Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Property Rights and Wildlife Utilisation:

generating incentives for conservation and economic development

A thesis presented in partial fulfilment of the requirements for the degree of Master of Arts in Economics at Massey University.

Abstract

The accelerating depletion of natural resources (biological diversity) range from degraded ecosystems, endangered species, and loss of genetic resources. This depletion has raised concern over future human economic welfare among other things. Conservation strategies have been implemented to preserve remaining biological diversity. The focus of this thesis is on conservation strategies to halt the loss of wild species. Protected areas and trade bans are the most recognised conservation measures. These strategies have their limitations however. This study will argue that increasingly the preservation of remaining wild species will be through economic incentives, specifically at the local community level.

If we are serious about saving wild species, our behaviour towards the utilisation of wildlife must change. A recent innovative idea is to look upon conservation as a form of economic development. Strategies that can lead to the successful implementation of this concept include conservation partnerships that actively involve local communities especially in developing countries, and the commercial and sustainable use of wild species.

Underlying the effectiveness and efficiency of these strategies are property right institutions and markets. Economic theory argues that natural resources will be protected only if direct economic benefits accrue to those most responsible for the care of these resources. In essence, the wise management of biological diversity must generate conservation and economic development benefits. This study examines and discusses the above issues.

Acknowledgements

Valuable help, advice, and support were received from the following people in the preparation of this thesis. I would like to acknowledge the contribution made by, Mum, Bevele and Rod, Robyn and Paul and Greg and this rest of the family. Special thanks to Olga and Aston for love and support. Thanks to Brendan for taking the time to read and comment on all the drafts and for the valuable direction gladly received before finally arriving at this completed product.

Table of Contents

Acknowledgements	iv				
List of Tables	viii				
List of Figures and Boxes	ix				
Chanter 1: Introduction	1				
Chapter 1: Introduction 1.1 Research Topic					
1.2 Thesis Outline	1				
1.3 Relevance of Research	2				
1.3.1 biodiversity: how many species, and the	5				
human/biodiversity connection	4				
1.3.2 Extinction of biodiversity and related					
consequences	5				
1.3.3 Wildlife and attitudes to conservation	8				
1.3.4 Biodiversity and developing countries	9				
1.3.5 Values of biodiversity	11				
1.3.6 Local, national and international	• •				
dimensions of biodiversity	14				
1.3.7 Underlying causes of biodiversity loss	15				
1.3.8 Indigenous Peoples/Local communities	16				
1.3.9 Conservation and local communities	18				
1.3.10 Property rights	19				
1.3.11 Commercialisation of wildlife: trade	20				
1.3.12 Summary: relevance of research	21				
1.4 Definition of Key Terms	22				
1.5 The Aims and Scope of this Thesis	25				
1.5.1 Exploring the linkages between the key terms	25				
1.5.2 Aims and objectives	25				
1.5.3 Limitations of study	26				
1.6 Why this Topic deserves Economic Analysis	26				
1.6.1 market and policy failures	27				
1.7 Methodology	29				
1.8 Conclusion	30				
Chapter 2: Literature Review	31				
2.1 Introduction	31				
2.2 Literature on Biodiversity	32				
2.2.1 Biodiversity loss	32				
2.2.2 Threats to biodiversity	34				
2.2.3 Underlying factors explaining biodiversity					
loss: economic	37				
2.2.4 Paths to extinction	38				
2.3 Traditional Conservation Solutions/Strategies	39				
2.3.1 Conservation: what is being protected	40				
2.3.2 Protected areas: size and spending	42				
2.2.2 Trade restrictions/hans: CITES	12				

2.3.4 Traditional conservation strategies:	
	44
2.4 Recent Innovations and Ideas for Conservation	44
2.4.1 Sustainable use	45
2.4.2 Protected area partnerships	46
2.4.3 Criticism of Community-Based	
	47
	48
2.4.5 A multi-disciplinary approach to	
and the second of the second o	49
	50
	50
2.5.2 Theories and the process of economic	
growth and development	51
	58
	60
그렇게 있는 것이다.	63
2.5.6 Local communities and development	64
	65
Chapter 3: Property Rights	67
3.1 Introduction	67
3.1.1 Chapter Outline	68
3.2 Property Rights	69
, , , , ,	69
3.2.2 Types of property rights	69
	73
3.2.4 Summary of property rights	75
	76
3.3.1 Property rights, social customs, biodiversity	
	76
SAME AND	78
	79
	82
3.3.5 Other problems with private and state property?	
The state of the s	85
1 1 7 6 1	85
3.3.8 Non-property rights or open-access	
and a second of the second of	88
, , , , ,	90
3.4 Conclusion	90
Chapter 4: Conservation Strategies: Protected Areas &	
	92
	92
	93
어디어 가는 그 맛있다.	93
	94
	102

4.2.3 Summary: Protected areas	110
4.3 Trade Measures as a Conservation Strategy	111
4.3.1 The wildlife trade	111
4.3.2 CITES	113
4.3.3 How CITES works	113
4.3.4 Why CITES fails	116
4.3.5 Limitations of CITES	118
4.3.6 Criticisms of CITES	122
4.4 Summary: Traditional Conservation Strategies	125
Chapter 5: Conservation Strategies: Partnerships &	
Wildlife Utilisation	127
5.1 Introduction	127
5.1.1 Chapter outline	128
5.2 Innovative Ideas in Protected Area Management	128
5.2.1 Partnerships in conservation	128
5.2.2 Local communities/Indigenous Peoples	129
5.2.3 Applied approaches linking protected areas	
and local people	132
5.3 Sustainable Use and Trade in Wildlife	136
5.3.1 Ways to improve the effectiveness of CITES	136
5.3.2 Commercial utilisation of wildlife	137
5.3.3 Comments on sustainability	141
5.3.4 Problems limiting the effectiveness of	
legal trade and markets	145
5.3.5 Summary on the commercialisation and	
trade in wildlife	147
5.4 Conclusion	148
5.5 A Case Study of Sustainable Use- The Africa	
Elephant & Local Communities	149
5.5.1 Introduction	149
5.5.2 Causes of decline: poaching and other factors	150
5.5.3 The Southern African sustainable use proposa	
5.5.4 Value of elephants	155
5.5.5 Sustainable use of elephants and local	
communities	157
5.6 A Partnership in Conservation: CAMPFIRE	158
Chapter 6: Conclusion	162
Appendices	
Appendix 1	171
Appendix 2	172
Appendix 3	173
References	175

List of Tables

Table 1.1: Conservation status of Mammals, 1996	7
Table 1.2: Conservation status of Amphibians surveyed, 1996	7
Table 1.3: Number of endemic species in some "hot spot" areas	9
Table 1.4: Countries with the highest number of species for selected	
organisms	10
Table 1.5: Wildlife habitat loss in selected Sub-Saharan Africa countries	11
Table 1.6: Economic values for environmental goods and services	12
Table 1.7: Market value of recently utilised varieties	14
Table 1.8: Countries where high cultural and biodiversity overlap	16
Table 2.1: Status of threatened species late 1980's	34
Table 2.2: Four categories of the instrumental value of biodiversity	39
Table 3.1: Four types of property regimes	70
Table 3.2: Property rights regimes and conditions for efficiency	71
Table 3.3: Types of property right regimes: owners, rights, and duties	75
Table 4.1: The development of the protected areas system of the world	
by CNPPA region	96
Table 4.2: Management objectives of protected areas	97
Table 4.3: Types of protected areas by IUCN category	98
Table 4.4: Numbers and combined areas of reserves by region, and	
percentage of region protected	100
Table 4.5: Estimates of minimum areas for the protection of biodiversity	101
Table 4.6: Annual world trade in selected wildlife	111
Table 4.7: Psittacines from Irian Jaya, Indonesia (early 1990s)	112
Table 5.1: Selected African elephants population estimates	150
Table 5.2: Land area (km²) used for wildlife conservation and	
utilisation in Zimbabwe	160

List of Figures and Boxes

Fig 1.1: Relative proportions of land area uses	5
Fig 4.1: Effects of an ineffectual trade ban	120
Fig 5.1: hypothetical population distribution of a wild species	142
Box 1.1: Recorded threats from known extinctions and endangerment:	
animals and birds	6
Box 1.2: Threats to India's wildlife sanctuaries	17
Box 1.3: Impact of national policies: Brazil	27
Box 2.1: IUCN Red Data Book categories	33
Box 3.1: Social customs in Indonesia and West Africa	77
Box 3.2: Arrow's fundamental Paradox of Information	80
Box 3.3: Nationalisation results in degradation	82
Box 3.4: International Conventions and agreements recognising and	
Acknowledging indigenous rights	87
Box 3.5: Tragedy of the commons in Indonesia	89
Box 4.1: What are Biosphere Reserves	99
Box 4.2: Importing countries dictating the terms of trade	123
Box 5.1: ADMADE in Zambia	133
Box 5.2: Regional trade agreements	140
Box 5.3: Crocodiles: a successful example of a species recovery	
Program based on commercial incentives	144