBERO-AMERIKA VEREIN

‘WM-Nr. 5’, (Brazil), Hamburg, May 2003

IBERO-AMERIKA VEREIN

‘WM-Nr. 7 - 8’(Costa Rica), Hamburg, August 2003

IIF (Institute of International Finance)

‘Costa Rica Country Report’, December 2004

IIF (Institute of International Finance)

‘Country Report South Africa’, Washington, 2003

IIF (Institute of International Finance)

‘Economic Report 2002’, November 2003

IIF (Institute of International Finance) Confidential
'Costa Rica Report', December 2005

IMF (International Monetary Fund)
'Country Report No. 03/17', Washington, 2003

IMF (International Monetary Fund)
'South Africa: Selected Issues', Washington, 2003

IMF (International Monetary Fund)
'Staff Report for the 2004 Article IV Consultation', Namibia, January 2005

IMF (International Monetary Fund)
'Namibia: Article IV Consultation with Namibia', Namibia, April 2006

Immobilien Datenbank Costa Rica
'International Transparency Index', 2003

imug (Hannoveraner Beratungsgesellschaft für sozialökologische Innovationen mbH)
'Themenspot Nachhaltige Geldanlage. Bekanntheit, Attraktivität und Investitionsverhalten' [Focus on Sustainable Investment. Awareness, Attractiveness and Investment Behaviour], results of a pan-German representative imug multi-topic survey, 2003

Industry and Environment
'Ecotourism and Sustainability'; Volume 24, No. 3 - 4; July - December 2001

Institut für Iberoamerika-Kunde [Institute for Latin American Research]
'BRENNPUNKT LATEINAMERIKA: Innere Sicherheit in Brasilien: Hintergründe und Aussichten' [FOCUS ON LATIN AMERICA: Homeland Security in Brazil: Background and Outlook], Hamburg, June 2002

International Tropical Timber Organization
'Annual Review and Assessment of the World Timber Association 2002', 2002

Journal of Electronic Defense
'Changing of the Guard', Vol. 26, Issue 7, 2003

Kessler, Ernst
'Staudinger', Kommentar zum BGB [Commentary on the German Civil Code], 12th edition Berlin, Sellier-de-Gruyter, 1991

Klug, Uwe/Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
'Handlungsoptionen der EZ zur Förderung von Naturschutzvorhaben durch Umweltfonds' [Possible Courses of Action for the Development Cooperation for the Promotion of Nature Conservation Projects by Environmental Funds], Eschborn, 2001

Knoblich, Stephan
'Fortschritt unter dem Kreuz des Südens? Anspruch und Wirklichkeit der Regenwalderschließung in Brasilien' [Progress under the Southern Cross? Ambition and Reality in Opening up the Rainforest in Brazil], CELA (Centro Latinoamericano), Working Document No. 70, Münster, 2001

Langholz, Jeffrey A.
'Economics, Objectives, and Success of Private Nature Reserves in Sub-Saharan Africa and Latin America', Conservation Biology, Volume 10, Pages 271 - 280, USA, 1 February 1996

Langholz, Jeffrey A./Lassoie, James P./Lee, David/Chapman, Duane
'Economic considerations of privately owned parks', in: Ecological Economics 33, Pages 173 - 183, USA, 2000

LIS (Länderinformationsseite [Countries Information Page])
The following five German-speaking institutions have jointly prepared this LIS since 1997: AGEH (Arbeitsgemeinschaft Entwicklungshilfe [Development Aid Working Community]), DED (Deutsche Entwicklungsdienst [German Development Service]), EED (Evangelischer Entwicklungsdienst [Evangelical Development Service]), Horizont 3000 (Horizont 3000, Österreichische Organisation für Entwicklungszusammenarbeit [Austrian Organisation for Development Co-operation]) und InWent (Internationale Weiterbildung und Entwicklung GmbH [International Training and Development Company])

Lutter, Marcus

‘Holding Handbuch’ [Holding Company Handbook], 3rd edition, O. Schmidt, Cologne, 1998

MATICES, Zeitschrift zu Lateinamerika, Spanien und Portugal [Journal on Latin America, Spain and Portugal]

‘Brasilien: Wem gehört das Land? Agrarreform: ein steiniger Weg’ [Brazil: Who Owns the Land? Agrarian Reform: a stony path], edition 24, Winter 1999/2000

Moura Costa, Pedro

‘Carbon accounting, trading and the temporary nature of carbon storage’, Prepared for the Nature Conservancy, with support from USAID, 2003

http://conserveonline.org/docs/2003/01/permanence_english.pdf

Nouriel Roubini’s

‘Chronology of the Asian Currency Crisis and its Global Contagion’, 1998

<http://www.stern.nyu.edu/globalmacro/>

Ö.T.E. (Ökologischer Tourismus in Europa e. V. [Environmental Tourism in Europe Association])

‘Der umweltorientierte Reiseveranstalter’ [The Environmentally Orientated Travel Agent], Bonn, October 1996

PricewaterhouseCoopers Economics, London

‘The PwC Country Risk Model, 3rd Quarter 2005’, London, 2005

PwC Deutsche Revision AG WPG

‘Investitionsgarantien der Bundesrepublik Deutschland, Direktinvestitionen Ausland, Jahresbericht’ [Investment Guarantees by the Federal Republic of Germany, Direct Investments Abroad, Annual Report], Hamburg, 2004

Reuter, Dieter

‘Münchener Kommentar’ [Munich Commentary], Kommentar zum BGB [Commentary on the German Civil Code], 4th edition, Munich, C. H. Beck, 2001

Rosen von, Rüdiger/Deutsches Aktieninstitut e.V./Institut für Ökologie und Unternehmensführung an der European Business School e.V. [Institute of the Environment and Business Management at the European Business School]:

‘Nachhaltigkeit und Shareholder Value aus Sicht börsennotierter Unternehmen’ [Sustainability and Shareholder Value from the Viewpoint of Listed Companies], Studien des Deutschen Aktieninstituts [Studies by the German Equities Institute], Issue 22, Frankfurt am Main, 2003

Savé Valley Conservancy/Bubiana Conservancy/Chiredzi River Conservancy

‘New Opportunities for Productive and Sustainable Land-Use’, 15 July 1994

Schiffer, Jan

‘Stiftung und Unternehmensnachfolge: Verständnis und Missverständnisse’ [Foundation and Company Succession: Understanding and Misunderstandings, BB, p. 265, 2002

Schmidt, Karsten

‘Gesellschaftsrecht’ [Company Law], 4th edition, Cologne, Carl Heymanns Verlag, 2002

Schmidt, Ludwig

‘Kommentar zum EStG’ [Commentary on the EstG], 23rd edition, Munich, C. H. Beck, 2004

Schönwiese, Christian-D.

‘Klima in der Diskussion’ [Climate under Discussion], Der Wald [The Forest], Issue 8/2002, 2002

Schröder, Michael

‘Socially Responsible Investments in Germany, Switzerland and the United States - An Analysis of Investment Funds and Indices’, ZEW Discussion Paper No. 03-10, 2003

Schwarz, Christian

‘Die Stiftung als Instrument für die mittelständische Unternehmensnachfolge’ [The Foundation as an Instrument of Medium-sized Company Succession], BB, p.2381, 2001

Sjöfarten Analysis Institut/The Institute of Shipping Analysis

'General Business Environment, Economy, Trade, Transports and Container Market Characteristics', p. 45, 2002

Steck, Birgit/Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)

GmbH/Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung

'Sustainable Tourism as a Development Option', Eschborn, 1999

Steck, Birgit/Strasdas, Wolfgang/Gustedt, Evelyn/Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

'Tourismus in der Technischen Zusammenarbeit' [Tourism in Technical Co-operation], Eschborn, 1998

Stecker, Bernd/Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

'Ökotourismus: Potential für Schutz und nachhaltige Nutzung der Tropenwälder - Eine Fallstudie aus den Nationalparks Taman Negara und Endau-Rompin in Malaysia' [Eco-tourism: Potential for the Protection and Sustainable Use of Tropical Rainforests - a Case Study from the Taman Negara and Endau-Rompin National Parks in Malaysia], Eschborn, 1996

Strasdas, Wolfgang

'Ökotourismus in der Praxis' [Eco-tourism in Practice], Studienkreis für Tourismus und Entwicklung e. V. [Tourism and Development Study Group], Ammerland, 2001

Svensson, Linus

'Summary of the Tourism and Hunting sessions', in: Report of an Electronic Conference, First Electronic Conference on Research and Biodiversity, 4 May - 26 June 1998

The Economist Intelligence Unit Limited (EIU)

'Brazil Country Outlook', April 2006

The Economist Intelligence Unit Limited (EIU)

'Brazil Risk: Financial Risk', 23 November 2005

The Economist Intelligence Unit Limited (EIU)

'Brazil Risk: Political Stability Risk', 23 November 2005

The Economist Intelligence Unit Limited (EIU)

'Country Briefing Brazil', 2003

The Economist Intelligence Unit Limited (EIU)

'Country Profile Costa Rica', 2001

The Economist Intelligence Unit Limited (EIU)

'Country Profile Costa Rica', 2003

The Economist Intelligence Unit Limited (EIU)

'Country Profile Namibia', 2002

The Economist Intelligence Unit Limited (EIU)

'Country Report', March 2003

The Economist Intelligence Unit Limited (EIU)

'Country Risk Service Namibia', April 2003

The Economist Intelligence Unit Limited (EIU)

'Currency Forecast Brazil', 10 November 2005

The Economist Intelligence Unit Limited (EIU)

'Financial Risk Brazil', 29 August 2003

The Economist Intelligence Unit Limited (EIU)

'Risk Wire', 2 September 2003

The Economist Intelligence Unit Limited (EIU)

'South Africa Risk: Foreign Trade & Payments Risk', 13 June 2003

The Economist Intelligence Unit Limited (EIU)

'ViewsWire, South Africa economy: Ten-year growth outlook', 30 May 2003

The World Commission on Environment and Development

'Our Common Future', Oxford, 1987

Transparency International

'International Transparency Index 2005', 2005

U.S. Department of State

'Background Note Namibia', April 2003

U.S. Department of State

'Country Report on Human Rights Practices', March 2003

UNCTAD

World Investment Report 2002, 2002

UNCTAD/DITE database on FDI inflows

FDI Country Profile Brazil, 2002

UNDP (United Nations Development Programme)

'Human Development Indicators', 2003

UNDP (United Nations Development Programme)

'Human Development Report 2002', 2003

UNFCCC (United Nations Framework Convention on Climate Change)

'Reforestation of severely degraded landmass in Khammam District of Andhra Pradesh, India under ITC Social Forestry Project', 2006

<http://cdm.unfccc.int/UserManagement/FileStorage/7KRR7XB7UAJQ6J74XIE5K0RZL7EH9V>

World Bank

'Country Brief Brazil', April 2003

World Bank

'Country Brief Brazil', April 2005

World Bank

'Mainstreaming Biodiversity in Development: Case Studies from South Africa', 2002

World Bank

'World Development Indicators Database', 2003

WMRC

'Daily Analysis', 20 February 2003

World Tourism Organization

'Tourism Highlights, Edition 2003', 2003

World Tourism Organization

'Tourism Highlights, Edition 2005', 2005

World Tourism Organization

'Tourism Highlights, Edition 2006', 2006

World Travel & Tourism Council

'The 2005 Travel and Tourism Economic Research', 2005

World Travel & Tourism Council

'The 2006 Travel and Tourism Economic Research', 2006

WTTC (World Travel and Tourism Council), IFTO (International Federation of Tour Operators), IH&RA (International Hotel and Restaurant Association), ICCL (International Council of Cruise Lines), BEST (Business Enterprises for Sustainable Travel), TOI (Tour Operators Initiative for Sustainable Tourism), WTO/OMT (World Tourism Organization) 'Industry as a partner for sustainable development', 2002

WWF / Forest Stewardship Council

'Political instrument, implementation and concrete results for sustainability since 1993', 2002

WWF International

'Forests for Life', 2002

WWF Switzerland

'Tropenwald - Tropenholz' [Tropical Rainforest - Tropical Wood], 1986

Zeitschrift des Deutschen Entwicklungsdienstes [Journal of the German Development Service]

DED letter No. 1/98, March 1998

Zittel, Werner/Treber, Manfred

'Analysis of BP Statistical Review of World Energy with respect to CO₂', 2001

Zöllner

'Köllner Kommentar zum Aktiengesetz' [Cologne Commentary on the German Stock Corporation Law], 2nd edition, Cologne, Carl Heymanns Verlag, 1988

2 Newspaper articles

All Africa

'African Leaders Etch Lasting Imprint On Earth Summit', 25 October 2002

BBC Monitoring Africa

'Namibia expropriates first farm', 2 September 2005

Bulletin der Botschaft der Republik Südafrika, 21 March 2003

F.A.Z.

'Nachhaltigkeitsfonds sind in ihrer Marktnische gefangen' [Sustainability funds are caught in their market niche] F.A.Z. of 20 November 2003

Frankfurter Rundschau

'CO₂ zum Schnäppchenpreis' [CO₂ at a Bargain Price] 12 November 2002

Handelsblatt

'Gewinne mit gutem Gewissen' [Profits with a clear conscience], 3 November 2006

Handelsblatt

'Markt für Nachhaltigkeitsfonds boomt' [The Market for Sustainable Funds is Booming], 4 February 2005

Handelsblatt

'Nachhaltigkeit bringt gute Rendite' [Sustainability Offers a Good Return], 4 May 2005

Handelsblatt

'Nachhaltige Investmentfonds verzeichnen Zuflüsse' [Sustainable Investment Funds Record Capital Influx], 3 August 2005

Handelsblatt

'Markt für Nachhaltigkeitsfonds wächst' [The Market for Sustainable Funds is Growing], 28 March 2006

Nachrichten für Außenhandel

'Regierung verschreckt Farmer und Investoren' [Government Frightens Farmers and Investors], Frankfurt 8 October 2002

Süddeutsche Zeitung

'Schub für nachhaltige Investments' [Boost for Sustainable Investments], 28 November 2005

Tagesspiegel

'Gut angelegt - In Deutschland ist ethisches Investment noch immer ein kleiner Markt - allerdings mit hohen Renditen' [A sound investment - ethical investment is still a small market in Germany, even though it offers good returns], 23 December 2005

The Daily Telegraph

'Namibian leader warns EU of economic war.', 4 September 2002

3 Internet

Export credit guarantees of the Federal Republic of German (country classification)
www.ausfuhrgewaehrleistungen.de und
www.agaportal.de/pages/aga/deckungspolitik/laenderklassifizierung.html

Brazilian Embassy in Berlin
www.brasilianische-botschaft.de

Coface
www.coface.fr

Common Market for Eastern and Southern Africa
www.comesa.int

Republic of South Africa, Department of Trade and Industry
www.dti.gov.za/publications/investorhandbook.htm

Hoover's
www.hoovers.com

Standard & Poor's
www.standardandpoors.com

Tropenwaldnetzwerk Brasilien [Tropical Woods Network Brazil]
www.tropenwaldnetzwerk-brasilien.de

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Figs 7, 8, 12, 13, 14, 15, 18, 19, 22

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