

# CONTENTS

<i>List of illustrations</i>	xii
<i>Note on contributors</i>	xviii
<i>Foreword</i>	xxi
<i>Preface</i>	xxiii
<i>Acknowledgements</i>	xxv
<i>List of acronyms and abbreviations</i>	xxvii

1 Introduction, objectives and approach	1
<i>Marianne Kettunen and Patrick ten Brink</i>	
1.1 Introduction	1
1.2 Objectives, scope and audience	3
1.3 Guiding principles	4
1.4 Approach, data, structure and application	6

## PART 1

### **Contextual guidance** 9

2 Protected areas: their values and benefits	11
<i>Nigel Dudley, Sue Stolton and Marianne Kettunen</i>	
2.1 Different benefits and values of protected areas	11
2.2 Basis of benefits: structure, functioning and processes in protected areas	12
2.3 Ecosystem services and related goods provided and supported by protected areas	13
2.4 Broader benefits	19
2.5 Putting the benefits into perspective	20
2.6 Opportunities and risks of assessing benefits	24

3	General principles for estimating the socio-economic value of benefits provided by protected areas	33
	<i>Marianne Kettunen, Patrick ten Brink and Samuela Bassi</i>	
3.1	Defining the socio-economic value of benefits	33
3.2	Estimating the socio-economic value of benefits	37
3.3	Estimating the costs of protected areas	43
3.4	Estimating the total (net) benefits of a protected area	47
3.5	Estimating the added value of protected area designation	50
3.6	Estimating benefits from multiple sites	51
	<b>PART 2</b>	
	<b>Practical guidance</b>	<b>55</b>
	<b>Step I: a scoping assessment of possible benefits</b>	<b>57</b>
4	Scoping assessment of benefits provided by protected areas	59
	<i>Marianne Kettunen and Patrick ten Brink</i>	
4.1	How to carry out a scoping assessment	59
4.2	Identification and rapid assessment of benefits	62
4.3	Joint consideration of different benefits	68
4.4	Consideration of benefits in the context of multiple protected areas	72
4.5	Identification of net benefits	74
5	Deciding which benefits to analyse in more detail	80
	<i>Marianne Kettunen and Patrick ten Brink</i>	
5.1	Identifying the most important benefits	80
5.2	Identifying the purpose of socio-economic valuation	81
5.3	Possible resources to support detailed socio-economic assessment	84
	<b>Annex 1: Scoping assessment of benefits provided by protected areas – an example of application</b>	<b>87</b>
	<i>Dalia D'Amato, Marianne Kettunen, Azucena de la Cruz, José Benedicto Royuela and Artur Gil</i>	

<b>Step II: detailed methodological guidance to estimate socio-economic value of benefits</b>	<b>95</b>
6 Provisioning services and related goods	97
<i>Marianne Kettunen and Dalia D'Amato</i>	
6.1 Overview of benefits	97
6.2 Socio-economic importance of benefits	99
6.3 Estimating the value of benefits	107
Annex 2: Step-by-step guidance: valuation of biodiversity resources	114
<i>Marianne Kettunen and Dalia D'Amato</i>	
7 Regulating services and related goods	126
<i>Tomas Badura and Marianne Kettunen</i>	
7.1 Overview of benefits	126
7.2 Socio-economic importance of benefits	128
7.3 Role of different stakeholders in maintaining and using benefits	131
7.4 Estimating the value of benefits	136
Annex 3: Step-by-step guidance: water-related ecosystem services	148
<i>Tomas Badura and Marianne Kettunen</i>	
Annex 4: Step-by-step guidance: climate change mitigation (carbon storage and sequestration)	156
<i>Samuela Bassi and Patrick ten Brink</i>	
8 Cultural services and related goods	172
<i>Sonja Gantioler and Dalia D'Amato</i>	
8.1 Overview of benefits	172
8.2 Socio-economic importance of benefits	175
8.3 Estimating the value of benefits	189
Annex 5: Step-by-step guidance: tourism, recreation and other cultural benefits	199
<i>Sonja Gantioler and Dalia D'Amato</i>	

9	Appreciating the value of supporting services	212
	<i>Dalia D'Amato and Marianne Kettunen</i>	
	9.1 Overview of benefits	212
	9.2 Socio-economic importance of benefits	214
	9.3 Estimating the value of benefits	215
10	Wider socio-economic benefits	226
	<i>Sonja Gantioler and Patrick ten Brink</i>	
	10.1 Overview of benefits	226
	10.2 Socio-economic importance of benefits	228
	10.3 Estimating the value of benefits	237
11	Costs related to protected areas	245
	<i>Samuela Bassi and Dalia D'Amato</i>	
	11.1 Costs of management	248
	11.2 Opportunity costs	252
	11.3 Other costs	255
	11.4 Total costs of protected areas	258
12	Assessing net benefits: site level	261
	<i>Patrick ten Brink and Marianne Kettunen</i>	
	12.1 Assessing aggregated benefits	262
	12.2 Comparing benefits with costs	266
	12.3 Considering the added value of protected area designation and management	274
	Annex 6: Calculating net present values (NPVs) and the effect of different discount rates	279
	<i>Patrick ten Brink</i>	
13	Assessing net benefits: multiple sites	284
	<i>Patrick ten Brink and Marianne Kettunen</i>	
	13.1 Issues to reflect when aggregating values for multiple sites	284
	13.2 Assessing aggregated benefits of multiple sites by scaling up	288
	13.3 Estimating the future benefits of multiple sites	293
	13.4 Comparing costs and benefits at an aggregate scale	294

<b>Step III: interpreting, using and communicating the estimates</b>	<b>299</b>
14 Interpreting the results of socio-economic assessments <i>Patrick ten Brink and Marianne Kettunen</i>	301
14.1 General meaning of the results	301
14.2 'Reading' socio-economic assessments	303
14.3 Robustness of estimates	305
14.4 Level of confidence	306
14.5 Wider reflection on the utility of the results	307
15 Using and communicating the results <i>Sections 15.1–15.3 by Sue Stolton and Nigel Dudley</i> <i>Section 15.4–15.5 by Marianne Kettunen and Dalia D'Amato</i>	309
15.1 Understanding, awareness and advocacy	310
15.2 Support to decision-making and management	316
15.3 Identifying and addressing social impacts	320
15.4 Mobilising funds	324
15.5 Considering synergies and conflicts with biodiversity conservation	328
16 Conclusions and way forward <i>Marianne Kettunen and Patrick ten Brink</i>	333
16.1 Towards a full appreciation and uptake of benefits provided by protected areas	333
16.2 An integrated future vision for protected areas: benefits for biodiversity and people	335
<i>Index</i>	337