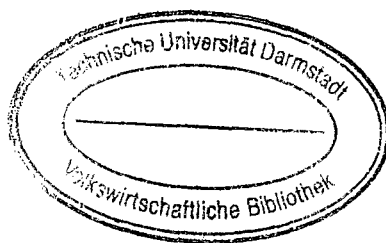


Handbook of Biodiversity Valuation

A GUIDE FOR POLICY MAKERS



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

TABLE OF CONTENTS

EXECUTIVE SUMMARY	9
I. INTRODUCTION	15
1.1 Rationale	15
1.2 Which value?	17
1.3 Which valuation method to use?.....	18
1.4 What is this Handbook likely to tell you?.....	20
II. BIODIVERSITY LOSS AND BIODIVERSITY VALUE.....	23
2.1 Why 'value' biodiversity?	23
2.2 Defining biological diversity	24
2.3 The ecological consequences of biodiversity loss	26
2.4 Measuring diversity	29
2.5 Valuation and the Convention on Biological Diversity	34
2.6 Rates of biodiversity loss	36
2.7 Setting priorities for conservation.....	37
Measures of diversity	39
Measures of threat	39
Measures of potential success	40
2.8 The economic consequences of biodiversity loss	40
Loss of ecosystem function.....	41
Resilience.....	42
2.9 Non-economic values	44
III. VALUES AND DECISION-MAKING	47
3.1 A typology of values.....	47
3.2 Debates about value systems	51
Intrinsic vs instrumental values.....	51
Instrumental vs higher order instrumental values	52
The zero-one dilemma.....	53
3.3 Can conservation policy be value-free?.....	54
3.4 The goals-alternatives matrix.....	56

3.5	Weighting in alternative decision-making procedures.....	57
3.6	Multi-criteria approaches	60
3.7	Costs, effectiveness and precaution	64
	Cost-based approaches	64
	Moral approaches	65
	Precautionary approaches	65
3.8	Conclusions.....	66
IV.	ELICITING VALUES: DELIBERATIVE AND INCLUSIONARY PROCEDURES.....	69
4.1	Introduction: forms of deliberative procedures.....	69
4.2	Deliberative procedures: advantages and disadvantages	71
V.	VALUES AND TIME	75
5.1	Biodiversity as a long-term asset	75
5.2	Time and decision-making.....	76
5.3	Discounting and the very long term.....	78
VI.	ECONOMIC VALUES: THE BASICS	81
6.1	The nature of economic value.....	81
6.2	Benefits and consumer's surplus	83
6.3	Total economic value.....	84
6.4	The cost-benefit formula.....	85
6.5	Valuing biodiversity as a support function	86
VII.	ECONOMIC VALUATION METHODS BASED ON MARKET PRICES	89
7.1	Introduction.....	89
7.2	Market prices	89
7.3	Observed market and related good prices	90
7.4	The productivity approach	92
7.5	Cost-based methods	93
7.6	Revealed preferences	95
7.7	Revealed preference: travel cost methods (TCM)	96
7.8	Application of the travel cost method for biodiversity	101
7.9	Hedonic pricing.....	102
7.10	Towards economic valuation protocols	104
VIII.	STATED PREFERENCE METHODS	105
8.1	Introduction.....	105
8.2	The contingent valuation method	107
8.3	Design of a CV study.....	108
8.4	Analysing CVM data	112

8.5	CVM and biodiversity valuation.....	114
8.6	Attribute based choice modelling	114
8.7	Choice experiments	115
8.8	Contingent ranking, rating and paired comparison methods	117
	Very high preference	118
8.9	Common design features	118
8.10	Analysing ABCM data.....	119
8.11	Choice modelling versus contingent valuation?	119
IX.	ECONOMIC VALUATION: BENEFITS TRANSFER	121
9.1	The aim and nature of benefits transfer	121
9.2	Forms of benefit transfer.....	122
9.3	Case study: a meta-analysis of UK woodland recreation values ..	124
9.4	Case study: a meta-analysis of wetland values	126
9.5	Case study: the Szigetköz wetland in Hungary.....	129
9.6	Testing for the validity of transferring benefit functions.....	130
9.7	Conclusions.....	132
X.	BIODIVERSITY VALUES AND THE POLICY PROCESS	133
10.1	The policy context for biodiversity values.....	133
10.2	Land use decisions and sustainable use of biodiversity.....	138
10.3	Precautionary approaches	140
	Safe minimum standards.....	141
	The precautionary principle	142
10.4	Setting priorities for biodiversity conservation revisited: cost-benefit analysis.....	143
10.5	Focusing conservation policies: species or ecosystems?	146
	REFERENCES.....	147