



Transboundary Conservation

A systematic and integrated approach

Maja Vasiljević, Kevan Zunckel, Matthew McKinney,
Boris Erg, Michael Schoon, Tatjana Rosen Michel
Craig Groves, Series Editor; Adrian Phillips, Volume Editor



Developing capacity for a protected planet

Best Practice Protected Area Guidelines Series No. 23



IUCN WCPA's BEST PRACTICE PROTECTED AREA GUIDELINES SERIES

IUCN-WCPA's Best Practice Protected Area Guidelines are the world's authoritative resource for protected area managers. Involving collaboration among specialist practitioners dedicated to supporting better implementation in the field, they distil learning and advice drawn from across IUCN. Applied in the field, they are building institutional and individual capacity to manage protected area systems effectively, equitably and sustainably, and to cope with the myriad of challenges faced in practice. They also assist national governments, protected area agencies, non-governmental organisations, communities and private sector partners to meet their commitments and goals, and especially the Convention on Biological Diversity's Programme of Work on Protected Areas.

A full set of guidelines is available at: www.iucn.org/pa_guidelines

Complementary resources are available at: www.cbd.int/protected/tools/

Contribute to developing capacity for a Protected Planet at: www.protectedplanet.net/

IUCN PROTECTED AREA DEFINITION, MANAGEMENT CATEGORIES AND GOVERNANCE TYPES

IUCN defines a protected area as:

A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

The definition is expanded by six management categories (one with a sub-division), summarized below.

Ia Strict nature reserve: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values

Ib Wilderness area: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II National park: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

IV Habitat/species management area: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

VI Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

The category should be based around the primary management objective(s), which should apply to at least three-quarters of the protected area – the 75 per cent rule.

The management categories are applied with a typology of governance types – a description of who holds authority and responsibility for the protected area. IUCN defines four governance types.

Type A. Governance by government: Federal or national ministry/agency in charge; Sub-national ministry or agency in charge (e.g. at regional, provincial, municipal level); Government-delegated management (e.g. to NGO)

Type B. Shared governance: Transboundary governance (formal and informal arrangements between two or more countries); Collaborative governance (through various ways in which diverse actors and institutions work together); Joint governance (pluralist board or other multi-party governing body)

Type C. Private governance: Conserved areas established and run by individual landowners; non-profit organizations (e.g. NGOs, universities) and for-profit organizations (e.g. corporate landowners)

Type D. Governance by Indigenous Peoples and local communities: Indigenous Peoples' conserved areas and territories - established and run by Indigenous Peoples; Community conserved areas – established and run by local communities.

For more information on the IUCN definition, categories and governance types see

Dudley (2008). *Guidelines for applying protected area management categories* which can be downloaded at: www.iucn.org/pa_categories

For more on governance types see Borrini-Feyerabend et al. (2013). *Governance of Protected Areas—from understanding to action*, which can be downloaded at www.iucn.org/library/sites/library/files/documents/PAG-020.pdf

Transboundary Conservation

A systematic and integrated approach

Maja Vasiljević, Kevan Zunckel, Matthew McKinney,
Boris Erg, Michael Schoon, Tatjana Rosen Michel
Craig Groves, Series Editor; Adrian Phillips, Volume Editor



IUCN, International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. IUCN's work focuses on valuing and conserving nature, ensuring effective and equitable governance of its use, and deploying nature-based solutions to global challenges in climate, food and development. IUCN supports scientific research, manages field projects all over the world, and brings governments, NGOs, the UN and companies together to develop policy, laws and best practice. IUCN is the world's oldest and largest global environmental organization, with more than 1,200 government and NGO Members and almost 11,000 volunteer experts in some 160 countries. IUCN's work is supported by over 1,000 staff in 45 offices and hundreds of partners in public, NGO and private sectors around the world.

www.iucn.org



IUCN WCPA (World Commission on Protected Areas)

IUCN WCPA is the world's premier network of protected area expertise. It is supported by IUCN's Programme on Protected Areas and has over 1,400 members, spanning 140 countries. IUCN WCPA works: by helping governments and others plan protected areas and integrate them into all sectors; by providing strategic advice to policy makers; by strengthening capacity and investment in protected areas; and by convening the diverse constituency of protected area stakeholders to address challenging issues. For more than 50 years, IUCN and WCPA have been at the forefront of global action on protected areas.

www.iucn.org/wcpa

IUCN WCPA Transboundary Conservation Specialist Group

IUCN WCPA Transboundary Conservation Specialist Group is the premier global network of transboundary conservation specialists. The Transboundary Conservation Specialist Group's mission is to promote and encourage transboundary conservation for the conservation of nature with associated ecosystem services and cultural values, while promoting peace and cooperation among nations. It seeks to enhance knowledge and capacity for effective planning and management of Transboundary Conservation Areas, in fulfilment of the Durban Action Plan and the Convention on Biological Diversity's Programme of Work on Protected Areas.

www.tbpa.net



MAVA Foundation

MAVA was established in 1994 and is a family-led, Swiss-based philanthropic foundation whose mission is to engage in strong partnerships to conserve biodiversity for future generations. Under the leadership of its President, André Hoffmann, the foundation strives to help protect and rebuild the earth's natural wealth, ensure sustainable use of natural resources and build strong conservation communities. MAVA has four different programmes. Three are region-based: the Alpine Arc and Switzerland, the Mediterranean Basin and Coastal West Africa. In each place MAVA has helped build extensive conservation capacity, to create and support conservation institutions and influence policy. The fourth programme, the Sustainable Economy, provides opportunities to affect global trends and have an impact that goes beyond MAVA priority regions. The programme explores how to ensure economic prosperity within the resources of one planet, addressing the issue of overconsumption of natural resources beyond their capacity to regenerate. MAVA also funds other work that reaches beyond the four programmes through their global portfolio of projects.

www.mava-foundation.org



BfN (German Federal Agency for Nature Conservation)

BfN is Germany's central scientific authority responsible for national and international nature conservation. The Agency provides the German government—primarily the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)—with professional and scientific assistance in all nature conservation and landscape management issues and in international cooperation activities. BfN performs a key knowledge transfer function for nature conservation by preparing scientific knowledge and rendering it suitable for practical application. Also, BfN furthers its objectives by carrying out related scientific research and is in charge of a number of funding programmes. The Agency therefore maintains an ongoing dialogue with policymakers, development organizations, the business sector, the scientific community, educators and the media, and is constantly adapting the nature conservation toolkit to societal change. BfN's international activities are guided by the goals and priorities enshrined in the multilateral environmental conventions and agreements relevant to nature conservation and aim to advance their implementation.

www.bfn.de



Federal Ministry for the
Environment, Nature Conservation,
Building and Nuclear Safety

BMUB (Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety)

The BMUB of Germany is responsible for a range of government policies which are reflected in the name of the Ministry itself. For more than 25 years the Ministry has worked to protect the public from environmental toxins and radiation and establish an intelligent and efficient use of raw materials; it has advanced climate action and promoted a use of natural resources that conserves biodiversity and secures habitats. Germany is a federal country and a member of the European Union and numerous international organizations. Close cooperation at national and international level plays an important role in the success of the BMUB's tasks.

www.bmub.bund.de



ICIMOD (International Centre for Integrated Mountain Development)

ICIMOD is a regional intergovernmental learning and knowledge sharing centre serving the eight regional member countries of the Hindu Kush Himalayan region—Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan. Its aim is to influence policy and practices to meet environmental and livelihood challenges emerging in the Hindu Kush Himalayan region. To do this, it brings together researchers, practitioners, and policy makers from the region and around the globe to generate and share knowledge, supports evidence-based decision making, and encourages regional collaboration. ICIMOD delivers impact through its six Regional Programmes of Adaptation to Change, Transboundary Landscapes, River Basins, Cryosphere and Atmosphere, Mountain Environment Regional Information System and Himalayan University Consortium. These regional programmes are supported by the four Thematic Areas of Livelihoods, Ecosystem Services, Water and Air, and Geospatial Solutions, and underpinned by Knowledge Management and Communication. ICIMOD seeks to improve the lives and livelihoods of mountain women and men, now and for the future.

www.icimod.org



Convention on
Biological Diversity

Convention on Biological Diversity

The Convention on Biological Diversity (CBD), which entered into force in December 1993, is an international treaty for the conservation of biodiversity, the sustainable use of the components of biodiversity and the equitable sharing of the benefits derived from the use of genetic resources. With 193 Parties, the Convention has near universal participation among countries. The Convention seeks to address all threats to biodiversity and ecosystem services through

scientific assessments, the development of tools, incentives and processes, the transfer of technologies and good practices, and the full and active involvement of relevant stakeholders, including indigenous and local communities, youth, NGOs, women and the business community. The tenth meeting of the Conference of the Parties to the CBD, held in 2010, adopted a revised and updated Strategic Plan for Biodiversity for 2011-2020, comprising five strategic goals and 20 Aichi Biodiversity Targets. The Plan is the overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system.

www.cbd.int



Thayatal National Park

National Park Thayatal is the smallest national park in Austria, with a total surface of 13.3 km². The Thaya River meanders over 26 km through a unique valley landscape, cut into the metamorphic rocks of the Bohemian Massif, creating one of the most beautiful incised valleys in Central Europe. The river is lined with steep banks often with vertical rock slides, wide valleys and a rich mosaic of various habitats. Over 90 per cent of the National Park's surface is covered in forests, dominated by oak and beech trees. The dry grasslands on the scraggy, steep slopes and on the rocky plateaus are botanical rarities unspoiled by human hands. The river and its water regime are altered by a hydropower plant upstream of the park. Reducing these impacts is a major challenge for the park managers.

www.np-thayatal.at



Podyjí National Park

Podyjí National Park extends over 60 km² in the south-western part of Moravia in the county of Znojmo, Czech Republic. The Ministry of the Environment of the Czech Republic established the National Park on 1 July 1991 recognizing the importance of its well-preserved forest, the deep Dyje River valley with incised meanders, and its high biological diversity, especially among plants, invertebrates and many relict species. The Podyjí National Park Administration, located in Znojmo, works to ensure the protection of nature and landscape on the territory of the National Park and its buffer zone. It is active in three main areas: (1) state administration in the fields of nature and landscape protection, protection of the agricultural land and fisheries; (2) professional work in nature protection, especially the coordination of research and monitoring, planning management strategies for nature protection, information and ranger services, ecological education and public relations; and (3) certain forestry activities and other special conservation activities in selected forest-free areas. Podyjí National Park holds a European Diploma of Protected Areas awarded by the Council of Europe.

www.nppodyji.cz

The designation of geographical entities in this book and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN, the MAVA Foundation, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), the German Federal Agency for Nature Conservation (BfN), the Secretariat of the CBD, ICIMOD, Thayatal National Park or Podyjí National Park concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this publication do not necessarily reflect those of IUCN, the Secretariat of the CBD, MAVA Foundation, BMUB, BfN, ICIMOD, Thayatal National Park and Podyjí National Park.

This publication has been made possible in part by funding from the MAVA Foundation, BMUB through BfN, and IUCN WCPA. ICIMOD, WCPA's Transboundary Conservation Specialist Group, Eco Horizon, Thayatal National Park and Podyjí National Park provided significant in-kind contributions.

Copyright: ©2015 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorised without prior written permission from the copyright holder provided the source is fully acknowledged. Reproduction of this publication for resale or other commercial purposes is prohibited without prior written permission of the copyright holder.

Citation: Vasilijević, M., Zunckel, K., McKinney, M., Erg, B., Schoon, M., Rosen Michel, T. (2015). *Transboundary Conservation: A systematic and integrated approach*. Best Practice Protected Area Guidelines Series No. 23, Gland, Switzerland: IUCN. xii + 107 pp.

ISBN: 978-2-8317-1723-4

DOI: 10.2305/IUCN.CH.2015.PAG.23.en

Cover photo: A joint patrol of rangers from Cross River National Park, Nigeria and Takamanda National Park, Cameroon. ©Wildlife Conservation Society Takamanda-Mone Landscape Project

Back cover photo: The Mongolian gazelle (*Procapra gutturosa*) migrates in large herds in the Dauria steppe of Central Asia. With cooperation between Russian Daurian State Nature Biosphere Reserve managers, local communities and border guards, sections of the border fence between Russia and Mongolia were temporarily removed in 2008 to allow the gazelles to enter into Russian territory. ©Vadim Kiriliuk

Designed by: Imre Sebestyén Jr. / UNITgraphics.com

Printed by: Pannónia Nyomda

Available from: IUCN (International Union for Conservation of Nature)

Global Protected Areas Programme
Rue Mauverney 28
1196 Gland
Switzerland
Tel +41 22 999 0000
Fax +41 22 999 0002
protectedareas@iucn.org
www.iucn.org/publications

The text of this book is printed on paper made from wood fibre from well-managed forests certified in accordance with the rules of the Forest Stewardship Council (FSC).

Foreword

There are 200 or so sovereign states, separated from their neighbours by thousands of kilometres of land and maritime boundaries. Approximately one-third of all terrestrial high-biodiversity sites straddle national land borders. For this reason alone, there is a compelling need for neighbouring states to collaborate in conservation. This is the topic at the heart of this volume in the Best Practice Series.

Few man-made boundaries are fixed. In fact, geopolitical history teaches us that international boundaries often alter over time, as they respond to changing political circumstances. Some international boundaries disappear, such as the border between East and West Germany. In such cases, they may leave behind a border zone that has been virtually untouched for decades and thus rich in biodiversity. In other cases, new boundaries are established as countries proclaim sovereignty. Where this happens, former protected areas may be divided up among several successor states: for example, in 1991, protected areas in the Western Tien Shan mountains region of the former Soviet Union came to be located in bordering parts of three newly independent states—Kazakhstan, Kyrgyzstan and Uzbekistan, all now committed to coordinated action. In Africa, where most boundaries were drawn by colonial powers, transboundary cooperation has been promoted to support joint efforts to protect common natural and related cultural values across boundaries. Similar cooperative initiatives are found in many other parts of the world where national borders have cut across natural systems.

There are many different ways to initiate and govern agreements for transboundary cooperation, both formal and informal. In recent years, there has been a significant increase in the number of such agreements, as parties have realized the many

benefits that this type of conservation can offer both to nature and to people. Indeed, transboundary conservation is often *both* about protecting nature *and* about promoting cooperation among people of different nations. So while it can protect species and ecosystems, it can also help divided communities come together, connect people of different cultural, ethnic or religious backgrounds, stimulate social and economic benefits, strengthen political relations and mitigate tensions.

This publication makes a compelling case for transboundary conservation approaches and promotes an array of innovative methods based on contemporary principles. It has been developed primarily to provide transboundary conservation managers with advice on how to work more effectively and how to address the challenges that are specific to transboundary conservation. It can also help advocates of this approach to make the case for transboundary cooperation.

This volume was prepared by the Transboundary Conservation Specialist Group of IUCN's World Commission on Protected Areas (WCPA). It is based on current knowledge and best practice drawn from global experience, both from within the Specialist Group's network and beyond.

IUCN, the Secretariat of the Convention on Biological Diversity, MAVA Foundation, the German Federal Agency for Nature Conservation (BfN), and the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) all have extensive experience in supporting, facilitating and enhancing transboundary conservation. We enjoyed working together in preparing these Guidelines. We hope that their joint efforts will improve the prospects for transboundary conservation—with benefits for people and nature.

Lynda Mansson
Director General
MAVA Foundation

Ernesto Enkerlin Hoeflich
Chair
IUCN World Commission on Protected Areas

Beate Jessel
President
German Federal Agency for Nature Conservation

Braulio Ferreira de Souza Dias
Executive Secretary
Convention on Biological Diversity

Acknowledgments

Several institutions collaborated in the development of these Guidelines. The IUCN WCPA's Transboundary Conservation Specialist Group has led the project for the revision of the IUCN WCPA Best Practice Guidelines on transboundary conservation, and has been the main source of expertise in developing the publication. The project was funded by the MAVA Foundation, the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the German Federal Agency for Nature Conservation (BfN), and IUCN WCPA. The project also included an international workshop on defining transboundary conservation principles, held in October 2013 in Thayatal National Park, Austria, which was attended by transboundary conservation experts from around the world and collected new knowledge that has been incorporated in this volume. A draft of these Guidelines was presented at a side event during the IUCN World Parks Congress in November 2014, in Sydney, Australia, and comments made there have been incorporated in this final version.

Maja Vasilijević initiated the development of this volume, and among other roles, acted as project coordinator. While all the authors gratefully acknowledge the support of the donors, Maja extends special thanks to Florian Carius (BfN), Marko Pečarević (MAVA Foundation) and Zsuzsa Törös (IUCN) for their support and cooperation throughout the project.

We wish to thank all our collaborating institutions for providing their expertise and support for this project; namely the International Centre for Integrated Mountain Development (ICIMOD), Thayatal National Park, Podyjí National Park and IUCN Global Protected Areas Programme. We gratefully acknowledge the support of Robert Brunner and Tomáš Rothrockl in hosting the workshop in Austria with a field trip to the Czech Republic.

Each Chapter was assigned a coordinator who cooperated with many contributors. Chapters 1 and 2 were prepared and/or coordinated by Maja; Chapter 3 by Michael Schoon, Maja, and Boris Erg; Chapter 4 by Kevan Zunckel; Chapter 5 by Matthew McKinney, Michael and Maja; Chapter 6 by Matthew, Maja, and Boris; Chapter 7 by Tatjana Rosen Michel; and Chapter 8 by Kevan and Sunita Chaudhary. Boris coordinated inputs from the authors of case studies and short stories presented in boxes. The Guidelines draw on the results of two surveys coordinated by the Transboundary Conservation Specialist Group in 2012. A third survey on transboundary conservation financing was undertaken specifically for this volume; it was prepared and coordinated by Matthew. Finally, all Chapters and supporting technical information were collated in the final document by Maja before the volume was edited by Adrian Phillips.

We give a warm thanks to all the people who contributed material for particular Chapters, provided examples of good practice from the field, translated several case studies into English, provided expertise during the workshop in Austria, offered reviews and comments, donated photographs, prepared figures and coordinated surveys noted in this volume. These include: Brahim Abou el Abbes, Rahimatsah

Amat, Giorgio Andrian, Kenneth Angu Angu, Taïbou Ba, Tim Badman, Jitendra Bajracharya, Martin Barriteau, Diana Bedoya, Charles Besançon, Paul Bewsher, Juan E. Bezaury Creel, Clara Bocchino, Grazia Borrini-Feyerabend, Alain Brandeis, Edgar Buhanga, Tony Bynum, Andy Bystrom, Zhao Chao, Olivier Chassot, Sunita Chaudhary, Nakul Chettri, Rusudan Chochua, Nguyen The Cuong, Askar Devletbakov, Emma Doyle, Nigel Dudley, Andrew Dunn, Dominique Endamana, Cristina Eghenter, Wayne Freimund, Wolfgang Fremuth, Ewald Galle, Jean-Marc Garreau, Sonali Ghosh, Nick de Goede, Catarina Grilo, David Grossmann, Christine Guinness, Ely ould Mohamed el Hadj, John Hanks, Anne Katrin Heinrichs, Elaine Hsiao, Syed Ainul Hussain, Paul Insua-Cao, Boedihartono Intou, Tilman Jaeger, Shawn Johnson, Harry Jonas, Orisha Joseph, Sanna-Kaisa Juvonen, Benjammin Kahn, Cheikh Tidiane Kane, Vadim Kiriliuk, Elizabeth Koch Ya'ari, Sabine Koenig, Rajan Kotru, Anna Kuhmonen, Kari Lahti, Annette Lanjouw, Michelle Lim, John Lambing, Alois Lang, Yan Lu, Kathy MacKinnon, Salifou Mahamadou, Neeraj Mahar, Marek Majerczak, Paul Martin, Daniela Marzo, Vinod Bihari Mathur, Volker Mauerhofer, Jamie McCallum, Edwin Meru, Stefan Michel, Li Migura, Peter Myles, Servi Nabuurs, Federico Niccolini, Aaron Nicholas, Krishna Prasad Oli, Marco Onida, Gisela Paredes-Leguizamón, Midori Paxton, Fan Pengfei, Adrian Phillips, Irma Popović Dujmović, Nawraj Pradhan, Michael S. Quinn, Gopal S. Rawat, Johannes Refisch, Lenka Reiterova, Cristian Remus-Papp, David Reynolds, Tamar Ron, Pedro Rosabal, Patrizia Rossi, Tobias Salathe, Petra Schultheiss, Harald Schütz, Gabriel Schwaderer, Peter Shadie, Eklabya Sharma, Lhakpa Norbu Sherpa, Andrej Sovinc, Anna Spenceley, Robert Stejskal, David Tiku Okon, Amir Tolouei, Hernán Torres, Yongyut Trisurat, Martin Valašek, Alan Valverde, Antonio Vasilijević, Maxim Vergeichik, Sally Walkerman, Arthur H. Westing, Jan De Winter, Graeme Worboys and Dorothy Zbicz.

We are very grateful to peer reviewers who provided their valuable advice on how to improve this volume: Charles Besançon, Duan Biggs, Sonali Ghosh, Sanna-Kaisa Juvonen, Kari Lahti, Stefan Michel, Tomasz Pezold and Kent Redford. Craig Groves, Best Practice Guidelines Series Editor, and Trevor Sandwith, IUCN Global Protected Areas Programme Director, added significantly to the review process.

We also wish to acknowledge the support from the following institutions: UNEP Great Ape Survival Partnership, FORMADAT, Frankfurt Zoological Society, EUROPARC Federation, Metsähallitus Natural Heritage Service, BUND Green Belt Project Office, UEMOA/PAPE, the Wildlife Conservation Society, the Wildlife Institute of India, Crown Managers Partnership, Heart of the Continent Partnership, the Peace Parks Foundation, Po-Cuneese Park, Natural Regional Park Queyras, INPN, Region of Piemonte, the University of Montana, and Arcus Foundation.

We also thank the proofreader of this volume, Cody Brown, the graphic designer, Imre Sebestyén jr., UNDP Croatia for logistical support, especially Sandra Vlašić, and the Eco Horizon NGO for administrative support to the project.

Abbreviations and acronyms

BfN	German Federal Agency for Nature Conservation
BMUB	German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on the Conservation of Migratory Species of Wild Animals
COP	Conference of the Parties
COTC	Crown of the Continent
DMZ	Demilitarized Zone
EU	European Union
ICIMOD	International Centre for Integrated Mountain Development
IUCN	International Union for Conservation of Nature
KAZA	Kavango Zambezi
MPA	Marine Protected Area
NGO	Non-governmental organization
PoWPA	Programme of Work on Protected Areas
SADC	Southern African Development Community
TBCA	Transboundary Conservation Area
TBCL/S	Transboundary Conservation Landscape and/or Seascape
TBMCA	Transboundary Migration Conservation Area
TBPA	Transboundary Protected Area
TIHPA	Turtle Islands Heritage Protected Area
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNEP-WCMC	United Nations Environment Programme - World Conservation Monitoring Centre
USA	United States of America
WAP	W-Arly-Pendjari
WCPA	World Commission on Protected Areas
WWF	World Wide Fund for Nature

Contents

Foreword	v
Acknowledgments	vi
Abbreviations and acronyms	vii
Executive summary	xi
Part 1: Understanding transboundary conservation: history and key concepts	1
1. Introduction	2
1.1. The development of these Guidelines	2
1.2. The participatory process in development of the Guidelines	2
1.3. What this publication offers	3
1.4. Aim of the Guidelines	3
1.5. Audience for the Guidelines	3
2. Background	4
2.1. An historical perspective on transboundary conservation	4
2.2. Growth in the world's Transboundary Conservation Areas	5
3. Definitions and typology	6
3.1. Working towards an agreed definition of transboundary conservation	6
3.2. The proposed typology and definitions of Transboundary Conservation Areas	8
3.3. International and regional approaches to transboundary conservation practice	15
3.4. A sound database of Transboundary Conservation Areas: opportunities	21
4. The benefits of transboundary conservation	22
4.1. The ecological benefits of transboundary conservation	22
4.2. The socio-economic benefits of transboundary conservation	26
4.3. The cultural heritage benefits of transboundary conservation	29
4.4. The significance of transboundary cooperation for the day-to-day management of shared issues	35
4.5. Transboundary conservation and international legal and policy frameworks	39
4.6. Transboundary conservation, political relations and security	39
5. Transboundary conservation governance	45
5.1. Explaining governance	45
5.2. Transboundary governance: a sub-type of shared governance	46
5.3. Models of transboundary conservation governance	50
5.4. Lessons learned and advice to practitioners	55
Part 2: From principles to action	57
6. Context and planning the transboundary conservation process	59
6.1. Assessing the enabling environment	59
6.2. Assessing the feasibility of transboundary conservation	61
6.3. Involving people	62
6.4. Defining the geographic extent	62
6.5. Negotiating a joint vision and developing management objectives	65
6.6. Lessons learned and advice to practitioners	69
7. The establishment and management of transboundary conservation initiatives	70
7.1. Securing the capacity	70
7.2. Securing political buy-in and building legitimacy	70
7.3. Mechanisms for the establishment of transboundary agreements	74
7.4. Developing and implementing an action plan	75
7.5. Assessing and securing financial sustainability	79
7.6. Lessons learned and advice to practitioners	82
8. Measuring results: the monitoring and evaluation of transboundary management effectiveness	83
8.1. Monitoring and evaluation of management effectiveness in protected areas	83
8.2. Monitoring and evaluation of Transboundary Conservation Areas' management effectiveness	84
8.3. Examples of transboundary monitoring and evaluation systems	84
8.4. International certification systems that could benefit Transboundary Conservation Areas	86
References and further reading	88

Appendices	97
Appendix A: Memorandum of Agreement for the establishment of the Turtle Islands Heritage Protected Area	97
Appendix B: Lessons from practice: regional pilot survey of transboundary conservation managers in North, Central and South America	99
Appendix C: Benefits and challenges in transboundary conservation	104

Case studies

Case study 1	The Transboundary Biosphere Reserve Delta of the Senegal River	18
Case study 2	Protecting Andean flamingos in South America	25
Case study 3	Kailash Sacred Landscape	31
Case study 4	Engaging communities across the border: FORMADAT in the Highlands of the Heart of Borneo	33
Case study 5	/Ai/Ais Richtersveld Transfrontier Park: benefits from joint management	37
Case study 6	The European Green Belt Initiative	48
Case study 7	The Crown of the Continent	53
Case study 8	The challenge of developing a shared vision: Maritime Alps-Mercantour	68
Case study 9	The Grenadines Network of Marine Protected Areas: an example of civil society leadership in transboundary conservation	77
Case study 10	Building institutional dialogue on participatory monitoring and evaluation of the Sangha Trinational in the Congo Basin	87

Box stories

Box 1	Lake Neusiedl / Seewinkel Fertő-Hanság National Park	9
Box 2	Greater Virunga Transboundary Collaboration	11
Box 3	Towards conservation of the Ombai Strait in the Indo-Pacific migration corridor	13
Box 4	Regional cooperation in the Barents region increases knowledge on protected areas	20
Box 5	Bridging the gap between local governments for the transboundary conservation of a critically endangered gibbon	23
Box 6	Cooperative management for the persistence of the Cross River gorilla	24
Box 7	The Mayombe forest ecosystems transfrontier conservation initiative	24
Box 8	Kavango Zambezi (KAZA): planning for sustainable tourism development	28
Box 9	Traditional knowledge supports conservation in the Altai-Sayan ecoregion	30
Box 10	Indo-Bhutan Manas and its role in tiger conservation in the Indian subcontinent	36
Box 11	The Alpine Convention: a legal framework for enhancing transboundary conservation	40
Box 12	Transboundary initiatives in the Dinarides in support of regional dialogue	41
Box 13	An inter-governmental framework for transboundary cooperation in North America	52
Box 14	Prioritization of Transboundary Protected Areas in South Asia: the Indian initiative	60
Box 15	Maloti-Drakensberg: defining the geographic extent of a transboundary initiative	64
Box 16	Cooperative management for the sustainability of species in the Emerald Triangle Protected Forests Complex	67
Box 17	A transboundary initiative in the Everest/Sagarmatha region	71
Box 18	Big Bend-Maderas del Carmen binational landscape protection	72
Box 19	Phong Nha-Ke Bang and the Hin Nam No: strengthening cooperation through international facilitation	73
Box 20	Integration of transboundary approaches with land management policies	75
Box 21	Harmonization of conservation approaches in the southern Caucasus	76
Box 22	The W, Arly and Pendjari: a transfrontier complex to consolidate	81
Box 23	European-wide network of certified Transboundary Protected Areas: TransParcNet	88

Tables

Table 1	Global assessments of transboundary conservation complexes	5
Table 2	Models of cooperation in transboundary conservation	7
Table 3	Unpacking the definition of a Transboundary Protected Area	8
Table 4	Unpacking the definition of a Transboundary Conservation Landscape and/or Seascape	10
Table 5	Unpacking the definition of a Transboundary Migration Conservation Area	12
Table 6	Comparison of key characteristics of types of Transboundary Conservation Areas	14
Table 7	Transboundary World Heritage Sites (natural sites and cultural landscapes)	15
Table 8	Transboundary Biosphere Reserves	17
Table 9	Transboundary Ramsar Sites	19
Table 10	Potential security implications in Transboundary Conservation Areas	43
Table 11	Differences between governance and management	45
Table 12	IUCN governance types of protected areas	46
Table 13	Strengths and weaknesses of formal transboundary conservation governance arrangements	51
Table 14	Strengths and weaknesses of informal transboundary conservation governance arrangements	51
Table 15	Common stages of a transboundary conservation process	58
Table 16	Suggested agenda for a workshop on the identification of a transboundary common vision and agreement on objectives for cooperative management	65
Table 17	Framework for common transboundary management in the Central Albertine Rift	66
Table 18	A template for contents of an action plan	76
Table 19	Recommendations to improve funding for transboundary conservation initiatives	80

Figures

Figure 1:	The approximate number of Transboundary Conservation Areas and internationally adjoining protected areas, 1988-2007.	5
Figure 2:	Diagrammatic representation of a Transboundary Protected Area	8
Figure 3:	Diagrammatic representation of a Transboundary Conservation Landscape/Seascape	10
Figure 4:	Diagrammatic representation of a Transboundary Migration Conservation Area	13
Figure 5:	Leadership roles for transboundary conservation	47
Figure 6:	Spectrum of public participation.	47
Figure 7:	The WCPA's management cycle and the framework for assessing management effectiveness of protected areas	58
Figure 8:	Stakeholder analysis	61
Figure 9:	Financing of transboundary conservation initiatives (showing number of respondents in each category).	79
Figure 10:	Cooperative relationship in Transboundary Conservation Areas	99
Figure 11:	Obstacles to cooperation with nearby protected area(s) across the international boundary	99
Figure 12:	Fields of cooperation in Transboundary Conservation Areas	100
Figure 13:	Key threats to protected areas from across the international boundary.	100

Executive summary

Ecosystems across the globe are divided by political boundaries. So they are exposed to many different policy, legal and institutional structures, management and governance regimes; they are affected by various social, cultural and economic contexts and systems; and they are sometimes impacted by complex relations between countries. Transboundary¹ conservation has emerged as a practical way to overcome these differences and encourage cooperative working across international boundaries so as to achieve shared conservation goals.

The first examples of transboundary conservation practice date from the early 1930s, but its rapid expansion has only been evident since the 1980s, in parallel with the growth of designated protected areas at the national level. Today, there are more than 200 examples of transboundary cooperation, ranging from informal agreements to government-to-government treaties.

What is transboundary conservation?

Transboundary conservation is a process of cooperation to achieve conservation goals across one or more international boundaries.

IUCN recognizes that cooperative conservation efforts also occur across intra-national boundaries (e.g. between provinces within a federal nation), but the term 'transboundary conservation' as used in this volume refers only to cooperation across international boundaries.

Typology of Transboundary Conservation Areas

The words 'Transboundary Conservation Area (TBCA)' are used here as a generic term that covers three types and a special designation. These terms reflect the current state of scientific knowledge and global practice, but they involve a partial revision of the previous typology used by IUCN in 2001.

The three kinds of TBCAs are these:

- A **Transboundary Protected Area**: a clearly defined geographical space that consists of protected areas² that are ecologically connected across one or more international boundaries and involves some form of cooperation.
- A **Transboundary Conservation Landscape and/or Seascape**: an ecologically connected area that sustains ecological processes and crosses one or more international boundaries, and which includes both protected areas and multiple resource use areas, and involves some form of cooperation.

- **Transboundary Migration Conservation Areas**: wildlife habitats in two or more countries that are necessary to sustain populations of migratory species and involve some form of cooperation.

*A **Park for Peace** is a special designation that may be applied to any of the three types of Transboundary Conservation Areas, and is dedicated to the promotion, celebration and/or commemoration of peace and cooperation.

'Cooperation' as used in all these definitions implies transboundary collaboration for conservation of various kinds; a minimum being regular communication and information sharing, but often also involving prior consultation, coordinated action, joint management planning and/or joint implementation of decisions.

There are several ways in which TBCAs can be given international recognition, such as transboundary World Heritage Sites, Ramsar Sites and Biosphere Reserves.

The value of transboundary conservation

Transboundary conservation can bring the following benefits:

- **TBCAs enable greater ecological integrity and contribute to the long-term survival of species.** TBCAs enhance the connectivity of areas under conservation management, reducing the fragmentation of habitats and allowing increased dispersal opportunities for individual species. This in turn supports higher resilience within ecosystems and among species, and greater genetic exchange among populations.
- **TBCAs contribute to securing the survival of migratory species.** Migratory species are often heavily dependent on transboundary cooperation, which allows them to occupy suitable habitats, especially critical breeding, feeding and resting areas.
- **Transboundary conservation has the potential to generate substantial socio-cultural and economic benefits.** Biodiversity conservation is usually the primary goal of transboundary conservation but—as biodiversity often brings benefits to people— socio-cultural and economic factors may also be important drivers.
- **Enhanced cooperation in TBCAs in day-to-day management can result in multiple benefits.** For example, sharing heavy equipment reduces the cost, joint patrols enable better law enforcement, and management efficiency is enhanced through cooperation.

¹ The word 'transboundary' is used throughout these Guidelines. In practice, other words, such as 'transfrontier' or 'transborder' are sometimes used, but there is no significant difference in meaning.

² As defined by IUCN (Dudley, 2008).

Principal characteristics of transboundary conservation

Transboundary conservation has the following important features:

- **All transboundary conservation implies cooperation between parties across the international boundary.** Without cooperation between parties from two or more countries there can be no transboundary conservation. The form of cooperation may vary from sharing information, communication, consultation and coordinated action to the joint implementation of decisions.
- **Transboundary conservation goes beyond protected areas and can include multiple approaches to land use and tenure.** As well as protected areas, other approaches to conservation can also contribute to sustainable development and indeed reinforce the effectiveness of neighbouring protected areas.
- **There is no single ideal model for initiating and implementing transboundary conservation.** Each initiative needs to be designed and adapted to meet the unique needs and interests of each specific geographical area and the countries involved.
- **Transboundary conservation governance involves many actors working across different scales and adopting a range of informal or formal arrangements.** It can be considered as a form of shared governance practiced across an international boundary. Both informal and formal arrangements for transboundary governance³ have their strengths and weaknesses.
- **The most effective transboundary governance arrangements are likely to be collaborative, nested and adaptive.** Diverse actors are involved, individual governance systems can be interlinked (or nested) to address transboundary issues more efficiently, and governance arrangements must be able to adapt to changing circumstances.
- **Effective transboundary governance is characterized by several defining elements.** These include: leadership, representation, public participation, function and scope, authority, legitimacy and accountability, learning, decision-making, conflict management and financing.
- **Cooperative management is important in furthering transboundary conservation programmes.** Cooperative management in this volume is understood in a transboundary context, as referring to actions that are undertaken together by parties from two or more countries with shared interests. While reaching a shared vision and developing a framework for cooperative management of TBCAs can take a lot of time, this is critical if cooperation is to survive over the long term. Parties need to ensure that they think carefully about why, where and when they intend to cooperate.
- **Ensuring political support can enhance transboundary cooperation.** Political endorsements are often essential to underpin the legitimacy of the initiative.
- **Monitoring and evaluation are integral elements of the cooperative arrangement in a TBCA.** The tools needed for monitoring and evaluation should however be adapted to the special circumstances of transboundary cooperation.

³ The words 'transboundary governance' are used in places in these Guidelines as a shorthand for 'transboundary conservation governance'.

Lessons from practice

A suite of 33 examples are profiled throughout these Guidelines. They represent different geographical regions, ecosystems and sizes. While 23 examples are presented fairly briefly in boxes, 10 cases are discussed in greater detail:

Case study 1: The Transboundary Biosphere Reserve Delta of the Senegal River. An example of an international transboundary designation shared by Mauritania and Senegal.

Case study 2: Protecting Andean flamingos in South America. Transboundary conservation efforts between Eduardo Avaroa National Refuge, Bolivia and Los Flamencos National Reserve, Chile, have focused on the protection of a migratory species.

Case study 3: Kailash Sacred Landscape. The focus has been on cultural and sacred values in the Hindu Kush Himalaya that spans the borders between China, India and Nepal.

Case study 4: Engaging communities across the border: FORMADAT in the Highlands of the Heart of Borneo. The establishment of an Alliance of the Indigenous Peoples of the Highlands in Borneo has resulted in enhanced transboundary conservation and cooperation between Brunei, Indonesia and Malaysia.

Case study 5: /Ai/Ais Richtersveld Transfrontier Park: Benefits from joint management. Many day-to-day management benefits stem from cooperation between parks in Namibia and South Africa.

Case study 6: The European Green Belt Initiative. An example of a continent-wide initiative with an innovative governance structure.

Case study 7: The Crown of the Continent. An example of both informal and formal transboundary governance in an area shared between Canada and the United States of America (USA).

Case study 8: The challenge of developing a shared vision: Maritime Alps-Mercantour. An example of shared management planning and implementation of management actions in the French and Italian Alps.

Case study 9: The Grenadines Network of Marine Protected Areas. An example of civil society leadership in facilitating transboundary cooperation between Grenada and St. Vincent and the Grenadines.

Case study 10: Building institutional dialogue on participatory monitoring and evaluation of the Sangha Trinational in the Congo Basin. Cooperation in monitoring and evaluation of a TBCA is shared between Cameroon, the Central African Republic and the Republic of Congo.

Part 1

Understanding transboundary
conservation: history and key
concepts

1. Introduction

This publication was developed through a wide participatory process, allowing for the incorporation of a variety of opinions and experiences in the final product. This process has shown that much has changed since the IUCN WCPA Best Practice Protected Area Guidelines Series No. 7 (Sandwith et al., 2001) was published. So, while this volume builds on that work, it also provides new perspectives drawn from the on-going practice of transboundary conservation. The current Guidelines therefore provide an improved understanding of transboundary conservation principles and practice, supported by examples taken from around the globe.

1.1. The development of these Guidelines

The predecessor to this publication, *Transboundary Protected Areas for Peace and Co-operation* (Sandwith et al., 2001), was published before the Vth IUCN World Parks Congress, held in Durban, South Africa, in 2003 (referred to throughout as the 2001 Guidelines). The theme of the congress was Protected Areas: Benefits beyond Boundaries, which was echoed in the Durban Accord: 'We see protected areas as providers of benefits beyond boundaries—beyond their boundaries on a map, beyond the boundaries of nation states, across societies, genders and generations' (IUCN, 2003a). The message from Durban affirmed that protected areas of all kinds are vital for human well-being. It also stressed the importance of creating linkages between protected areas and wider systems of resource management, including the establishment of transboundary conservation initiatives in support of biological corridor programmes. Such initiatives should encompass the

These new, more socially-oriented approaches to protected areas, with more emphasis on local communities, Indigenous Peoples, sustainable development, the establishment of partnerships, and related management and governance issues, were widely promoted during the congress.

The 2001 Guidelines was a benchmark publication that offered a standardized transboundary-related terminology and guidelines for the establishment of Transboundary Protected Areas (TBPAs) and Parks for Peace. Although it makes reference to the potential for TBPAs to bring about economic benefits for local and national economies, and uses the term 'ecosystem services'⁴ in a number of places, it did not expand on the potential value of the concept. Indeed, it was only really with the exposure given to ecosystem services through the Millennium Ecosystem Assessment (2005) that the concept began to gain traction and its importance to conservation initiatives became apparent. The present Guidelines reflect these developments in thinking, which is well documented in the work of Mace (2014); she tracks the prevailing views of conservation over the last 50 decades and shows how the current conservation paradigm has become that of 'people *and* nature'.

1.2. The participatory process in development of the Guidelines

These Guidelines were developed from the following activities:

- An International workshop on defining transboundary conservation principles, 16-18 October 2013, Thayatal National Park, Austria;



Participants of the International workshop on defining transboundary conservation principles, October 2013, Austria. ©Thayatal National Park

social components of protected areas, providing opportunities for communities that are separated by national boundaries and promoting connectivity for mobile Indigenous Peoples who have traditionally migrated across borders (IUCN, 2003b).

⁴ They 'can include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits' (Millennium Ecosystem Assessment, 2005).

- A wide consultative process within the WCPA's Transboundary Conservation Specialist Group and WCPA's membership;
- The experiences that have been generated since the publication of the 2001 Guidelines.

The workshop in Austria gathered 24 transboundary conservation specialists from around the world, representing practitioners, international and national non-governmental organizations (NGOs), academic institutions, governments and project donors. Its objectives were to:

- Discuss and work towards consensus on the TBCA⁵ typology and definitions;
- Agree on the table of contents for the Guidelines, on the roles and responsibilities of the team of authors, and on the time frames for deliverables;
- Present and discuss a number of transboundary initiatives from around the world with a view to identifying best practice and case studies⁶.

1.3. What this publication offers

These Guidelines aim to extend and deepen knowledge about transboundary conservation. The following are some of the key elements that they offer:

- a. A definition of transboundary conservation;
- b. A revised typology of TBCAs, with definitions;
- c. Elaboration of transboundary conservation governance models;
- d. Advice on the process for initiating transboundary conservation through establishing, managing and monitoring a TBCA;
- e. A review of the implications of transboundary initiatives for cooperative management;
- f. A large number of best practice examples drawn from different geographical regions and ecosystems around the world, and involving different protected area management categories, models of cooperation and transboundary arrangements.

Element (b) deserves special mention. In 2008, IUCN put forward a new definition for protected areas (Dudley, 2008), so making it necessary to adjust the definition of a TBPA as used in the 2001 Guidelines. So these present Guidelines offer a new definition of a TBPA, as well as a revised typology of TBCAs that reflects recent developments in transboundary conservation initiatives. The Guidelines explain the various types of TBCAs in detail, and provide examples drawn from the field. The history of the development of TBCA types and the newly proposed typology and definitions are explained in Chapter 3.

What these Guidelines do not provide

Although the authors acknowledge the importance of a comprehensive database of TBCAs, these Guidelines do not provide this. The 2001 Guidelines included a database of

⁵ Graham et al. (2003) define conserved area as '...area-based measure that—regardless of recognition and dedication and at times even regardless of explicit and conscious management practices—achieves conservation de facto and/or is in a positive conservation trend and likely to maintain it in the long term...'. This definition also equally applies to land, inland waters and coastal and marine territories and areas.

⁶ Report from the workshop, all presentations, list of participants and agenda are available at <http://www.tbpa.net/page.php?ndx=26>



Springtime in Thayatal National Park in Austria which forms a TBPA with neighbouring Czech Podyjí National Park. ©Thayatal NP/D. Manhart

internationally adjoining protected areas, but the compilation process for subsequent lists, such as that of UNEP-WCMC 2007 (Lysenko et al., 2007), has not included verification by managers. Given that there are new definitions and concepts in these Guidelines, there is now an urgent need for a new list validated by managers and practitioners.

Also, these Guidelines do not offer specific advice about transboundary conservation in the marine realm, which requires separate treatment, although a number of the examples cited in the text include a coastal and adjoining marine element.

1.4. Aim of the Guidelines

The aim of these Guidelines is to assist transboundary conservation practitioners and those intending to become involved in initiating, establishing, governing, managing and monitoring transboundary programmes, by providing best practice guidance in all these aspects. Through this guidance, everyone concerned with transboundary conservation should be able to deepen their understanding of what this entails, the values and challenges of working in a transboundary context and the lessons learned when implementing initiatives. The inclusion of case studies throughout these Guidelines provides practical examples of implementation within a variety of situations.

Every transboundary initiative will have its own unique set of circumstances, so these Guidelines provide a point of departure and a frame of reference. They will also need to be revised and updated again as more lessons are learned.

1.5. Audience for the Guidelines

These Guidelines are aimed at a broad audience encompassing transboundary conservation practitioners, protected area staff, planners, staff of governmental institutions, civil society organizations, local community representatives, Indigenous Peoples' representatives, researchers, donor agencies and wider group of conservation professionals. The publication is designed to give those from different sectors easy access to the guidance, recommendations and best practice drawn from experience around the world.

2. Background

The first TBPA were established in the 1930s in North America and Europe. However, it was only during the last two decades of the 20th century that transboundary conservation projects were developed in regions in all parts of the world—thus following a similar increase in the number of protected areas designated at national levels. Transboundary conservation has been more widely applied as people and governments have seen the many benefits it can bring. This Chapter provides a short history of the development of transboundary conservation approaches and describes efforts to record the growing number of them.

2.1. An historical perspective on transboundary conservation

Transboundary conservation initiatives were pioneered in Europe and North America. As early as the 18th century, a Treaty of Alliance between Louis XVI, King of France, and Frederic of Wangen, Prince-Bishop of Basel, recognized that offences related to forests, hunting and fishing had to be properly dealt with in order to keep good relations and peace between the two bordering states (Rüster and Simma, 1975). This agreement called for uniform laws to cover these issues in the shared region.

The Krakow Protocol, signed on 6 May 1924 by the governments of Poland and what was then Czechoslovakia, provided for the final delineation of a disputed boundary left over from World War I, and the bilateral regulation of tourism and traffic in the border areas. The Krakow Protocol has particular importance for transboundary conservation as its Annex, signed on 5 September 1925, outlined the designation of a joint bilateral nature park in the Pieniny Mountains. However, the provisions of this Annex were not implemented until 1932, when Europe's first TBPA was established at an official ceremony held in Crveny Klastor (in today's Slovakia)⁷.

Just one month earlier, the inauguration of the Waterton-Glacier International Peace Park had taken place between Canada and USA. Catalysed by Rotary Clubs from Alberta, Canada, and Montana, USA, and officially supported by both governments, Waterton-Glacier International Peace Park was established to celebrate the long-lasting peaceful relations between the two countries and to further their friendship. It is considered to be the first TBPA in the world, being firmly based upon an international treaty made between two sovereign states. This site was added to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage List as a transboundary site in 1995.

Some have traced the origins of transboundary conservation in Africa back to colonial times, since the then colonial power, Belgium, created the Albert National Park in 1925 to protect mountain gorilla populations on the boundary between the

colonies of Ruanda-Urundi and the Congo (van der Linde et al., 2001). After independence in the 1960s, components of this park became Volcanoes National Park (Rwanda) and Virunga National Park (Democratic Republic of Congo). Along with a number of Uganda's national parks they now form part of the trinational Greater Virunga Transboundary Collaboration (see Box 2). In 1938, the ecologist Gomes de Souza proposed that the Portuguese colonial administration of Mozambique negotiates with adjacent states to conserve transboundary areas (Mittermeier et al., 2005a). More recently, the Kgalagadi Transfrontier Park was launched in 2000 by the Presidents of Botswana and South Africa, covering more than 35,000 km² to protect ungulates and their predators, and facilitate the free movement of tourists within the boundaries of the single park (Peace Parks Foundation, 2011).

On other continents, transboundary conservation made slower progress. In Central America, the First Central American Meeting on Management of Natural and Cultural Resources, held in 1974 in Costa Rica, recommended that border areas with natural and cultural values of interest to all involved countries and which might benefit from an integrated conservation strategy, should be managed jointly (Budowski, 1975). The first TBPA involving a Central American country was Los Katios-Darien National Parks shared by Colombia and Panama. The key reason for cooperation between the two parks as of 1980 was to prevent the spread of foot and mouth disease from Panama to South America, but resulted also in cooperation on conservation issues (Mittermeier et al., 1995). La Amistad International Park, shared by Costa Rica and Panama and the first TBPA between Central American countries, was established in 1982 following the historic meeting of the countries' two Presidents and a joint declaration in 1979; it aims to promote the cooperative management of natural resources and a peaceful relationship (Castro et al., 1995).

In South America, informal cooperation between Argentina and Brazil with Iguazu-Iguazú National Parks started in the 1980s, although the two adjacent parks had been established



Brazilian Iguazu National Park and Argentinian Iguazú National Park share one of the world's largest waterfalls. ©Charles Besançon

⁷ Additional information is available at <http://www.pieninyprn.pl> and <http://pieniny.sk/en.html>

Table 1 Global assessments of transboundary conservation complexes

Author	Scope	Results
Thorsell and Harrison (1990)	Border parks	70
Zbicz and Green (1997)	Transfrontier protected area complexes	136 (comprising 488 protected areas)
Zbicz (2001)	Internationally adjoining protected areas	169 (comprising 666 protected areas)
Besaçon and Savy (2005)	Internationally adjoining protected areas and other transboundary conservation initiatives	188 (comprising 818 protected areas)
Lysenko et al. (2007)	Transboundary protected areas	227 (comprising 3,043 protected areas)

by the late 1930s. The two parks form part of one of the most important forest complexes in the southern part of the continent and include widest waterfalls in the world (Straube and Urben-Filho, 2005).

The first marine TBPA was established in Asia. The Turtle Island Heritage Protected Area in the Sulu Sea was declared by the governments of Malaysia and the Philippines in 1996, to secure the survival of marine turtles in the region. Appendix A shows an example of a Memorandum of Agreement made between governments.

This brief historical overview shows that transboundary conservation initiatives were, and continue to be, established for several purposes. The conservation of nature has been the primary one, but other purposes include: the commemoration of peace, striving to establish peaceful relationships, ensuring political stability, encouraging economic development and facilitating socio-cultural integration.

2.2. Growth in the world's Transboundary Conservation Areas

The first global inventory of 'border parks' was compiled in 1988⁸, and several other global inventories have been prepared since. All are summarised in Table 1. The methodology and data sources used in these surveys vary.

For example, only some projects included a survey of managers; and some surveys required protected areas to be physically contiguous to qualify for inclusion whilst others did not. So any comparisons between figures should be made with caution.

Drawing on the assessments in Table 1, Figure 1 shows the indicative growth of TBCAs including clusters of protected areas located near international boundaries (internationally adjoining protected areas) from 1988 to 2007. Even allowing for the limitations in the data, the broad trend is clear: a steady growth both in the potential for transboundary conservation cooperation and in the number of active TBCAs.

Some regional inventories have also been compiled, notably the work of IUCN WCPA in the 1990s in Europe that contributed substantially to the global database. The resulting inventory of European TBPAs (Brunner, 1999) formed part of the WCPA Parks for Life initiative in the region.

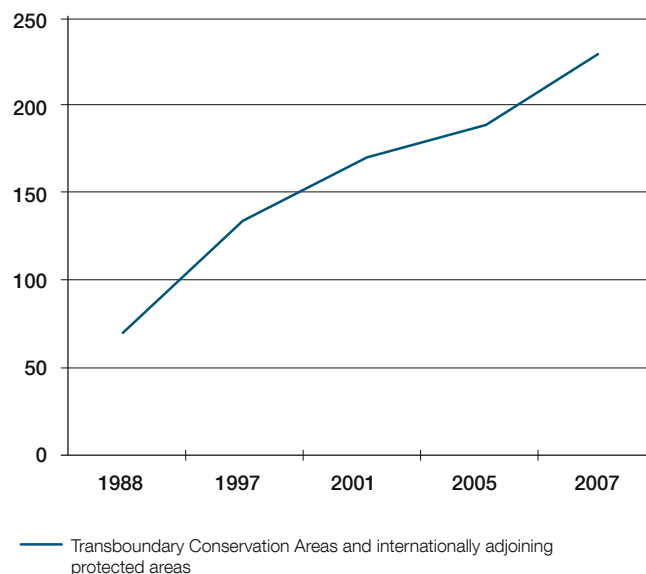


Figure 1: The approximate number of Transboundary Conservation Areas and internationally adjoining protected areas, 1988-2007

⁸ Presented during the First Global Conference on Tourism 'A Vital Force for Peace', Vancouver, Canada, and published in 1990.

3. Definitions and typology

There have been a number of attempts to standardize the terminology related to transboundary conservation over time and at a global level. These Guidelines offer the following overarching definition of transboundary conservation and proposes a new typology and definitions of TBCAs, reflecting the current state of knowledge and global practice in transboundary conservation.

Transboundary conservation is a process of cooperation to achieve conservation goals across one or more international boundaries.

3.1. Working towards an agreed definition of transboundary conservation

IUCN first offered standardized terminology for transboundary conservation in the 2001 Guidelines, with definitions and explanation for the terms Transboundary Protected Area and Parks for Peace. These had been negotiated and agreed upon at several events convened by IUCN WCPA: the International Conference on Transboundary Protected Areas as a Vehicle for International Cooperation (Cape Town, South Africa, 1997), the International Symposium on Parks for Peace (Bormio, Italy, 1998), and Promoting a Global Partnership meeting (Gland, Switzerland, 2000).

The two definitions recommended in 2001 were:

A Transboundary Protected Area:

'an area of land and/or sea that straddles one or more boundaries between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limits of national sovereignty or jurisdiction whose constituent parts are especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed cooperatively through legal or other effective means'.

Parks for Peace:

'transboundary protected areas that are formally dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and to the promotion of peace and cooperation'.

However, these definitions, though helpful in clarifying concepts in 2001, have not stood the test of time. There are four reasons why this has been so:

- The exclusive focus on protected areas was too narrow to encompass all forms of cooperation;
- IUCN updated its definition of a protected area in 2008;
- The variety of models of cooperation that exist are not well reflected in the definition;
- The focus on sub-national boundaries was found to be unhelpful.

These points are expanded in the following text.

Broadening the focus beyond protected areas

The work of WCPA and the Biodiversity Support Programme⁹ in sub-Saharan Africa suggested that concepts of transboundary conservation needed to move beyond a focus on protected areas only and embrace also natural resource management areas and other broader conservation initiatives. The participants of the workshops in Thailand in 2003¹⁰ and in Italy in 2004 discussed strengthening the transboundary conservation typology along these lines, and two new definitions were proposed, to be added to the existing definitions of TBPA and Park for Peace.

Sandwith and Lockwood (2006) suggested definitions for what they called Transboundary Conservation and Development Areas and Transboundary Migratory Corridors as follows:

Transboundary Conservation and Development Areas:

'areas of land and/or sea that straddle one or more borders between states, sub-national units such as provinces and regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts form a matrix that contributes to the protection and maintenance of biological diversity, and of natural and associated cultural resources, as well as the promotion of social and economic development, and which are managed co-operatively through legal or other effective means'.

Transboundary Migratory Corridors:

'areas of land and/or sea in two or more countries, which are not necessarily contiguous, but are required to sustain a biological migratory pathway, and where co-operative management has been secured through legal or other effective means'.

Updating the IUCN definition of a protected area

In 2008, IUCN adopted a new definition of a protected area as follows:

'A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values' (Dudley, 2008).

Because protected areas have been central to the original concept of transboundary conservation, this new IUCN definition of a protected area required a revision of the TBPA definition as well, and had implications for definitions of other types of TBCAs.

⁹ Biodiversity Support Programme was a consortium of WWF, The Nature Conservancy and the World Resources Institute funded by the US Agency for International Development.

¹⁰ The International Workshop on Increasing the Effectiveness of Transboundary Conservation in Tropical Forests organized by IUCN and the International Tropical Timber Organization.

Models of cooperation

Cooperation in a TBCA can be achieved through a variety of models, with various results and benefits. Cooperation related to transboundary conservation has been divided into six 'levels of cooperation' (Zbicz, 1999). This framework can be helpful by setting out a gradation from lower to higher levels of engagement with which transboundary sites can identify themselves. However, levels of cooperation may overlap and/or occur simultaneously between various actors; there is an implication that higher levels are better, whereas they often entail greater transaction costs; and lower level arrangements can still deliver quickly in an emergency. Therefore, while these Guidelines emphasize that cooperation is a necessity in transboundary conservation—and that a site can be understood as a TBCA only if cooperation across international boundaries is involved—the term 'levels of cooperation' is replaced with the more flexible 'models of cooperation'.

Building on the work of Zbicz (1999) and the spectrum on public participation (Figure 6) presented by the International Association for Public Participation (2007), these Guidelines suggest that cooperation may include: communication or sharing of information, consultation, coordinated action, and joint implementation of decisions (Table 2).

These Guidelines do not imply that the models of cooperation in Table 2 are progressive and that one model is superior or inferior to another. Instead, the various models should be viewed as appropriate for different situations at different times in TBCAs. The challenge is to match the appropriate model of cooperation with the needs, interests and on-going political and socio-economic circumstances of a particular TBCA. Nonetheless, cooperation should always be encouraged and the strongest appropriate cooperative arrangement model should be sought to achieve the best conservation outcome.

Each model of cooperation can be implemented informally or through more formal arrangements. Often these models complement each other; often, too, different models can operate alongside each other. Transboundary conservation governance¹¹ provides the enabling environment for models of cooperation. While in some cases transboundary governance

can be strong, actions on the ground can be quite weak; conversely, effective cooperative management¹² does not always depend on good transboundary governance.

International versus sub-national boundaries in Transboundary Conservation Areas

In the definitions used by IUCN in the 2001 Guidelines, transboundary conservation was applied both to areas divided by international boundaries, and to boundaries within countries, i.e. across sub-national units (provinces, regions) and autonomous areas. While acknowledging the value of cooperative efforts in conservation across sub-national boundaries, the new definitions of TBCA types limit the concept to international boundaries, i.e. boundaries between sovereign states. However, IUCN WCPA encourages those establishing and managing transboundary processes across sub-national boundaries to refer to these Guidelines, as much that is written here will be equally applicable *within* countries.

The focus on international boundaries has been made for three main reasons:

- Working across international boundaries is qualitatively different from working at sub-national level: between countries, there are usually different laws and institutional frameworks, different management systems, incompatible databases and monitoring practices, diverse languages, cultures and religions, and varied levels of economic performance; sometimes too there are difficult political relations between countries.
- It is very difficult to determine exactly to which level advice on sub-national division of boundaries should apply. To regard transboundary cooperation between sub-national units as TBCAs would create uncertainty about their defining characteristics, thus causing confusion which could devalue this approach.
- Most current and all previous databases containing lists of TBCAs include only those areas that extend across international boundaries; it makes sense to build on this aspect.

Table 2 Models of cooperation in transboundary conservation

Model of cooperation	Example
Communication or Information sharing	<ul style="list-style-type: none"> Regular communication on actions, problems, opportunities or other relevant issues Regular sharing of information, e.g. notifying about various management actions in a particular site
Consultation	<ul style="list-style-type: none"> Seeking opinion, feedback or advice from each other, e.g. on how to solve a problem, how to improve a management action, etc. Cooperative process with the aim to harmonize management
Coordinated action	<ul style="list-style-type: none"> Jointly coordinated management actions implemented within the sovereign areas of each party, that contribute to the conservation goals of the entire transboundary ecosystem, e.g. monitoring of species and ecological processes occurs as regular activity on the territory of each party, but the results contribute to conservation of species or ecosystems in the whole shared ecosystem This model is considered to be a form of cooperative management
Joint implementation of decisions	<ul style="list-style-type: none"> Jointly coordinated and implemented management actions across the sovereign boundaries, e.g. joint law enforcement patrols, joint fundraising and project implementation, the production of marketing material that profiles the TBCA as a single entity, etc. This model is considered to be a form of cooperative management

11 See Chapter 5 for further reading on transboundary governance.

12 See section 6.5. for further reading on cooperative management.

3.2. The proposed typology and definitions of Transboundary Conservation Areas

Typology of Transboundary Conservation Areas

In light of these developments since 2001, WCPA's Transboundary Conservation Specialist Group has led a discussion leading to the elaboration of a new typology and definitions. WCPA now recommends the recognition of three types of TBCA, with a special category that can be applied to any of these three types, as follows:

Type 1	Transboundary Protected Area
Type 2	Transboundary Conservation Landscape and/or Seascape
Type 3	Transboundary Migration Conservation Area
Special designation that can be applied to any of the three types	Park for Peace

The proposed typology of TBCAs aims to embrace all potential situations that may occur in practice. However, it is important to emphasize that different types of TBCAs may occur alongside each other or even be embedded into another type. For a comparison of the various types of TBCAs, see Table 6.

The definitions and explanation of types of Transboundary Conservation Areas

Type 1: Transboundary Protected Area (TBPA)

A Transboundary Protected Area is a clearly defined geographical space that includes protected areas that are ecologically connected across one or more international boundaries and involves some form of cooperation.

The meaning of this definition is 'unpacked' in Table 3.

Table 3 Unpacking the definition of a Transboundary Protected Area

Phrase	Explanation
Clearly defined geographical space	Comes directly from the IUCN definition of a protected area, which defines this as including 'land, inland water, marine and coastal areas or a combination of two or more of these. 'Space' has three dimensions, e.g. as when the airspace above a protected area is protected from low-flying aircraft or in marine protected areas when a certain water depth is protected or the seabed is protected but water above is not: conversely subsurface areas sometimes are not protected (e.g. are open for mining). 'Clearly defined' implies a spatially defined area with agreed and demarcated borders. These borders can sometimes be defined by physical features that move over time (e.g. river banks) or by management actions (e.g. agreed no-take zones)' (Dudley, 2008).
Protected areas	As defined by IUCN: 'a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values' (Dudley, 2008).
Ecologically connected	Refers to 'the flow of organisms and ecological processes' (Krosby et al., 2010, based on Taylor et al., 1993) between protected areas. Across an international boundary, the movement of species and the occurrence of ecological processes (biological, geochemical and physical) are enabled by the existence of portions of one or more common (shared) ecosystems in a TBPA. Shared ecosystem(s) usually imply certain physical proximity, and so ecologically connected protected areas located in two or more countries are normally close to or contiguous with each other.
International boundaries	Refers to the international boundaries between countries and specifically does not refer to boundaries between sub-national units.
Form of cooperation	Refers to any of the four models of cooperation in transboundary conservation (see Table 2) that are practiced between relevant stakeholders from two or more countries.

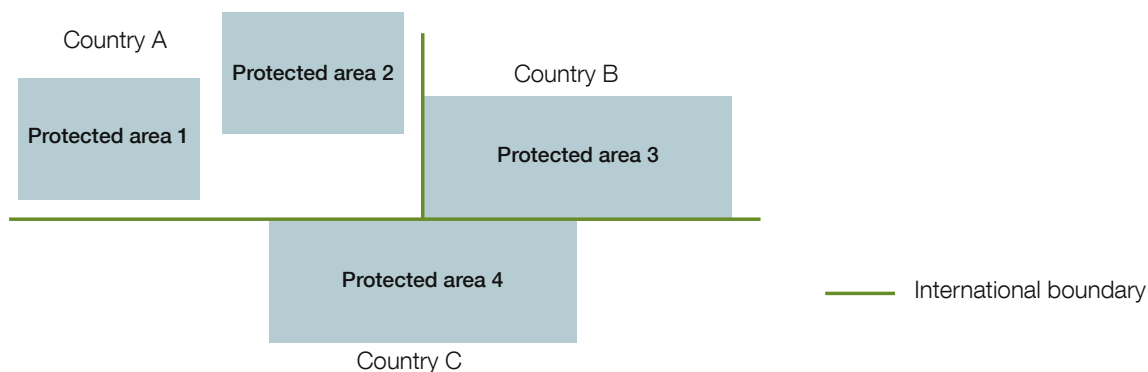


Figure 2: Diagrammatic representation of a Transboundary Protected Area

As with the 2001 definition of a TBPA, this new definition recognizes that its constituent parts are protected areas that cooperate across international boundaries. However, there are three key differences:

- The focus is now on the international level, without reference to sub-national boundaries. It is also more flexible in allowing for various forms of cooperation.
- The emphasis is now on ecological connections. It is important to note that two or more protected areas on different sides of boundaries, which are not physically contiguous but separated by other land uses, may nonetheless be connected ecologically. Because such protected areas are connected in this way, there is an ecological reason for transboundary cooperation.
- In referring to a 'protected area', the new TBPA definition should be read in connection with the new IUCN definition of a protected area. Accordingly, TBPAs encompass the long-term conservation of nature with its ecosystem services and cultural values, while emphasizing the landscape scale of

many transboundary conservation initiatives and the management of ecosystem services (Biggs et al., 2011).

For comparison of key characteristics between a TBPA and other TBPA types, see Table 6.

It follows from the definition that a TBPA can be of two kinds, both illustrated in Figure 2:

- Two or more contiguous protected areas across international boundary;
- A cluster of protected areas located in two or more countries but separated by areas that are not protected.

Examples of TBPAs include: the Maritime Alps-Mercantour TBPA shared by Italy and France (see Case study 8); the Quetico-Boundary Waters Protected Areas of Canada and the USA; the Intercontinental Biosphere Reserve of the Mediterranean between Morocco and Spain; and the Lake Neusiedl / Seewinkel Fertő-Hanság National Park, Austria and Hungary (see Box 1). All show how a TBPA can help secure ecological connectivity.

Box 1

Lake Neusiedl / Seewinkel Fertő-Hanság National Park

Lake Neusiedl National Park in Austria and Seewinkel Fertő-Hanság National Park in Hungary are a transboundary wetland area in the western part of the Carpathian Basin, at the last foothills of the Alps, Austria and Hungary. The bilateral national park was formally opened in 1994. The setting up of this TBPA marked the end of years of division along the so-called Iron Curtain. On the Austrian side, the national park is situated on private property belonging to more than one thousand families, whereas in Hungary the park has been established on state land.

Several years of joint planning, starting in 1988 when the last communist government was still in place in Hungary, led to a new spirit in transboundary cooperation in general—not only in the conservation sector. This area was all within the Austro-Hungarian Empire until its break-up in 1918. Since then it has suffered from a lack of regional identity, but this has been rebuilt around the shared natural heritage that occurs within the two parks. The area also has a rich cultural heritage, which was recognized in its designation as a transboundary UNESCO World Heritage Cultural Landscape in 2001. Other bilateral projects have been implemented by both national parks in fields such as environmental education, ecotourism, visitor programmes, monitoring and habitat management.

The joint Austro-Hungarian National Park Commission, representing the respective governmental authorities



Excursion at reed (*Phragmites australis*) belt, the second largest contiguous reed bed in Europe after the Danube delta. ©Sabine Koenig

and the parks' management bodies, acts as a Steering Committee for the development of the TBPA. Day-to-day cooperation is achieved through regular meetings, coordinated by the directors, and covering various fields of work. For the time being, the state constitutions do not allow for the establishment of one joint national park management body, but this remains a long-term goal for both countries.

Prepared by: **Alois Lang**, Lake Neusiedl National Park
 Web: <http://www.nationalpark-neusiedlersee-seewinkel.at/>;
<http://www.ferto-hansag.hu>

Type 2: Transboundary Conservation Landscape and/or Seascape (TBCL/S)

A Transboundary Conservation Landscape and/or Seascape is an ecologically connected area that includes both protected areas and multiple resource use areas across one or more international boundaries and involves some form of cooperation.

Table 4 explains the term ‘multiple resource use area’; this is in addition to the information in Table 3.

Table 4 Unpacking the definition of a Transboundary Conservation Landscape and/or Seascape

Phrase	Explanation
Multiple resource use areas	Refers to areas under governmental, communal, or private control, used for a variety of purposes (e.g. agriculture, forestry, aquaculture) and which are sustainably managed or managed in a way that is compatible with the conservation objectives of the protected area(s) within the TBCL/S.

A TBCL/S most closely resembles Transboundary Conservation and Development Area from the previous typology (see Sandwith and Lockwood, 2006), but there are two notable differences:

- a. The definition of TBCL/S incorporates the new thinking represented in all types of TBCAs—the meaning of boundaries in the term ‘transboundary’, the new IUCN definition of a ‘protected area’, a focus on ecological connectivity, and an expanded view of conservation to include ecosystems and ecosystem services.
- b. The substitution of ‘landscape/seascape’ for ‘conservation and development area’ recognizes that the distinguishing feature of the whole area is that it has a distinctive, unifying character due to the interaction of people and nature over time.

TBCL/Ss recognize the benefits of coordinating management over a large area (Schoon et al., 2014). Thus TBCL/Ss include protected areas, but also other areas which support conservation objectives through sustainable management which is compatible with the objectives of the protected areas and helps to integrate them into broader landscapes/seascapes

(Figure 3). Cooperative approaches in a matrix of multiple land uses help to ensure that conservation management objectives are addressed across the whole landscape/seascape. So TBCL/Ss represent practical examples of the ecosystem approach (UNEP/CBD COP 5, 2000), as well as supporting the implementation of Aichi Target 11, which calls for ‘well connected systems of protected areas and other effective area-based conservation measures... integrated into the wider landscapes and seascapes’ (UNEP/CBD COP 10, 2010).

As with TBPA, TBCL/Ss are characterized by ecological connectivity, providing the environment needed for ecosystem functionality, including the provision of ecosystem goods and services.

For comparison of key characteristics between a TBCL/S and other TBCA types, see Table 6.

It follows from the definition that a TBCL/S may take several forms:

- Two or more contiguous protected areas across international boundary and including adjoining intervening land;
- A cluster of protected areas in two or more countries and the intervening land;
- A protected area in one country alongside a proposed protected area in a neighbouring country;
- A protected area in one country alongside an area with sympathetic land use over the border.

Examples of TBCL/Ss include: the ‘W’ Regional Park of Benin, Burkina Faso, and Niger; the Altai-Sayan Ecoregion of central Asia (see Box 9); and the Greater Virunga Landscape (see Box 2), all of them demonstrating a broad-scale approach to conservation across international boundaries.

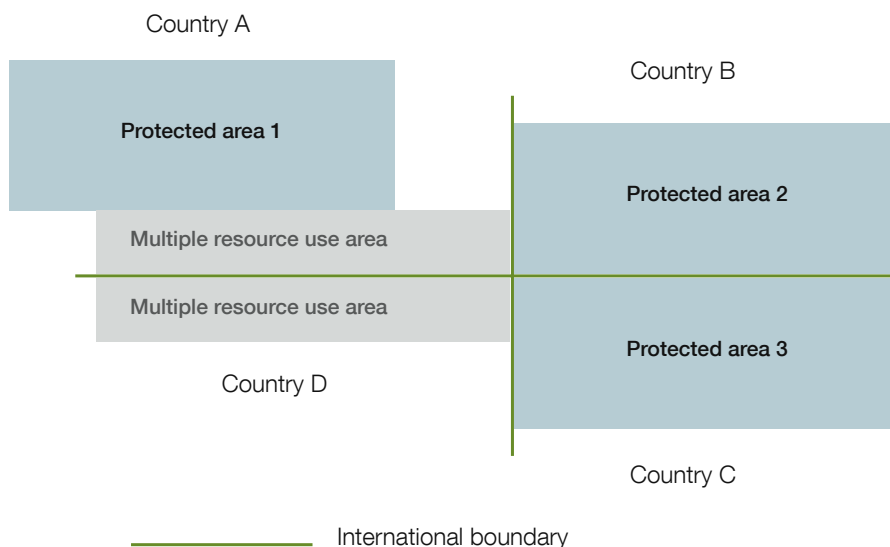


Figure 3: Diagrammatic representation of a Transboundary Conservation Landscape/Seascape

Type 3: Transboundary Migration Conservation Area (TBMCA)

Transboundary Migration Conservation Areas are wildlife habitats in two or more countries that are necessary to sustain populations of migratory species and involve some form of cooperation.

Phrases referring to the definition of a TBMCA are explained in Table 5. Phrases that are not included in Table 5 are found in Table 3.

ecosystems and are therefore important adaptive response to the negative effects of climate change on habitats of threatened species.

Corridors can be of several kinds. A continuous linear corridor could be made up of a narrow forest strip or of a river with its riverside habitat. Landscape corridors consist of a mosaic of interlinked landscapes. Corridors made up of stepping stones represent small patches of habitats that enable species to move: they can be critical habitats for bird migration, for example, as feeding or resting grounds. There is abundant literature on corridors and their functions, for example Bennet (2003), Bennet (2004), Asian Development Bank (2005), Hilty

Table 5 Unpacking the definition of a Transboundary Migration Conservation Area

Phrase	Explanation
Wildlife habitats	Natural and/or semi-natural areas populated by species of animal, plant and/or other types of organism and containing suitable living conditions for the species. In the context of a TBMCA, wildlife habitats should constitute the range of one or more populations of migratory species. 'Range' signifies 'all the areas of land or water that a migratory species inhabits, stays in temporarily, crosses or overflies at any time on its normal migration route' (UNEP/CMS Secretariat, 1979).
Sustain	Provides for the maintenance of suitable ecological requirements for a migratory species.
Populations of migratory species	Refers to 'the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries' (UNEP/CMS Secretariat, 1979).

This definition differs from the previous definition for Transboundary Migratory Corridors (Sandwith and Lockwood, 2006) because the revised name better describes the geographical/spatial area that this type of TBCA encompasses. The previous definition that focused on corridors (or pathways) did not cover other essential factors such as meeting the necessary ecological requirements for a migratory species, the importance of key habitat areas, and the protection of intermediate stop-over habitats for migratory species. As many migratory species cross international boundaries, their survival increasingly depends on transboundary cooperation between the countries concerned.

TBMCA's may include protected areas, but they are not essential, as long as there is effective cooperation in the conservation of migratory species or their associated habitats. Countries usually opt to give these areas legal protection and place them under a management and monitoring regime; very often, parts of TBMCA's include sustainably managed resource use areas (Lausche, 2011).

Terrestrial, freshwater, marine or flyway¹³ corridors are important in providing physical passage, allowing the connectivity of populations of species across international boundaries and maximizing the potential range of species. Stronger protection of corridors is needed to reduce the loss, erosion or fragmentation of important habitats. Otherwise species will be lost or populations become so isolated and reduced that they are at risk. The protection of corridors and connectivity conservation areas can also build resilience¹⁴ in

et al. (2006), Bennet and Mulongoy (2006), Worboys et al. (2010), Aune et al. (2011).

While annual bird migrations can transcend continents, and some marine species travel as far (see Box 3), the seasonal movement of terrestrial mammals usually involves shorter distances, such as between two adjacent countries. For example, zebra (*Equus quagga burchellii*) and wildebeest (*Connochaetes taurinus*) migrate annually between the Serengeti National Park (Tanzania) and the Maasai Mara National Reserve (Kenya) (Dudley and Rao, 2008); the Pamir argali sheep (*Ovis ammon polii*) migrate between Afghanistan, China, Kyrgyzstan, Pakistan, and Tajikistan. The route that they pass through consists of protected areas, multiple resource areas and other areas with no active management (Rosen, 2012).

So TBMCA's are potentially complex, inter-country forms of TBCA's, as illustrated diagrammatically in Figure 4.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS) is the key instrument for creating TBMCA's. Indeed its *raison d'être* is transboundary cooperation to conserve migratory species (UNEP/CMS Secretariat, 1979). The Convention on Biological Diversity (CBD) also addresses the needs of migratory species¹⁵.

For comparison of key characteristics of a TBPA in comparison to other TBCA types, see Table 6.

13 A flyway is defined as migration route through which the entire range of a migratory bird species (or groups of related species or distinct populations of a single species) move on an annual basis from the breeding grounds to non-breeding areas, including intermediate resting and feeding places, as well as the area within which the birds migrate (UNEP/CMS Secretariat, 2010).

14 'Resilience refers to the ability of an ecosystem to maintain its functions (biological, chemical, and physical) in the face of disturbance' (Dudley et al., 2010).

15 The CBD's Programme of Work on Protected Areas (PoWPA) Activity 1.2.3. specifically calls upon Parties to the Convention to 'integrate regional, national and sub-national systems of protected areas into broader land- and seascape, inter alia by establishing and managing ecological networks, ecological corridors and/or buffer zones, where appropriate, to maintain ecological processes and also taking into account the needs of migratory species' (UNEP/CBD COP 7, 2004).

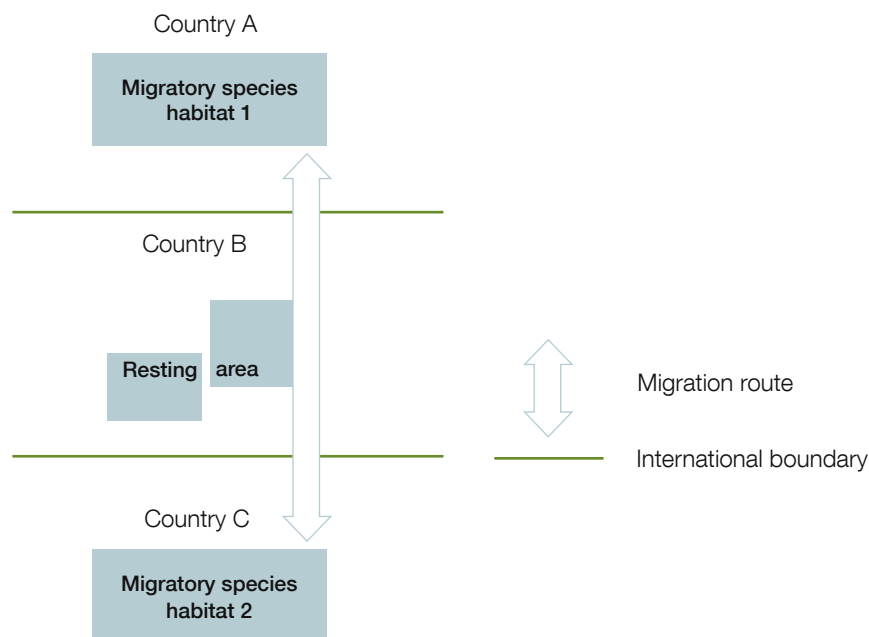


Figure 4: Diagrammatic representation of a Transboundary Migration Conservation Area

Box 3

Towards conservation of the Ombai Strait in the Indo-Pacific migration corridor

The Savu Sea is in eastern Indonesia, at the nexus of the Indian and Pacific Oceans. It forms part of the Lesser Sunda Ecoregion that covers more than 300,000 km². These waters include the world's highest coral reef biodiversity, as well as Indo-Pacific migration corridors of regional importance to large cetaceans. The major passage, Ombai Strait Transboundary Corridor is shared between Indonesia (the islands of Alor, west Timor and Wetar) and Timor Leste. The corridor has been identified as a critical habitat for endangered, threatened and protected species—including sperm whale (*Physeter macrocephalus*), blue whale (*Balaenoptera musculus*), marine turtles (*Cheloniidae*), whale shark (*Rhincodon typus*) and mantas (*Manta birostris*)—and has been integrated in large-scale Marine Spatial Planning



A sperm whale (*Physeter macrocephalus*) lob tailing off Flores, Indonesia. ©Benjamin Kahn/APEX Environmental

initiatives. The corridor is also a major exit for the Indonesia Throughflow: a unique oceanic exchange current between the tropical Pacific and Indian Oceans which results in strong seasonal upwelling and persistent pelagic habitats of importance to migratory and residential cetaceans and to other large marine life.

It is a challenge to manage this region, as both countries have complex legal frameworks including national, provincial and district level mandates for Ombai Strait waters. Traditional tenure and intense commercial resource use must also be managed; there is however limited institutional capacity in both nations to address current and emerging threats. A comprehensive network of marine protected areas (MPAs) has been developed and is currently implemented in parts of the Lesser Sunda Seascape, with emphasis on coral reefs, deep-sea yet near-shore habitats, migration corridors, such as the Ombai Strait, and priority species, such as blue whales. The marine spatial planning processes and conservation actions that are needed to ensure protection of the Ombai Strait Transboundary Corridor could be used as a model to encourage more transboundary conservation measures for large cetaceans throughout the Coral Triangle¹⁶.

Prepared by: **Benjamin Kahn**, APEX Environmental
 Further reading: Kahn (2008); Kahn (2009a); Kahn (2009b); Kahn (2009c); Kahn (2010); Wilson et al. (2011); Kahn and Vance-Borland (2013); Kahn (2014)

16 A vast area, global centre of marine biodiversity spanning Indonesia, Malaysia, the Philippines, Papua New Guinea, Timor Leste and the Solomon Islands. See <http://www.coraltriangleinitiative.org/>

Table 6 Comparison of key characteristics of types of Transboundary Conservation Areas

Characteristic	Transboundary Protected Area	Transboundary Conservation Landscape and/or Seascape	Transboundary Migration Conservation Area
Cooperation across international boundary	Yes	Yes	Yes
Contains protected areas	Yes	Yes	Not necessarily
Contains areas that are not protected, but are sustainably managed	No	Yes	Not necessarily
Shared ecosystem(s)	Yes	Yes	Not necessarily
Relative physical proximity between units within a TBCA	Yes	Yes	Not necessarily
Transboundary cooperation in species/habitat management	Yes	Yes	Yes
Protection of migratory species is the key reason for cooperation	Not necessarily	Not necessarily	Yes
Transboundary cooperation in the day-to-day management, strengthening of local community relations, visitor management, security considerations	Yes	Yes	Not necessarily



Caribbean flamingo (*Phoenicopterus ruber*) migrates short distances to ensure to get enough food. ©Charles Besançon



Annual migration of zebra (*Equus quagga*) in the eastern African region. ©IUCN/ Alicia Wirz



Pamir argali sheep (*Ovis ammon polii*) habitats cross boundaries of Afghanistan, China, Kyrgyzstan, Pakistan and Tajikistan. ©Askar Devletbakov

Special designation: A Park for Peace

A Park for Peace is a special designation that may be applied to any of the three types of Transboundary Conservation Areas, and is dedicated to the promotion, celebration and/or commemoration of peace and cooperation.

The new definition of a Park for Peace is distinguished from the previous definition in that this concept may now be applied to any of the three types of TBCAs if they are dedicated to the promotion, celebration, and/or commemoration of peace and cooperation. In contrast, the previous definition in the 2001 Guidelines applied only to TBPAs.

The new definition recognizes that Parks for Peace can serve several purposes. They may celebrate the endurance of peace and the commemoration of peace in a region: for instance, Waterton-Glacier International Peace Park is a good example of a Park for Peace established to celebrate long-standing peaceful relations between Canada and the USA. They may also help to reinforce peace and cooperation: the Cordillera del Condor shows how transboundary conservation efforts can help foster peace and improve relationships between partners through working together. Finally, a Park for Peace could be used to promote peace at some point in future: for example the on-going but as-yet unrealized project to create an EcoPeace Park along the Demilitarized Zone (DMZ) on the Korean peninsula.

IUCN has used the term 'Park for Peace' ever since 1997, rather than 'Peace Park'. While IUCN supports all efforts to promote, celebrate or commemorate peace through conservation measures, the term 'Peace Park' has often been used for situations that are not related to transboundary conservation. For example, some Peace Parks commemorate battlefields, or are urban parks; others are protected areas within a country and have no transboundary context.



Apollo butterfly (*Parnassius apollo frankenbergeri*) in Pieriny Mountains shared by Poland and Slovakia. Joint conservation efforts, including captive breeding of female butterflies from Poland and males from Slovakia, have helped the population to recover successfully. ©Marek Majerczak



Waterton-Glacier International Peace Park in Canada and USA is the first Park for Peace in the world, established in 1932. ©John Lambing

3.3. International and regional approaches to transboundary conservation practice

There are important related designations for transboundary conservation at both the international and regional levels. They do not form part of the WCPA's typology, but can be used alongside it. They are described here to show the various options that can be used today in transboundary conservation.

International designations

TBCAs are recognized through several global intergovernmental agreements/programmes, including the Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1972 (World Heritage

Convention), the UNESCO Man and the Biosphere Programme, and the Convention on Wetlands of International Importance, Especially as Waterfowl Habitat, Ramsar, 1971 (Ramsar Convention). Each of them recognizes transboundary conservation, but in a slightly different way.

As will be seen in further sections, there has been a surge in the creation of such international designations at the transboundary scale during the current century. It is also apparent that many such areas are to be found in Europe, because many internationally based designations occur within this region and because there are strong frameworks and structures to encourage international cooperation in Europe (see also 'Regional approaches' section).

World Heritage Convention

UNESCO World Heritage Sites are designated under the provisions of the World Heritage Convention. They may be

Table 7 Transboundary World Heritage Sites (natural sites and cultural landscapes)

No.	Transboundary World Heritage Site	Country	Year of inscription
1	Bialowieza Forest	Belarus, Poland	1979, 1992 ¹ , 2014 ¹
2	Caves of Aggtelek Karst and Slovak Karst	Hungary, Slovakia	1995, 2000 ¹
3	Curonian Spit ²	Lithuania, Russian Federation	2000
4	Fertő / Neusiedlersee Cultural Landscape ²	Austria, Hungary	2001
5	High Coast / Kvarken Archipelago	Sweden, Finland	2000, 2006 ¹
6	Kluane / Wrangell-St Elias / Glacier Bay / Tatshenshini-Alsek	Canada, USA	1979, 1992 ¹ , 1994 ¹
7	Maloti-Drakensberg Park ³	Lesotho, South Africa	2000, 2013 ¹
8	Monte San Giorgio	Italy, Switzerland	2003, 2010 ¹
9	Mosi-oa-Tunya / Victoria Falls	Zambia, Zimbabwe	1989
10	Mount Nimba Strict Nature Reserve	Côte d'Ivoire, Guinea	1981, 1982 ¹
11	Primeval Beech Forests of the Carpathians and the Ancient Beech Forests of Germany	Germany, Slovakia, Ukraine	2007, 2011 ¹
12	Pyrénées-Mont Perdu ^{2 3}	France, Spain	1997, 1999 ¹
13	Sangha Trinational	Cameroon, Central African Republic, Republic of Congo	2012
14	Talamanca Range-La Amistad Reserves / La Amistad National Park	Costa Rica, Panama	1983
15	Uvs Nuur Basin	Mongolia, Russian Federation	2003
16	Wadden Sea	Denmark, Germany, The Netherlands	2009, 2014 ¹
17	Waterton Glacier International Peace Park	Canada, USA	1995

Source: UNESCO (2014a)

¹Extension ²Cultural landscape ³Mixed site

designated for reasons of cultural and/or natural heritage, and must be of Outstanding Universal Value¹⁷. The total number of properties inscribed on the World Heritage List in July 2014 was 1,007, of which 197 were natural, and 31 mixed sites (mixed site combines natural and cultural values); the rest are cultural sites (UNESCO, 2014a). Transboundary World Heritage Sites of interest to IUCN normally fall into categories of natural and mixed sites; some cultural landscapes are also of interest to IUCN. Currently, there are 17 transboundary sites of this kind on the World Heritage List (Table 7), 3 of them are cultural landscapes, and 2 are mixed sites.

In recent years, both IUCN and UNESCO have been working to strengthen the understanding of transboundary World Heritage Sites, especially by distinguishing a sub-category of serial transnational sites (e.g. see IUCN, 2009; UNESCO, ICCROM, ICOMOS, IUCN, 2011; UNESCO, 2013). So transboundary World Heritage Sites are considered to be continuous protected areas that extend across international boundaries (IUCN, 2009; UNESCO, ICCROM, ICOMOS, IUCN, 2011); whilst serial transnational World Heritage Sites refer to the World Heritage properties that contain a number of component parts located in two or more countries, and that as a whole contain Outstanding Universal Value (UNESCO, 2013). Despite this differentiation between transboundary and serial transnational properties, some sites are given as examples under both criteria, e.g. Uvs Nuur Basin, Caves of Aggtelek Karst and Slovak Karst, and High Coast / Kvarken Archipelago (UNESCO, ICCROM, ICOMOS, IUCN, 2011; UNESCO, 2014a).

All the following may be considered as TBCAs recommended in this volume:

- a. Transboundary World Heritage Sites (as per UNESCO, 2013);
- b. Serial transnational World Heritage Sites (as per UNESCO, 2013);
- c. Single World Heritage Sites located in two or more countries and which have on-going and very close programmes of cooperation.

Transboundary World Heritage Sites offer examples across the range of the TBCA typology. Thus:

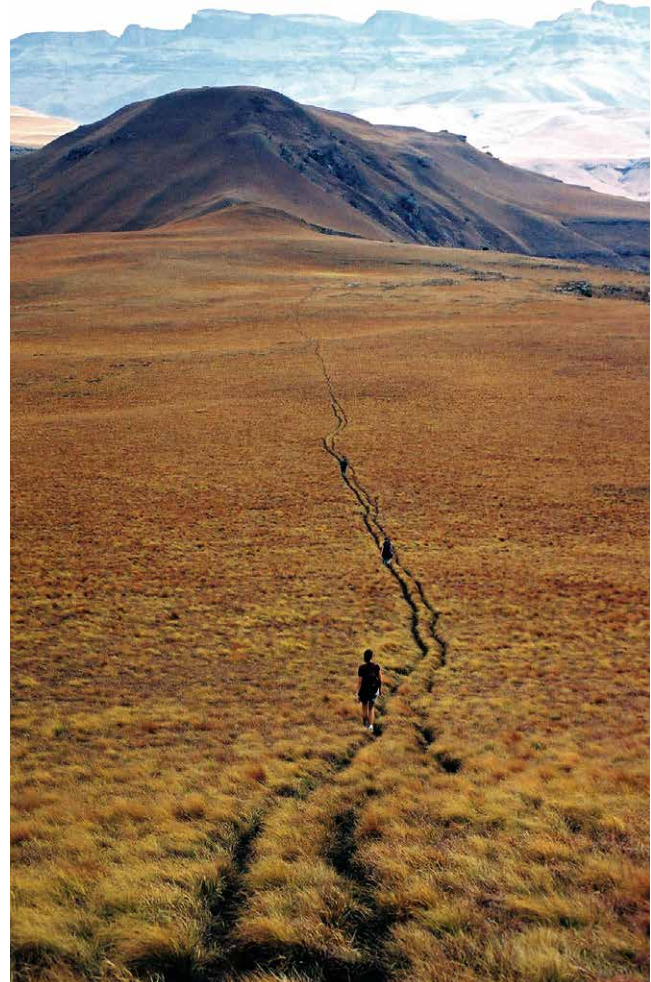
- The Wadden Sea (Denmark/Germany/The Netherlands) is a Transboundary Conservation Seascape;
- The Maloti-Drakensberg (Lesotho/South Africa) is a Transboundary Conservation Landscape (see Box 15);
- Uvs Nuur (Mongolia/Russian Federation) is a TBMCA;
- Kluane / Wrangell-St. Elias and Glacier Bay / Tatshenshini / Alsek (Canada/USA) are two large TBPAs;
- The Waterton-Glacier International Peace Park (Canada/USA) is a specially designated Park for Peace.

UNESCO Man and the Biosphere Programme

The UNESCO Man and the Biosphere Programme promotes interdisciplinary approaches to biodiversity conservation and the sustainable use of natural resources, and maintains the World Network of Biosphere Reserves. The functions of internationally recognized Biosphere Reserves, which encompass protected areas and lands and waters in multiple countries, include

¹⁷ 'Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity' (UNESCO, 2013).

conservation, sustainable development and logistical support (e.g. research, monitoring, training and education). In 1995, the Seville Strategy recommended the establishment and functioning of transboundary Biosphere Reserves 'as a means to conservation of organisms, ecosystems and genetic resources crossing national boundaries' (UNESCO, 1996). Five years later, recommendations for the establishment and functioning of transboundary Biosphere Reserves were adopted



Maloti-Drakensberg Park World Heritage Site shared by Lesotho and South Africa. While the uKhahlamba Drakensberg Park in South Africa was designated as a World Heritage Site in 2000, the property was extended in 2013 to include the Sehlabathebe National Park to become a transboundary World Heritage Site. ©Maja Vasilijević

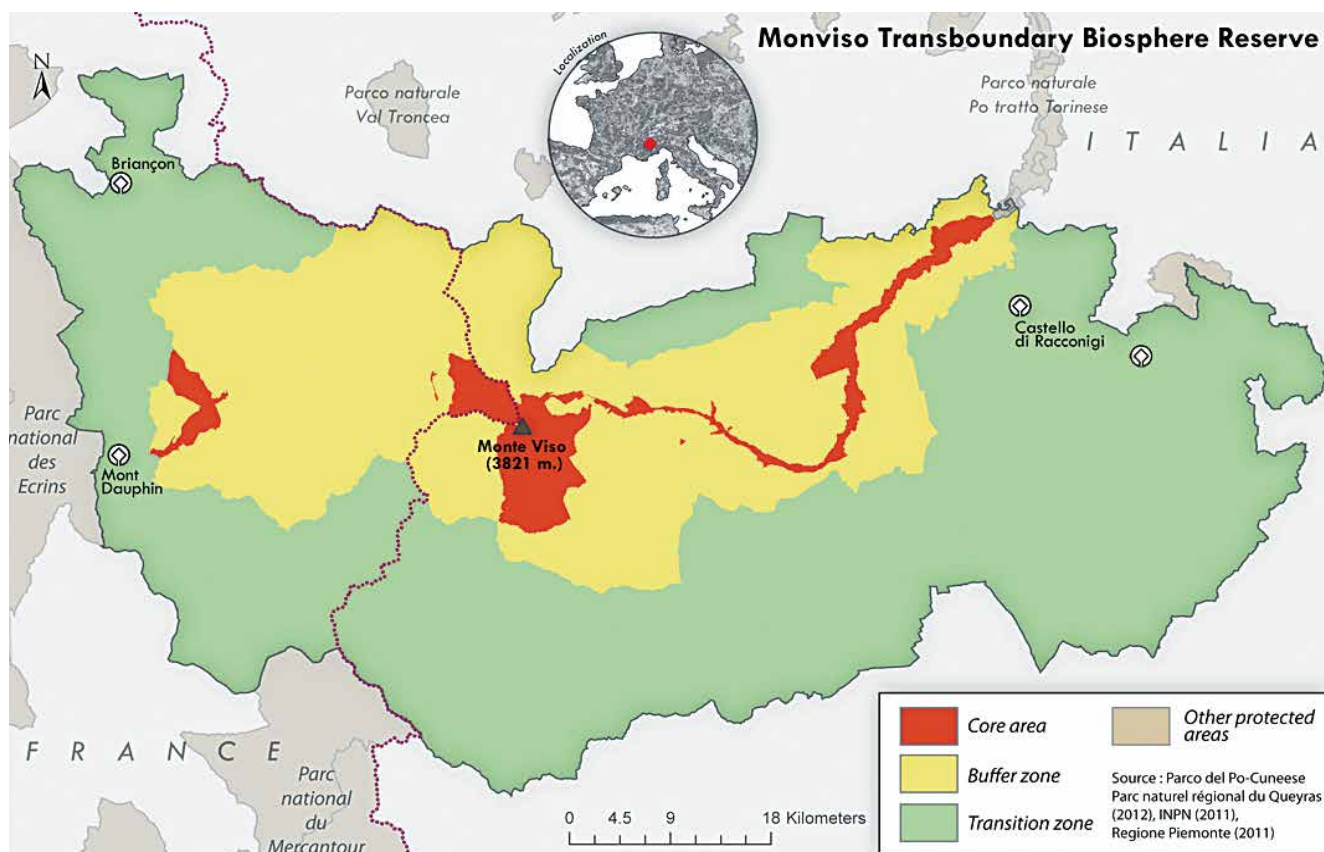


In 2012, the Ministers of Environment from Albania and The former Yugoslav Republic of Macedonia signed a joint Declaration of Commitment for the establishment of a transboundary Biosphere Reserve Ohrid-Prespa. These joint efforts resulted in the UNESCO designation in 2014. ©Frankfurt Zoological Society

Table 8 Transboundary Biosphere Reserves

No.	Biosphere Reserve	Country	Year of inscription
1	Danube Delta	Romania, Ukraine	1998
2	Delta of the Senegal River	Mauritania, Senegal	2005
3	East Carpathians	Poland, Slovakia, Ukraine	1998
4	Geres / Xures	Portugal, Spain	2009
5	Intercontinental Biosphere Reserve of the Mediterranean	Morocco, Spain	2006
6	Krkonoše / Karkonosze	Czech Republic, Poland	1992
7	Mont Viso / Area della Biosfera del Monviso	France, Italy	2014
8	Mura Drava Danube	Croatia, Hungary	2012
9	Ohrid / Prespa	Albania, The former Yugoslav Republic of Macedonia	2014
10	Tatra	Poland, Slovakia	1992
11	Trifinio Fraternidad	El Salvador, Guatemala, Honduras	2011
12	Vosges du Nord / Pfälzerwald	France, Germany	1998
13	'W' Region	Benin, Burkina Faso, Niger	2002
14	West Polesie	Belarus, Poland, Ukraine	2012

Source: UNESCO (2014b)



A map of Mont Viso / Area della Biosfera del Monviso transboundary Biosphere Reserve (France, Italy) shows component parts of the Biosphere Reserve: core area, buffer area and transition zone. ©Parco del Po-Cuneese, Parc Naturel Régional du Queyras, INPN, Regione Piemonte

in Pamplona, Spain (UNESCO, 2000). As of July 2014, there are 631 Biosphere Reserves of which 14 are recognized by UNESCO as transboundary Biosphere Reserves (Table 8) (UNESCO, 2014b).

Most Biosphere Reserves correspond to TBCL/Ss. Examples of transboundary Biosphere Reserves include:

the 'W' Region Biosphere Reserve of Benin, Burkina Faso and Niger, which consists of national parks, Ramsar Sites and multiple use conservation areas; the Danube Delta Biosphere Reserve of Romania and Ukraine; the Delta of the Senegal River of Mauritania and Senegal (see Case study 1); and the Trifinio Biosphere Reserve of El Salvador, Guatemala and Honduras.

Case study 1

The Transboundary Biosphere Reserve Delta of the Senegal River

The Delta of the Senegal River transboundary Biosphere Reserve consists of a complex mosaic of interrelated ecosystems represented by wetlands, grasslands, tropical savannahs and mangrove formations, as well as the seashore and a large part of the continental plateau in the marine part of the reserve. The area is at the crossroads of four bio-geographical domains, and a site visited by many migratory birds, including Palearctic migratory birds. At Djoudj and Langue de Barbarie, over 350 species have been identified and the avian population is estimated at over 3 million individuals between November and May, including one of the few nesting colonies of lesser flamingo (*Phoenicopterus minor*) in West Africa. The mangroves are at their northernmost point in West Africa. The diversity of ecosystems in such an arid environment creates a suitable habitat for many animals, such as crocodiles (*Crocodylinae*), pythons (*Pythonidae*), marine turtles (*Cheloniidae*), manatees (*Trichechidae*) and gazelles (*Bovidae*).

Conservation measures were taken in 1971 when the National Bird Sanctuary in Senegal was established. The Diawling National Park in Mauritania was created in 1990. Located on either side of the Senegal River, they constitute a single transboundary ecological unit. The management of both parks quickly expressed their wish to collaborate, leading to a twinning arrangement in 2000. The joint conservation efforts encouraged the two states to nominate the Delta of the Senegal River for UNESCO as a transboundary Biosphere Reserve, and it was designated as such in 2005. Covering an area of 6,417.68 km², this is the second transboundary Biosphere Reserve in Africa, and it includes terrestrial and marine areas. The UNESCO designation has provided benefits to the numerous protected areas it encompasses, including the two pioneer parks of the Delta of the Senegal River Biosphere Reserve. Djoudj National Bird Sanctuary has also been a UNESCO World Heritage Site since 1981, while Diawling National Park became a Ramsar Site in 1994. These two parks, the Langue de Barbarie National Park and three reserves constitute the core areas of the Biosphere Reserve; while thirteen protected areas, including an MPA, six classified forests, three sites on islands, one forest-pastoral reserve and one Community Natural Reserve are located in its buffer zone. The establishment of the Tocc Tocc Community Natural Reserve and a Ramsar Site south of the Guiers Lake has been facilitated by the existence of the transboundary Biosphere Reserve. Thus the network of conservation areas has now expanded beyond the limits of the Biosphere Reserve. This came about through a participatory and scientific approach leading to a land use map and a zoning plan for the Biosphere Reserve, developed in collaboration with the Centre of Ecological Monitoring in Dakar.

The Delta of the Senegal River includes several small towns such as the cultural World Heritage Site of Saint Louis, and is an area inhabited by communities tightly connected to the natural resources, linked to their lifestyle, culture and customary rights. The communities are under pressure from land claims driven by large scale agricultural initiatives, and the adverse effects of pollution by fertilisers and pesticides.



Local communities are part of the governance structures in the Delta of the Senegal River Biosphere Reserve. ©IUCN/Lucas Chambers

Despite many conservation successes, international recognition alone has not been sufficient to ensure the integrity and sustainable management of this area. After a decade of bringing together experts and building the capacity for integrated management of the River Senegal delta, this transboundary Biosphere Reserve still needs stronger conservation action on the ground. Local evidence, and experience from elsewhere, indicates that a system of shared governance and adaptive management will improve the prospects for sustainable management. Progress has already been made towards building a regional system of shared governance. The many actors involved have identified what needs to be done to enable all sectors and stakeholders to cooperate in resource management in the delta area. Such a governance system can help strengthen the capacity of local actors in negotiations and decision-making relating to the protected areas, and enable better management of marine and coastal ecosystems in the Senegal River delta.

The Delta of the Senegal River has always been an ecological reality; now it is becoming a socio-economic and institutional reality as well. However, it is early days and this young institution still needs support, especially in managing fragile natural resources, ensuring sustainable use systems are in place and dealing with the sometimes volatile relationships between Mauritania and Senegal.

Prepared by: **Taïbou Ba**, Centre de Suivi Ecologique,
Jean-Marc Garreau and **Ely ould Mohamed el Hadj**, IUCN
Web: <http://www.unesco.org/mabdb/br/brdir/directory/biores.asp?mode=all&code=MRT-SEN+01>

Ramsar Convention

Through the Ramsar Convention, contracting Parties commit to the conservation and wise use of their wetland sites. Of the 2,187 designated Ramsar Sites in 2014, 16 are recognized as transboundary (Table 9) (Ramsar Secretariat, 2013). A transboundary Ramsar Site describes a situation where an ecologically coherent wetland system extends across national borders and the Ramsar Site authorities on both, or all, sides of the border(s) have formally agreed to collaborate in its management, and have notified the Ramsar Secretariat of that intent¹⁸.

The three most recent transboundary Ramsar Sites have all been formed between Bulgaria and Romania: the Suhaia-Belene Islands Complex, Bistret-Ibisha Island, and Lake Calarasi-Srebarna. Each represents a TBCL in the WCPA typology. Many other national Ramsar Sites form parts of other internationally-recognized transboundary conservation initiatives, e.g. as a World Heritage Site or a Biosphere Reserve, or as part of a TBCA outside these international recognitions.

ecological region that straddles the boundaries of two or more countries, encompassing one or more protected areas as well as multiple resource use areas' (Southern Africa Development Community, 1999). This closely parallels the definition for TBCL/S in this volume. Regional transboundary efforts have been largely led by SADC and the Peace Parks Foundation in southern Africa since 1999, followed a year later with the formal recognition of the Kgalagadi Transfrontier Park between Botswana and South Africa. Today there are ten Transfrontier Conservation Areas with signed treaties or Memoranda of Understanding in the region and a dozen more in the planning stages¹⁹.

EUROPARC Federation, one of the leading organizations promoting transboundary conservation in Europe, put forward the following definition of TBPAs: 'legally designated protected areas which are directly adjacent to other protected areas across state borders' (EUROPARC Federation, 2014a). Although the EUROPARC's definition does not include the notion of transboundary cooperation, the guiding criteria for certification

Table 9 Transboundary Ramsar Sites

No.	Ramsar Site	Country	Common name (if any)	Year of inscription
1	Baradla Cave System and related wetlands - Domica	Hungary, Slovakia		2001
2	Bayerische Wildalm and Wildalmfilz - Bayerische Wildalm	Austria, Germany	Austrian - Bavarian Wildalm	2008
3	Belene Islands Complex - Suhaia	Bulgaria, Romania	Suhaia - Belene Islands Complex	2013
4	Donau-March-Thaya-Auen - Untere Lobau - Mokradý dolního Podyjí - Moravské luhy	Austria, Czech Republic, Slovakia	Floodplains of the Morava - Dyje - Danube Confluence	2004
5	Felső-Tisza - Tisa River	Hungary, Slovakia	Upper Tisza Valley	2003
6	Ibisha Island - Bistret	Bulgaria, Romania	Bistret - Ibisha Island	2013
7	Ipoly Valley - Poiplie	Hungary, Slovakia		2007
8	Kotra - Cepkeliai	Belarus, Lithuania		2009, 2010
9	Krkonoská rašelinište - Subalpine peatbogs in Karkonosze Mountains	Czech Republic, Poland	Krkonoše/Karkonosze subalpine peatbogs	2009
10	Neusiedler See-Seewinkel - Lake Fertő - Nyírkai-Hany	Austria, Hungary	Neusiedler See-Seewinkel - Fertő-Hanság (Fertő-Hanság határon átnyúló ramsari területe; Grenzüberschreitendes Ramsar-Gebiet Neusiedlersee-Seewinkel-Waasen)	2009
11	Nigula Nature Reserve - Sookuninga Nature Reserve - Northern bogs (Ziemelu Purvi)	Estonia, Latvia	North Livonian	2006, 2007
12	Niumi National Park - Delta du Saloum	Gambia, Senegal	Niumi - Saloum	2008
13	Prostyr - Prypiat River Floodplains - Stokhid River Floodplains	Belarus, Ukraine	Stokhid - Prypiat - Prostyr	2008
14	Rhin supérieur-Oberrhein - Oberrhein-Rhin supérieur	France, Germany	Rhin supérieur-Oberrhein - Oberrhein-Rhin supérieur	2008
15	Srebarna - Lake Calarasi (Iezerul Calarasi)	Bulgaria, Romania	Lake Calarasi (Iezerul Calarasi) - Srebarna	2013
16	Vallée de la Haute-Sûre - Vallée de la Haute-Sûre	Belgium, Luxembourg	Vallée de la Haute-Sûre	2004

Source: Ramsar Secretariat (2013)

Regional approaches

Transboundary conservation terminology varies, reflecting regional differences. For example, the Southern African Development Community (SADC) defines a Transfrontier Conservation Area as 'the area or component of a large

of EUROPARC Transboundary Areas include cooperation as an important factor (EUROPARC Federation, 2014b).

The European Green Belt (see Case study 6) is a very large-scale transboundary conservation initiative. Stemming from the former east-west divide in Europe, the so called Iron Curtain, it

¹⁸ These agreements relate only to the collaborative arrangements between the countries involved and do not imply a distinct legal status beyond the national legal obligations (Ramsar Convention Secretariat, 2013).

¹⁹ Note however that at the time of compiling these Guidelines, SADC has embarked on a process of preparing their own, regionally focused Guidelines, and in doing so will be introducing derivatives of the definitions prepared by the IUCN WCPA Transboundary Conservation Specialist Group in the compilation of these Guidelines.

Box 4

Regional cooperation in the Barents region increases knowledge on protected areas

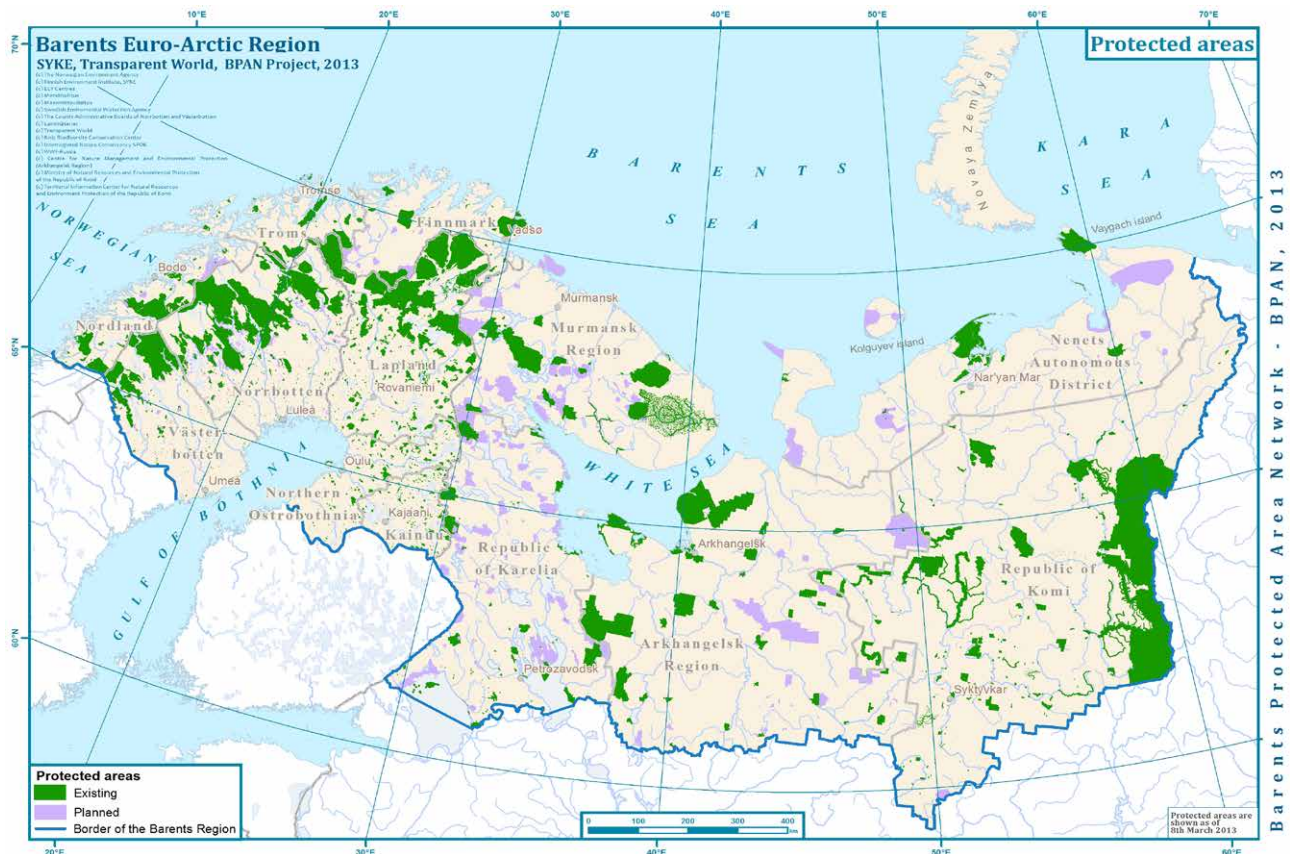
The primary aim of the Barents Protected Areas Network is to promote and support the development of a representative protected area network in the Barents region to conserve the biodiversity of boreal and arctic ecosystems. The project brings together a wide range of nature conservation authorities, research institutes and NGOs from Finland, Norway, Russia and Sweden. Information across the network is exchanged on a voluntary basis.

Taking into account the governance diversity of the region, including both EU and non-EU countries, it was decided that the CBD's Programme of Work on Protected Areas (PoWPA) should be used as a common framework. Between 2011 and 2013 PoWPA goals and targets were analysed in the context of the Barents region, identifying where there had been progress and where more work was needed. This information was generated by groups of local specialists across eight sub-regions, each conducting a critical examination of their own protected area system. Based on these reviews, recommendations were developed for the future of the protected area network.

The exercise increased the participating specialists' knowledge of the CBD and PoWPA. This was especially important from the regional perspective since in all cases the national government manages CBD-related work. The PoWPA provided a common language that enabled the pooling of information across the Barents region.

In the Barents region, good progress has been made in relation to PoWPA goals for transboundary conservation. There are many transboundary conservation initiatives, such as cooperation that now exists between protected areas across the Finnish, Norwegian and Russian borders. External funding is needed to support cooperation as basic funding is often scarce, but an established, long-term record in cooperation should help to generate funding.

Prepared by: **Sanna-Kaisa Juvonen**, Metsähallitus Natural Heritage Services,
Anna Kuhmonen, Finnish Environment Institute
 Web: http://www.bpan.fi/wp-content/uploads/2013/12/BPAN_PoWPA_report.pdf;
http://www.bpan.fi/wp-content/uploads/2013/12/BPAN_PolicyBrief.pdf;
<http://www.bpan.fi>



The Barents Protected Areas Network, a vast network of protected areas that cooperate on various aspects of biodiversity conservation. ©Metsähallitus Natural Heritage Services

brings together 24 countries in a unique cooperative network aimed at creating an 'ecological backbone' across Europe and supporting communities in their effort to cooperate and conserve nature across national boundaries. Transboundary conservation is also embedded in several eco-regional or political agreements, notably the Alpine Convention (see Box 11), the Carpathian Convention, the Barents Protected Areas Network (see Box 4) and the Dinaric Arc Initiative (Box 12).

The Natura 2000 network aims to create a network of protected sites for the long-term conservation of the most valuable species and habitats in Europe. It includes many sites across the EU in which there are transboundary conservation efforts. Even though it does not entail transboundary conservation *per se*, Natura 2000's focus on habitats that often cross international boundaries requires strong international cooperation. The Natura 2000 network consists of Special Protection Areas (created under the Birds Directive) and Special Areas of Conservation (under the Habitats Directive)²⁰. All Natura 2000 sites are based on defined lists of species and habitats requiring protection. With 26,000 designated Natura 2000 sites in all EU member states, the network covers about 18 per cent of Europe's land area (marine sites are less well represented). A number of TBCAs are recognized as Natura 2000 sites.

3.4. A sound database of Transboundary Conservation Areas: opportunities

As shown in Table 1 (see section 2.2.), the latest assessment of transboundary conservation initiatives was performed in 2007 (Lysenko et al., 2007). This dataset could serve as a good starting point from which to develop a comprehensive database of TBCAs that can be managed and updated in the future. This requires a standardised methodology for data collection, including recognized data sources, using agreed definitions. Because of the improvements made in the management of protected areas data by IUCN and UNEP-WCMC through the Protected Planet²¹ initiative, it is now easier to produce a list of protected areas adjacent to international boundaries. Additional criteria, following the new definitions of TBCA types, would need to be applied. In the case of TBMCA, which do not necessarily imply physical proximity, other sources of information would have to be consulted, such as the mechanisms through CMS.

The following attributes should be included as new fields in the database:

- Geographical distribution (including extent and location);
- Historical background (including date of establishment);
- Component units (e.g. protected areas with management categories and governance types);
- Partners involved;
- Models of cooperation and their effectiveness;
- Existence of agreements;
- Overlays with other conservation strategies (e.g. hotspots of Conservation International, ecoregions of the World Wide Fund for Nature (WWF), Important Bird Areas of Birdlife International, UNESCO World Heritage Sites and Biosphere Reserves, Ramsar sites and biological migration pathways);
- Overlays with regions of past or current conflict.

Compiling an easy-to-use and informative database on TBCAs would enhance knowledge about transboundary conservation, including aspects of management and governance, improve networking between interested parties, help connect TBCAs with other forms of large scale conservation, facilitate scientific research and comparative analyses, and assist in tracking global trends in transboundary cooperation for conservation.

²⁰ See http://ec.europa.eu/environment/nature/natura2000/index_en.htm

²¹ See <http://www.protectedplanet.net>

4. The benefits of transboundary conservation

Transboundary conservation has been applied in recent decades because of its potential to deliver multiple goals: better biodiversity conservation outcomes; support for, and improved delivery of, ecosystem services; support for sustainable economic development; and the promotion of international peace and cooperation (Mittermeier et al., 2005; Vasiljević and Pezold, 2011; see Appendix B). In the right circumstances, it has the capacity to improve outcomes in all these respects, though success will depend on an appropriate investment in management.

This Chapter provides evidence and examples of transboundary conservation benefits, and shows how they might be increased. A checklist of potential benefits is provided in Appendix C.

4.1. The ecological benefits of transboundary conservation

The most obvious argument for the establishment of transboundary conservation initiatives is that political boundaries and the processes that put them in place ignore the natural boundaries of, and processes within, ecosystems (WWF and ICIMOD, 2001). As a result, ecosystems are divided by international boundaries. When this happens, different parts of the same ecosystem are usually subject to different management regimes, operating under different governance, policy and legal frameworks and shaped within different socio-economic contexts. In effect, the politics are imposed upon nature. This leads to the fragmented management of ecosystems, which affects their capacity to function and threatens the species within them. The ability of government agencies, NGOs and civil society organizations to achieve biodiversity conservation targets is thus compromised (WWF and ICIMOD, 2001).

The ecological implications of political and institutional boundaries have been well documented. It has certainly helped to give the concept of ‘ecosystem management’²² greater prominence. Although the objectives of transboundary conservation relate to a range of social, economic and political targets, TBCAs are most often underpinned by ecological reasoning (Vasiljević, 2012a; McCallum et al., 2014; see Appendix B). Thus transboundary conservation is



A green turtle (*Chelonia mydas*) surfacing for air in Sabah, Malaysia, is a highly migratory species that lives throughout tropical and subtropical seas. ©Harry Jonas

²² Grumbine (1994) provides an account of the evolution of this concept and traces the history of its application in the USA. He shows that the idea is not new and that the science and philosophy behind it were put forward by conservation pioneers such as Aldo Leopold in the 1940s and, a decade earlier, by the Ecological Society of America's Committee for the Study of Plant and Animal Communities.

often advocated as a way to improve ecological connectivity, thereby facilitating the movement of species, allowing local populations to mix and reducing the risk of local extinctions. The need for this is all the greater because of the accelerating impact of climate change.

Transboundary conservation has the potential to bring a number of specific ecological benefits, for example:

- Ensuring the **long-term persistence of viable populations of species**—e.g. the Waterton-Glacier International Peace Park supports a much larger population of grizzly bears (*Ursus arctos*) than would be possible if the bears were managed as separate populations²³;
- Securing the **survival of migratory species** through cooperation in the management of key wildlife habitats in range states;
- Facilitating the **reintroduction or natural recolonization** of populations of species that currently survive only in isolated patches;
- Building **greater ecological integrity** by increasing the size of the area under conservation management, reducing fragmentation and integrating ecosystem processes and drivers such as fire, natural flow regimes and natural grazing regimes;
- Maintaining or strengthening **ecosystem resilience in the face of climate change**, in the case of relatively large ecosystems that allow longitudinal or altitudinal movement of species (Claudet et al., 2008; Prugh et al., 2008; Thompson et al., 2009; Carroll et al., 2010; Dudley et al., 2010, Ervin et al., 2010).



The hatinh langur (*Trachypitecus hatinhensis*) in the Phong Nha-Ke Bang National Park of Viet Nam has also been recorded in Laotian Hin Nam No National Protected Area. This endangered species is poached for meat, medicine and the wildlife trade. Cooperation between the two parks is seen as a way to improve the species' population status. ©Harald Schütz

These and other conservation benefits are illustrated by Boxes 5, 6 and 7, and Case study 2. Moreover, as section 4.2. will show, well managed and functioning ecosystems have the potential to contribute to the well-being of human communities and reinforce economic resilience (Holling and Meffe, 1996; Walker et al., 2002; Pant et al., 2012), but more research is needed to confirm and elaborate these connections. Such considerations become even more relevant when seen from the perspective of resilience

²³ See <http://www.igbconline.org>



South Africa is a stronghold of white rhinoceros (*Ceratotherium simum*), re-established throughout its historical range to include neighbouring Botswana, Mozambique, Namibia, Swaziland and Zimbabwe. ©Charles Besançon

and adaptation in the face of climate change (Walker and Salt, 2006; Xu et al., 2009; Chettri et al., 2010a; Chettri et al., 2010b).

However, the cooperation that is required to work across boundaries has transaction costs (Leach et al., 1999;



The Buna/Bojana River forms a border between Albania and Montenegro. Together with the transboundary Lake Shkoder/Skadar, the river forms a common ecosystem, an important stop-over on the migration route of many waterbirds. ©Boris Erg

Murawski, 2007). Because these costs can be considerable, it is important that those involved in transboundary conservation seek to achieve the full suite of potential benefits discussed in this Chapter.

Box 5

Bridging the gap between local governments for the transboundary conservation of a critically endangered gibbon

In 2002 a species of ape thought to be extinct was rediscovered on the border between China and Viet Nam. Less than 25 years previously a border war had been fought in this area. Now efforts from both sides of the border are turning the species' fortunes around. The ape is the Cao Vit gibbon (*Nomascus nasutus*) and, with only about 120 individuals, is one of the world's rarest primates. It is confined to about 50 km² of forest on limestone mountains nearly entirely surrounded by intensive lowland agriculture and straddling the international border. Threats were transboundary, often fuelled by local markets, such as for fuelwood, charcoal and timber. An ecological vision for this species required looking at the whole landscape, but this was made difficult by the international border, language differences, poor links between counterpart government agencies and occasional border tensions. An international NGO, Fauna and Flora International, with national staff and close partnerships with local government forestry offices in both countries, was well placed to bridge that gap. The first major transboundary activity was a census of the entire gibbon population. Most of the gibbon groups were in Viet Nam where there was limited forest for future population expansion, whereas China offered more habitat that could be used in future. Habitat restoration was recognized as an immediate priority for Viet Nam, but a long-term priority in China. Adjacent protected areas were soon established, covering the entire gibbon habitat. Enforcement was strengthened through government exchange visits and links between local patrol groups who share a common language. Scientific research and data sharing helped to identify priority areas for habitat restoration and a potential biodiversity corridor in China, which could be linked to



Viet Nam and China cooperate on the protection of a critically endangered Cao Vit gibbon (*Nomascus nasutus*). ©Zhao Chao

additional areas of suitable habitat in Viet Nam. Habitat restoration techniques and experiences are now being shared. In 2011, the local governments signed a general agreement for transboundary conservation.

Prepared by: **Paul Insua-Cao**, The Royal Society for the Protection of Birds,

Nguyen The Cuong, Fauna & Flora International Viet Nam Programme,

Yan Lu, formerly Fauna & Flora International China Programme, **Fan Pengfei**, Dali University, Institute of Eastern-Himalaya Biodiversity Research

Web: <http://www.fauna-flora.org/species/cao-vit-gibbon/>

Box 6

Cooperative management for the persistence of the Cross River gorilla

The Cross River gorilla (*Gorilla gorilla diehli*) is the most threatened of the African apes and is classified by IUCN as critically endangered. The ape is now restricted to the mountainous headwaters of the Cross River straddling the border of Cameroon and Nigeria. Due to past hunting pressure, fewer than 300 survive in approximately nine sites spread across an area of around 12,000 km². The largest and most important of these sites is the contiguous Cross River National Park in Nigeria and Takamanda National Park in Cameroon. With support from the Great Ape Conservation Fund of the US Fish and Wildlife Service and the Arcus Foundation (Great Apes Program), the Wildlife Conservation Society is leading transboundary conservation efforts to save this endangered species. To date these have focused on supporting joint patrols in the remote and inaccessible transboundary area, exchange visits, an annual transboundary workshop, and sharing information to help capture poachers who slip across the border in an attempt to evade arrest. A framework cooperation agreement has been drafted by the governments of Cameroon and Nigeria for the joint implementation of transboundary conservation along the entire border area. Given that the two countries fought a border war in the same area over the control



A joint patrol of rangers in a TBPA Cross River National Park (Nigeria) and Takamanda National Park (Cameroon). ©Wildlife Conservation Society Takamanda-Mone Landscape Project

of the oil-rich Bakassi peninsula as recently as the 1990s, this level of cooperation is remarkable. A Revised Regional Action Plan for the Conservation of the Cross River Gorilla 2014-2019 was recently produced by the IUCN Species Survival Commission's Primate Specialist Group and the Wildlife Conservation Society, with transboundary conservation forming a key feature of the plan.

Prepared by: **Andrew Dunn**, Wildlife Conservation Society
Web: <http://www.primata-sg.org/CRG2014.pdf>

Box 7

The Mayombe forest ecosystems transfrontier conservation initiative

The Mayombe forest, shared between Angola, the Democratic Republic of Congo, the Republic of Congo and Gabon, forms the south-western margin of the Congo Basin's tropical rainforest and is host to outstanding species, like the central chimpanzees (*Pan troglodytes troglodytes*), western lowland gorillas (*Gorilla gorilla gorilla*) and forest elephants (*Loxodonta cyclotis*).

The Mayombe ecosystems were subjected to decades of biodiversity loss through intensive unsustainable utilization and degradation, and are still insufficiently protected. However, the growing recognition of their importance is evident through the designation of the Maiombe National Park in Angola (2011), while new protected areas are under consideration in corridors throughout the Mayombe area.

Conservation efforts were initiated in the Maiombe forest (Cabinda Province of Angola) in 2000, with local stakeholders' engagement. Because of the striking difference in the level of degradation between the neighbouring countries, it was easy to see that cooperation between them was essential. The Mayombe Transfrontier Conservation initiative was conceptualized in Angola, and adopted by the Democratic Republic of Congo and the Republic of Congo. The three countries signed the Cabinda

Declaration and the Memorandum of Understanding in July 2009. Gabon joined in 2013.

A study was undertaken to identify and map potential new conservation areas and ecological corridors, focused on the needs of umbrella and flagship species. This information was needed to allow the Transfrontier Conservation Area to be managed through the Biosphere Reserve approach and to ensure the integration of existing and new protected areas, buffer zones of forest concessions and agricultural land, and multiple use areas. The study also looked at existing legislation and policy frameworks and current land-uses. As a result, a strategic plan was adopted by the four governments in 2013. It identifies these areas for urgent action: harmonizing legal and policy frameworks, institutional and technical capacity building, integrated spatial and management planning, sustainable economic development, strengthening law enforcement, sensitization and education, and creating financial sustainability for the initiative's implementation.

Prepared by: **Tamar Ron**, Biodiversity conservation consultant
Further reading: Ron (2011a); Ron (2011b)
Web: <http://www.mayombe-tpa.org/>

Case study 2

Protecting Andean flamingos in South America

Eduardo Avaroa National Refuge, Bolivia and Los Flamencos National Reserve, Chile, are adjacent protected areas located in the High Andes at an average altitude of 3,000 metres. They contain saline wetlands with the most important nesting sites for three species of flamingo: the Andean flamingo (*Phoenicoparrus andinus*), James's flamingo (*Phoenicoparrus jamesi*) and the Chilean flamingo (*Phoenicopterus chilensis*). Flamingos migrate seasonally between both protected areas after breeding. Therefore, the protection of these nesting colonies is crucial.

The survival of these species was seriously threatened by the collection of eggs during the nesting season, poaching and non-metal mining activities (sodium borate or borax) in the vicinity of the wetlands. In 1996, the Group for the Conservation of High Andean Flamingos was created to aid local authorities in the protection of the flamingos' important habitats. Today, the Group carries out transboundary activities, such as capacity building for local people and guards on both sides of the border. The Group consists of representatives of government agencies, NGOs and local communities, who elect their representatives according to their own traditions.

At the outset, the Bolivian and Chilean organizations were not at the same level in terms of species management techniques and capacity to coordinate political and diplomatic binational actions. Standardized research and monitoring techniques have given the Group access to reliable data that can be used to measure progress in the conservation of all three flamingo species, as well as their habitats.

During the last two decades, transboundary cooperation has had its ups and downs. At first, the main limiting factor was the distrust between the countries which affected cooperative activities in the border region. Then progress was held back by weak professional capacity to develop parallel activities. The hardest obstacle to overcome, however, was the lack of funding. Current funding is provided by the local governments of Chile and Bolivia, borax mining companies and through the CMS. The mining companies have financed a number of awareness building activities and have also modified some of their mining practices that had impacted negatively on the colonies in the past.

The integrated work carried out between the Los Flamencos National Reserve and the Eduardo Avaroa National Wildlife Reserve has allowed nesting colonies to be better protected from egg collection, poaching and mining. Educational campaigns have also been effective in building awareness among the local Atacameños communities (on the Chilean side) and Aymara communities (on the Bolivian side), who now help protect the flamingos during the nesting season, provide support during the yearly census work and assisting in the ringing of juvenile flamingos which is used to monitor the seasonal migration between the two countries.

The Group for the Conservation of High Andean Flamingos has also managed to raise funds from mining companies in order to place satellite transmitters on the Andean flamingo so as to monitor its longevity and migratory movements.

Both the ringing and the satellite transmitter activities have demonstrated the vulnerability of this species to threats along its migration route. These include natural predation and poaching outside the reproductive colonies, but the most important threat is undoubtedly the modification of the wetlands in which the Andean flamingos find their basic food sources (microorganisms). This arises from the unreliability of the rains, causing fluctuations in the saline aquatic habitats in which these microorganisms thrive. Another major threat is the extraction of water for the copper and lithium industries: this has a huge impact on the wetlands that are fed during the brief two months summer rainy season.



The local community participates in measuring juvenile James's flamingo (*Phoenicoparrus jamesi*). ©Hernán Torres

The extraction of eggs, hunting and disturbances caused by the local communities, which were the main reason for the decline of the flamingos, are no longer practiced. Indeed, the local communities are proud of the biological richness of the High Andean wetlands located within their ancestral territories and help to protect them with great passion.

There is, however, still a lot to do in both Bolivia and Chile in these areas:

- Protecting the reproductive colonies;
- Deepening an understanding of the fluctuations in the reproductive success of the flamingos;
- Understanding better the reasons for the changes in the size of the wetlands area;
- Determining why changes occur in the chemical composition of the water, and how this affects the reproduction of microorganisms;
- Understanding how far recent environmental changes are caused by climate change alone or whether this is occurring alongside a mix of natural factors.

Prepared by: **Hernán Torres**, Group for the Conservation of High Andean Flamingos

Web: <http://www.conaf.cl/parques/reserva-nacional-los-flamencos/>; http://www.sernap.gob.bo/index.php?option=com_content&view=article&id=93&Itemid=274;
<http://www.redflamencos-gcfa.org>

4.2. The socio-economic benefits of transboundary conservation

The conservation of nature always faces challenges in demonstrating its relevance to meeting human needs and aspirations. Nature in general and natural areas in particular, are under continual pressure either to deliver tangible benefits for people or to yield to other priorities. While many people passionately believe that nature has intrinsic value, and that it deserves to be protected in its own right, the evidence from most countries is that this is not usually enough to influence political action, except at the margin. So conservation will only succeed in many places if it can demonstrate that it delivers significant and meaningful socio-economic benefits, and that these will accrue to society through meeting conservation objectives.

Hence the importance of the work that has been done in recent years in developing our understanding of how nature produces and delivers a broad range of ecosystem goods and services that contribute to societal well-being and economic resilience—notably through the work of the Millennium Ecosystem Assessment (2005). As a result, transboundary conservation practitioners have been presented with a concept, and the related tools, which can be used to help them to understand better the full value of the natural resources in their care; and to show the relevance of this to people living within and around the areas concerned²⁴. While these Guidelines promote the concept of ecosystem goods and services, and their relevance to transboundary conservation initiatives, the authors recognize that the concept has sometimes been contested (see Schröter et al., 2014). However, it seems quite likely that the benefits that transboundary cooperation for conservation brings to people—through such goods and services—will be recognized as being just as important as the direct biodiversity benefits. And, in turn, the prospects for nature conservation will improve if biodiversity becomes accepted as a measure of the ecological integrity of an area and of its ability to guarantee the continued delivery of ecosystem-derived goods and services.

Because national boundaries often inhibit the free movement of people and goods, they have big implications for people who need to cross them, and especially for communities

that live near them. Communities, and even families, of common cultural background and heritage find themselves divided. For the people who have historically travelled across boundaries, for example nomadic communities following their herds, such barriers impact profoundly on their lives. Boundaries also disrupt trade routes, with customs posts that enforce trade rules like tariffs. They can also be barriers to tourism.



Common logo of Lake Neusiedl / Seewinkel Fertő-Hanság National Park, Austria and Hungary. ©Lake Neusiedl / Seewinkel Fertő-Hanság Parks Administration

On their own, TBCAs cannot overcome all these negative impacts of international boundaries, but they can help to mitigate them. The rest of this section and Box 8 give examples of the socio-economic benefits that can flow from TBCAs.

Supporting trade across borders: The Maloti-Drakensberg Transfrontier Project has catalysed projects that make it easier for people to move from Lesotho into South Africa through the Sani Pass (see Box 15). This is an important commercial route for people trading goods and services between the countries (Maloti Drakensberg Transfrontier Project, 2007).



TBCAs have the potential to bring socio-economic benefits in the Hindu Kush Himalayan region. ©Jitendra Bajracharya

Dealing with wildlife/people conflicts associated with migratory species: The KAZA Transfrontier Conservation Area (see Box 8), shared by Angola, Botswana, Namibia, Zambia and Zimbabwe, includes a migration corridor that was developed for the largest population of elephants (*Loxodonta africana*) in Africa, which need access to water, food and refuge. Some 2,000 people live near the river and it has been a challenge to balance their needs with those of the migrating elephants. The Peace Parks Foundation and Conservation International have promoted the growing and marketing of chillies, since they are an effective deterrent to elephants (Murphy, 2008).

Developing a transboundary cooperative framework: Mount Kangchenjunga, a contiguous ecosystem shared by Bhutan, India and Nepal in the Himalayas, is a potential transboundary landscape where biodiversity-based enterprises, such as mountain niche products (high value medicinal plants) and mountain tourism, are seen as sources of additional income. To capitalize on these opportunities, ICIMOD is developing a cooperative regional framework, strategy and plan²⁵ (Sharma, 1997; SASEC, 2004; Chettri et al., 2008a; Chettri et al., 2011).

Encouraging and managing transboundary tourism: Transboundary tourism²⁶—that is tourists travelling between different parts of a TBCA to have different experiences, to view different natural features, and spend money in different countries and regions of the area—can bring benefits to all countries concerned. Nature-based tourism is a large and expanding sector of the tourism industry (United Nations Department of Economic and Social Affairs, 2014). TBCAs are well positioned to capitalize on the economic potential

²⁴ For approaches to identifying and valuing ecosystem goods and services, see Tallis et al. (2008); Kettunen and ten Brink (2013); TEEB (2013). To read about mapping, see Tallis and Polasky (2009); Kareiva et al. (2011); Maes et al. (2012). However, the identification, valuation and mapping of ecosystem services require high levels of technical expertise that would not be readily available in all TBCAs.

²⁵ See <http://www.icimod.org/hkhconservationportal/Landscape.aspx?ID=2>

²⁶ For more information on tourism in protected areas and ecotourism, see Eagles et al. (2002); Bushell and Eagles (2007); Spenceley (2008); Ballantyne and Packer (2013).



Migrations of elephants (*Loxodonta africana*) often cause human-wildlife conflict. ©Peace Parks Foundation

that tourism offers. Examples of successful transboundary tourism can be found in the Maritime Alps-Mercantour TBPA between Italy and France (see Case study 8), and the Great Limpopo Transfrontier Park between Mozambique, South Africa and Zimbabwe.

The economic benefits of tourism are obvious, but too much dependence on it as the key source of income can be unsustainable. In general, it is important that a share of profits remain in local communities and protected areas, rather than being dispersed elsewhere. In a transboundary context there are additional complications, for example if infrastructure is more developed in one country than another, it may result in an uneven distribution of profits. Thus, a cooperative approach is needed to tourism planning and management in TBCAs, otherwise the results can be environmental degradation and conflict between communities and interests.

Drawing on experience from around the world, the following appear to be the more important management-related activities where partners from neighbouring countries should consider working together:

- Cooperation in the tourism planning process;
- Joint marketing and presentation of the area, including transboundary routes and circuits;
- Development of a common tourist map for a TBCA, including attractions and supporting services;
- Development of a common identity (e.g. a single logo) for the purpose of tourism marketing;
- Provision of simplified border crossing procedures and visa requirements;
- One-fee-only-systems for the TBCA, so that tourists do not pay multiple fees for conservation areas in different countries;
- Development of a common code of conduct for visitors covering appropriate behaviour, safety, environmental considerations and cultural sensitivity;



The Kailash Sacred Landscape crosses China, India and Nepal. The ecosystem goods and services coming from this 31,000 km² area sustain the livelihoods of about one million people living in the Kailash Landscape. ©Gopal S. Rawat

- Simplified licensing, work permits, and fees for guides and tour operators crossing borders with tourists on transboundary circuits;
- Engagement with, and support to, local entrepreneurs in organizing tours to areas in all countries participating in the TBCA;
- Common standards for training of guides and other service providers in the area;
- Favourable conditions for visitor movement in all the involved countries in a TBCA, taking into account security requirements and emergency response measures;
- Involvement of local people in tourism (e.g. provision of accommodation, organization of tours, promotion of local culture and heritage, and selling local goods to visitors).

The participation of a wide range of stakeholders and institutions, including local people, in transboundary tourism initiatives is crucial to maximize the socio-economic benefits. Conservation authorities need to collaborate with the private sector to ensure that transboundary tourism initiatives are responsive to market need. They should encourage the private sector to involve local people in the supply of goods and services, and to operate in ecologically sustainable ways.



Tourists diving at Cocos Island National Park, Costa Rica, a part of a wider migration route of marine mammals and the Conservation Marine Corridor established by the governments of Colombia, Costa Rica, Ecuador and Panama. The marine corridor also includes the Malpelo Island Sanctuary in Colombia and three National Parks: Galapagos Islands in Ecuador, Gorgona Island in Panama and Coiba Island in Colombia. ©Christine Guinness

Box 8

Kavango Zambezi (KAZA): planning for sustainable tourism development

The Kavango Zambezi (KAZA) Transfrontier Conservation Area is an initiative of the SADC and the governments of Angola, Botswana, Namibia, Zambia and Zimbabwe. It is co-financed by the German government. The KAZA Memorandum of Understanding was signed in 2006 by the Ministers responsible for environment, wildlife and tourism from the five participating countries, who were aiming towards the establishment of a transboundary area. Established on 18 August 2011 this mega park covers 444,000 km² of land spanning the international boundaries of the five participating countries, thereby linking national



An important source of income for women in the Kavango Zambezi is selling traditionally woven baskets to tourists. ©Peace Parks Foundation

parcs, wildlife management areas, forest reserves, and community-use and settlement areas.

The vision of KAZA is to establish a world-class transfrontier conservation and tourism destination in the Okavango and Zambezi River basins, supporting sustainable development in this region by 2030. Entrenched in the mission is the sustainable management of the KAZA ecosystems, including its cultural heritage, based on the best conservation and sustainable tourism models. It aims at improving the socio-economic well-being of the communities and other stakeholders in and around the KAZA region, by harmonizing policies, strategies and practices. KAZA is now developing a branding and marketing strategy that will create a premier tourism and investment destination.

The KAZA Transfrontier Conservation Area is one of the most significant conservation efforts undertaken in Africa in the last 100 years. It promotes unconstrained animal movements across administrative boundaries, but also aims to make it easier for tourists to move through the area. This should boost tourism, create jobs, and generate sustainable revenues for rural communities. Conservation and tourism are therefore seen as the key drivers for socio-economic development of this region.

Prepared by: **Peter Myles**, Tournet Africa
 Web: <http://www.kavangozambezi.org/>

4.3. The cultural heritage benefits of transboundary conservation

Many protected areas and wider conservation areas have significant spiritual and cultural values. According to the IUCN WCPA's Specialist Group on Cultural and Spiritual Values of Protected Areas, the cultural values of protected areas refer to 'the values that different cultures place on natural features of the environment that have great meaning and importance for them and on which their culture's survival depends' (IUCN, 2014). Nature can have a profound transcendent or intrinsic importance to people: it puts them in touch with a deeper reality, giving meaning to their lives and motivating them to care for the environment. Sacred sites are related to the beliefs and practices of Indigenous Peoples and mainstream religions, but they can also be appreciated by people who do not necessarily share those value systems, but still recognize and respect these places as symbols of identity or sites of inspiration.



The Blackfeet Nation is working with the Roundtable on the Crown of the Continent (Canada, USA) to develop and implement climate adaptation strategies. ©Tony Bynum

These cultural considerations must be at the centre of the planning and management of TBCAs in order to ensure that Indigenous Peoples and traditional local communities are able to engage fully with the process (see Case study 4) (Beltrán, 2000; Borrini-Feyerabend et al., 2004b; Chan et al., 2012). So transboundary conservation practitioners should think beyond biodiversity and ecological arguments for working across boundaries, and consider the cultural values that exist in the area, and how far these could also benefit from transboundary cooperation (see Case study 3). Not only will this provide an added layer of significance to the TBCA, it will also help to engage with affected Indigenous Peoples and traditional local communities.

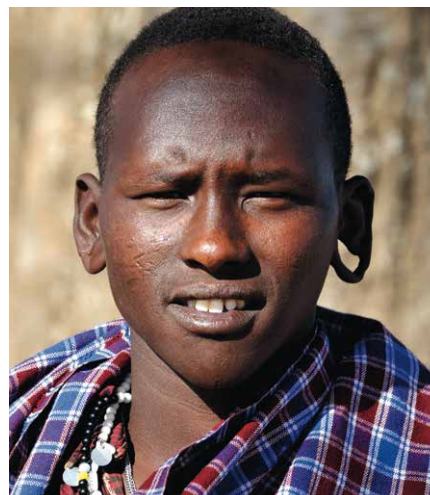
Often the starting point is to value the knowledge that many traditional communities have acquired through their links to the natural environment (Papayannis and Mallarach, 2009; GDF, CEESP and WCPA, 2010). By recognizing and building on these linkages, it will be possible to enhance the credibility of transboundary conservation initiatives, especially those that relate to cultural heritage features that are divided by political boundaries (see Box 9). Though those links may have already begun to weaken under the impact of external forces, it may still be possible to revive them.



Boundary areas of the Hindu Kush Himalayan countries are home to Indigenous Peoples. ©Jitendra Bajracharya

While the historical and archaeological aspects of cultural heritage are relevant to this discussion, it is aspects of the *living* heritage that best exemplify the linkages between traditional communities and Indigenous Peoples and nature, and which are possibly most relevant to transboundary conservation. Such linkages are very evident within hunter-gatherer communities, such as the !Khomani San in the Kgalagadi Transfrontier Park between Botswana and South Africa, but there are many other examples of where cultural heritage features in their broadest sense have benefited from transboundary conservation.

An example of a cultural landscape at the transboundary scale is the Pyrénées-Mont Perdu, an outstanding mountain landscape that spans the national borders of France and Spain, centred on Mont Perdu, a calcareous massif that rises to 3,352 metres. This mixed World Heritage site, with a total area of about 300 km², includes two of Europe's largest canyons on the Spanish side and three major cirque walls on the more abrupt northern slopes with France, classic representations of these geological landforms. The site is also a pastoral landscape reflecting an agricultural way of life that was once widespread in the upland regions of Western Europe. Its landscape of villages, farms, fields, upland pastures and mountain roads provides exceptional historical insights (UNESCO, 2014c).



The Maasai are nomadic people that are ancestral inhabitants of the Maasai Mara National Reserve (Kenya), forming a TBPA with the Serengeti National Park (Tanzania). ©Boris Erg

Box 9

Traditional knowledge supports conservation in the Altai-Sayan ecoregion

The Altai-Sayan ecoregion covers 1 million km² area across four countries: China, Kazakhstan, Mongolia and Russia. The area is home to about 5 million people, including more than twenty Indigenous groups. It has a rich cultural heritage and a wealth of biodiversity.

The predominantly semi-nomadic communities practice livestock herding, subsistence hunting and fishing, retaining much of their traditional and customary ways of living. Since the wellbeing of these communities depends in large part on a healthy natural environment, this ought to benefit conservation. However, over time, herd numbers have been increasing, resulting in overgrazing of grasslands, and there has been poaching and excessive hunting of wildlife. In recent years, though, the situation has slowly started to change for the better as local communities become more engaged in the conservation of Altai landscapes. The United Nations Development Programme (UNDP) has been supporting this process, involving local communities more in protected area management, and promoting transboundary collaboration between the four countries. For example, nomadic herders in Mongolia have been trained as game guards to help monitor wildlife in remote

areas. Communities have also been given responsibility to manage a defined wilderness area, so raising their sense of 'ownership' and stewardship towards natural resources.

By collecting and analysing traditional ecological knowledge, scientists and practitioners have been able to propose better land use systems and improved methods of protected area management. For instance, in Russia traditional land use systems were taken into account during the preparation of the Shorskiy National Park Management Plan. The traditional hunting and fishing grounds of the Shors people were mapped using a Geographic Information System, and special zones for traditional use were identified. Regulations were put in place to legalize traditional, indigenous methods of hunting and fishing. Five parks were established to be managed by Indigenous Peoples. A Mobile Visitor Centre in Nomadic Traditions was set up in the Ubsunurskaya Kotlovina Biosphere Reserve, generating revenue in the first year of operation.

Prepared by: **Maxim Vergeichik** and **Midori Paxton**, UNDP
Web: <http://www.altai-sayan.com/eng/index.php>



The Altai-Sayan is a vast ecoregion shared between four Asian countries. Traditional knowledge helps in the area's management. ©Boris Erg

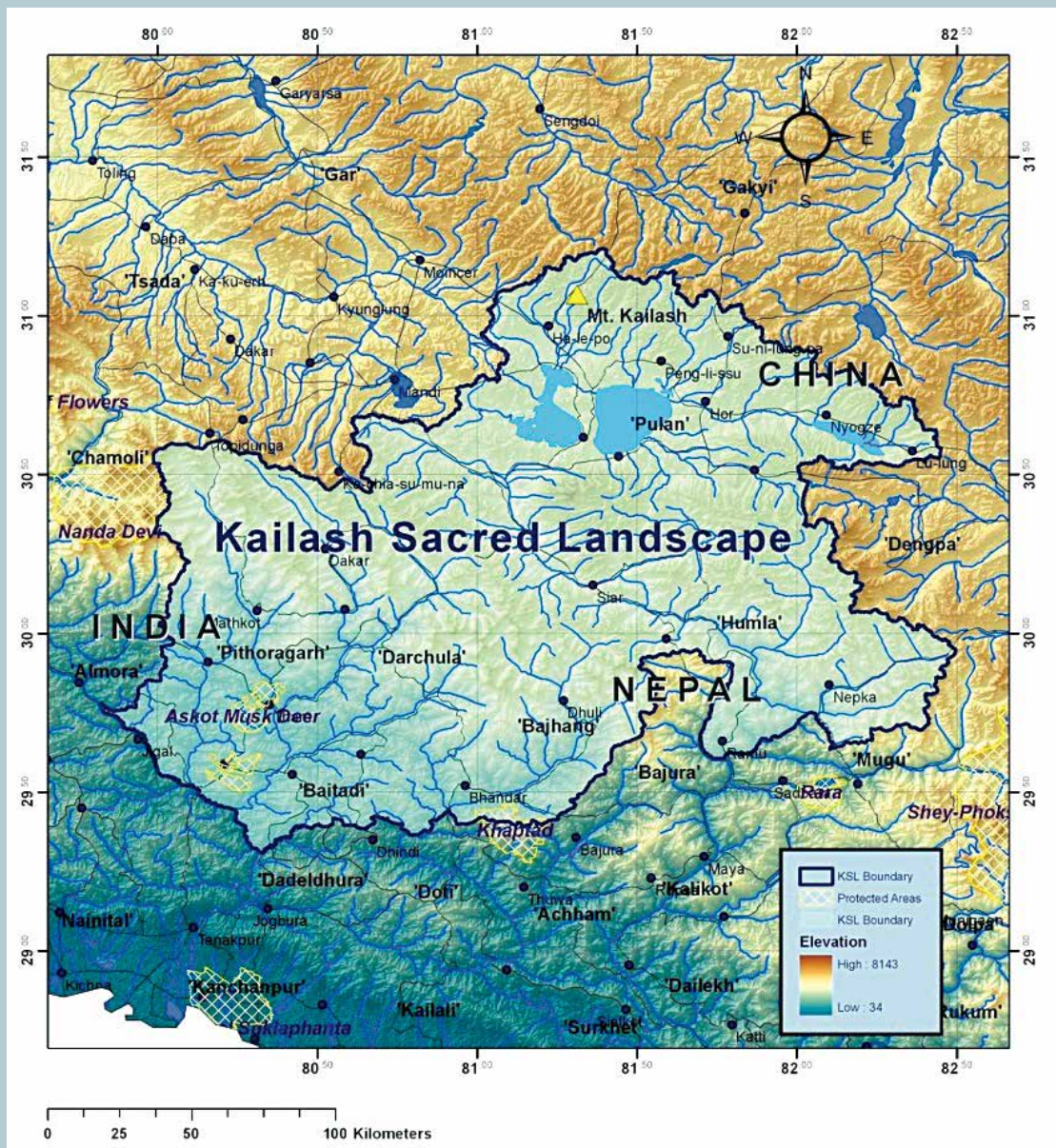
Case study 3

Kailash Sacred Landscape

The Kailash Sacred Landscape Conservation and Development Initiative is a regional transboundary conservation programme of ICIMOD (2012-2017) in the Hindu Kush Himalaya. The initiative emphasizes the importance of sacred sites and the preservation and management of biocultural diversity²⁷.

The Kailash Sacred Landscape was identified as one of the region's key transboundary landscapes because of its

immense biodiversity, cultural and sacred values. The area covers over 31,000 km² of diverse terrain across a remote south-western part of the Tibetan Plateau within the Tibetan Autonomous Region, China, north-western Nepal, and a part of northern India that borders Nepal. The sacred mountain Kailash and the nearby holy Lake Manasarovar attract pilgrims from many parts of Asia. This area has tremendous cultural and religious significance for five major religions—Hinduism, Buddhism, Bonism, Jainism and Sikhism—and



Delineated Kailash Sacred Landscape in the Hindu Kush Himalaya. ©ICIMOD

²⁷ Biocultural diversity signifies biological, cultural and linguistic diversity (Maffi and Woodley, 2010). More information can be found in: Posey (2001); Loh and Harmon (2005); Maffi et al. (2005).

a number of local forms of traditional worship. Pilgrims from all faiths share a common cultural landscape. Within several ecosystems and dozens of cultural areas, there are hundreds of local or regional features—trees, temples, passes, ruins—that are invisible or inaccessible and the full extent and value of the biological and cultural diversity of the area is not known.

The integration of sacred sites into a large-scale and high-profile project for the management of the area is a challenge, but also an opportunity to combine practical and analytical skills, bringing together region-wide expertise. Research will be needed to help identify, describe, and monitor the many sacred sites, and to understand better how social and cultural factors interact with nature so as to account for high levels of biodiversity high around sacred sites.

The environment and culture of this remote and fragile landscape are under pressure from climate change and other factors (e.g. unplanned tourism and development, economic changes through globalization processes). The Kailash Sacred Landscape Conservation and Development Initiative aims to use an integrated ecosystem approach and planning to restore the landscape's degraded ecosystems, harness traditional knowledge and enhance the options for livelihoods by strengthening transboundary cooperation. This requires that we understand both the natural and the cultural values of this landscape, as represented in the following elements:

- Natural significance: biogeographic areas, Ramsar Sites and habitats for endangered species (e.g. snow leopard (*Panthera uncia*) and keystone species (e.g. blue sheep (*Pseudois nayaur*), red fox (*Vulpes vulpes*), and Tibetan snowcock (*Tetraogallus tibetanus*));
- Tangible evidence of cultural significance: pilgrimage, transhumance, sacred sites, sacred mountains, cultural routes, sacred groves;
- Uniqueness and spiritual significance: Mount Kailash and Lake Manasarovar are believed to be the centre of the cosmos by many of the visiting pilgrims from five major religions;
- Natural beauty: the landscape is exceptionally beautiful and of great aesthetic importance;
- As a source of life: Kailash supplies water to millions living within the landscape and downstream; this is valued not only as a natural resource but also for its powers of spiritual healing, with springs etc. treated as sacred sites;
- Historical significance: past civilizations connected to Kailash, historic trade routes;
- Earth science: geology, the creation of the landscape (geomorphology, tectonic plates).

An interdisciplinary programme of studies has thrown up the following research questions that still need to be answered:

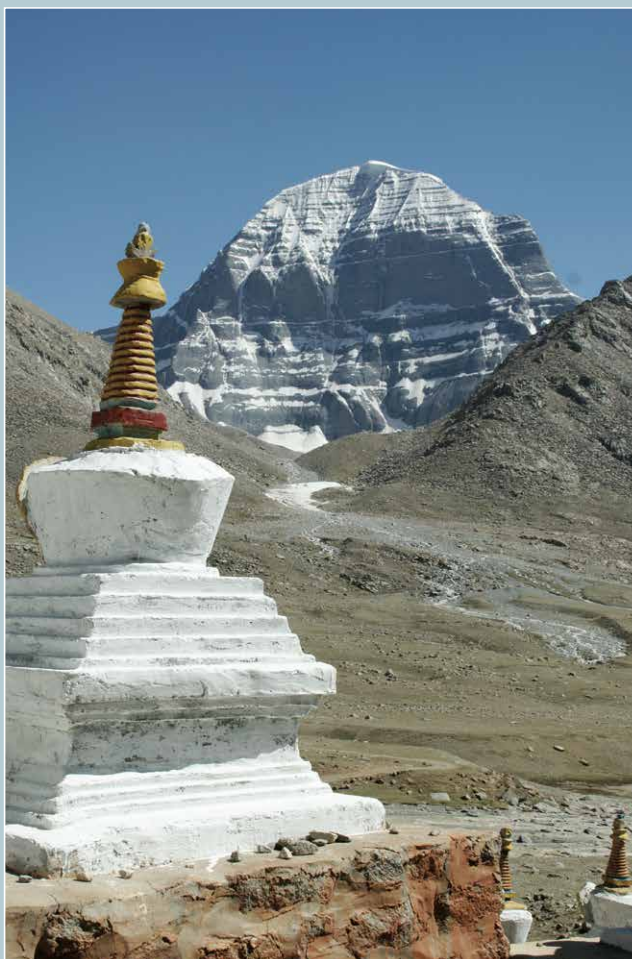
- What are the patterns and processes of environmental and other changes, and how do such changes affect ecosystems, socio-ecological resilience and cultures in Kailash Sacred Landscape?

- What are the cultural, ecological and socio-economic linkages within different landscape elements, and what are the key threats to such linkages?
- How does the implementation of a transboundary cooperation framework and ecosystem management policies in Kailash Sacred Landscape enhance cultural preservation, gender integration, inclusive decision-making and livelihood opportunities for women and men, and socio-ecological resilience?
- What are the economic values of various ecosystem services in Kailash Sacred Landscape, especially cultural and supporting services, and how are these goods and services distributed across stakeholders?
- The answers to these research questions should provide a better basis to assess, monitor and manage the biocultural diversity that exists in sacred sites. One product could be a toolkit to help understand the potential support that TBAs can bring to sacred sites.

Prepared by: **Rajan Kotru, Will Tuladhar Douglas and Nawraj Pradhan**, ICIMOD

Further reading: Sayer (2009); Lawrence (2010); ICIMOD (2012); Sayer et al. (2013)

Web: <http://www.icimod.org/?q=9456>



Mount Kailash, attributed with significant sacred, cultural and conservation values, is central to transboundary cooperation in the region. ©Sally Walkerman

Case study 4

Engaging communities across the border: FORMADAT in the Highlands of the Heart of Borneo

Success in conservation depends on creating the right connections and fair benefits for people and nature. Conservation thrives on good partnerships and collaborations that can go beyond the borders of nation states. Recent initiatives in Borneo, like the Heart of Borneo led by Brunei, Indonesia and Malaysia, along with innovative transboundary governance approaches, aim to strengthen sustainability and equity as well as biodiversity conservation.

The Highlands of Borneo are located in the deep interior of the island, in the 'heart' of Borneo. They are divided between the neighbouring states of Indonesia and Malaysia (Sarawak and Sabah). A relatively isolated region averaging 1,000 metres in height, it represents one of the largest forested and traditionally farmed catchment areas in Borneo. Some of the main rivers in Borneo originate from this important watershed and flow to both Indonesia and Malaysia. Forest cover secures climate stability at the local level and mitigates the negative effects of climate change. The Highlands are also home to a rich assemblage of megalithic monuments and archaeological remains, witnesses to a long history of settlement. Indonesian parts of the Highlands are inside the Kayan Mentarang National Park while parts of the Highlands on the Malaysian side are in the Pulong Tau National Park. Traditionally, communities have practiced wet rice agriculture

in the wide valleys of the Highlands, and dry rice agriculture on the hill slopes. The rice agricultural system, integrally linked to animal husbandry including water buffalo (*Bubalus bubalis*), has managed to sustain the communities of the Highlands and also produce agricultural surplus.

While administratively divided between two countries, the Lundayeh/Lun Bawang, Kelabit, and Sa'ban peoples of the Highlands share a common linguistic and cultural heritage. The strong ethnic and family ties are one of the main reasons for the close social and economic/trade interactions that take place across the international border.

In 2004, the leaders and people of the Highlands established a transboundary organization, FORMADAT, the Alliance of the Indigenous Peoples of the Highlands in Borneo. FORMADAT was concerned about the damage that uncontrolled development could do to the fragile environment of the Highlands, so affecting the livelihoods and traditions of local communities whose economy is based on a healthy natural environment. So it aimed to forge stronger links across the border to help steer development in sustainable directions. The Indigenous leaders believed that the future of the Highlands should be a shared one, rooted in their common past.



Lundayeh Indigenous Peoples in the Highlands of the Heart of Borneo are the signatories of the FORMADAT Declaration which enhances transboundary conservation and sustainable development in the region. ©FORMADAT

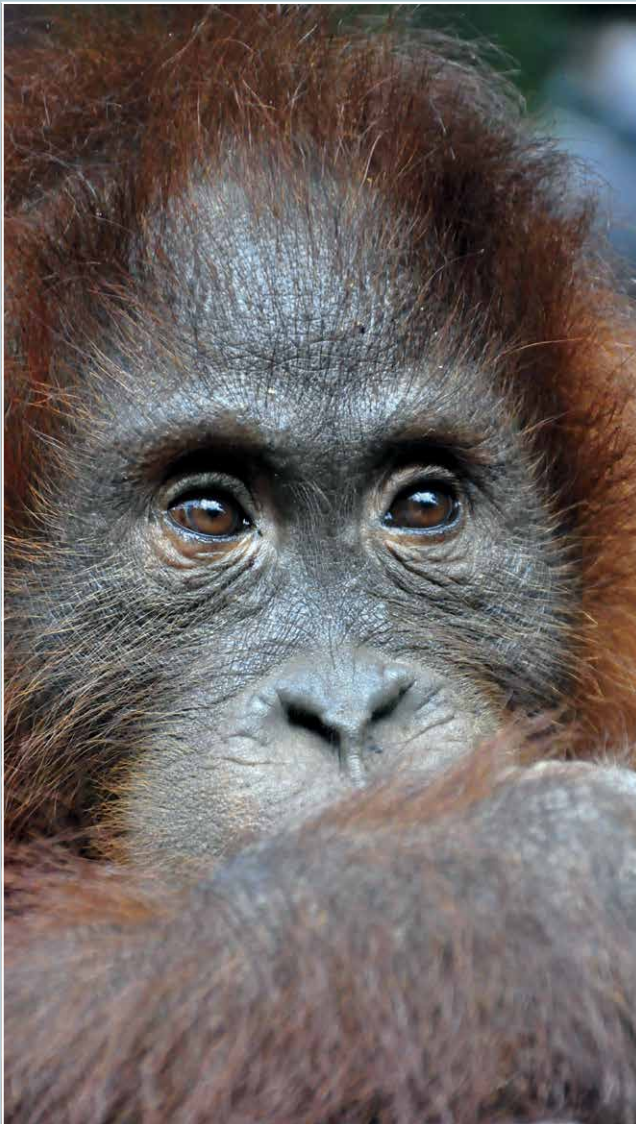
In 2006, at the third annual meeting of FORMADAT, the participants adopted a declaration, addressing the three pillars of sustainability:

Social

- Maintain the cultural and family bonds that have made the people of the highlands one people sharing a common land;
- Strengthen traditions and customary ways;

Economic

- Develop sustainable economic alternatives such as organic agriculture and community-based ecotourism;
- Open market access and establish of fair trading networks across the border;



Environmental

- Minimize negative impacts on the environment;
- Encourage conservation that involves local people in all its aspects;
- Protect water sources, cultural and historical sites, river banks and forest areas.

The uniqueness of the FORMADAT initiative rests on it being a local, community initiative for transboundary conservation and sustainable development, which predated the trilateral Heart of Borneo Initiative, formally signed in Bali in 2007. It did not emerge from a process of conservation area delineation, nor was it directly triggered by issues of participation and the rights of Indigenous Peoples in the management of the two national parks in the Highlands. It was instead a grass-root initiative, arising from the local peoples' commitment on both sides of the international border to secure sustainable development and conserve the resources of their homeland.

From the start, FORMADAT has argued for the recognition and involvement of Indigenous Peoples in the Heart of Borneo Initiative. The creation of local constituencies is vital in generating the sense of local ownership and accountability necessary for the success of such broad, landscape and regional conservation efforts. In 2013, representatives of FORMADAT Indonesia and Malaysia were invited as observers to the trilateral government meeting in Brunei for the first time.

Innovative FORMADAT programmes include a support for a Cultural Field School and traditional festivals, the organic cultivation of local varieties of rice, the protection of agro-biodiversity and the establishment of a Tele-Center for communication. These have built local support and interest among communities and districts and national authorities on both sides of the border. FORMADAT aims to extend its partnerships so as to build more support for sustainable development and prosperity in the Highlands.

Prepared by: **Cristina Eghenter**, WWF Indonesia
Web: http://www.wwf.or.id/en/about_wwf/whatwedo/pds/social_development/formadat/about_formadat/

Orangutan (*Pongo pygmaeus*), assessed as endangered according to IUCN Red List, is endemic to the island of Borneo. ©Harry Jonas

4.4. The significance of transboundary cooperation for the day-to-day management of shared issues

Global practice shows that transboundary conservation has all sorts of potential benefits for the day-to-day management of shared ecosystems, resources and interests (see Vasilijević and Pezold, 2011; Case study 5; Box 10). Where different parties have the political will to cooperate, pursue common aims and are ready to work together, management is more effective and finance, staff and equipment are deployed more efficiently. There is also greater scope for cross-learning, so reducing the time needed to generate solutions to problems. Even where broad political support for cooperation is lacking, a small-scale, site-based cooperative management effort may demonstrate the benefits of cooperation across international boundaries.

Sandwith et al. (2001), based on Hamilton et al. (1996), showed how cooperation across borders could reduce transaction costs in many aspects of day-to-day management, such as sharing equipment, organizing joint patrols to combat poaching and illegal wildlife trade, cooperation in wildfire management and ecosystem restoration programmes, producing educational material, and organizing exchanges and capacity building programmes between the protected areas' staff. However, creating the right enabling environment for these potential benefits can be a complex process. Usually nested in a wider governance framework, the effective day-to-day management of transboundary initiatives requires a joint vision as well as a clear definition of processes, roles and responsibilities, and mutually agreed management and monitoring guidelines.

Lake Neusiedl and Seewinkel Fertő-Hanság National Parks in Austria and Hungary provide a good example of a decade-long cooperation, which entails joint research and monitoring, the development of transboundary tourism products, and the promotion of the local cultural heritage (see Box 1). Similarly, the trilateral Dauria International Protected Area shared by China, Mongolia and Russia benefits from joint projects involving 200 monitoring stations in the study of species and habitats (Buuveibaatar et al., 2014).



Park rangers often get injured during their regular patrols and while combating poaching. ©IUCN Photo Library/Steve Winter

The more effective the cooperation between institutions, the more opportunities for cost-effective management arise. This in turn can help draw communities and wider stakeholder groups into planning and management processes that have a direct beneficial impact on their interests. All this will create stronger transboundary linkages, which should further reduce costs of all kinds. Such a virtuous circle will greatly improve the management of the transboundary site.



Technical equipment provided through the support of the MacArthur Foundation, facilitates easier communication between park rangers in Nyungwe-Kibira Landscape, Rwanda-Burundi. ©Aaron Nicholas, Wildlife Conservation Society

Box 10

Indo-Bhutan Manas and its role in tiger conservation in the Indian subcontinent

The Indo-Bhutan Manas Tiger Conservation Landscape is part of the largest single area managed for the conservation of the Bengal tiger (*Panthera tigris tigris*). Its unique geographical location as a gateway to the Indo-Malayan and Indo-Chinese biogeographic regions, along with representation of the Ethiopian and Australasia bio-geographic pathways, makes it a biodiversity hotspot: among threatened and endangered species are the snow leopard (*Panthera uncia*), tiger, elephant (*Elephas maximus*), one-horned rhinoceros (*Rhinoceros unicornis*), Bengal florican (*Houbaropsis bengalensis*), golden langur (*Trachypithecus geei*), pygmy hog (*Haematopinus oliveri*), hispid hare (*Caprolagus hispidus*), wild buffalo (*Bubalus arnee*) and Indian bison (*Bos gaurus*).

A multi-stakeholder partnership has recently emerged to help apply modern technology for tiger conservation and law enforcement. The team—made up of forest department personnel, researchers from NGOs and community level workers—used remotely triggered camera traps and the capture-recapture framework

to estimate the number and density of tigers in the Transboundary Manas Conservation Complex. Information on dispersal and behaviour shows how individual tigers use specific territories. Regular monitoring in the last three years indicates there are between 25 and 35 tigers. The photographic database of tigers also assisted law enforcement agencies, and a case of transboundary illegal wildlife trafficking was detected subsequently.

A more detailed implementation plan is now required to secure the commitment of the governments of Bhutan and India to support on-going wildlife monitoring. This should cover day-to-day field surveillance and tiger monitoring, intelligence sharing and building the capacity of the local community to address animal-human conflicts. It should also include sustainable funding with time frames.

Prepared by: **Sonali Ghosh**, Manas Tiger Reserve
Further reading: Mani (1974); Borah et al. (2012)
Web: <http://worldheritagemanas.org>



The habitat of the Bengal tiger (*Panthera tigris tigris*) spreads through Bangladesh, Bhutan, India and Nepal and necessitates coordinated action in protection of the tiger population. ©IUCN Photo Library/Steve Winter

28 For more information about these biogeographic zones, see Mani (1974).

29 See Nichols (1992).

Case study 5

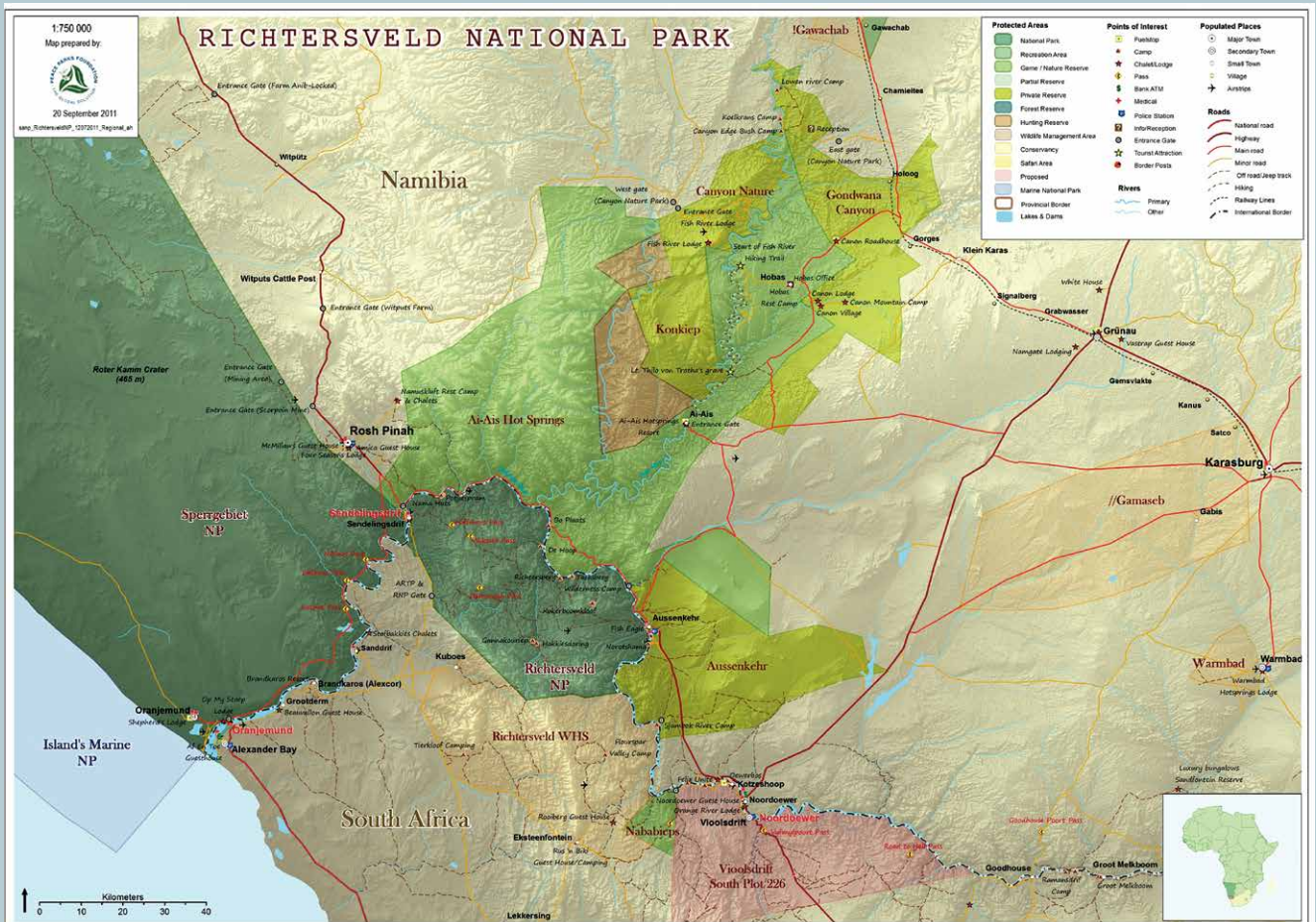
/Ai/Ais Richtersveld Transfrontier Park: benefits from joint management

The /Ai/Ais Richtersveld Transfrontier Park is situated on the border shared by South Africa (Northern Cape Province) and Namibia (Karas region). It comprises the Richtersveld National Park, South Africa and /Ai/Ais Hot Springs Game Park, Namibia. The main purpose of the park is to protect the mountain desert landscape with its unique plant biodiversity.

The /Ai/Ais Richtersveld has promoted transboundary ecotourism activities to help foster regional socio-economic development and local job creation. The main tourism products are the Desert Knights Mountain Bike Tour and the upcoming Desert Kayak Trails, which operate independently of the existing tourism products managed by each country in its own park. Some of the income from these joint activities goes to a joint account for the sole purpose of benefitting the wider transboundary area; some of it benefits the local communities through job creation and capacity building. The end vision is for the communities to take over the tourism trails and run them as community income-generating projects. The /Ai/Ais Richtersveld is determined to wean itself off outside sponsorship and become a self-reliant and financially self-sustaining transfrontier park. It is also willing to share its experience with other transboundary areas.

The development of human capacity is one of the main objectives of this TBPA. With the support of the Peace Parks Foundation, the /Ai/Ais Richtersveld has run staff development training and workshops. Most training was aimed at building the parks' staff's capacity to undertake their daily duties. Workshops held within the last three years have addressed: mountain search and rescue (hiking trails specific); tourism skills development; conservation based training (geology, bird identification, plant identification); skipper training (pontoon and river patrols); Geographic Information System (mapping); and river guide and team leader training (desert kayak trails). For the past two years, all parks staff have attended year-end gatherings to interact and learn from each other.

The Orange River forms the boundary between Richtersveld National Park and /Ai/Ais Hot Spring Game Park. The biggest threat to the parks is illegal fishing for commercial purposes. Alongside educating local communities, the two parks established joint patrols to control the illegal fishing in and around the parks. Good cooperation between park staff, police, immigration officials and private landowners has had a positive outcome: for example, no gill nets have been found in the area for over a year now. This could not have been



A map showing the /Ai/Ais Richtersveld Transfrontier Park Namibia and South Africa. ©/Ai/Ais Richtersveld Transfrontier Park

achieved if one country had acted alone—a good example of the benefits of transboundary cooperation.

Good communications are essential to effective management. Due to the difficult terrain on both sides of the border, there is very little mobile phone coverage and only the offices have landlines. So /Ai/Ais Richtersveld installed a transboundary radio communication system, which enables communication to nearly all parts of the transboundary park. This has had all sorts of benefits in terms of joint law enforcement, tourism and emergency responses. The surrounding communities have also benefited through access to better telephone connections.

For many years, the only access between South Africa and Namibia was the border post at Vioolsdrift / Noordoewer, requiring a 520 km long trip between the two parks. In 2007, the /Ai/Ais Richtersveld built a pontoon bridge over the Orange River at Sendelingsdrift, connecting the two parks and enabling easy access for staff and tourists.

Border posts were constructed before the bridge was built, and personnel were recruited and trained to guard the border posts and operate the bridge. The pontoon bridge currently runs at a loss, but the intention has been to provide a service to tourists to link the two parks which would bring wider economic benefits.

Both countries have benefitted greatly from the establishment of the Transfrontier Park. All the parties are committed to transboundary cooperation, and everyone is working towards a common goal.

Prepared by: **Nick de Goede**,
/Ai/Ais Richtersveld Transfrontier Park
Web: <http://www.sanparks.org/parks/richtersveld/>



Fish River canyon in the /Ai/Ais Richtersveld Transfrontier Park. ©Peace Parks Foundation

4.5. Transboundary conservation and international legal and policy frameworks

The growing interest in transboundary conservation has led to the development of policy and law to support the approach. The impetus for this can come from world-wide treaties or regional agreements (see Box 11).

The CBD PoWPA, adopted in 2004, provides a policy framework for all protected areas in countries. It is 'the first global inter-governmental agreement that set measurable targets and timetables for protected areas' (Dudley et al., 2005). The PoWPA endorsed the ecosystem approach as the framework within which the relationship of protected areas to the wider landscape and seascape should be planned and managed. In furtherance of this, the CBD Secretariat and its partners were asked 'to compile and disseminate information on TBPAs, including, as far as possible, their geographical distribution, their historical background, their role and the partners involved' and also to develop guidelines for collaborative management approaches and TBPAs (UNEP/CBD COP 7, 2004). These current Guidelines are, in an extent, a response to the calls from the CBD.

In the updated framework of action for the period 2011-2020, the Parties to the Convention adopted twenty targets—the Aichi Biodiversity Targets. Target 11 introduced the commitment to conserve at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas by 2020, through the establishment, among other considerations, of well connected systems of protected areas and other effective area-based conservation measures. Although it makes no explicit reference to TBCAs, Target 11 emphasizes the importance of connectivity conservation in the integration of protected areas into the wider landscape and seascape (UNEP/CBD COP 10, 2010). Thus, it implies the conservation planning should not only take place at the national level, but also at the broader regional or international level, so giving a key role to transboundary conservation.

The CMS entered into force in 1983, and is an important application of transboundary conservation principles with regards to migratory species, especially through the idea that countries have obligations to each other as range states.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) plays a pivotal role in ensuring that all trade in endangered species is sustainable and legal. Indeed, law enforcement is especially important in a transboundary context in view of the recent growth in illegal transboundary wildlife trade (see Appendix B). CITES works closely with the International Consortium on Combating Wildlife Crime, a partnership that also brings together INTERPOL, the United Nations Office on Drugs and Crime, the World Bank and the World Customs Organization. Each of these offers specialized expertise that supports national enforcement agencies and sub-regional and regional networks in fighting the illegal wildlife trade.

In addition, there are the global agreements described in section 3.3. which lead to site specific designations which have legal and policy implications.

4.6. Transboundary conservation, political relations and security

Because transboundary conservation includes the establishment of cooperative frameworks, it has a great potential to help improve political relations between sovereign countries (McCallum et al., 2014; see Appendix B). Environmental diplomacy plays an important role in advancing transboundary conservation when contiguous ecosystems are divided by political boundaries (Sharma et al., 2007; Ali, 2010). Transboundary conservation and related cooperation between countries can demonstrate political good-will; they can also help to promote political stability between newly formed countries and countries with contested borders (see Box 12) (Mittermeier et al., 2005a; Westing, 1993b). Transboundary conservation can be a way of opening negotiation and communication channels and thus reinforcing and enhancing diplomatic relations between countries (Westing, 1998; McNeely, 2003; Ali, 2010).



Messages for peaceful cooperation in the Korean Demilitarized Zone. ©Boris Erg

The reverse, however, is also true; where there is no will to address border disputes between countries, or where agreements have not been ratified, the establishment of transboundary conservation initiatives will be much more difficult. Regional instability and insecurity can also affect the effectiveness of transboundary collaboration. In extreme situations, for example as is currently the case in parts of the Middle East and the Sahel, civil wars and conflicts are so serious and widespread that any conservation effort is probably out of the question on security grounds.

The IUCN 2001 Guidelines include a 'Draft Code for Transboundary Protected Areas in Times of Peace and Armed Conflict' (Draft Code) outlining frameworks for the establishment and management of TBPAs (Sandwith et al., 2001)³⁰. At the time of its development, it was a forward-looking document that placed protected areas into a broader context of contemporary environmental, political, social, cultural and humanitarian concerns. The Draft Code, for example, includes a section on 'TBPAs in times of armed conflict', which recommends that certain rules be followed by the parties to conflict, so as to minimize the damaging effects of military actions on natural and cultural resources. The document has not been updated for the purpose of this publication, but IUCN strongly encourages the use of the Draft Code by all of those engaged in transboundary initiatives where issues of armed conflict arise or may arise.

³⁰ Available at http://cmsdata.iucn.org/downloads/pag_007.pdf

Box 11

The Alpine Convention: a legal framework for enhancing transboundary conservation

The international treaty on the protection of the European Alps (the Alpine Convention) came into force in 1995 and binds eight countries (Austria, France, Germany, Italy, Liechtenstein, Monaco, Slovenia and Switzerland) and the European Union (EU). It constitutes a regional multilateral environmental agreement following an integrative, all-encompassing, and transboundary approach. The core aim of the Alpine Convention is to safeguard the Alps. Its Parties agreed on the creation of Protocols which detail implementation mechanisms. Among them is the 'Conservation of the Nature and the Countryside' Protocol, which sets out various requirements for the conservation of nature, including the obligation to preserve natural and near-natural biotope types in sufficient amounts and to guarantee their effective spatial distribution.

The Alpine Convention finds its origin in a coordinated response to common challenges in TBCAs. Over the years it has built a sense of ownership and responsibility across political and administrative borders. It has promoted stronger transboundary conservation. The Convention set up an 'ecological network platform'

which coordinates research activities and projects on the ground. It promotes the establishment of functioning networks of protected areas. It also facilitates the participation of Alpine stakeholders in EU-led initiatives such as the 'green infrastructure' initiative of the EU Commission and the LIFE+ programmes. The Convention also promotes connections with other relevant international legal frameworks through Memoranda of Understandings, such as with the CBD and the Carpathian Convention, partly with the aim of supporting the protection of wildlife migration corridors. The Alpine Convention serves as a blueprint for other mountainous regions of the world where there is a need to integrate transboundary conservation measures and help meet human needs in a sustainable way.

Prepared by: **Volker Mauerhofer**, United Nations University, Institute of Advanced Study of Sustainability, **Ewald Galle**, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, **Marco Onida**, formerly Secretariat of the Alpine Convention

Web: <http://www.alpconv.org>



The Austrian Alps bordering Germany. ©Maja Vasilijević

Box 12

Transboundary initiatives in the Dinarides in support of regional dialogue

A number of transboundary conservation initiatives in the Dinaride area of south-eastern Europe can help support regional stability. This region was impacted by armed conflict in the early 1990s, resulting in the break-up of the former Yugoslavia, with grave consequences for diplomatic, economic, and social relations between most of the countries involved. This is one of the most highly valued areas of Europe in terms of biodiversity, hosting large carnivores, one of the richest cave fauna in the world, and the largest karst ecosystem in Europe. It is now criss-crossed by many international boundaries, requiring regional cooperation in the conservation of nature and the management of protected areas along the borders. The Dinaric Arc Initiative was launched in 2004 by key international players in the region. Within four years, this led to the signing of a Joint Statement that recognized the importance of transboundary cooperation in protected areas (the statement was signed by six governments—Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, and Slovenia—during the Big Win for the Dinaric Arc event at the 9th meeting of the Conference of the Parties (COP) to the CBD in Bonn, Germany, in 2008). While this had enormous political value for the Dinaric Arc region, it was also an important impetus for protected area management. In 2013, the six countries were joined by Kosovo and The former Yugoslav Republic of Macedonia in endorsing the second



High-level government officials signed a Joint Statement for the enhancement of regional cooperation in nature conservation in south-eastern Europe during the CBD COP 9 in 2008. ©WWF MedPO

Joint Statement for enhanced regional cooperation. A number of other regional cooperation initiatives have emerged in recent years (Dinaric Arc Parks, Conservation Planning Platform, etc.), all evidence of how transboundary conservation can foster political dialogue and stability.

Prepared by: **Maja Vasiljević**, Eco Horizon,
Boris Erg, IUCN Programme Office for South-Eastern Europe
Web: <http://www.dinaricarcinitiative.net>



Plitvice Lakes National Park in Croatia, one of the protected areas that established cooperation with neighbouring Una National Park in Bosnia and Herzegovina following the Big Win for Dinaric Arc's Joint statement. ©Graeme Worboys

31 This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Among a number of examples of transboundary initiatives that contribute to peace building and security, and which are featured by Westing (1993a), Westing (1998), Mittermeier et al. (2005a), Ali (2007), Braack et al. (2010), are two that relate to particularly intractable border conflicts:

- The DMZ** on the Korean peninsula separates the Democratic People's Republic of Korea and the Republic of Korea. It is about 250 km long and 4 km wide. The DMZ has been in place since 1953. Empty of permanent settlements and largely uncultivated, its existence has been an incidental boon for wildlife and representative samples of most of the peninsula's ecosystems. NGOs, international and scientific organizations have endeavoured to promote the establishment of a Park for Peace, building on the conservation value of the DMZ. The Republic of Korea's institutions have held a number of events focusing on the DMZ and its future in recent years: an International Conference on Management of DMZ Area for Peace and Ecosystem Conservation took place in 2010; during IUCN's 2012 World Conservation Congress at Jeju, there was a meeting to promote the natural heritage of DMZ; a symposium on conservation and peace building in the DMZ took place during the 12th CBD COP (Pyeongchang, 2014), at which the host government spoke of its hope of building a 'World EcoPeace Park' in the DMZ; finally, the government launched the Peace and Biodiversity Dialogue Initiative during the CBD COP 12 (UNEP/CBD COP 12/INF/30, 2014).
- The Siachen Glacier**, with the adjacent Saltoro Ridge (Kashmir region), is regarded as a 'no man's land', with India and Pakistan both claiming the area as their own. With troops positioned at an altitude of 6,700 metres, the area has been witness to many deaths, caused by the periodic fighting and harsh climate. Also, the sensitive environment has been damaged by the military occupation, and chemical pollution from the areas has drained into the watershed of the Indus River, upon which millions of people depend (Ali, 2011; Verma, 2011). Talks at the international level continue to promote the idea of creating a Park for Peace that would protect the fragile mountain environment and end the fighting.



Rangers in KAZA regularly monitor the area. ©Peace Parks Foundation

Political instability and armed conflict, even if they occur in only one of the countries that share a transboundary conservation programme, can have an impact on the adjoining country. For example, insecurity affects tourism in border regions, refugees from a country suffering from civil war may flee to an adjacent country, and wildlife may also take refuge in more secure parts of the region. In times of insecurity, governments tend to see defence and security as the priority; and then conservation is often neglected. Even in such difficult times, some level of cooperation may continue across boundaries at the local level, for example between park managers and rangers. This might even become a platform from which stability can be re-established later—so in times of conflict or instability it is important to try to

maintain communication and trust between the staff of parks in different countries.

Braack et al. (2006) explain some implications of transboundary conservation initiatives for national security in TBCAs and provide examples of management measures that can overcome insecurity (Table 10).



Transboundary cooperation allows a fence marking the boundary between China and Russia to be opened occasionally to enable free movement of the Mongolian gazelle (*Procapra gutturosa*) migratory species. ©Vadim Kiriliuk

Table 10 Potential security implications in Transboundary Conservation Areas

Activities related to transboundary conservation initiatives	Rationale for activity	Security implications	Mitigating measures
1. Removal of international boundary fences	<ul style="list-style-type: none"> To restore freedom of movement of wildlife To restore habitats impacted by clearings or patrol roads at boundaries To improve access for people To remove visual barriers in the landscape 	<p>Implementation of Activity 1 may have the following security implications:</p> <ul style="list-style-type: none"> Detection of illegal movement is impeded Movement of people and vehicles is enabled Complication in the jurisdiction of authorities in the prosecution of crimes Animals threaten lives and damage property 	<ul style="list-style-type: none"> Control or close access roads to the international boundary Retain sections of fences in priority areas Maintain visible boundary markers Control immigration and/or emigration Ensure effective measures to avoid conflict with animals
2. Optimization of access points and transport routes to and within a TBCA	<ul style="list-style-type: none"> To enable easier access to a TBCA To relax complicated immigration procedures To control visitor numbers To rationalize border control points 	<p>Implementation of Activity 2 may have the following security implications:</p> <ul style="list-style-type: none"> Information gathering on the movement of people between the involved countries becomes more difficult Control of illegal activities, such as poaching and illegal logging, is compromised Distribution of revenues is compromised 	<ul style="list-style-type: none"> Control or close access roads to the international boundary Maintain a well-managed transboundary communication system in order to vary visitor bookings, payments and movements Establish a joint information management system Implement a limited number of entrance gates and control points
3. Control of visitor movement and safety	<ul style="list-style-type: none"> To ensure visitor safety and security, as well as the control of facilities (e.g. for overnight stay) and protection of natural resources in a TBCA (e.g. to combat poaching or arson) 	<p>Activity 3 ensures adequate response to:</p> <ul style="list-style-type: none"> Increased possibility of visitors becoming stranded or injured in remote areas Increased possibility of accidental or purposeful damage, arson or theft 	<ul style="list-style-type: none"> Contribute to tourism planning processes Establish sophisticated rescue facilities Secure facilities against accidental or purposeful damage, arson or theft Restrict access to dangerous areas (e.g. potential landmines) Provide armed escorts where visitors' safety is threatened Develop joint search and rescue procedures and firefighting plan Produce joint marketing materials that explain relaxation of border controls
4. Involvement of local people	<ul style="list-style-type: none"> To enable better communication and access to communities on either side of the border To enable trade and employment or to increase entrepreneurial opportunities To include community lands in the TBCA To enhance participatory structures in management and governance of a TBCA 	<p>Implementation of Activity 4 may have the following security implications:</p> <ul style="list-style-type: none"> Communities are resentful if access to resources or opportunities is denied or restricted without adequate communication Sections of the community are marginalised by and excluded from decision-making process 	<ul style="list-style-type: none"> Implement clearly understood and supported programmes on legitimate access to natural resources and employment opportunities Establish effective consultation processes and involvement in decision-making

Activities related to transboundary conservation initiatives	Rationale for activity	Security implications	Mitigating measures
<p>5. Harmonization of relevant laws and regulations</p>	<ul style="list-style-type: none"> To apply wildlife regulations, including provisions of adequate international conventions and protocols, in the whole TBCA To arrest and prosecute offenders To reach agreement on an overall management plan for a TBCA 	<p>Activity 5 ensures adequate response to:</p> <ul style="list-style-type: none"> Disparities in dealing with offences that may lead to offenders taking advantage of a less stringent set of rules Differing application of provisions of international conventions Difficulties in pursuing offenders across boundary by security personnel 	<ul style="list-style-type: none"> Examine provisions of legislation in each country Cooperate to ensure ratification of key conventions Forge agreements to overcome legal disparities
<p>6. Control of animal diseases and prevention of invasions of alien plants and animals</p>	<ul style="list-style-type: none"> To ensure health of populations and control spread of invasive species due to: re-established connectivity between landscapes and plant and animal populations; translocation of animals from one part of a TBCA to another; and increased movement of people and vehicles across the international boundary 	<p>Activity 6 ensures adequate response to:</p> <ul style="list-style-type: none"> The risk of transmitting diseases among wildlife populations, livestock and people Introduction or spread of alien plant species Genetic contamination of local populations caused by translocation 	<ul style="list-style-type: none"> Consult early on risk assessment and mitigation measures Harmonize management programmes Establish control measures to ensure wildlife diseases are not spread across the border on vehicles Control translocation of animals
<p>7. Communications</p>	<ul style="list-style-type: none"> To deal with emergencies To compile information in the whole TBCA To improve overall management 	<p>Implementation of Activity 7 may have the following security implications:</p> <ul style="list-style-type: none"> Compromised security over sensitive data 	<ul style="list-style-type: none"> Establish a transboundary communications plan Agree on institutional responsibilities Agree protocols on how to handle sensitive data Ensure compatible communications infrastructure, including standards for access to data Apply emergency notification and response procedures

Source: Adapted from Braack et al. (2006)

5. Transboundary conservation governance

Transboundary conservation governance takes as many forms as there are applications. Depending on who holds the authority and responsibility for making key decisions, TBCAs may be governed by governments, private entities such as landowners and NGOs, local communities and/or Indigenous Peoples, and/or some combination of all these actors. However, all these different arrangements for transboundary conservation are forms of ‘shared governance’ as IUCN defines it³².

Transboundary conservation governance includes both formal and informal arrangements and occurs at many scales. More successful initiatives will attempt to govern at the scale of the problems confronted—and this will require multiple levels of governance at multiple geographic scales. So there is no single model for transboundary conservation governance—each arrangement must be designed and managed to meet the unique needs and interests of the particular region. However, there are common elements. There is also best practice to inform transboundary governance, as is highlighted in this Chapter.

5.1. Explaining governance

Governance refers to the way in which decision making is undertaken, the actors who are involved and the processes by which conflicts among actors are resolved. It is about representation, style of interaction, authority and decision rules³³. It also refers to processes that support governance, such as fostering scientific and public learning, and building civic and political will.

Graham et al. (2003) define governance as ‘the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say.’

The idea of transboundary conservation means that the territory of interest transcends the legal and geographic reach of established jurisdictions and institutions (McKinney and Johnson, 2009). The people affected by this have

Table 11 Differences between governance and management

Governance	is about process	<ul style="list-style-type: none"> Who brings together the appropriate people with the best available information to determine what ought to happen Who decides what the objectives are and how differences among rightsholders and stakeholders are reconciled and trade-offs are agreed upon How the decisions are taken Who and how ensures the resources and conditions for effective implementation Who holds power, authority, and responsibility Who is or should be held accountable
Management	is about substance	<ul style="list-style-type: none"> What is done in pursuit of given objectives The means and actions to achieve such objectives How effectiveness is generated and ensured

Source: Adapted from Borrini-Feyerabend et al. (2013)

³² Governance by various rightsholders and stakeholders together (Borrini-Feyerabend et al., 2013).

³³ A summary of current thinking on governance in the context of protected areas was published for the 2014 World Parks Congress. This describes **governance quality**, including the principles of good governance, and explains the emerging concept of **governance vitality** (Borrini-Feyerabend et al., 2014).



Spinner dolphin (*Stenella longirostris*) in the seas of the Coral Triangle is a regular fisheries by-catch. The Coral Triangle Initiative members have called for strengthened transboundary governance of shared fishing stocks (primarily tuna) so as to reduce by-catch (Coral Triangle Initiative, 2009). ©Benjamin Kahn/APEX Environmental

interdependent interests, which means that none of them has sufficient power or authority to address the problems adequately on their own. This creates a gap in governance—no single entity has the power, authority and responsibility to address transboundary issues, so there is a need to create innovative ways to work across boundaries. Merely applying scientific or technical knowledge to address economic, social or environmental concerns cannot bridge this gap, nor is bridging the gap simply about managing natural resources more effectively and efficiently. In other words, it is essential to establish suitable governance arrangements to provide an enabling environment within which the natural, social and economic processes, related to the establishment and management of a transboundary conservation initiative, may evolve.

As explained in Table 11, there is a clear distinction between the *substance* of what needs to be done in a particular transboundary situation and the *process* by which people

concerned bring this about (McKinney and Johnson, 2009; Borrini-Feyerabend et al., 2013). Governance is about the process of deciding what to do, while management is more about implementing appropriate strategies derived

at the governance level to address the substantive issues (see Chapter 7 on management). While governance and management differ, they complement each other, through iterative processes: governance informing management and experience in management influencing governance.

5.2. Transboundary governance: a sub-type of shared governance

Realizing that governance arrangements for protected areas are quite diverse all over the world, IUCN and CBD (Dudley, 2008; UNEP/CBD COP 10, 2010; Borrini-Feyerabend et al., 2013) suggest that alternative approaches in respect of protected areas can be grouped into four broad types (Table 12) according to the main actors holding authority and responsibility for key decisions, such as establishing a TBCA and determining its management objectives.

Table 12 presents **shared governance** as one type of governance of protected areas, and transboundary governance as a sub-type. Shared governance refers to the process by which decisions have been reached. It is about the sharing of power, authority and responsibility between various actors in the process of making relevant decisions (Borrini-Feyerabend et al., 2013). Transboundary governance is a form of shared governance since various actors are involved in the decision-making process—in this case, actors from two or more countries.

WCPA's guidance on governance recognizes that TBCAs may include other 'local actors' or 'other jurisdictions' (Borrini-Feyerabend et al., 2013). Moreover, practice has shown that **many transboundary conservation initiatives are governed through informal arrangements** (see Appendix B; Brajanoska et al., 2013; McCallum et al., 2014). The most common situation is when relevant protected areas from two or more countries either make formal arrangements or take decisions in an informal way, the latter usually involving specific management tasks. After taking advice from the relevant expert groups in WCPA, it has been agreed that in these Guidelines—and in future—the IUCN governance framework will explain that transboundary governance should include **formal and informal arrangements made between multiple actors from two or more countries**.

As mentioned earlier, transboundary governance almost always includes a variety of actors (see Case studies 6 and 7). For example, it can involve two governments that make decisions on the evolution of a specific TBCA. But, it can also involve an NGO in one country and a government agency in another, which means that transboundary governance is shared by different sectors and actors. **Levels of authority** vary from the local level, though the district or provincial level, to the level of the national ministry or even to a supra-national regional level (van der Linde et al., 2001). The appropriate level will depend on the specific transboundary circumstances and/or the objectives of the TBCA. For example, the authority to develop a transboundary wildlife corridor would usually involve relevant government ministries and local planning institutions from the involved countries, whilst decision-making over cooperation in monitoring certain species or illegal hunting may involve protected area managers and staff, and local communities. Over time, initiatives started at local levels usually seek high-level support in order to achieve greater recognition. For example, actors at a local level may decide that some legislation is needed to advance cooperation in a transboundary context, in which case they may need help at a higher level in putting such laws into place.

Defining characteristics of transboundary conservation governance

During a workshop convened by the IUCN WCPA's Transboundary Conservation Specialist Group in October 2013 at Thayatal National Park, Austria, participants from 15 countries agreed that transboundary conservation governance is most effective when it includes the following suite of defining characteristics or common elements:

1. LEADERSHIP (see Figure 5)
 - The willingness and ability to share power, mobilize people, synthesize ideas and assemble resources;
 - The ability to forge alliances with people holding diverse interests, viewpoints and mandates; to invite people to develop and take ownership of a shared vision and values; and to bridge differences and nourish relationships;
 - The need for different types of leaders to catalyse, enable and sustain action.

Table 12 IUCN Governance types of protected areas

governance type	Sub-types
Type A. Governance by government	<ul style="list-style-type: none"> • Federal or national ministry or agency in charge • Sub-national ministry or agency in charge (e.g. at regional, provincial, municipal level) • Government-delegated management (e.g. to an NGO)
Type B. Shared governance	<ul style="list-style-type: none"> • Transboundary governance (formal and informal arrangements between two or more countries) • Collaborative governance (through various ways in which diverse actors and institutions work together) • Joint governance (pluralist board or other multi-party governing body)
Type C. Private governance	Conserved areas established and run by: <ul style="list-style-type: none"> • individual landowners • non-profit organizations (e.g. NGOs, universities) • for-profit organizations (e.g. corporate owners, cooperatives)
Type D. Governance by Indigenous Peoples and local communities	<ul style="list-style-type: none"> • Indigenous Peoples' conserved territories and areas—established and run by Indigenous Peoples • Community conserved areas and territories—established and run by local communities

Source: Adapted from Borrini-Feyerabend et al. (2013)

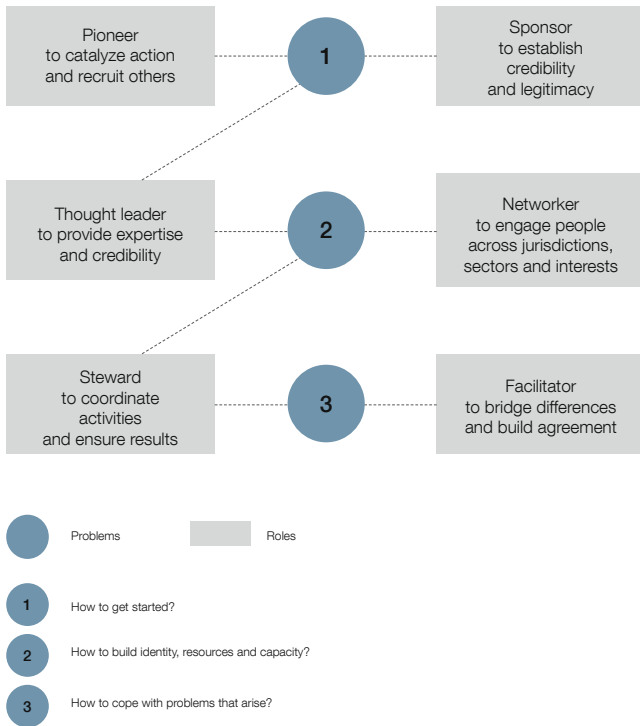


Figure 5: Leadership roles for transboundary conservation
Source: McKinney and Johnson (2009)

2. REPRESENTATION

- The people, organizations and authorities needed to achieve the desired outcomes;
- Who participates and what is their role (catalyst, convener, decision maker, advisor, etc.)
- The balance of power within the area.

3. PUBLIC PARTICIPATION

Strategies to involve government agencies, local communities, private landowners, NGOs, Indigenous Peoples, rightsholders and other stakeholders (Figure 6);

- Rightsholders are people with legal or customary rights to land, water and natural resources (IUCN, 2008);
- Stakeholders are people who possess direct or indirect interests in land, water and natural resources; they do not necessarily have legally or socially recognized entitlements to them (Borrini-Feyerabend et al., 2013) but will be impacted, either positively or negatively, by the initiative.

4. FUNCTION AND SCOPE

- The role and geographic area of interest;
- The relationship to other social and political entities within the region.

5. AUTHORITY, LEGITIMACY AND ACCOUNTABILITY

- The degree of legal authority;
- The alignment of public and political aims;
- The level of formal and/or informal organization:
 - Formal and informal recognition
 - Linking informal arrangements to formal decision-making systems.

6. LEARNING

- The process of facilitating scientific and public learning;
- The recognition and application of Indigenous and traditional knowledge.

	Increasing Level of Public Impact				
	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	The partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example techniques	<ul style="list-style-type: none"> • Fact sheets • Web sites • Open houses 	<ul style="list-style-type: none"> • Public comment • Focus groups • Surveys • Public meetings 	<ul style="list-style-type: none"> • Workshops • Deliberative polling 	<ul style="list-style-type: none"> • Citizen advisory committees • Consensus-building • Participatory decision-making 	<ul style="list-style-type: none"> • Citizen juries • Ballots • Delegated decision

Figure 6: Spectrum of public participation

Source: International Association for Public Participation (2007)

Case study 6

The European Green Belt Initiative

The European Green Belt is a 12,500 km long strip of land and coastal sea area. It stretches from the Barents Sea to the Adriatic and Black Seas and comprises more than 3,200 protected areas. As the Green Belt snakes from north to south, it passes through a variety of European landscapes ranging from arctic tundra, boreal forests, mires, lush flood plains and alpine peaks, to coastal habitats and grasslands. It connects 24 countries and its potential as the backbone of a pan-European ecological network is widely recognized. Major parts of the European Green Belt's pristine landscapes were developed along the former 'Iron Curtain', marking the political separation between the former Eastern and Western Blocs. In its four different sections—Fennoscandian, Baltic, Central European and Balkan Green Belt—history has followed different paths, but the common factor is that the existence of the former border zone has left a legacy of remarkable natural values which now form the European Green Belt.

Almost 150 governmental and non-governmental organizations, municipalities, protected areas, enterprises and scientific institutions have come together in the European Green Belt Initiative.

At individual sites in all four sections, people and organizations are involved in work to conserve biodiversity and to support local people in using natural resources sustainably. Besides conventional nature-conservation-oriented projects, the focus is on sustainable development to secure local livelihoods: for example, the GreenNet project (2011-2014) aims to develop the peripheral rural areas in a sustainable and integrated way. There are also cooperative programmes in environmental education, cultural heritage and societal integration. In the Fennoscandian Green Belt most work is done through transboundary park-to-park cooperation and collaboration by scientific organizations supported by government-level political decisions.

By bringing people together and encouraging the exchange of experiences and ideas, through regional meetings and in other ways, the European Green Belt Initiative can add value and ensure that it reaches its goals. If all regions and actors share a common understanding of what they are doing and why they are doing it, the European Green Belt could make a real difference to the conservation of Europe's natural heritage.



A map showing the Green Belt 'line' across the European continent. ©European Green Belt Initiative/Coordination Group

Considering the geographical span of the Initiative and the number of countries, institutions and individuals involved, collaboration remains a major challenge. Sustained leadership and empowerment are needed at all levels: local, national, and regional. This is why governance has been an integral and challenging aspect of the work of the Initiative since it began.

Ground-breaking steps to establish a sustainable governance structure were taken in 2012 when the Coordination Group was created. Its tasks are the conceptual development of the European Green Belt Initiative, the organization of the Pan-European Green Belt Conferences, and communication. The Terms of Reference of the Coordination Group specify that each region delegates one Regional Coordinator, one National Focal Point and one National NGO Partner. In addition, a representative of IUCN participates in the meetings as an advisor.

Each of the four regions has adopted a different governance mechanism. The Fennoscandian Green Belt has a government-level Memorandum of Understanding signed by Finland, Norway and Russia in 2010. The agreement

expresses their joint determination to invigorate cooperation along the Fennoscandian Green Belt based on principles of sustainable development. National views and timely communication are secured by National Working Groups, e.g.: Finland established a National Working Group with three Regional Working Committees covering the whole length of the border.

The European Green Belt Initiative actively connects nature conservation with care for local history and cultural values throughout Europe. However, its survival depends on it being able to secure independent, long-term financing. The formalized structure of the Coordination Group, and its participatory principle, should help to achieve this, as well as ensuring continuing political commitment and support from all the countries involved.

Prepared by: **Anne Katrin Heinrichs** and **Gabriel Schwaderer**, EuroNatur
(on behalf of the Coordination Group of the European Green Belt Initiative),
Kari Lahti, Metsähallitus Natural Heritage Services
Web: <http://www.europeangreenbelt.org>



Celebration of the tenth anniversary of the European Green Belt Initiative took place in Berlin, Germany, in 2013. ©BUND Green Belt Project Office

7. DECISION-MAKING

- The type of decision rules, roles and responsibilities of representatives;
- The degree to which decisions are binding or merely advisory.

8. CONFLICT RESOLUTION

- Procedures to prevent, manage, and resolve conflicts.

9. ADAPTIVE MANAGEMENT

- Strategies to monitor and measure progress, support on-going learning and adapt to change.

10. FINANCING

- Sustainable financial support from public, private or NGO sources for the creation and on-going management of a transboundary conservation initiative;
- Securing other income generating streams from the value of the natural resource base that can be used to meet the costs of transboundary conservation.

Although there is no single model for transboundary conservation governance, all successful approaches share these defining characteristics and common elements. Their presence is essential if governance is to be inclusive, informed, deliberative, transparent, credible, legitimate and sustainable (e.g. Oran, 1999; van der Linde et al., 2001; McKinney and Johnson, 2009).

5.3. Models of transboundary conservation governance

The IUCN typology of governance arrangements for protected areas (Table 12) helps to clarify who has authority and responsibility for making decisions, and thus covers issues of representation and decision making, and to some degree leadership. However, it does not take account of the other common elements of transboundary conservation governance, such as the degree of formality that underpins it and the range of actors involved.

A basic principle is that the preferred model of governance should reflect the needs of the area concerned. The IUCN World Parks Congress 2014 in Sydney, Australia, called on ‘all countries, relevant organizations, protected area managers and rightsholders (to) support the maintenance and implementation of a variety of shared governance models for protected and conserved areas, in particular for the conservation of transboundary ecosystems and migratory species as means to ensure their equity, effectiveness and efficiency, including for sustainable use. This should be achieved through recognition of customary practices, advances in protected area law and other legislation, and **models of transboundary conservation governance** designed to suit their contexts’ (Borini-Feyerabend et al., 2014).

The optimum governance model will involve making choices around the degree of formality, the actors and structures involved, the need to establish new governance structures and the need for structures to evolve and adapt over time.

Formal and informal models

A review of models of transboundary conservation governance around the world suggests that many formal and informal approaches exist (e.g. see Appendix B). Formal arrangements are underpinned by legal mechanisms or agreements, which may be binding (e.g. a bilateral treaty) or non-binding (e.g. a Memorandum of Understanding or a Declaration of Intent). Informal approaches do not require ratification of official agreements but are based on looser arrangements made between the participants.

An example of a formal structure is the Danube River Network of Protected Areas in Europe which gathers together the representatives of twelve protected areas in eight Danube countries. The Declaration of Tulcea formally launched the initiative to ‘expand the cooperation, coordination, consultation and strengthen links between the national administrations of protected areas of Danube riparian countries’ (Declaration of Tulcea, 2004). In 2009, the Danube River Network of Protected Areas was officially launched by the Declaration of Vienna. Similar networks involving protected area authorities are mentioned throughout these Guidelines; e.g. the Barents Protected Areas Network (see Box 4) and the TransParcNet (see Box 23).



The Heart of the Continent Partnership is an example of an informal governance structure in which land managers and local stakeholders work together on transboundary projects to promote natural, cultural and economic values of the Minnesota, USA and Ontario, Canada region. ©Heart of the Continent Partnership

Table 13 Strengths and weaknesses of formal transboundary conservation governance arrangements

FORMAL TRANSBOUNDARY CONSERVATION GOVERNANCE	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Creates more or less permanent forums to facilitate transboundary thinking and action • Allows government agencies to work across boundaries either within existing government structures or by realigning functions • Enables high-level and broad-based support for implementation • Provides flexibility to include representatives from all sectors—public, private, non-profit, university, etc. • Clarifies roles and responsibilities, thereby minimizing misunderstanding and friction among participants • May ensure implementation by creating the right incentives and/or binding agreements • Provides legitimacy for addressing transboundary issues • May be better able to address long-term transboundary concerns • Provides a central platform to integrate diverse needs and interests (in case of the establishment of new transboundary formal structures) • May help build trust and social capital 	<ul style="list-style-type: none"> • Authority may be limited to planning and visioning, not implementation • Effectiveness depends on good-faith efforts and continuity of participation among individuals in each agency; staff turnover can derail group efforts • Equitably distributing costs and benefits among participants can be challenging • Requires trust and the building of social capital • Individual partners may want their interests to predominate, making it difficult to prioritize projects fairly, despite agreement on a transboundary vision • May include agreement between partners on high-level vision that includes very different conceptualizations of what this means and how to get there • Newly established transboundary institutions/structures often have high start-up and maintenance costs and may not be easily adapted to changing circumstances

Table 14 Strengths and weaknesses of informal transboundary conservation governance arrangements

INFORMAL TRANSBOUNDARY GOVERNANCE	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Typically requires less time, money and other resources than formal arrangements • Well suited to responding to problems characterized by divergent sources, actors and information • Minimizes administrative and bureaucratic hurdles • Can be built on existing relationships • Can be readily scaled to the issue and potential solutions at hand • Offers an inclusive platform to integrate diverse needs and interests (in case of the establishment of new transboundary informal structures) • Requires trust • Provides flexibility to include representatives from all sectors—public, private, non-profit, university, etc. 	<ul style="list-style-type: none"> • May be difficult to sustain due to lack of formal structure • Lack of specific, formal agreement on roles and responsibilities can lead to misunderstanding and friction through the loss of continuity and/or champions with institutional memory • In contentious situations, the necessary trust among participants may be difficult to forge or sustain • Highly susceptible to changes in power, politics, personnel, and resources • Can be challenging to distribute costs and benefits equitably among players in the network • May lead to an increase in transaction and coordination costs • Tools and resources (and perhaps even the spirit of cooperation) may disappear when the issue that spurred the informal cooperation goes away • Newly established transboundary institutions/structures often have high start-up and maintenance costs and may not be easily adaptable to changing circumstances

An example of an informal arrangement that involves NGOs is the part played by the Roundtable on the COTC Conservation Initiative which brings together most of the conservation NGOs in the region (see Case study 7).

Informal approaches are not a substitute for formal arrangements. Rather, they supplement, complement and often make the more formal processes of governance work better.

Informal arrangements support the implementation and enforcement of policies and plans. Because they are often built on an understanding of local culture and livelihoods, they encourage a greater sense of ownership of, and willingness to engage in transboundary conservation. They normally require less resources than formal approaches and come with fewer bureaucratic obstacles. But they may be less robust, making it more difficult to sustain the effort, personnel may come and go more often, and resources may be unreliable. Table 13 sets out the most common strengths and weaknesses of formal arrangements for transboundary cooperation, and Table 14 those of informal ones.

The actors and structures involved

Various actors can catalyse and coordinate formal and informal transboundary governance arrangements. So governments, government agencies, NGOs, local communities, Indigenous Peoples and protected area administrations may all play this role. These arrangements can be very complex. For example, the Transboundary Joint Secretariat of Armenia, Azerbaijan and Georgia is hosted by the German Development Cooperation, and members and partners include AHT-Group AG from Germany, the Regional Environmental Centre for the Caucasus, the Ministry of Nature Protection of the Republic of Armenia, the Ministry of Ecology and Natural Resources of the Azerbaijan Republic, the Agency of Protected Areas of Georgia and the Caucasus Nature Fund (see Box 21). It is a cooperative structure consisting of government agencies, an international organization and a private company.

Bringing the actors together requires collaborative structures, such as partnerships, networks, commissions, groups, alliances or specially established institutions with members from each participating country. The terminology to describe

them varies widely, and several terms may be used to refer to the same kind of arrangement: thus a partnership may be called an alliance and a network may be called a group. Given this diversity of approaches, these Guidelines do not recommend standardized transboundary governance arrangements or definitions. Instead they highlight the variety of experience in the governance of TBCAs.

The need for new structures

Formal and informal approaches to transboundary governance can be built on existing structures and/or institutions, but sometimes new institutions are needed. Often these serve to integrate and coordinate established interests. Policy makers and citizens are often sceptical about creating another layer of government, and existing local and national governments may object to relinquishing any of their own powers. Opposition is likely to be strongest to the creation of a new regulatory body, and bringing this into being will therefore require political skill and commitment. Above all, it must be shown that it will add value. The following are examples of new bodies that have helped improve the prospects for transboundary cooperation:

- The Alliance of the Indigenous Peoples of the Highlands in Borneo (FORMADAT) was established in 2004 and brings together the leaders and people of the Highlands region of Indonesia, Malaysia and Brunei; though informal in nature, it is supported by a Declaration signed by its members (see Case study 4 for details).
- The Maritime Alps-Mercantour, where a joint juridical structure was established in 2013 under the EU's mechanism European Grouping of Territorial Cooperation (see Case study 8 for details).
- The joint Austro-Hungarian National Park Commission which was created for the Lake Neusiedl and Seewinkel Fertő-Hanság National Parks in 1988 (see Box 1).

- The Great Limpopo Transfrontier Park of Mozambique, South Africa and Zimbabwe, where government officials signed a Memorandum of Understanding in 2000. Joint working groups were set up for conservation, tourism, finance etc., which reported via a supervisory technical committee to a ministerial committee of all the three countries. This arrangement was formalised in a treaty to establish the Transfrontier Park in 2002, which creates a joint management board and transforms the working groups into permanent committees.
- The Joint Commission for the China-Mongolia-Russia Dauria International Protected Area is a high-level formal structure established in 1994 to oversee the trilateral Dauria International Protected Area (consisting of the Daursky State Nature Biosphere Reserve and the Valley of Dzeren Federal Nature Refuge in Russia, Mongol Daguur Special Protected Area in Mongolia, and Lake Dalainor Nature Reserve in China).
- Box 13 describes a continent-wide initiative that has been created in North America to encourage transboundary cooperation among many pre-existing protected areas.

The evolution and adaptation of governance models over time

Governance arrangements often become more formalized over time. When the Grenadines Network of MPAs in the south-eastern Caribbean was first created, there was no formal structure. The network consists of sites that are managed cooperatively by community and government. After years of dedicated work by an NGO, The Sustainable Grenadines Inc., and its partners, including local communities and government agencies, a formal agreement was signed between the MPAs (see Case study 9).

Box 13

An inter-governmental framework for transboundary cooperation in North America

Canada, Mexico and the USA share a continent with vast, interconnected wilderness and many protected areas. In order to protect these places and the ecosystem services they provide, seven North American agencies signed the first ever international agreement dedicated to conserving wilderness in 2009. The Memorandum of Understanding on Cooperation for Wilderness Conservation created a framework for cooperation between the Parks Canada Agency of the Government of Canada, the U.S. Fish and Wildlife Service, National Park Service and Bureau of Land Management of the Department of Interior, the U.S. Forest Service and the Office of Environmental Markets of the Department of Agriculture and Mexico's National Commission for Natural Protected Areas of the Secretariat of Environment and Natural Resources.

A North American Inter-Governmental Committee on Cooperation for Wilderness & Protected Areas Conservation has been set up to direct work under the Memorandum of

Understanding, working across boundaries on common ecological, economic and social challenges. It aims to strengthen the conservation of ecosystems and species by cooperating on strategies for research, monitoring, protection and restoration, while facilitating opportunities for public outreach, education, visitor experience and enjoyment.

Since 2009, cooperation has yielded valuable lessons for addressing transboundary issues at a continental scale. In particular, the Climate Change Working Group has focused efforts in explaining to policy makers and the public how protected areas are essential for climate change adaptation, e.g. in delivering natural solutions for landscapes, waterscapes and communities in all three countries.

Prepared by: **Rob Prosper**, Parks Canada Agency

Web: <http://nawpacommittee.org/wp-content/uploads/2012/08/NAWPA-CCWG-Brochure.pdf>

Case study 7

The Crown of the Continent

The Crown of the Continent (COTC) is a 72,000 km² transboundary ecosystem that spans the USA (Montana) and Canada (British Columbia and Alberta). For nearly 100 years, beginning with the creation of Glacier and Waterton National Parks, this area has served as a laboratory for transboundary conservation. Today, this special place incorporates a number of innovative governance arrangements, both formal and informal, that are emerging in TBCAs throughout the world. They build on the pioneer Waterton-Glacier International Peace Park set up in 1932, where each component park is part of a Biosphere Reserve and the International Peace Park has been designated as a transboundary World Heritage site.

More than 100 agencies and community-based organizations are working today to promote and sustain the cultural, community, and conservation values of this special place. The Roundtable on the COTC serves as a 'network of networks' for this large group. The following COTC-wide initiatives have been taken during the past 20 years:

1994	COTC Ecosystem Education Consortium
1999	Transboundary Research and Education Program, University of Montana and University of Calgary
2001	Crown Managers Partnership
2002	COTC Resource Learning Center
2002	Heart of the Rockies
2007	COTC Geotourism Council
2007	Roundtable on the COTC
2009	University of Montana COTC Initiative
2009	COTC Conservation Initiative

All these essentially informal initiatives support transboundary conservation, through information exchange, building relationships and creating the civic and political will needed to address complex issues relating to natural resources which cannot be addressed effectively by any single stakeholder. The COTC includes two countries with more than 20 government agencies exercising some type of authority over the management of the landscape. While each of these expert-driven institutions plays an important role in managing the area's unique natural and cultural resources, most of the issues facing the COTC are across jurisdictional and cultural boundaries. Whereas the formal legal and institutional arrangements delineate ownership and management authority, they also create barriers between disparate cultures, values, interests and goals. People who care about the COTC are increasingly looking to bridge these barriers.

The transboundary system of governance that is organically emerging reflects a nested model of governance. Starting at the smallest geographic scale, there are at least 20 community-based partnerships in the COTC, most of them initiated and convened by citizens. These community-based partnerships create the basic building blocks within the emerging nested system of governance structure. For example, the Blackfoot Challenge is a landowner-based group coordinating management of the Blackfoot River, its tributaries, and adjacent public and private lands. It is organized locally and known nationally as a model for preserving the rural character, ecological health and natural beauty of a watershed. It supports environmentally responsible resource stewardship by private and public interests working together. Private landowners, federal and state land managers, local government officials and corporate



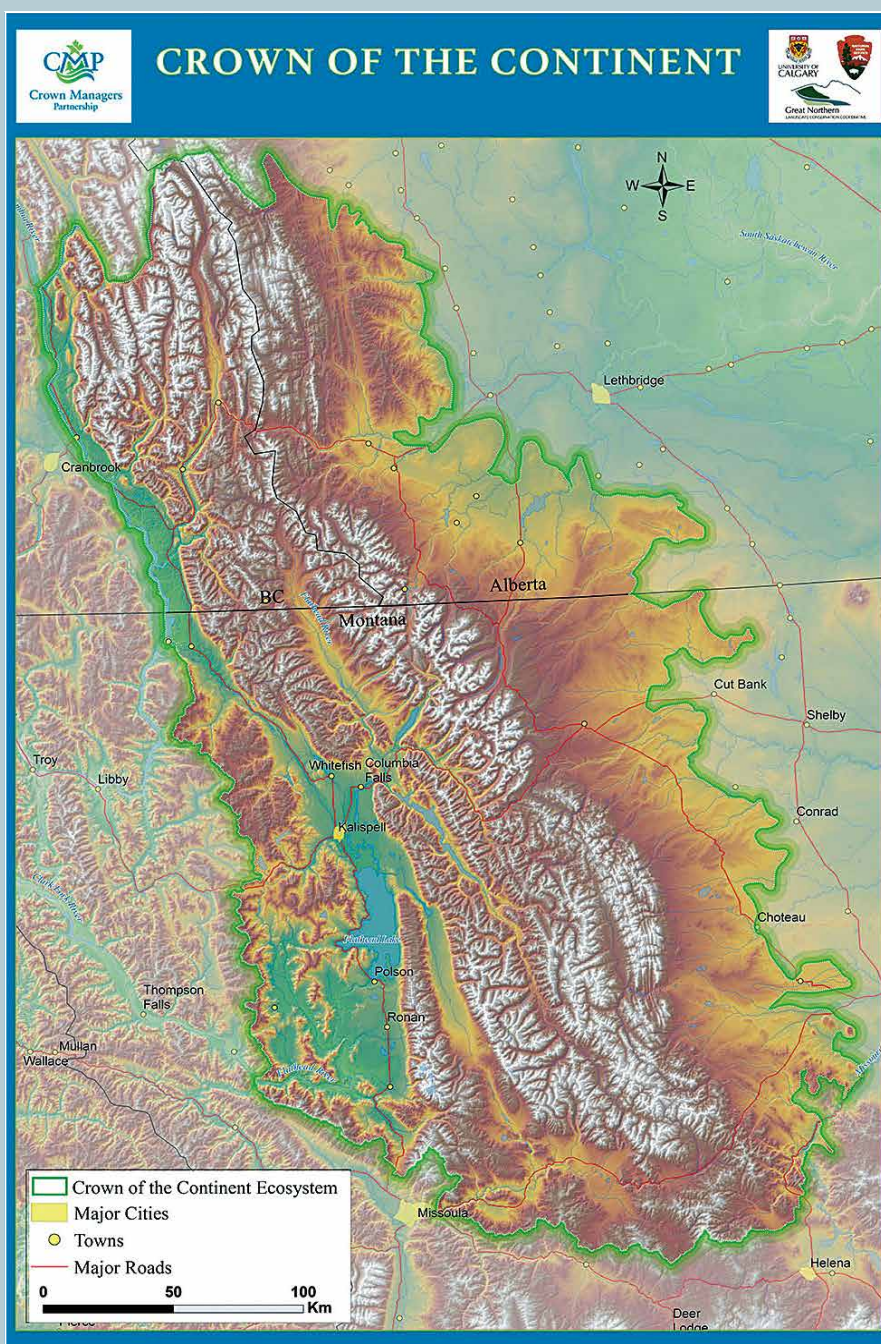
Scientists from USA and Canada are collaborating to understand the impact of habitat fragmentation and disease on the native bighorn sheep (*Ovis canadensis*) population. ©Tony Bynum

landowners make up the informal membership. All share a common vision for the Blackfoot watershed and all believe that success is most likely to result from building trust by working together. It is a good example of how community-based partnerships can often exist alongside each other, and are nested within a larger spatial context—in this case, the ecosystem referred to as the COTC.

So the COTC is an example of a collaborative, nested and adaptive approach that blends formal and informal arrangements. Citizens, private businesses, NGOs and universities in the COTC increasingly support the formal governance arrangements. They facilitate scientific and public learning, foster civic and political will, and organize events that connect people and build regional identity.

The COTC is itself just a small part of the continental scale Yellowstone to Yukon Conservation Initiative, an effort to protect wildlife core areas and corridors across a 1,295 km² landscape. It began as a network of biologists and conservationists who were concerned about the status of wildlife populations. The initiative still supports networking among professionals, but focuses more on protecting key connectivity for species such as the grizzly bear (*Ursus arctos*) which face significant threats from habitat loss, from invasive species and, increasingly, on climate change. It also works closely with private landowners, community leaders and others to address a range of issues related to land use, community and economic prosperity, and wildlife management.

Prepared by: **Matthew McKinney**, University of Montana
 Further reading: Bates (2010); Locke and McKinney (2013)
 Web: http://www.crownroundtable.org/the-initiatives.html#crown_wide



A map showing the Crown of the Continent's ecosystem spreading across the USA and Canada. ©Crown Managers Partnership

5.4. Lessons learned and advice to practitioners

Several lessons emerge from this critical review of transboundary conservation governance. But it is important first to emphasize three overarching trends in transboundary conservation governance—all of which should be considered indications of ‘best practice’.

First, transboundary conservation governance is increasingly **collaborative**. This means engaging diverse role players and stakeholders—including communities, rightsholders, private sector groups, experts and governments from the involved countries—in learning jointly about their areas and the problems they face, and generating options for management. This may need to be done in the face of conflict, changing conditions and unreliable sources of information. A core principle is that the various interests should not merely be ‘consulted’ but enabled to engage directly in decision-making.

Second, transboundary conservation governance is increasingly **nested**, meaning that it includes distinct but linked systems of governance at various levels of social organization. This is desirable in principle because autonomous, self-organized governance systems are often more effective in learning from experimentation than a single central authority. Under appropriate circumstances, individual systems can be linked—or nested—to form dynamic ‘networks of networks’, capable of addressing transboundary issues that could not be addressed by any single organization.

Third, transboundary conservation governance is increasingly **adaptive**. It is based on the premise that uncertainty is a given—that social, economic and environmental variables change, landscapes evolve and unanticipated impacts occur. Rather than waiting until more complete information is available, adaptive governance means that we should learn by doing and create an expectation of learning as we go.

In light of the above, and taking into account the best practice presented throughout these Guidelines, six key take-away points for transboundary conservation practitioners and projects are emphasized:

a. **Address common elements of good governance.**

Although there is no single model for transboundary conservation governance, there are common elements that should be addressed in the design and operation of any

governance arrangement (i.e. leadership, representation, public participation, function and scope, authority, legitimacy and accountability, learning, decision-making, conflict resolution, adaptive management and financing).

- b. **Let function dictate structure.** Whether a transboundary conservation initiative should be formal or informal, and whether it should be led by government, private entities, local communities and/or Indigenous Peoples, it should always be driven by the intended functions of the initiative.
- c. **Promote flexibility and adaptability.** One of the key lessons emerging from the practice of transboundary conservation is that the most effective governance arrangements are adaptable. While the goals of transboundary conservation may remain constant, the means to achieve them cannot be set in stone since social, political, economic and environmental contexts are constantly changing.
- d. **Design mechanisms for accountability.** Because all shared governance relies on building trust and social capital, institutional arrangements should promote and support an open, transparent, inclusive and informed process. Conflict resolution mechanisms are needed to make sure that participants can resolve differences.
- e. **Govern at the scale of the problem.** As emphasized throughout this Chapter, TBCAs are complex social-ecological systems³⁴ with many problems. Challenges occur at many different scales. Governance functions best when it matches the scale of the issue it attempts to resolve. In transboundary conservation, some issues are better addressed at a very local scale while others will need to span large regions. Effective transboundary governance will encourage decision-making at the appropriate scale.
- f. **Cooperate or go it alone.** Across the continuum of transboundary conservation governance, stakeholders regularly confront the dilemma of when to cooperate and when not to. These Guidelines emphasize that this will vary by stakeholder and by issue. A general rule of thumb is to weigh the increased transaction costs of cooperation and collaboration against the benefits gained through cooperation and collaboration. A similar rule of thumb should help determine the appropriate level and form of cooperation.

³⁴ A social-ecological system refers to a bio-geo-physical unit and its associated human actors and institutions.



China-Mongolia-Russia Dauria International Protected Area is governed by a high-level Joint Commission. The picture shows Mongol Daguur Special Protected Area (Mongolia). ©Maja Vasiljević



FORMADAT leaders from Indonesia and Malaysia meet a Malaysian government official. FORMADAT, the Alliance of the Indigenous Peoples of the Highlands in Borneo, is a local informal initiative that enriches governance approaches in the Highlands. ©Edwin Meru

Part 2

From principles to action

Overview of Part 2: from principles to action

Part 2 consists of three Chapters that elaborate the four essential stages of the transboundary conservation process: diagnose, design, take action and evaluate (see Table 15). These are of course the basic stages of any good adaptive management planning cycle and are just as relevant in a transboundary context. In fact, the guidance in this Part of the Guidelines is in line with WCPA's advice on management planning. Thus, Table 15 is consistent with the six stages of the WCPA's management cycle (see Figure 7): (1) understanding the **context** of the area by reviewing the values, threats and opportunities,

stakeholders and relevant management context; (2) **planning** for management; (3) allocating resources (**inputs**); (4) implementing actions according to accepted **management processes**; (5) producing **outputs** (goods and services) which result in (6) impacts or conservation **outcomes** (Hockings et al., 2006)³⁵. This management cycle also provides the Commission's recommended framework for assessing management effectiveness of protected areas.

Nonetheless, there are some special characteristics of transboundary conservation which will shape the detailed application of the conservation process at every stage.

Table 15 Common stages of a transboundary conservation process

WCPA's Framework	CONTEXT AND PLANNING		INPUTS AND PROCESSES	OUTPUTS AND OUTCOMES
Stages	DIAGNOSE	DESIGN	TAKE ACTION	EVALUATE
Goals	Determine the need for transboundary conservation	Match the process to the situation	Secure resources and implement actions	Learn and adapt
Step 1	Identify if there is a compelling reason to act	Determine who should lead the effort	Assess the capacity to implement plans	Assess progress and outcomes
Step 2	Determine if there is a constituency for change	Mobilize and engage the right people	Develop an action plan	Determine if there is a need to continue
Step 3	Estimate the scope of the issue	Define the geographic extent	Secure financial sustainability	Adapt the management and action plans
Step 4	Estimate the capacity to work across boundaries	Negotiate a joint vision and develop management objectives	Implement the plans	Communicate progress

Source: Adapted from McKinney and Johnson (2009)

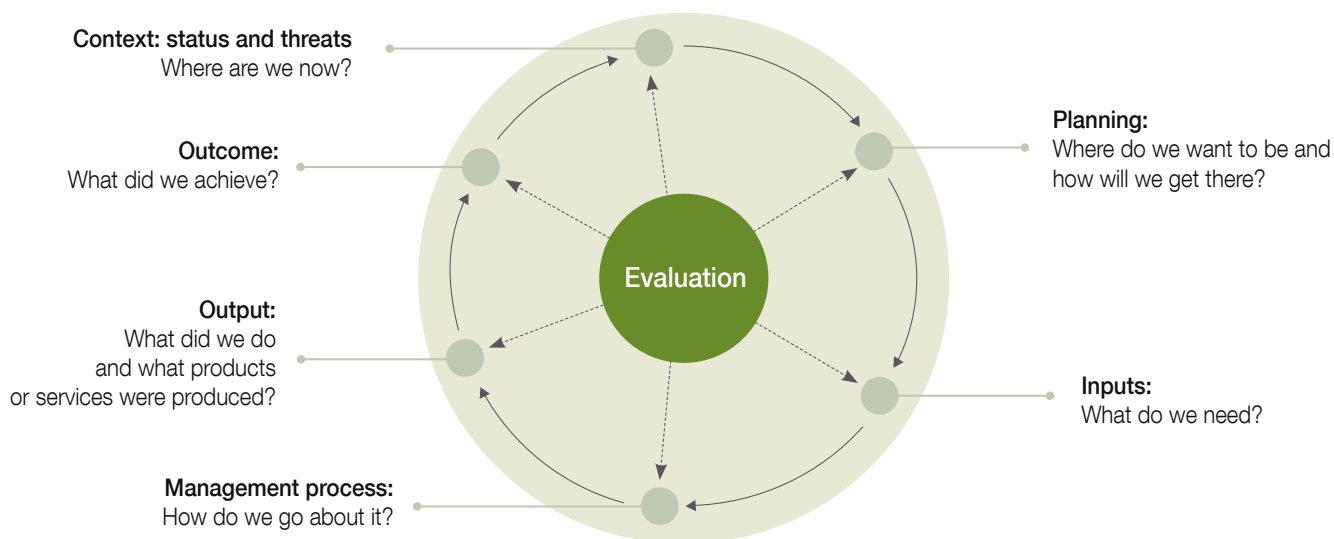


Figure 7: The WCPA's management cycle and the framework for assessing management effectiveness of protected areas

Source: Hockings et al. (2006)

35 Note that the transboundary conservation process stages are also consistent with the Open Standards project management cycle, designed by the Conservation Measures Partnership (2013), see <http://www.conservationmeasures.org>

6. Context and planning the transboundary conservation process

This Chapter focuses on the two initial stages of the transboundary conservation process: ‘diagnose’ and ‘design’³⁶. Diagnosis deals with **context** issues by assessing the enabling environment (section 6.1.) and the feasibility of transboundary conservation (section 6.2.), thus establishing the need for transboundary conservation. The design stage aims to match the process to the situation by careful **planning** of important elements and processes: engaging the right people (section 6.3.), determining the geographic boundaries of a transboundary initiative (section 6.4.) and developing a joint vision and management objectives (section 6.5.).

6.1. Assessing the enabling environment

Before initiating a transboundary conservation process, interested organizations and individuals should come together to assess the situation. If the benefits of transboundary conservation for the key interest groups outweigh the costs involved of working across borders, a strong case will be made for working in a transboundary way (see Box 14). As Table 15 shows, four diagnostic steps should help identify if the countries and stakeholders involved need to engage in transboundary conservation, and if the key partners are ready to act. These will require time and resources, but are necessary to establish if there is a case for transboundary action. They will reveal whether there is a powerful catalyst for action like a serious threat or significant opportunity, assess the geographic scope of the issue that needs to be addressed, help analyse the social-ecological system, ascertain the constituency for change, and estimate the capacity for transboundary conservation. This will confirm if there is compelling case for transboundary action.

- **Diagnostic step 1: Identify if there is a compelling reason to act**

Transboundary conservation is challenging and many interests are reluctant at first to think and act across international boundaries. It involves more work, brings more responsibilities and makes more demands on what are often already thinly stretched resources of finance and staff. So the case for transboundary conservation is only compelling when people have mutually compatible aims and believe that they are more likely to achieve their aims by thinking and acting together than by doing so alone. Research and practical experience suggest that nearly all transboundary efforts originate in response to one of two driving forces: a threat or pressure, or a promising opportunity (van der Linde et al., 2001; Baldus and Hahn, 2007; van der Molen and Ietswaart, 2012). Without such a motivation to change the way things are done, it will

not be possible to overcome inertia. But the existence of such a motivation is only the first step in bringing about a successful transboundary conservation initiative.

- **Diagnostic step 2: Determine if there is a constituency for change**

There must also be a critical mass of people who are aware of a common crisis, threat or opportunity, and willing to work together in response. This raises several additional questions: Who is interested in or affected by the issue? What are their aspirations? What are their concerns? Who might undermine the process or outcome if their interests are not taken account of? (see section 6.2.)

- **Diagnostic step 3: Estimate the scope of the issue**
Delineating the precise boundaries of a TBCA is not part of this initial phase in the transboundary conservation process. Rather what is needed is a preliminary sense of the issues involved and a broad approximation of the territory affected, so as to embrace the full range of stakeholders’ interests (note that boundaries in certain TBCAs can be adjusted to respond to changing needs over time). This exercise will reveal how many jurisdictions would be involved, as well as the history of relationships among potential participants. Do they have a track record of working together or not getting along? What is known (or not known) about the scientific and technical aspects of the issue? What types of natural resource or socio-economic decisions need to be made in the project area, and will working together in a transboundary fashion improve this decision-making? These and similar questions can help diagnose the scale of the challenge and the need for collaboration. This step is evolving and iterative, and thus it also forms part of the design phase (see section 6.3.).

- **Diagnostic step 4: Estimate the capacity to work across boundaries**

This step is about the capacity of key partners to start the process of cooperation and build their competence over time—rather than seeking to assess their capacity to deliver long-term goals at the outset. Just as no single person or group is likely to have the power or authority to address all aspects of a transboundary issue, so no one person or group will have all the necessary resources to deal with it. The best way to assemble these resources is to identify what assets various partners are willing to bring to the effort and share, and what, if any, resources are missing. Often, transboundary initiatives are embarked on without securing all the necessary resources at the outset; if so, they may not be able to respond adequately to the hopes of local stakeholders. It should be noted that estimating capacity is important throughout the transboundary conservation process, especially when the management objectives are broken down into operational goals and specific actions, as these need to be realistic in terms of the available capacity (see section 7.1.).

³⁶ This Chapter is partly adapted from the publication *Initiating effective transboundary conservation: A practitioner’s guideline based on the experience from the Dinaric Arc* by Erg et al. (2012). See: https://cmsdata.iucn.org/downloads/initiating_effective_transboundary_conservation.pdf

Box 14

Prioritization of Transboundary Protected Areas in South Asia: the Indian initiative

India shares borders with Bangladesh, Bhutan, China, Myanmar, Nepal, Pakistan and Sri Lanka. Of the 683 protected areas in India, 26 are located in international border regions. In order to prioritize TBPA, these protected areas were categorized by the Wildlife Institute of India on the basis of five criteria: ecosystem resilience (size, connectivity), ecosystem services, number of species of conservation concern, entities of cultural and aesthetic significance, and economic potential; involving 24 indicators with a variety of thresholds. Scores were assigned on the basis of expert opinion and literature survey. Based on this analysis, TBPA were then listed in order of priority.

Subsequently, the proposed priorities were considered by the National Board of Wildlife. A Task Force was formed under the Chairmanship of the Secretary of the Ministry of Environment and Forests, with members from State Forest Departments, civil society organizations, and the Ministries of External Affairs, Home Affairs and Defence. After taking account of the analysis and strategic political and governance considerations, the Task Force identified the following five protected area complexes as potential TBPA:

(1) Buxa Tiger Reserve (India) - Phipsoo Wildlife Sanctuary (Bhutan); (2) Manas Tiger Reserve (India) - Royal Manas National Park (Bhutan); (3) Valmiki Tiger Reserve (India) - Chitwan National Park (Nepal); (4) Dudhwa National Park (India) - Shuklaphanta Wildlife Sanctuary (Nepal); (5) Sunderban Tiger Reserve (India) - Sunderban Wildlife Sanctuary (Bangladesh). While the formal declaration of TBPA is still in process, coordination meetings have taken place between the protected areas in each of the complexes to address such urgent issues as strategies to protect tiger populations, including the control of poaching and the illegal transborder trade in wildlife parts and products. This case study demonstrates the role of vertical and horizontal coordination between scientific and other institutions, leading to improved communications and effective ways of coordinating different governance systems. In this way, it has been possible to develop the political will needed to bring management bodies together and to set up TBPA.

Prepared by: **Syed Ainul Hussain** and **Vinod Bihari Mathur**, Wildlife Institute of India
Web: <http://www.wii.gov.in>



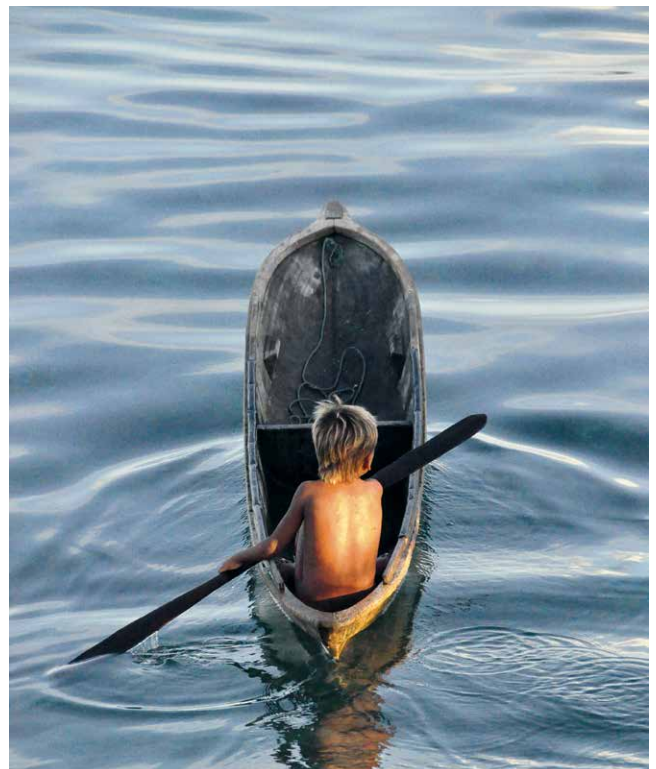
The Asiatic wild ass (*Equus kiang*), or kiang, is an endangered species inhabiting the steppe areas of the Tibetan Plateau. It is the symbol of the trans-Himalayan steppe of the Tibetan Plateau. Its movements through the border region of India and China in Ladakh often cause conflict with local inhabitants, when the animal eats their crops. This problem has become an opportunity to initiate dialogue aimed at conflict resolution and to help establish TBPA in the region. ©Neeraj Mahar/Wildlife Institute of India

6.2. Assessing the feasibility of transboundary conservation

Stakeholder analysis

A stakeholder analysis can provide answers to the diagnosis presented in section 6.1. It is an excellent way to assess the feasibility of a transboundary conservation scheme, as it will reveal the substantive issues and the diversity of viewpoints and interests. It helps people understand the history and the prevailing situation in the transboundary area, and why the various parties might engage in transboundary collaboration. It can also help those involved understand the costs and benefits of acting cooperatively rather than individually. Moreover, through the analysis, participants learn about each other's interests and values, so building understanding, trust and working relationships.

There are many ways to run a stakeholder analysis: focus groups, semi-structured interviews, snowball sampling³⁷, social network analysis and so on can all be used to identify and categorize stakeholders and how they relate to each other. Figure 8 shows one possible approach to conducting a stakeholder analysis (see also Reed et al., 2009 for a systematized presentation of methods and their key characteristics). The information gathered during this analysis should indicate if the minimum conditions exist for transboundary cooperation and help design an appropriate model for this.



A boy from a Bajau Laut community of Sabah, Malaysia. This Indigenous community who lives at sea, migrates throughout the archipelago of Southeast Asia and uses marine resources as their livelihoods, is one of the stakeholders within the Coral Triangle Initiative area. ©Harry Jonas

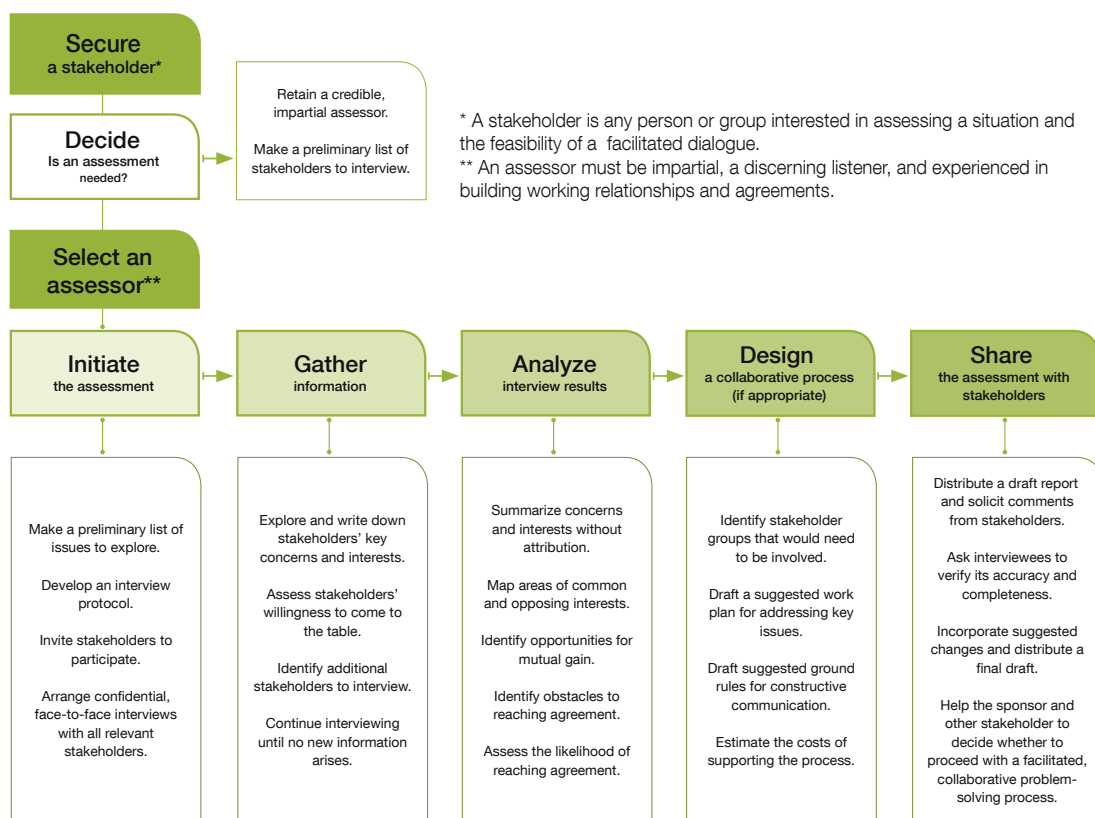


Figure 8: Stakeholder analysis

Source: McKinney and Johnson (2009) (adapted from Consensus Building Institute, 1998)

37 Snowball sampling is a non-probability sampling technique where existing study subjects recruit future subjects from among their acquaintances—the sample group appears to grow like a rolling snowball.

Diagnostic tool for transboundary conservation planners

To supplement the stakeholder analysis, the IUCN WCPA's Transboundary Conservation Specialist Group has developed a *Diagnostic tool for transboundary conservation planners: Suggested questions to determine feasibility for transboundary conservation* (Vasilijević, 2012b). This is intended to help assess the feasibility of initiating a transboundary conservation process. Many publications offer guidance on developing transboundary conservation, but this particular tool is innovative in that it provides a way of making assessments based on quantitative methodology, and is capable of being applied rapidly, as a form of self-assessment. It is designed to help protected area authorities, governments, NGOs, local communities and other interested parties to establish how ready they are to initiate a transboundary conservation project.

The tool is built around the use of a questionnaire that can easily be completed by stakeholders and others. The process is relatively fast, and does not have to be administered by a transboundary expert: others can interpret the results and establish the feasibility of a transboundary conservation project. However, the diagnostic process must be participatory: all interested parties should be consulted, indeed full participation is essential if the conclusions are to be well-grounded. For this reason, the questionnaire should follow on from the stakeholder analysis recommended earlier.

The questions presented in the diagnostic tool are standardized and not tailored to any particular area. While this could mean that sometimes site-specific issues are overlooked, the authors nonetheless believe that this is offset by the attractions of a simple and user-friendly approach, which is suitable for a rapid self-assessment procedure.

An improved electronic edition of the diagnostic tool includes an automated report generation function and is available at the website administered by the WCPA's Transboundary Conservation Specialist Group³⁸. This tool will need to be further tested in various geographical regions and ecosystems, and adjusted and improved accordingly.

6.3. Involving people

The investment in understanding the issues is needed to design an appropriate and efficient transboundary conservation initiative. It should aim to draw people into the effort, help them stay focused on the issues at hand, and enable the achievement of the desired outcomes—recognizing of course that such processes, no matter how well designed, should allow for adaptation and evolution as they are implemented.

Table 15 indicates the first two steps in the design phase of a transboundary conservation process: (1) determine who should convene and lead the effort, and (2) mobilize and engage the right people. Once people agree that they have a compelling reason to work together, they tend to look for leadership. Who is going to bring everyone together, organize the work, facilitate dialogue and be the voice for change? The most effective leader must be able to work across boundaries with a diverse range of interests (see Figure 5 for more on leadership).

38 See <http://www.tbpa.net>

To be effective, transboundary conservation initiatives must engage the right people and build a constituency for change. While such a constituency may already be organized in some transboundary areas, it is not always present—or it may exist only to a limited extent. So some transboundary conservation initiatives will need to build such a constituency, either from a small group of interested people or from scratch. Being as inclusive as possible helps to ensure that the people affected by the initiative feel ownership of both the process and the outcome, and also allows other interest groups to become involved as the project develops.

6.4. Defining the geographic extent

In the process of defining the geographic reach of transboundary conservation initiatives (step 3 of the design phase as in Table 15), the distinction between two closely related processes is important: delineating the boundaries, and mapping the delineated area. Delineating the extent of the area to be included in the transboundary initiative will take time because it involves a process that should be consultative, flexible, adaptive and iterative. Mapping the detail within it will be equally time-consuming. The two processes are essentially iterative—thus the mapping exercise will often require a revision of the initial boundaries for the transboundary conservation initiative.

Several separate tasks are required:

- **Assemble and map the information**

The starting point is clear, accurate information about the extent of the area to be affected by the transboundary initiative. This should show what parts of each participating country will be involved, and how the area relates to natural features, as represented by topographical, hydrological, ecological and other information, and man-made ones, like communication routes, land use zones etc. All of this requires a good map in which the scale of the cooperative management that is required needs to match the scale of the conservation issue (Dallimer and Strange, 2015).

- **Identify and consult stakeholders**

Once the target area is known, it is easier to identify and communicate with the stakeholders who are directly affected and who will be influential in the establishment and management of the TBCA. Dallimer and Strange (2015) emphasize the importance of this aspect particularly from the perspective of demonstrating the relevance of biodiversity and ecosystem services for the wellbeing of the stakeholders.

- **Plan for establishment and management**

Planning for the establishment and management of a TBCA requires good spatial data. When the Greater Limpopo Transfrontier Park was first conceptualized it was put forward as a TBCA, which included vast tracts of communal and private land surrounding well-separated protected areas. Through a series of iterations with decision makers, the area was significantly reduced to include only those protected areas that are immediately adjacent to each other (or, in one case, connected by a linking corridor). Only when this was done could planning proceed.

- **Provide greater definition for agreements**

It is possible for transboundary conservation agreements to be concluded in the absence of precise spatial descriptions, but there always needs to be some indication of the potential



A stakeholder consultation meeting addressing needs-based interventions, Nepal. ©Jitendra Bajracharya

geographical areas for collaboration. If this is not possible at the outset, subsequent agreements will be required to define areas with precision.

- **Analyse, monitor and evaluate**

The geographic extent of a transboundary conservation initiative is needed for a range of more detailed analyses and to develop a monitoring and evaluation framework (see Chapter 8).

A variety of highly technical, or less technical, methods may be used to delineate and map a TBCA. The selection of the preferred method will depend on the resources and capacity available. As can be seen from the Maloti-Drakensberg case (Box 15), a more low-tech method was used at first, to secure political buy-in. Later, a much more sophisticated approach was followed, using up-to-date conservation planning software. This identified a much wider area of interest. Subsequently, through a process of integrating systematic conservation planning³⁹, with its emphasis on biodiversity considerations, with social and economic factors, it has been possible to identify an area that is easy to explain and justify.

ICIMOD has played an important regional role in helping to identify and define critical transboundary landscapes across the Hindu Kush Himalayan region. It adopts a process-led approach, initiated by intensive expert consultations supported by high-level policy makers among conservation and development agencies, and in consultation with local communities (Zomer and Oli, 2011). In defining the areas, they have followed a systematic conservation planning approach based on protected area coverage and gaps (Chettri et al., 2008b), species distribution patterns and habitat contiguity (Chettri et al., 2007a; Rana, 2008), cultural and socio-economic considerations (Zomer and Oli, 2011; Chettri et al., 2012) and climate change and adaptation challenges (Zomer et al., 2013). In the case of Kailash Sacred Landscape (see Case study 3) China, India and Nepal each developed their own country-specific maps using common ecological, socio-cultural and environmental criteria; they came together to develop a transboundary landscape map based on discussions and agreements between them.

39 The development and refinement of systematic conservation planning as a discipline and a tool may be ascribed to two Australian scientists C. R. Margules and R. L. Pressey who have produced a number of relevant publications such as Margules and Pressey (2000). Their work is referenced substantially together with that of others in the very useful work of Watson et al. (2011) who review the discipline of systematic conservation planning and assess its usefulness, now and in future. There is often a bias in this work towards the terrestrial environment, but Ban et al. (2014) promote the use of systematic conservation planning to help achieve the 'required ecosystem-based, integrated and science-based management that world leaders at [the UN Conference on Sustainable Development in] Rio [2012] acknowledged should underpin ocean management'.

Box 15

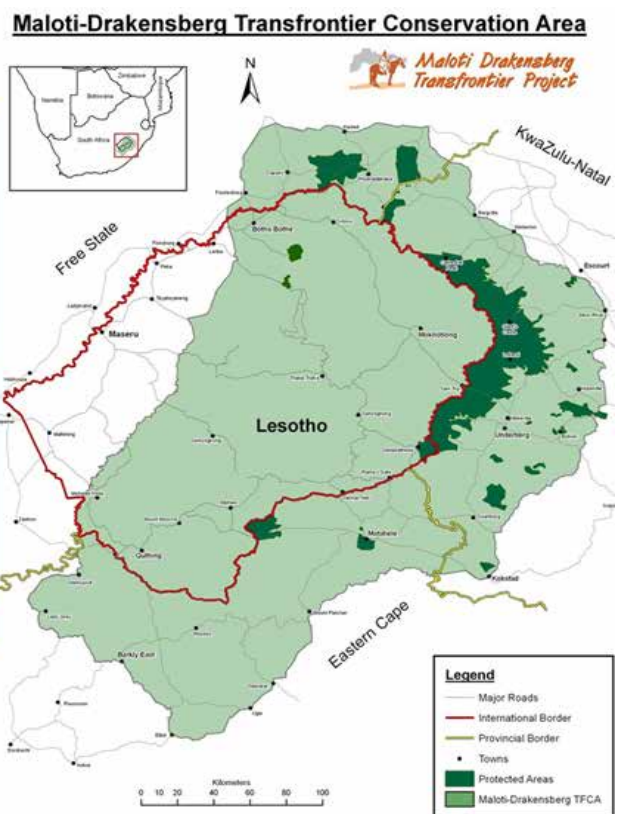
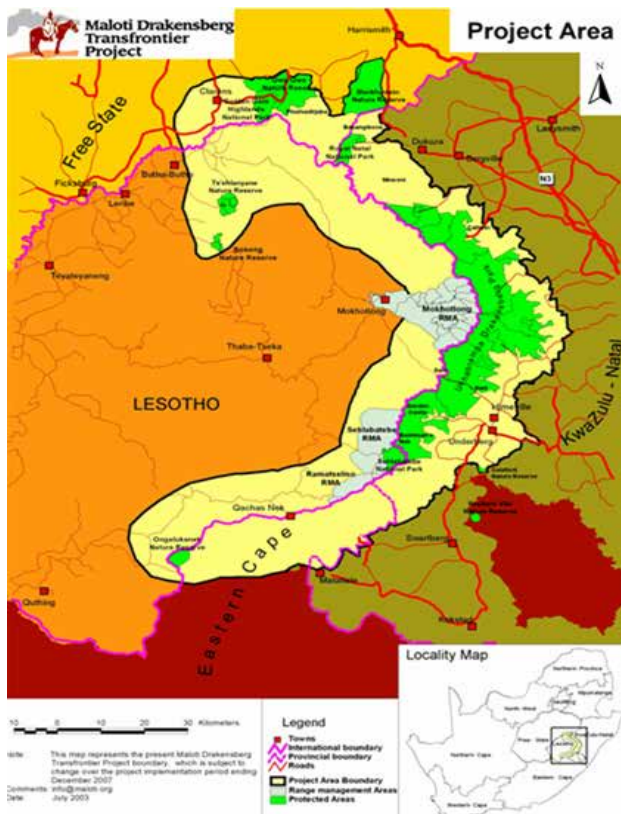
Maloti-Drakensberg: defining the geographic extent of a transboundary initiative

The Maloti-Drakensberg Transfrontier Project is a transboundary conservation initiative between the Kingdom of Lesotho and the Republic of South Africa to conserve the rich natural and cultural shared heritage of the Maloti-Drakensberg Mountains. It also aims to stimulate sustainable development based upon natural and cultural resources. A Memorandum of Understanding was signed in 2001 and a five year implementation phase, funded by the Global Environment Facility through the World Bank, began in 2003.

When the project moved from initiation to implementation, its geographic extent was influenced by political dynamics. There was a perception in Lesotho that the project was an attempt by South Africa to secure influence or control over some of their territory. So, while Lesotho was a willing participant in the project, the extent of the land they were prepared to include as part of the target area was limited to a strip drawn a standard distance from the international border, with an extension to include some of their protected areas. In South

Africa the line on the map reflected the character of the mountain bioregion that was the focus for transboundary collaboration. As the first five-year implementation phase progressed and systematic conservation planning techniques were applied, a very different picture emerged: much greater portions of both countries were included in the project area. So, even though the initial proposal excluded much of the bioregion, it helped secure political buy-in and as a point of departure for the project; and a greatly enlarged area was eventually included as a result of the parties collaborating in a subsequent conservation planning process.

Prepared by: **Kevan Zunckel**, Zunckel Ecological and Environmental Services
 Web: <http://www.maloti.org.za>



The Maloti Drakensberg Transfrontier Conservation Area as depicted at the initiation of the project in 2001 and the full extent of the initiative as agreed to by the bilateral Steering Committee in 2007. ©Maloti Drakensberg Transfrontier Project

6.5. Negotiating a joint vision and developing management objectives

The fourth step in the ‘design’ stage (see Table 15) describes the development of a common vision and a framework for cooperative management which includes elaboration of management objectives. This should if possible be expressed in joint management plan for the entire TBCA. Best practice on management planning is well covered in many publications, for example Sandwith et al. (2001), Phillips (2002), Thomas and Middleton (2003), IUCN (2008), McKinney and Johnson (2009), Stolton et al. (2012), Erg et al. (2012), and Borrini-Feyerabend et al. (2013). This section therefore provides only a broad summary of this advice, repeating the recommended best practice of a sequence of logical steps. It assumes that all the necessary preliminary stages have been followed: mandates have been secured from decision-making bodies, feasibility studies have shown that the benefits of a TBCA outweigh the transaction costs, stakeholders have been identified and leadership has been agreed.

There are many definitions and explanations of cooperative management including related concepts such as participatory

management, co-management and stewardship (for a thorough review of these and other terms, see Borrini-Feyerabend et al., 2004a). Often, these interpretations have been used in ways that overlap with what is now considered to be shared governance; in fact, as noted in Table 11 above, governance and management differ.

Cooperative management is ‘taking action together to implement decisions and pulling together the available means (human, financial, etc.) to reach the agreed aim/ results’ (Borrini-Feyerabend, pers. comm.; Borrini-Feyerabend et al., 2013). It can include cooperation between different sectors, such as government agencies and Indigenous Peoples, or cooperation within the same sector (e.g. several stakeholder groups of local communities) (see Box 16). These Guidelines use **the term cooperative management only in the context of transboundary cooperation**, i.e. its meaning and interpretation are to be understood here solely in an international context. So, here it always involves stakeholders from two or more countries with a common interest in the conservation of a shared ecosystem or species, cooperating formally or informally.

Table 16 Suggested agenda for a workshop on the identification of a transboundary common vision and agreement on objectives for cooperative management

Method	Agenda item
Formal presentations (1)	<ul style="list-style-type: none"> Objectives of the workshop and details on the workshop process Rationale for the establishment of the transboundary conservation initiative Review of the relevant national and international legal and policy frameworks in which the initiative can be nested Potential further work to bring about enhanced legal and policy compatibilities between the participating countries
Formal presentations (2)	<ul style="list-style-type: none"> Various actors provide information as to who they are, where they are located in relation to the area in question, what their perspectives are on the possible establishment of a TBCA in terms of their fears, hopes, aspirations, etc.
Open facilitated discussion	<ul style="list-style-type: none"> Participants add to what has been presented and ask questions for clarity <p><i>Note that this process may reveal controversial and potentially inflammatory viewpoints, which are essential to understand and to respect. It is normal that each stakeholder should enter with a biased perspective of their interests. This process allows participants to begin to question their own views by developing an appreciation of the bigger picture and how the same issues are seen by other players.</i></p>
Situation analysis	<ul style="list-style-type: none"> Facilitator identifies all the dynamics and aspects that are relevant to and will influence the establishment and management of the transboundary conservation initiative Facilitator categorizes the aspects according to the principles of sustainability, i.e. natural and cultural, social and economic Facilitator distinguishes aspects that are either internal or external to the target area This broader context may then be presented back to the stakeholders for review, correction and confirmation
Plenary brainstorming or break-out groups (1)	<ul style="list-style-type: none"> Participants start developing a shared vision <p><i>Note that a series of draft vision statements may be produced from which the facilitator can help to derive one that reflects the commonalities as well as ensuring the inclusion of other aspects for which there is consensus and understanding.</i></p>
Plenary brainstorming or break-out groups (2)	<ul style="list-style-type: none"> Facilitator starts deriving the list of broad management objectives, according to the principles of sustainability as a way of ensuring that all relevant aspects are considered Participants review the management objectives and facilitator rationalizes them to a maximum of ten objectives <p><i>Note that an important aspect of this process should be the clear identification of objectives that relate to issues that are of a transboundary nature. In many cases, initial talks may see transboundary conservation as an all or nothing proposal, but stakeholders quickly realize that they may have very different visions of what ‘counts’ for inclusion in the partnership. This will help to confirm which stakeholders should continue to participate in the more detailed planning process discussed in section 7.4.</i></p>
Plenary brainstorming (if time and resources allow)	<ul style="list-style-type: none"> Participants prioritize the management objectives. This can be achieved through a process of pair-wise comparison in which participants systematically compare the relative importance of the objectives with each other and thus are able to list them in order of priority <p><i>Note that this process requires skilled facilitation and more time, and also requires that the participants have a sound understanding of all the preceding steps and outcomes. While the pair-wise comparison is a robust and defensible method, a more low-tech process of allowing participants to individually place a mark against half of the objectives which they feel are the most important, provides a collective indication of the priorities. The total number of marks allocated to each objective provides an immediate and graphic illustration of how the stakeholder group feels about how the objectives should be prioritized.</i></p>

Cooperative management depends on there being a shared understanding of the issues, a common vision, a set of agreed objectives and a means to deliver transboundary conservation initiatives (see Case study 8). **Wherever possible, these should be expressed through a management plan prepared and agreed jointly by the partners.** If there are insuperable practical obstacles to this, then some other form of agreed statement that encompasses vision and objectives is essential.

A management planning workshop may well be required to negotiate a common vision, a shared understanding of the issues and a framework for cooperative management (see Table 16). This could take up to three days of intensive engagement—possibly longer if field trips are included.

The main concrete outcomes of the workshop should be a vision statement and a prioritised list of common management objectives. These need to have a time frame of up to 10 years (for medium and short-term components, see section 7.4.). They would be major components of any joint management plan.

While three days or more of hard work and difficult discussions may have been captured on a few pages, it is highly likely that those who participated in the workshop will have begun to take ownership of the initiative. So an equally important, if less tangible, outcome is a shared understanding of the bigger picture, and the development of relationships and trust which will sustain cooperation over the years.

The terms used here to describe the components of cooperative management planning, such as ‘vision’ and ‘management objectives’, reflect a hierarchy of thinking that is required in any management planning process. Alternatives such as ‘mission’, ‘aim’, ‘goals’, ‘strategic objectives’, ‘key strategic areas’ may be used, as long as a logical sequence of thought is retained. Always begin with a broad and long-term statement of intent, then move down to normative statements that become increasingly refined and specific, as discussed in section 7.4.

The Central Albertine Rift TBPA Network shared between the Democratic Republic of Congo, Rwanda and Uganda is an example that incorporates elements of this sequential framework (see Table 17).

Table 17 Framework for common transboundary management in the Central Albertine Rift

Vision	
The Central Albertine Rift Transfrontier Protected Area Network together with the surrounding landscape conserved sustainably	
Goal	
Sustainable conservation of the Central Albertine Rift biodiversity for long term socio-economic development through strategic transboundary collaborative management	
Key result area	Strategic objective
1. Enabling Environment	1.1: Policies and laws harmonized by year 6 and implemented to ensure effective management of the protected areas network 1.2: Biodiversity conservation in the Central Albertine Rift contributing to the political stability in the region within the first 6 years
2. Landscape Management	2.1: Connectivity and integrity of core wildlife protected areas in the Central Albertine Rift ensured by year 10 2.2: Integrity of protected areas assured through development of adequate mechanisms for natural disaster management by year 10 2.3: Undertake management oriented research aimed at sustainable conservation of biodiversity
3. Effective Management Capacity	3.1: Coordinated planning and monitoring in the landscape by year 9 3.2: Capacity of protected areas staff enhanced and standardized by end of the plan period
4. Collaboration	4.1: Co-ordination mechanisms enhanced to contribute towards avoidance of conflict, duplication and wastage of resources within year 1 4.2: Effective communication of Protected Area Authorities staff established across the language barriers by year 7
Key result area	Strategic objective
5. Law Enforcement	5.1: Formal transboundary collaborative law enforcement mechanisms to control illegal activities established by year 5
6. Education and Awareness	6.1: Positive attitudes towards biodiversity conservation and protected areas in the Central Albertine Rift encouraged by year 2 6.2: Acceptance of wildlife as a precious resource to be conserved by the communities by year 4
7. Economic Development	7.1: Natural resources-based economic development promoted so as to enhance conservation benefits and contribute to the shared policy of poverty reduction by year 6 7.2: Sustainable economic development of the natural resource based tourism by year 7 7.3: Required infrastructure for tourism and protected areas management identified and developed by year 10 7.4: Local communities participating in and benefiting from natural resources management by year 3
8. Financial Sustainability	8.1: Long-term sustainable financing mechanisms for the Central Albertine Rift protected areas network established by year 8

Source: *Transboundary Core Secretariat (2006)*

Box 16

Cooperative management for the sustainability of species in the Emerald Triangle Protected Forests Complex

The Emerald Triangle, on the borders between Cambodia, Laos and Thailand, is one of the most important biodiversity conservation areas in the Greater Mekong region. Several rare species, including the Asian elephant (*Elephas maximus*), Indochinese tiger (*Panthera tigris corbetti*), gaur (*Bos gaurus*), banteng (*Bos javanicus*) and Eld's deer (*Rucervus eldii*), migrate seasonally across all three borders. Biodiversity in the area is threatened by poaching and encroachment by people into the forest. The survival of many species will depend on the

collaborative efforts of the three countries to maintain the integrity of remaining habitats and to address transboundary issues.

Since 2001, the Royal Forest Department of Thailand and the Forestry Administration of Cambodia have been implementing a joint project on the management of the Emerald Triangle protected forests complex so as to promote transboundary biodiversity conservation. Laos joined the partnership in 2012. The project covers five protected areas in Thailand, the Preah Vihear Protected Forest in Cambodia, and the Phuoxeingthong National Biodiversity Area and the Dong Kanthung Protected Forest in Laos. The project is supported by the International Tropical Timber Organization and funded by the Government of Japan.

The first phase (2001-2004) was about initiating transboundary cooperation and joint management planning; the second phase (2008-2010) focused on strengthening cooperation, public participation and biodiversity monitoring. The third phase (2012-2015) seeks to harmonize transboundary biodiversity conservation and management between the three countries. Cooperation currently covers: research, using land use and species distribution models to determine biodiversity hotspots and areas at risk of future encroachment; information sharing; developing sustainable management strategies built upon a common vision developed through the project; and training park rangers in wildlife protection, and specifically in how to remove the barriers to migratory wildlife movements across the trinational borders.

Prepared by: **Yongyut Trisurat**, Kasetsart University,
Faculty of Forestry,
Department of Forest Biology
Web: <http://www.itto.int/cbd/>



The oriental whip snake (*Ahaetulla prasina*) is a common species in the Emerald Triangle Protected Forest Complex. ©Harald Schütz

Case study 8

The challenge of developing a shared vision: Maritime Alps-Mercantour

A common conservation strategy is the driving force of sustainable socio-economic development in the Maritime Alps-Mercantour TBPA. This area of about 1,000 km² consists of the contiguous Italian Maritime Alps Regional Park and the French Mercantour National Park. The territorial connection, together with the high value of the natural and cultural heritage, has given this area a strong identity that transcends administrative, legal and cultural barriers. Close collaboration is the result of a long history of shared endeavour and a maturing of a common vision. The two parks have come together to experiment using new forms of cooperative management and governance, expressed in a strategic plan for the governance of this TBPA.

In 1987, the two parks signed a twinning agreement to undertake simple joint management activities for conservation and sustainable development. The cooperation began with shared wildlife management projects, e.g. to strengthen the population of ibex (*Capra ibex*), to reintroduce the bearded vulture (*Gypaetus barbatus*), and to monitor wolf (*Canis lupus*) populations. More ambitious cooperation projects followed, with the support of the EU's INTERREG programme: since 1991, it has helped fund 17 projects with a total value of EUR 10 million. These include management activities, such as the enhancement of a transboundary trail network and a common signposting system, and scientific research, such as the All Taxa Biological Inventory (the only other directory of this kind was prepared for the Great Smoky Mountain National Park in the USA).

The shared vision and joint activities of Maritime Alps and Mercantour helped the two parks to win the European Diploma for Protected Areas in 1993 (renewed in 1998, 2003 and 2008). In 1998 they signed a new, more structured Twinning Charter, in which priority actions were identified for transboundary conservation and sustainable development. One of these related to sustainable tourism, which is why the parks jointly signed the EUROPARC European Charter for Sustainable Tourism.



Transboundary cooperation between the Maritime Alps Nature Park and Mercantour National Park started with shared concern for the protection of ibex (*Capra ibex*). ©PNPG Archive Marco di Lenardo

The Maritime-Mercantour Common Action Plan was adopted in 2006 to formalize cooperation. This called for a common juridical governance structure. With the support of the Italian Ministry of Environment, and within the framework of the Alpine Convention, an expert group reviewed existing transnational legal structures elsewhere. As a result, the joint juridical structure was established in 2013 using the EU's instrument of European Grouping of Territorial Cooperation (this is the first European cooperation structure that allows public entities to establish a new body with full legal personality, as defined by European Law). The newly titled 'European Park Maritime Alps-Mercantour' is empowered to implement joint projects, undertake transboundary management operations, and draw up conservation and sustainable development plans.

One of the most innovative management tools for the TBPA has been offered by the EU's INTERREG Alcotra programme, which funded the development of the Maritime-Mercantour Integrated Transboundary Plan. This plan involved 17 partners in addition to the two parks, and covered a far larger area than the parks. The plan led to a programme of work between the parks and other partners covering scientific research and nature conservation, cultural identity, land management, eco-tourism, car-free alternatives for transboundary tourism and environmental education. It also encouraged the local community's involvement, and supported the creation of 'interest groups' made up of local stakeholders in both parks that share common concerns. The plan lasted three years and was completed in 2013. It has contributed greatly to the creation of a common transboundary identity: a 'Mountain without Frontiers'.

Prepared by: **Daniela Marzo** and **Federico Niccolini**, University of Macerata,

Patrizia Rossi, Alpi Marittime Nature Park,
Alain Brandeis, Mercantour National Park

Further reading: Parc National du Mercantour, Parco Naturale Alpi Marittime (1998);

Parco Naturale Alpi Marittime (2006); Senge (2006); Marzo et al. (2012)
Web: <http://www.maritimemercantour.eu>; <http://whc.unesco.org/en/tentativelists/5818/>; <http://whc.unesco.org/en/tentativelists/5820/>; <http://www.cor.europa.eu/egtc>



A common signpost in French and Italian in the Maritime Alps-Mercantour TBPA, Italy/France, is an indication of good cooperation across the international boundary. ©PNPG Archive Marco di Lenardo



The organizational structure of the transboundary process was agreed during the first meeting of experts from Tai-Sapo Forest Complex, Côte d'Ivoire/Liberia, in 2009. Four years later, the stakeholders agreed on a common vision to further guide the process of cooperative transboundary management of the Tai-Sapo landscape. ©UNEP Great Ape Survival Partnership

6.6. Lessons learned and advice to practitioners

Six key take-away lessons emerge from this Chapter:

- a. **Look before leaping.** Diagnose the situation before engaging in transboundary conservation. Rather than assuming that there is a compelling case for action, ask the people themselves. Use informal surveys or a more systematic stakeholder analysis, accompanied by the diagnostic tool for transboundary planners. Clarify the issues that need addressing, estimate its geographic extent, identify a constituency for change, and assess the region's capacity for working across boundaries.
- b. **Move from assessment to design.** Unless the key issues and stakeholders are already agreed upon by all parties, an assessment may not add much value. Determine who should lead and organize; mobilize the right stakeholders and people; and create the right organizational structure. Invest in these critical planning stages in order to avoid problems that will otherwise arise later on.
- c. **Carefully define the transboundary area.** Define the 'problem-shed' and the extent of people's interests in the area. Include an area that fits both the problem and the interests. Map this through a consultative, flexible, adaptive and iterative process.
- d. **Work towards reaching a shared understanding and develop a common vision.** This is normally the initial stage in the development of a joint management plan. It is also an important element in building mutual trust and relationships that will be needed in taking the process forward.
- e. **Ideally express the vision and objectives in a joint management plan.** If that is not practical, then draw up as detailed an agreed statement of shared vision and objectives as possible.
- f. **Determine specific areas of cooperation and be realistic.** The partners must think carefully through where and when they intend to work cooperatively. Developing a prioritised list of common management objectives can be a helpful way in further determining areas of mutual interest for furthering cooperation. Partners should be realistic in relation to what needs to, and can be, done.

7. The establishment and management of transboundary conservation initiatives

Chapter 7 focuses on the 'take action' stage of the transboundary conservation process (see Table 15). The goals are: to secure the capacity and resources (**inputs**) needed to implement activities (sections 7.1. and 7.5.); to put in place sound **management processes** based upon the legitimacy of the initiative (section 7.2.); to develop the necessary agreements (section 7.3.); and to implement an action plan (section 7.4.)⁴⁰.

7.1. Securing the capacity

The capacity of key stakeholders to engage in the cooperative exercise has already been estimated during the initial stages of the transboundary conservation process (see sections 6.1 and 6.2.). However, *securing* this capacity (in terms of committing the expertise, knowledge and resources that stakeholders can bring to the scheme) is an essential part of developing the plans for the transboundary initiative and eventually bringing it to reality. This will require continued dialogue with stakeholders throughout the planning and management process, securing their advice, building their confidence in the scheme and helping them see the benefits they will secure from it. The financial resources may also be identified in general terms at an early stage but can often only be secured with certainty after the elaboration of the action plan (see section 7.5).

7.2. Securing political buy-in and building legitimacy

Transboundary conservation initiatives can be established through a top-down approach, a bottom-up approach, or third party facilitation. Top-down approaches are initiated by institutions and actors who operate at higher levels in governments, regional or international institutions. They do not necessarily involve stakeholders at local levels. They can lead to a cooperative agreement to set up a TBCA. Bottom-up approaches involve building transboundary cooperation from the ground level, for example by protected area managers or local communities: this is in fact the most common approach (see Appendix B). Third-party initiatives are usually brought about through the intervention of a donor, an externally-based NGO or a similar agency (see Box 17).

The choice of approach to follow often depends on where the initial dialogue and collaboration are found to be easiest, or where a particular champion exists (Sandwith et al., 2001; van der Linde et al., 2001; Chettri et al., 2007b). Each approach has advantages and disadvantages. The effectiveness and the success of the transboundary initiative will be determined by the specific environmental, political,

social and economic circumstances. On-the-ground decision-making and collaboration often benefits in the short-term from bottom-up approaches, while top-down initiatives ensure access to policy makers in the government (Schoon, 2008; Schoon, 2012). Regardless of where the initiative originates, the support of decision-making authorities will be essential for the long-term sustainability of transboundary conservation cooperation. For example, cooperation initiated by protected area staff may achieve much without a formal agreement, but high-level policy support (e.g. through a Memorandum of Understanding) could strengthen relationships and improve the prospects for transboundary cooperation. It is important, however, that the aims of bottom-up approaches should not be overtaken by high-level dialogue that excludes the interests of those on the ground.

Transboundary cooperation can be hindered by different and/or conflicting laws, language barriers, the existence of politically tense relationships, a lack of equality in the ratification of international protocols, differing commitments and expectations from states, illegal trade associated with corruption, and many other issues (see Appendix B). But often the most important factor is the absence of the political commitment that each prospective country must bring to the dialogue, without which it will not be possible to develop policy and legal instruments (see section 7.3. and Box 18) needed for transboundary conservation. Political support and commitment can be built through modest steps, such as: securing official endorsement for some established, on-the-ground, collaborative activities; promoting the harmonization of conservation legislation; and by consulting with and winning the support of security authorities⁴¹.

Legitimacy for a transboundary project does not rest on political support alone. Sustained cooperation between partners over the long term also requires mutual trust and understanding. This can be built upon past successes and concrete results that all can see, particularly local achievements. Success in addressing threats and managing political and other pressures also helps to strengthen the legitimacy of transboundary cooperation. In short, tangible successes at the operational level reinforce cooperation for transboundary conservation as much as top-down leadership by committed politicians (IUCN WCPA Transboundary Conservation Specialist Group, 2012).

Van der Linde et al. (2001) point out that strong influence and control from central government may not always be in the best interest of local administrations. There needs to be a careful balance of local and national involvement in way that reflects the complexity of the transboundary situation, acknowledges that local people's dependence on local resources is often critical, and which can also deal with poverty issues.

40 Parts of this Chapter draw on the results of three surveys of experts and practitioners undertaken by the IUCN WCPA's Transboundary Conservation Specialist Group: *Legal Concept Paper Survey* (2012), *Regional Pilot Survey of Transboundary Conservation Managers in North, Central and South America* (2012), and *Transboundary Conservation Financing* (2014).

41 See Sandwith et al. (2001) for more details on obtaining political support.

Box 17

A transboundary initiative in the Everest/Sagarmatha region

The Mt. Everest ecosystems, straddling China and Nepal, are hugely important for conservation. Nepal established the Sagarmatha and the Langtang National Parks in 1976. Small and isolated protected areas are, however, not very effective in conserving species and ecosystems processes. So the governments of Nepal and China, with support from a US-based NGO, The Mountain Institute, established the Qomolangma Nature Preserve in the Tibetan Autonomous Region of China in 1989 and Makalu-Barun National Park in Nepal in 1992, creating one of the largest contiguous TBPAs in Asia (400,000 km²).

Transboundary cooperation was initiated to bring people and institutions together to address common issues of transboundary poaching and wildlife smuggling, and controlling wildfires, forest pests and animal diseases. In protected areas with resident Indigenous Peoples, livelihood improvement activities are equally important.

Visits by the protected areas' officials from Nepal to the Tibetan Autonomous Region, China, led to the signing of a Memorandum of Understanding between the two sides.

This facilitated joint trainings, workshops and studies of transboundary issues. Transboundary cooperation between the staff of protected areas in the two countries has greatly improved as a result, and much has been learnt about the importance of ecological connectivity across the political boundaries. This has helped build trust between professionals coming from different language and cultural backgrounds.

As Nepal and China do not have an open border, transboundary travel is strictly regulated and cooperation is not easy to maintain. The highly centralized governance system of the two countries restricts the scope for transboundary dialogue between the local institutions. This field level transboundary initiative has the potential to become the foundation for a national level agreement on transboundary conservation that would provide the necessary political buy-in and support for sustainable transboundary cooperation.

Prepared by: **Lhakpa Norbu Sherpa**, The Mountain Institute
Web: <http://www.mountain.org>



The vast highlands of the Tibetan Plateau. ©Neeraj Mahar/Wildlife Institute of India

Box 18

Big Bend-Maderas del Carmen binational landscape protection

Establishing TBCAs can take many years. It takes time because the process is inherently complex and uncertain given its multinational and multi-sectorial character. Conservation efforts in the Big Bend-Maderas del Carmen region, shared by Mexico and the USA, began in 1933. By 1935, meetings were being held between Mexican and the United States government agencies, but soon afterwards the initial momentum fell away. Communications were exchanged mainly through diplomatic channels over a number of years but with no tangible outcomes.

Two federal protected areas were established in the USA in 1944 and 1978 and two state protected areas in 1948 and 1988. In 1994, the first two Mexican federal protected areas were established; two more followed in 2009. Both countries had now national legal protection regimes, a basis for developing a bilateral management framework.

The Mexican and the US Presidents reaffirmed their willingness in 2010 to designate Big Bend–Rio Bravo as a natural area of binational interest. Over 15,000 km² are now under governmental protection and over

2,000 km² under private conservation management regimes within this TBCA.

Civil society has played, and continues to play, a crucial role in shaping this binational conservation landscape. Those involved have included: Conservadores de Ecosistemas del Puerto del Pino, the Mexican-based cement company CEMEX, the Texas Bighorn Society, The Nature Conservancy and private landowners.

This experience suggests three things:

- If initial efforts are not successful, transboundary conservation initiatives can nonetheless make progress through piecemeal advances;
- Conservation agencies should maintain communications with those responsible in their countries for foreign relations;
- An adaptive and opportunistic approach is essential to take advantage of new opportunities.

Prepared by: **Juan E. Bezaury Creel**,
The Nature Conservancy

The IUCN WCPA Transboundary Conservation Specialist Group (2012) notes that the following elements of a bottom-up approach can be used to build political support for transboundary conservation:

- Ensuring that the state is accountable at the local level;
- Ensuring transparency, accountability and continuity through broad participation;
- Decentralizing decision-making and strengthening local autonomy;
- Building trust by holding regular meetings between cross-border stakeholders;
- Ensuring that communication with local communities is not restricted to community leaders;
- Demonstrating that illegal trade and wildlife crime can be tackled at the grass-roots levels;
- Providing a neutral platform for local communities to work together;
- Ensuring that income generated locally (e.g. from transboundary conservation tourism) largely stays largely in the local area and benefits the local community;
- Recognizing local conservation efforts in ways that build local pride.

As mentioned, third-party initiatives are often facilitated by international organizations, NGOs (such as international ones) or donors through their grants or technical assistance. Some donor-driven transboundary conservation initiatives remain active only as long as the donors provide funds and support: once these are no longer available, weaknesses may be revealed. So exit strategies should be built in from the start to ensure financial sustainability beyond the duration of outside support. For example, plans may have to be made to replace the facilitation role performed by neutral outsiders when the donor leaves. If however the project has built strong cooperation between the local communities or NGOs (whether they be separate NGOs in each political jurisdiction or a single NGO working across boundaries), they may be able to sustain transboundary cooperation without further external support.

There are many examples of successful bottom-up or third-party approaches that have created a change in cooperation among local stakeholders such as: the Greater Virunga Transboundary Landscape (Democratic Republic of Congo, Rwanda and Uganda) (see Box 2); Maritime Alps-Mercantour (Italy and France) (see Case study 8); and Phong Nha-Ke Bang and the Hin Nam No (Laos and Vietnam) (see Box 19).

Box 19

Phong Nha-Ke Bang and the Hin Nam No: strengthening cooperation through international facilitation

The Annamite Mountain range features the largest karst ecosystem forest in Southeast Asia, encompassing Phong Nha-Ke Bang National Park in the Vietnamese province of Quang Binh and Hin Nam No National Protected Area in the Lao province of Khammouane. These protected areas form part of the Indo-Burman biodiversity hotspot, a region of global significance with a high level of biodiversity and endemic species. International organizations have facilitated transboundary cooperation between the two protected areas ever since they were established in 1998.

Despite differences in the management, legal frameworks and socio-economic development of local communities, both protected areas have been confronted with similar challenges in the protection of the natural resources. The livelihoods of local populations have depended on forest resources for generations and further pressures have originated from trading in forest products that affects the way forests are used and managed. Transboundary cooperation to address those challenges and so conserve the forests started with the support of different international and national organizations, notably IUCN, WWF and Fauna and Flora International. There is now good,

regular exchange of knowledge between the parks, which also collaborate in research. The cooperation between the Quang Binh and Khammouane provinces, as well as between the two protected areas, was further strengthened with the support of the German Development Cooperation, which has been active in the region since 2012. Two projects are important in enhancing transboundary cooperation: Nature Conservation and Sustainable Management of National Resources in the Phong Nha-Ke Bang National Park Region; and Integrated Nature Conservation and Sustainable Resource Management in the Hin Nam No Region. During 2012 there was: dialogue involving protected area management boards and provincial authorities; an exchange of knowledge and working experiences on biodiversity monitoring; work on improving local livelihoods; cooperation in law enforcement between technical staffs and forest rangers; and joint training on Wildlife Trade Law Enforcement in Viet Nam.

Prepared by: **Pham Thi Lien Hoa**, German Development Cooperation

Web: <http://www.pnkb-quangbinh.org.vn/index.php?act=group&view=214&c=1>



Paradise cave in the Phong Nha-Ke Bang National Park, Viet Nam, hosts one of the most outstanding limestone karst ecosystems in the world. The caves extend across the border to Laos in the Hin Nam No Protected Area. ©IUCN Photo Library/Bastian Bomhard

7.3. Mechanisms for the establishment of transboundary agreements

There are many kinds of international agreements, ranging from international treaties to informal understandings. The following is a list of different kinds of agreements⁴² which might be set up to achieve transboundary conservation (adapted from van der Linde et al., 2001 and Sandwith et al., 2001):

- A formal binding agreement: e.g. multilateral environmental agreements, bilateral treaties and 'international customary law' (accepted practices recognized by international tribunals);
- Non-binding agreement: e.g. a Memorandum of Understanding between key agencies;
- A regional cooperative framework: e.g. a declaration or regional action plan signed by government officials;
- A protocol or contingency plan: a more limited agreement to address specific issues such as dealing with emergencies or search and rescue operations;
- A declaration or statement by relevant actors of their intention to cooperate in a transboundary context (e.g. as adopted at the conclusion of a transboundary workshop);
- A letter of intent (applicable at any level);
- A traditional arrangement (e.g. recognition of the rights of adjacent community to undertake harvesting across the boundary);
- An informal agreement, for example, between protected area managers.

There is no universally right approach: the form of agreement will need to reflect the prevailing political circumstances. However, in general, formal treaties have the advantage that they lay down specific rights and obligations, and can provide the strongest legal basis for long-term transboundary cooperation (Sandwith et al., 2001). The IUCN WCPA Transboundary Conservation Specialist Group (2012) has identified the kinds of situations where countries should consider creating formal binding agreements for the transboundary initiative:

- When the relations between countries are hostile or unfriendly;
- When existing national laws hinder transboundary cooperation;
- Where governments do not have a strong and long history of transboundary collaboration;
- Where there are significant legal, socio-cultural, ecological and economic differences between countries.

Although high-level agreements are often appealing to parties involved in transboundary cooperation, they do not necessarily ensure a successful outcome. Given the generally more complex procedures required for establishing formal agreements, informal agreements are often easier to set up and can play an important role in promoting cooperative, friendly relations and joint action, and often—but not always—lead over time to more formal arrangements (Singh, 1999). The *Legal Concept Paper Survey* provides diverse opinions on the appropriateness of informal agreements in furthering transboundary conservation processes (IUCN WCPA Transboundary Conservation Specialist Group, 2012): some experts and practitioners consider that informal agreements are always necessary, some believe that they would be most appropriate where formal agreements are unlikely to

be effective, while some say informal arrangements are not sustainable over the long term.

In addition to Box 20, here are three examples of the types of agreements that fall short of international treaties but have still been effective in promoting transboundary cooperation:

- The St. Petersburg Declaration on Tiger Conservation, adopted by the heads of governments of 13 tiger range countries in 2010 and associated with it, the Global Tiger Recovery Program-Kunming Consensus on Transboundary Conservation and Combating Illegal Wildlife Trade, adopted in 2013⁴³;
- The Bishkek Declaration on the Conservation of the Snow Leopard, adopted by the heads of governments of 12 snow leopard range countries in 2013 and associated with it, the Global Snow Leopard and Ecosystem Protection Program⁴⁴;
- The decision of the meeting on Transboundary Movement of Biological Specimens and Species, Tehran, 2012 that mandated ECO Institute of Environmental Science and Technology (a regional intergovernmental organization established in 1985, which brings together Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan) to establish a network of TBPA's in the region⁴⁵. The Institute now plans to report on the status of protected areas in the region, analyse international and regional transboundary initiatives, and define common conservation objectives, in preparation for the development of a legal framework between the countries.



An annual festival to celebrate and promote the conservation of the great green macaw (*Ara ambiguus*) in San Juan-La Selva Biological Corridor gathers local communities, NGOs and government officials from Costa Rica and Nicaragua. During the festival in 2003, government representatives signed a bilateral agreement to protect the region's biodiversity. ©Alan Valverde



Following five years of informal cooperation, Directors of Triglav National Park in Slovenia, Prealpi Giulie Nature Park and Dolomiti Friulane National Park in Italy signed an agreement to strengthen collaboration on visitor management in 2001. ©Tomasz Pezold

42 For examples of agreements, see <http://www.tbpa.net>

43 See <http://globaltigerinitiative.org/publications/>

44 See <http://www.snowleopard.org/the-bishkek-declaration-on-the-conservation-of-the-snow-leopard>

45 See <http://eco-iest.org/en/news/4051/ecoiest-to-establish-a-network-on-transboundary-protected-areas>

Box 20

Integration of transboundary approaches with land management policies

People living in border areas of Colombia, Ecuador and Peru have often been excluded from decisions affecting them, for example in the development of public policies, land management and environmental conservation. At the same time, border areas have been impacted by large infrastructure projects, land conversion, migration and illegal activities, such as wildlife trading and poaching.

All three countries have made progress in the development of policy, regulation and institutional instruments relating to: biodiversity conservation, land tenure and management, and the recognition of rights of Indigenous Peoples and local communities. However, the need now is to integrate this rich experience more into the practice of transboundary conservation.

This is being done under the aegis of the Andean Community (of which Colombia, Ecuador and Peru are members). The countries have agreed to promote a

balanced form of development through a Community Policy for Integration and Border Development, the definition of Border Integration Zones to support the management of shared ecosystems and participatory planning, and the development of a Regional Biodiversity Strategy, one of whose objectives is to strengthen the coordinated management of shared transboundary ecosystems. Several transboundary conservation initiatives, such as the Condor Corridor (Ecuador, Peru) and the Conservation Corridor of Paya-Güepi-Cuyabeno (Colombia, Ecuador, Peru), illustrate these principles and have helped to ameliorate social and environmental conflicts.

Prepared by: **Gisela Paredes-Leguizamón**,
National Parks of Colombia

Further reading: Comunidad Andina de Naciones (1999); Comunidad Andina de Naciones (2001); Comunidad Andina de Naciones (2002); Paredes-Leguizamón (2011); Paredes-Leguizamón (2013); Comunidad Andina de Naciones (2014);
Web: <http://www.comunidadandina.org/>

7.4. Developing and implementing an action plan

Section 6.5. describes the development of a common vision and a framework for cooperative management, which includes the elaboration of management objectives, key elements in a joint management plan.

In taking the work forward to this next, more detailed stage, all those involved need to think carefully about where and when they intend to collaborate, for example in collective decision-making, sharing of resources and sharing information (see Case study 9). Equally important, all parties should be clear about where they intend to act independently and unilaterally (see Box 21).

Drawing up the joint management plan or other agreed statement of vision and objectives, should already have helped to cement agreements between the partners, create 'ownership' of transboundary conservation initiatives, generate a shared vision and set out what needs to be done in the form of statements of long-term objectives. But implementation requires several further stages:

- **Identifying the team to oversee implementation (i.e. who will make sure the work is done)**

This should include senior officials or representatives from the relevant agencies or partner bodies of the participating countries, who have the authority to make decisions and stand accountable for implementation. It is likely that the team will consist mostly of those who have relevant legal mandates, but a wider membership should be allowed, reflecting the unique circumstance of each transboundary

conservation initiative and the social, economic and ecological expertise that is required.

- **Developing specific short-term statements of operational goals, derived from long-term management objectives in the management plan or other higher level document (i.e. what to do)**

As with any conservation project, it helps to break down a transboundary scheme into its component parts for planning purposes, for example wildlife conservation, controlling invasive species, managing and promoting tourism, educational outreach and coordinating with local communities. For each of these, the goal statements should be practical and implementable in a day-to-day context. Therefore, they should be expressed in terms that are: specific, measureable, achievable, realistic and time-bound, i.e. SMART. The more complex the higher level objectives, the more numerous will be the goal statements. To measure progress, related indicators will also need to be defined.

- **Developing action plans (i.e. how to do it)⁴⁶**

Each of the operational goals should be further broken down into particular actions. Again, the number of these will be determined by the complexity of the operational goals. The timescale in action plans will be shorter than in management plans. The actions should aim to answer the following questions for each of operational goal:

⁴⁶ Examples of action plans that are worth further study are those for: the Central Albertine Rift TBPA Network in Africa (see Table 17); the Coral Triangle in Asia (Coral Triangle Initiative, 2009); Skadar/Shkodra Lake in Europe (APAWA and CETI, 2006); and the Guiana Shield countries (Brazil, Colombia, French Guiana, Guyana, Suriname and Venezuela) (UNDP and SCBD, 2014).

Table 18 A template for contents of an action plan

Objective					
Operational Goal					
Action					
What tasks	Who participates	With whom	With what resources	Time frame	Measure of achievement

- » What needs to be done?
 - » Who will be held accountable to see it is done?
 - » Who needs to be part of the implementation of this action?
 - » What resources are required?
 - » What are the time frames for completion (note that this could be an action that needs to be done repeatedly, e.g. once a month, or one that should be completed by a certain date)?
 - » What will the measurable outcome be? What milestones should be used to measure progress on the way?

specific tasks, the resource requirements, time frames for implementation, and the basis from which a monitoring and evaluation framework may be derived. It is important, too, because it helps distinguish between what is desirable and what is attainable. The contrast between these is often very evident: for example where urgent action is needed to combat imminent threats of commercial poaching but the resources for this are limited. While action has to be constrained by the available resources, it is really important to understand how far such actions fall short of what is desirable. This should encourage the pursuit of more innovative and cost-effective alternatives, or help make the case for additional resources.

Action plans have to be consistent with each country's managing procedures. This process may be captured in a series of templates (see Table 18), which together may form an annual plan of action, or a three or five year action plan, depending on the implementation time frame.

Action plans should be flexible documents and include proposals for regular review and updating—and thus allowing for adaptive management. The frequency of revision relates to the time frame of each component. While the joint vision and higher-level management objectives may need to be revisited only after 5 to 10 years, operational goals and actions will need to be revised and updated often annually through annual operating plans. Monitoring and evaluation, which are integral parts of the review process, are discussed further in Chapter 8.

Breaking the tasks down in this way provides the detail that will show who is accountable for the implementation of

Box 21

Harmonization of conservation approaches in the southern Caucasus

The Transboundary Joint Secretariat for Nature Conservation in the southern Caucasus was established in 2007 as part of the Ecoregional Nature Protection Programme for the southern Caucasus, financed by the German Federal Ministry for Economic Cooperation and Development through KfW Development Bank. The Transboundary Joint Secretariat promotes cooperation between three southern Caucasus countries (Armenia, Azerbaijan, Georgia) in biodiversity conservation. It supports regional approaches to protected area planning and management and the development of protected area networks in the region according to international standards, and has issued regional guidelines for protected area management planning. It also promotes ecotourism in the interests of economic development.

The Secretariat organizes transboundary visits between experts from countries in the southern Caucasus and facilitates the participation of all three countries at important international conservation events that address environment

and development issues. In 2012 for example, along with IUCN's Caucasus office, it assisted three countries to attend the IUCN World Conservation Congress at Jeju, Republic of Korea. In the same year, it also began to pilot the Financial Participatory Approach with local communities around protected areas. This is based on competition and awards, cash prizes being given for the best ideas and the most innovative practice in conservation and sustainable development, thus encouraging people to experiment with alternatives to using natural resources unsustainably. The results show a high degree of ownership and demonstrate that innovative locally-driven ideas and projects can contribute strongly to sustainability. Regional guidelines for the Financial Participatory Approach methodology will be developed after evaluating the pilot programmes.

Prepared by: **Rusudan Chochua** and **Servi Nabuurs**,
 Transboundary Joint Secretariat for the Southern Caucasus
 Web: <http://tjs-caucasus.org/>

Case study 9

The Grenadines Network of Marine Protected Areas: an example of civil society leadership in transboundary conservation

The Grenadine Islands comprise an archipelago with over 35 islands and cays located on the Grenada Bank between two countries: Grenada, and St. Vincent and the Grenadines. It is a contiguous area of ecological significance supporting the most extensive coral reefs and related habitats in the south-eastern Caribbean. Grenadine Islanders are heavily dependent on the marine environment for their livelihoods. Properly managed, the area has the potential to sustain livelihoods, contribute to national economies and support regional and global biodiversity conservation. However, there is no overall transboundary marine management regime in the Grenadines, and the potential for long-term sustainability is being eroded by unplanned and uncoordinated development, overfishing, climate change and a limited capacity for the management of protected areas.

MPAs are relatively new in Grenada and St. Vincent and the Grenadines. MPA management has suffered from a lack of funds and limited human resources. The distance of the MPAs from their respective capital cities presents an additional hurdle to effective management. There is also a general need to re-orientate stakeholder expectations towards a more sustainable use of marine resources. So there is an urgent need to strengthen the effectiveness of MPA management.

Although an international border divides the Grenadines Bank, the linkages among the Grenadine islanders in both countries are strong. This provides a solid basis for MPAs networking and collaboration. The Grenadines Network of MPAs builds on and strengthens the foundation of established MPAs, benefiting from protected area systems plans, years of capacity building, monitoring and community development.

The establishment of the Grenadines Network of MPAs in 2011 was led by a local NGO, the Sustainable Grenadines Inc. (SusGren). SusGren has worked for more than 10 years on the conservation of the coastal and marine environment, and sustainable livelihoods for the people of the Grenadines, and has assisted the governments to implement protected area systems plans in line with the CBD's PoWPA, and to work towards the Caribbean Challenge⁴⁷ targets. At the outset, the Grenadines Network of MPAs had neither a formal cooperative management guidelines nor an institutional structure, but there was a strong willingness to collaborate among the three founding MPAs and the related government

agencies in both countries. SusGren helped bring about the signing of a formal cooperative agreement between the MPAs, to improve MPA management and ensure conservation and sustainable use of marine resources. This agreement has been renewed each year as new members have joined the Grenadines Network of MPA.



A Nassau grouper (*Epinephelus striatus*), peeking through a common sea fan (*Gorgonia ventalina*). ©IUCN Photo Library/William Goodwin

Since its inception, SusGren has secured a continuous stream of funding for Grenadines Network of MPAs, mostly from the US National Fish and Wildlife Foundation. This has enabled: annual networking meetings to share best practice; joint training on topics such as management planning, law enforcement, monitoring and outreach; field trips to increase knowledge of coral reefs and associated habitats like mangroves; and site visits for specialized learning about fee collection, the maintenance of fixed moorings and control of invasive lionfish. Small grants have helped the MPAs to implement their management plans. With growing interest from new partners and continued support from SusGren and the funding community, the Grenadines Network of MPAs is now firmly established with six MPA members.

Some lessons have been learned:

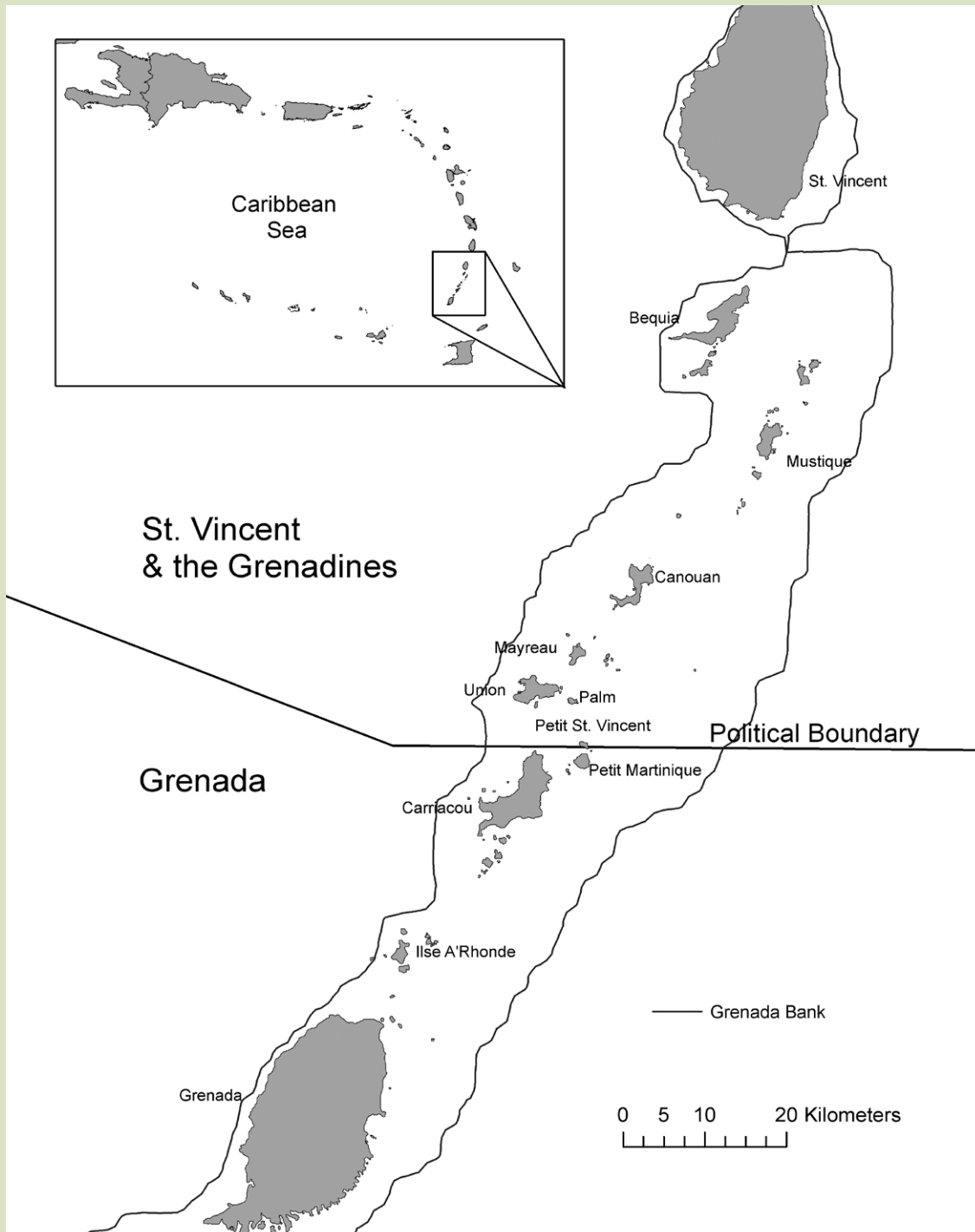
- Government support was instrumental in the initial establishment of the network and still encourages its growth.
- Public support and broader stakeholder engagement is growing with each community-focused activity. The inclusion of local fishers and chiefs in training on lionfish handling is raising the local profile of MPAs. Schools responded warmly to the inclusion of local children in hands-on training from the MPA staff.

⁴⁷ The Caribbean Challenge Initiative was launched in 2008. Ten participating countries (Antigua and Barbuda, Bahamas, British Virgin Islands, Dominican Republic, Grenada, Jamaica, Puerto Rico, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines) have committed to conserving at least 20 per cent of their nearshore marine and coastal environments in national MPA systems by 2020.

- Formalizing the collaborative agreement among the partners of the Grenadines Network of MPAs ensures that individual MPAs are ready to cooperate and demonstrates a commitment to donors and experts.
- Joint participation of the MPAs in enforcement training is encouraging a more consistent enforcement of the rules and regulations across the Grenadines.
- Training for MPA staff and stakeholders and direct funding to the MPAs via small grants have helped to increase biological and socio-economic monitoring by member MPAs.

- Annual meetings, field visits, joint training and inter-MPA exchange visits help to increase communication amongst MPAs and to share best practice.

Prepared by: **Martin Barriteau** and **Orisha Joseph**, Sustainable Grenadines Inc.,
Emma Doyle, Gulf and Caribbean Fisheries Institute
 Web: http://campam.gcfi.org/Communications/Grenadines_MPA_Network_Press_release_final.pdf



A map showing an archipelago shared between Grenada and St. Vincent and the Grenadines. ©Sustainable Grenadines Inc.

7.5. Assessing and securing financial sustainability

Funding will be needed for: the core work of planning and managing the transboundary conservation initiative with all its logistical and administrative requirements; related aspects like data collection and reporting, technology, communications, public relations; and on-the-ground work.

A recent survey of *Transboundary Conservation Financing* by the IUCN WCPA's Transboundary Conservation Specialist Group which looked at 53 initiatives from most regions of the world shows that the three most important sources of funding are governments at various levels, NGOs and regional partnerships (see Box 22, IUCN WCPA Transboundary Conservation Specialist Group, 2014; Appendix B). Offering complementary resources that leverage investment are multinational funding organizations (e.g. UN agencies and the Global Environment Facility) and 'other creative funding approaches' (e.g. private sector tourism, user fees, ecosystem service revenues, carbon sequestration and Reduced Emissions from Deforestation and Forest Degradation (REDD) revenues, and trust funds) (see Figure 9).

The same survey identified **ten most common obstacles or barriers to funding** (not listed in any order of priority):

- Lack of government support, often because of tension between economic and environmental interests and concerns about conflict and security at the borders;
- Lack of trust between governments and other stakeholders, restricting opportunities to pool limited resources;
- Lack of local capacity and civil society experience, and thus no social and political infrastructure to raise external funds;
- Limited public awareness about the value and need for transboundary conservation, and thus an absence of civic and political will;

- Lack of a basic understanding about the cultural, ecological and other values associated with transboundary areas, thus making it hard to frame a compelling message;
- Incoherent and uncoordinated (often conflicting) funding strategies: people and organizations within the same region competing for the same limited resources;
- Funding dedicated to particular issues, problems or disciplines, so limiting the resources available to invest in multi-objective, multi-disciplinary solutions;
- Incompatible legal and policy arrangements across adjacent jurisdictions, making it difficult to achieve the kind of common goals and aspirations that funders look for;
- Lack of capacity to understand and package transboundary conservation initiatives in ways that show how ecosystem goods and services can be strategically important in meeting social and economic aspirations;
- The development of a 'donor-dependency' culture among some transboundary conservation practitioners; this can deter potential funders looking for sustainable outcomes.

The survey identified the most promising strategies for funding for transboundary conservation as: 'public capital' (including government conservation programmes, local ballot initiatives and local taxes, fees and incentives); and 'philanthropic capital' (including individual donors, foundations, businesses and corporations, institutional and NGO collaborations, land purchase by conservation bodies, voluntary contributions and land 'swaps' for conservation). Forty per cent of the respondents identified 'private capital' as a promising strategy, including payments for ecosystem services; tradable land use rights; agriculture, timber, and other income from conservation land; and fees for services. The survey made a number of recommendations to transboundary conservation planners and managers on how to strengthen the funding base (see Table 19).

This survey demonstrates that many transboundary conservation practitioners around the world are wrestling

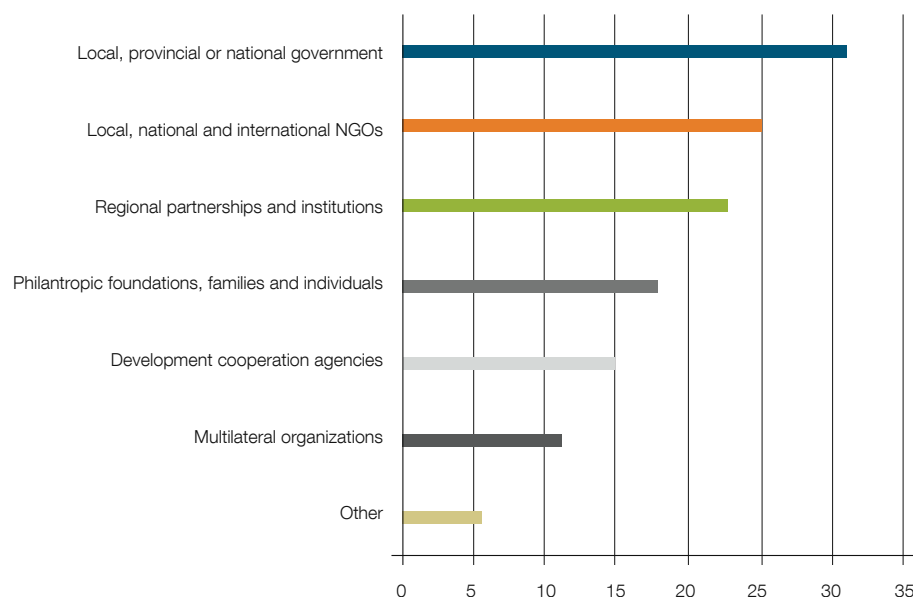


Figure 9: Financing of transboundary conservation initiatives (showing number of respondents in each category)

Table 19 Recommendations to improve funding for transboundary conservation initiatives

RECOMMENDATIONS	Examples
Create training opportunities	<ul style="list-style-type: none"> • A ‘Transboundary Conservation Finance training’ initiative • Opportunities for peer exchange and networking • Case studies to highlight innovative tools, programmes, and partnerships • Focusing on real-world problem solving and action planning, including how to build community-based collaborative capacity
Aggregate and disseminate resources	<ul style="list-style-type: none"> • Identify and publicise case studies • Create an information clearinghouse • ‘Ask the Expert’ webinars
Build and support a ‘Transboundary Conservation Finance Network’	<ul style="list-style-type: none"> • Exchange information • Build capacity in fund raising techniques • Inspire each other
Foster new and innovative ideas	<ul style="list-style-type: none"> • Work with funders of all kinds • Take some calculated risks • Invest in some pilot projects

with the issue of sustainable funding—but are also finding solutions (see also Appendix B). The following steps are recommended as a possible approach to developing a funding strategy (though developed for protected areas in general, they are equally applicable in a transboundary context) (Emerton et al., 2006):

- Undertake a critical **review of all the costs** associated with the implementation of the management plan so as to ensure that it is as economically efficient as possible.
- Using the categories and examples of ecosystem goods and services as provided by the Millennium Ecosystem Assessment (2005), carefully **assess the full potential** of the TBCA to produce and deliver ecosystem goods and services; then, using mapping software such as InVEST (Tallis and Polasky, 2009) and other decision making tools (TEEB, 2000; Goldman and Tallis, 2009; Tallis et al., 2010; Vogl and Tallis, 2014), **identify the beneficiaries** and their linkages to the area. Using these tools in some cases requires skills in Geographical Information Systems, economics and quantitative modelling.

- Using the resulting comprehensive picture of the full socio-economic value of the area, **identify strategies** relevant to each of the beneficiaries that may be used to **secure the long-term investments** required to manage the TBCA so that it continues to deliver the associated ecosystem goods and services.
- Draw up a **long-term business plan** which compares the **costs of jointly managing** the TBCA with the **potential income generating opportunities**—this will illustrate the profit or loss that occur.
- In the event of a loss, or a shortfall in operational budget, look to **alternative funding sources** (see above and Emerton et al., 2006).

A useful source of advice on conservation finance is the Conservation Finance Network⁴⁸. It offers conservation finance tools and training to people working to protect, restore and steward natural areas. Another resource is the Conservation Finance Alliance, which is also home to IUCN WCPA’s Specialist Group on Protected Area Financing⁴⁹.



Nature tourism in the Serengeti National Park, Tanzania, provides opportunities for local businesses. ©Boris Erg

48 <http://www.conservationfinancenetwork.org>

49 <http://www.conservationfinance.org>

Some caveats are needed when encouraging a business-like approach to the funding of TBCAs:

- These recommendations are not made in support of the privatization of nature. While there is some current debate about the value of 'payments for ecosystem services' approach, what is being put forward here is the idea that TBCAs can, in some cases, contribute to meeting the socio-economic needs of people living in and around the area, and that this has a value which needs to be understood (Kettunen and ten Brink, 2013).
- A longer term perspective is needed than is often the case in the business world. A full inventory of the ecosystem values in a TBCA should assess both the present and the future state of the area. For example, current pollution problems may make it impossible to realise the full potential of a water catchment delivering watershed services, but if these problems are addressed, then those longer benefits can be realised. So it may be necessary to secure government funding for restoration work before being able to demonstrate the long-term benefits that well-managed natural resources can bring (SANBI, 2012). De Groot et al. (2013) have shown that the restoration of most habitat types will result in a positive return on investment.
- The key to successful funding is to think about sustainable finance from the outset. Even if short term funding can easily be secured, what will ensure success is a model that will generate funding streams over the long term (Emerton et al., 2006).

Box 22

The W, Arly and Pendjari: a transfrontier complex to consolidate

Formed by the W, Arly and Pendjari (WAP) National Parks, with partial wildlife reserves and neighbouring areas, the WAP complex spans more than 31,000 km² between Benin, Burkina Faso and Niger in the West African savannah. The area hosts more than 60 per cent of West Africa's elephants (*Loxodonta africana*), some of the last viable populations of big carnivores and the last West African giraffes (*Giraffa camelopardalis*). Its place in conservation has endured since the 1950s; success is due to the size of the area and the availability of significant funding.

Beginning in the 1970s several national conservation projects were developed. The first transfrontier conservation project, Ecosystèmes Protégés en Afrique Soudano-Sahélienne (ECOPAS), which was financed by the EU with an investment of EUR 24 million, started in 2003. It focused on existing national parks adjacent to the WAP in Benin, Burkina Faso and Niger, east of the complex. A Global Environment Facility/UNDP-supported project (EUR 5 million) followed and covered the whole WAP area. Currently, the Support Programme to the Park

Agreement project, which is financed by the EU, the West African Economic and Monetary Union, and the three countries at a cost of EUR 23,5 million, reinforces regional efforts to promote conservation and development in the areas around the WAP.

The West African Economic and Monetary Union has brought more reliable regional funding through its Fund of Assistance to Regional Integration and its Regional Fund for Agricultural Development. These complement national initiatives, such as the Foundation of West African Savannahs of Benin. After more than 30 years of interactive dialogue, transfrontier cooperation for conservation has been slowly developing, but it remains heavily dependent on foreign support.

Prepared by: **Jean-Marc Garreau**, IUCN Central and West Africa, **Cheikh Tidiane Kane**, **Salifou Mahamadou** and **Jan De Winter**, West African Economic and Monetary Union
 Web: <http://www.unops.org/english/whatwedo/UNOPSinaction/Pages/W-Arly-Pendjari-Protected-Area-System.aspx>



The W, Arly and Pendjari is an important area for the survival of the kob (*Kobus kob*). ©UEMOA/PAPE

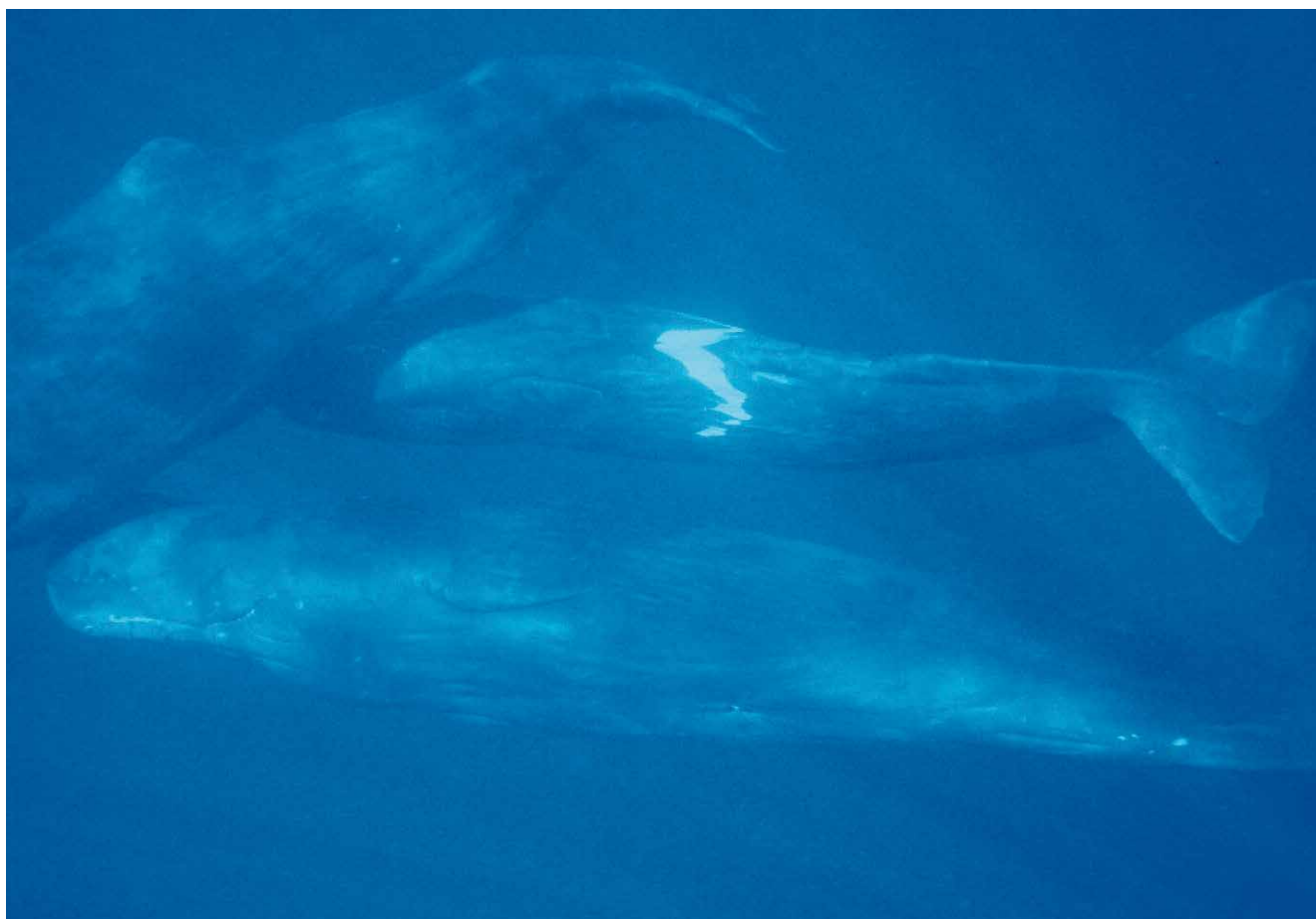
7.6. Lessons learned and advice to practitioners

This Chapter provides guidelines and identifies best practices on the establishment and management of transboundary conservation initiatives. The most important lessons are these:

- a. **Understand and work with the unique environmental, political, social and economic circumstances/dynamics of each transboundary conservation initiative while building legitimacy.** In some cases top-down approaches will work; in others, bottom-up approaches or third-party involvement will generate more successful results. A combination of different approaches may also be the way to establish effective cooperative framework in a TBCA.
- b. **Use available legal and policy instruments; consider new ones as well.** The extent of political commitment

from each country is a key consideration in determining what types of policy and legal instruments will work best in transboundary conservation. Having policy support at a higher level through a Memorandum of Understanding or a binding agreement helps establish the legitimacy of transboundary cooperation, but informal agreements are also useful and may evolve into more formal arrangements.

- c. **Agree on the technical details that are needed to ensure the long-term success of the initiative.** The partners should determine who is accountable for the implementation of specific tasks, as well as time frames for implementation and measures of achievement—all relevant to a monitoring and evaluation framework that allows adaptive management over time (see Chapter 8). Securing financial sustainability for the transboundary initiative over the long term will need an innovative approach to income generation and funding.



Proclaimed by Indonesian government in 2009, the Savu Sea Marine National Park is an important migration corridor for marine species including the sperm whale (*Physeter macrocephalus*). The establishment of a National Park supports the objectives of the Coral Triangle Initiative that encompasses a much wider area connecting six countries in the region. ©Benjamin Kahn/APEX Environmental

8. Measuring results: the monitoring and evaluation of transboundary management effectiveness

As with all conservation interventions, transboundary conservation initiatives should be monitored and evaluated for their effectiveness. This provides the intelligence needed to assess the results, and identify what modifications may be needed in strategies and actions to improve performance.

Monitoring and evaluation are integral parts of the whole cycle of conservation planning and management and therefore correspond to the 'evaluate' stage of Table 15 (see Chapter 6), i.e. **outputs** and **outcomes** elements of the WCPA's framework. The advice here should therefore be read in conjunction with the guidance in the previous two Chapters, but especially with sections 6.5 and 7.4. on developing the cooperative management framework, as this will provide the foundation for monitoring and evaluation plan. Monitoring and evaluation are broad and deep topics and it is beyond the scope of this Chapter to provide a great level of detail about how to go about this important step in the adaptive management cycle. So the discussion of monitoring and evaluation here is deliberately narrowed to: one particular approach, the evaluation of management effectiveness of protected areas, which has been a major emphasis of WCPA (section 8.1.); and to some specific tools and frameworks that have been used to monitor TBCAs (sections 8.2., 8.3. and 8.4.). To become more familiar with the literature on monitoring and evaluation, and adaptive management, the readers can refer to a few important references: Allen and Gunderson (2011); McDonald-Madden et al (2012); Williams and Brown (2012); Westgate et al. (2013); Hutto and Belote (2014); Mascia et al. (2014).

8.1. Monitoring and evaluation of management effectiveness in protected areas

IUCN WCPA provides a framework for monitoring the progress and evaluating the management effectiveness⁵⁰ of protected areas. This common approach emerged in 2000 (Hockings et al., 2000) and was refined in the revised Best Practice Guidelines on Management Effectiveness (Hockings et al., 2006). It has become the framework for designing assessment systems of different kinds, of which WWF's Rapid Assessment and Prioritization of Protected Area Management (Ervin, 2003) and the World Bank/WWF's Management Effectiveness Tracking Tool (Stolton et al., 2007) are the most widely used (Leverington et al., 2010).

WCPA's management effectiveness evaluation framework notes the following **purposes for monitoring and evaluation**, being to:

- Enable and support an adaptive approach to management;
- Assist in effective resource allocation;
- Promote accountability and transparency;
- Help involve the community, build constituency and promote protected area values.

It also provides guidance about what to assess and broad criteria for assessment. Six elements that are considered important to measure in management effectiveness evaluation are based around a management cycle already introduced earlier in Table 15: context, planning, inputs, management processes, outputs and outcomes. It is important that this cycle, its components, and particularly the linkages between them, are understood. They exist within complex, dynamic social-ecological systems. By completing the management cycle through diligent monitoring and evaluation, protected area managers are able to assess the impacts both of their own policies and of such external factors, and thus ensure that their management responses are appropriate.

Hockings et al. (2006) identify **four key steps in monitoring and evaluation**:

- Defining evaluation objectives
- Choosing/developing a methodology and planning the evaluation process
- Implementing the evaluation
- Analysing, communicating and implementing the results.

The management planning principles and processes discussed in Chapters 6 and 7 provide the point of departure for these steps, particularly the template provided in Table 17 where each management action requires an indication of how its effectiveness will be measured. It is recommended that those responsible for the protected area management planning process be conversant with Hockings et al. (2006), so that they are well placed to design a monitoring and evaluation framework and implementation plan.

Hockings et al. (2006) acknowledge that there are gaps and room for further learning and development in this important aspect of protected area management. Indeed, good practice in protected area management is constantly evolving in response to changing circumstances, and managers need to be responsive to this.

⁵⁰ Management effectiveness evaluation is 'the assessment of how well the protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives. The term management effectiveness reflects three main themes: design issues relating to both individual sites and protected area systems; adequacy and appropriateness of management systems and processes; and delivery of protected area objectives including conservation of values' (Hockings et al., 2006).

8.2. Monitoring and evaluation of Transboundary Conservation Areas' management effectiveness

There is thus clear generic advice (i.e. Hockings et al., 2006; Leverington et al., 2010) on monitoring the progress, and evaluating the effectiveness of protected areas. However, there seems to be little specific advice on doing this in TBCAs (exception is e.g. McKinney and Johnson, 2009). There are though some special features of the transboundary context which need to be considered when applying the generic advice, and following the four important steps shown in Table 15:

- **Assess progress and outcomes**

What is specific about monitoring and evaluation in the transboundary context is: the need for monitoring systems that can work across international boundaries; and the need for systems of evaluation that can be applied by countries working together.

Designing monitoring and evaluation systems that work across international boundaries presents additional challenges to those encountered in a purely national exercise. The barriers that may need to be overcome could be:

- » Different levels of technical competence among the staff in the countries concerned: many aspects of monitoring and evaluation require training and certification;
- » Different levels of access to monitoring technology: for example, acquiring satellite imagery may be easier for one country to afford than another;
- » Resistance to sharing 'bad news': for example, staff or communities in one country may be reluctant to report poor species trends to another;
- » Resistance to the unwelcome messages that can come from evaluation: this exercise might show that one country in the TBCA is performing far less well than another.

It follows that both the design and operation of monitoring and evaluation systems will call for considerable interpersonal communication skills, as well as technical skills related to biological or socio-economic monitoring. These will be even more demanding when the subjects of the monitoring are potentially sensitive topics affecting social, economic or cultural aspects. Monitoring and evaluation relating to people



Training in Geographic Information Systems provided to park rangers in the Emerald Triangle Protected Forests Complex. ©Yongyut Trisurat

can be politically charged, and in a transboundary context can be even more challenging.

- **Determine if there is a need to continue**

The results of the assessment may require the stakeholders to ask whether there still exists a compelling reason to continue a particular transboundary activity. Revisiting the original goals and objectives helps to answer such questions. A decision to stop an activity can be just as difficult as to start it in the first place as some will have a vested interest in the *status quo*. In a transboundary situation, decisions to reverse a previously agreed position may be doubly sensitive. The same set of diagnostic tools (see sections 6.1. and 6.2.) can be used to determine whether to continue with the approach.

- **Adapt the management and action plans**

Monitoring and evaluation provides an opportunity to assess the changing conditions and act accordingly by adapting relevant objectives and plans. Adaptive management seeks continuous improvement. In the transboundary context this will require a strong on-going commitment to cooperate and share decision-making.

- **Communicate progress**

It is important to notify all stakeholders about the progress of a transboundary process and whether the outcomes have been met. Communicating progress serves as a way of demonstrating success and potentially obtaining further support for the work. It can also be a very effective way to engage new people, and to create new opportunities for funding. In a transboundary context, it is important to have an integrated programme of communication so that stakeholders in different parts of the TBCA learn of the monitoring and evaluation outcomes at the same time.

8.3. Examples of transboundary monitoring and evaluation systems

Several examples are described which show how monitoring and evaluation systems can be applied at the level of TBCAs (see also Case study 10). They are offered as examples of best practice, but they were designed for application within their regional contexts or as part of the World Heritage Convention, Ramsar Convention and Biosphere Reserves. It is clear that there is an urgent need to share experience globally in this area. Also, a globally coordinated effort is required to develop a tool or protocol that can be used to align the assessment of the effectiveness of TBCA management, and provide for a common basis upon which performance can be monitored and evaluated. Until then, managers of TBCAs are advised to do all they can to develop integrated systems of monitoring and evaluation as part of their cooperative management planning and implementation.

ICIMOD's monitoring and evaluation framework

ICIMOD's monitoring and evaluation framework is being developed and tested in the Kailash Sacred Landscape Conservation and Development Initiative, a collaborative transboundary programme between China, India and



Capacity building and training of regional partners in establishing long-term monitoring plots in the Kailash Sacred Landscape. ©Gopal S. Rawat

Nepal (see Case study 3). The Kailash Sacred Landscape Conservation and Development Initiative monitoring and evaluation framework is a results-based monitoring and evaluation mechanism that focuses on impact pathways and the theory of change⁵¹ (ICIMOD, 2013). Monitoring and evaluation focuses on the expected positive changes resulting from the initiative, measuring the resulting flow of benefits to the communities at intermediate stages. Thus, the results provide opportunities for learning and innovation.

The monitoring and evaluation framework sets up sequential measurement levels, such as inputs, outputs, outcomes and impacts. At each level, indicator-based key performance questions are used to monitor and evaluate programme activities in each country. Data collection methods and a matrix are used to collect the resulting answers. Monitoring and evaluation units at ICIMOD and in each country are responsible for annual performance assessment at the regional and country level. This monitoring and evaluation framework is used to identify shortcomings and what adjustments are needed in management actions to achieve the desired outcomes—an example of adaptive management in practice (ICIMOD, 2013).

The Performance Appraisal Tool of the Peace Parks Foundation

In southern Africa the Peace Parks Foundation has worked with transboundary conservation practitioners from the member states of the SADC to develop a Performance Appraisal Tool (Peace Parks Foundation, 2013). The tool is built on the foundation of the essential elements of sustainability: ecological, social, financial and governance. Eight Key Performance Areas were derived from these, each with four Key Performance Indicators. Using a much finer level of analysis, a score is generated for each Key Performance Area and an overall score for each TBCA (Peace Parks Foundation, 2013). The objectives of the tool are to:

- Assess the progress in the establishment and development of TBCAs;
- Establish best practices from TBCAs;
- Share experiences with other TBCAs;

- Identify factors that have delayed progress in establishing and developing TBCAs.

The Peace Parks Foundation considers that the Performance Appraisal Tool provides a means by which affected communities, public authorities, resource managers and development partners can assess the delivery of the objectives of the Transfrontier Conservation Area. It has become a robust accountability instrument for all stakeholders, enabling them to assess policy outcomes and ensure the optimal allocation of resources. The tool is also being put forward to help transboundary conservation practitioners develop common indicators to compare initiatives within and between TBCAs.

Monitoring and evaluation of international designations

Brief reference is made to the reporting and monitoring recommended under the World Heritage Convention, the Ramsar Convention on Wetlands and the Biosphere Reserves programme, as these will be relevant to those TBCAs which are also transboundary international recognitions (see section 3.3.).

There are two monitoring mechanisms under the **World Heritage Convention**:

- **Reactive monitoring** is ‘the reporting by the World Heritage Centre, other sectors of UNESCO and the Advisory Bodies (including IUCN) to the World Heritage Committee on the state of conservation of specific World Heritage properties that are under threat’ (UNESCO, 2013). When the World Heritage Centre receives information of a threat to the conservation of a site from a source other than the State Party concerned, it will confirm this and report to World Heritage Committee.
- **Periodic reporting** is undertaken by States Parties every six years. Its aim is to assess the application of the Convention, evaluate the status of World Heritage values in the sites on the list, including up-to-date information on the state of conservation, and support regional cooperation.

The monitoring recommended under the **Ramsar Convention** forms part of an integrated framework for Inventory, Assessment and Monitoring as explained in the Ramsar Handbook 13 (Ramsar Convention Secretariat, 2010).

Article 9 of the Statutory Framework for **Biosphere Reserves** requires that a periodic review be undertaken of each site every ten years, covering the functioning, zoning and extent of the Biosphere Reserve, as well as the involvement of people living in the site (UNESCO, 1996). UNESCO publishes an on-line Periodic Review Form for reporting for use in transboundary Biosphere Reserves.

51 A theory of change describes the process of change by outlining the causal linkages in a programme. The monitoring and evaluation based on the theory of change is a participatory process to evaluate many different types of projects.

8.4. International certification systems that could benefit Transboundary Conservation Areas

Although monitoring and evaluation are primarily about improving management, they can also be used in conjunction with a system of certification, indicating that certain protected areas have met internationally agreed standards. Two examples, IUCN's Green List of Protected Areas and EUROPARC's TransParcNet (see Box 23), are given below.

IUCN's Green List of Protected Areas

The IUCN Green List of Protected Areas is a potentially useful initiative which may be used as a monitoring and evaluation tool to measure the performance of transboundary initiatives⁵². Protected areas put forward as potential sites for listing will need to meet a full suite of minimum standards, including conservation objectives, legitimate

establishment, management effectiveness, governance and visitor experience. IUCN, in partnership with protected area agencies and other responsible management bodies, intends to manage the assessment of candidate sites. While the point of entry to the Green List initiative is regional, its focus is on individual protected areas and does not necessarily include aspects of transboundary conservation. However, within the context of cooperative management across international boundaries, it is possible that protected areas participating in a transboundary conservation initiative may use the standards set by the Green List programme as a guide to improving the effectiveness of cooperative management and overall performance.

Box 23

European-wide network of certified Transboundary Protected Areas: TransParcNet



Lake Neusiedl and Seewinkel Fertő-Hanság (Austria/Hungary) received the first certificate by EUROPARC in 2003 within the 'Transboundary Parks-Following Nature's Design' programme. ©EUROPARC Federation

The EUROPARC Federation launched a certification process 'Transboundary Parks-Following Nature's Design' at the IUCN Vth World Parks Congress in Durban in 2003, and since then it has been implementing this in Europe. The criteria for certification are used to assess the strengths and weaknesses of partnerships, analyse the quality of cooperation and identify examples of good practice. Experience and expertise have been exchanged among members of the TransParcNet, currently a network of 23 certified protected areas from 13 countries, all of which fulfil the Basic Standards requirements. Re-evaluation of all EUROPARC Transboundary Areas

is done every five years in order to see if the certificate should be retained.

Oulanka (Finland) and Paanajärvi (Russia) National Parks are an example of a EUROPARC certified Transboundary Area. The process of self-assessment, reviewed by EUROPARC's Transboundary Steering and Evaluation Committee and followed by field verification by external experts, has been extremely useful for the parks' management in taking the cooperation to a new level. The parks have found the recommendations valuable. The certificate, 'Transboundary Parks-Following Nature's Design', awarded at EUROPARC's annual conference, has been used to convince donors of the commitment and practical cooperation between the parks.

Peer review by experts is often the most effective way to obtain trustworthy guidance on how to overcome difficulties and improve the quality of protected area management. As a membership network that can organize such reviews, TransParcNet is an excellent way to bring together the best expertise from across the region and apply it to the challenges that are facing individual managers of TBCAs.

Prepared by: **Petra Schultheiss**, EUROPARC Federation,
Kari Lahti, Metsähallitus Natural Heritage Services

Web: <http://www.europarc.org/what-we-do/transboundary-parks/>;
<http://www.europarc.org/what-we-do/transboundary-parks/certified-parks/oulanka-paanajarvi-t/>

⁵² See http://www.iucn.org/about/work/programmes/gpap_home/gpap_quality/gpap_greenlist/

Case study 10

Building institutional dialogue on participatory monitoring and evaluation of the Sangha Trinational in the Congo Basin

Measuring conservation effectiveness at landscape level is one of the biggest challenges in conservation. The Sangha Trinational in the Congo Basin is a well preserved forest block covering an area of 44,000 km², including three contiguous national parks: Lobeke in Cameroon, Dzanga-Ndoki in Central African Republic, and Nouabalé-Ndoki in the Republic of Congo. About 200,000 Bantu and Indigenous Pygmies inhabit this area which contains more than 1,700 species of plants, 105 species of terrestrial mammals, including forest elephant (*Loxodonta africana*), gorilla (*Gorilla gorilla*) and chimpanzee (*Pan troglodytes*), 428 species of birds, and 300 species of fish.



High conservation value in Dzanga-Ndoki National Park (Central African Republic), forming part of the Sangha Trinational. ©Boedhihartono Intou

Since 2004, WWF, IUCN and the Centre for International Forestry Research have collaborated to develop a shared monitoring system to track progress in the landscape. Initially a multi-stakeholder group was assembled, with a primary objective of monitoring ecological integrity of the forest ecosystems and social dynamics with regards to impacts on livelihoods of surrounding local communities. 22 indicators were identified and grouped into 5 capital asset categories: human, social, natural global, natural local and physical, that are indicators of progress towards a 'better landscape'. The group then agreed on how each indicator could be scored on a 1-5 Likert scale, an approach which is well known and documented. Monitoring of landscape performance between 2006 and 2013 showed that the kind of development taking place was causing a loss of natural capital. A plea was made during the ninth meeting of the Congo Basin Forest Partnership for community micro projects to fight poverty: as a result, 69 such community micro projects were selected for the Sangha Trinational area, with a budget of USD 1,3 million.

Forest exploitation and poaching are the main drivers of change in the Sangha Trinational landscape. Therefore, concessioners are potentially the most important actors for any sustainable management process. Several major private operators have played a double role in the institutional dialogue: contributing data, and providing logistical support

for the Sangha Group annual meetings. In 2013, joint anti-poaching patrols were organized, with the support of law enforcement officers, which produced encouraging results: the arrest of poachers, and seizures of ivory, weapons and ammunition.

Science for conservation

The Trinational Scientific Committee advises the Trinational Committee for supervision and arbitration (the supreme decision-making body of the Sangha Trinational at ministerial level). It brings together 15 scientific institutions to promote scientific approaches to conservation in the Sangha Trinational landscape, and to develop a scientific strategy for Sangha.

The scientific committee participated in international discussions, especially on transboundary conservation of biodiversity in tropical forests, in the run-up to the CBD summit in Nagoya in 2010. This work involved the development of both appropriate social and technological tools for TBCA management. Social tools include: participatory processes to measure TBCA performance; dialogues between governments, civil society, private sector and communities; training appropriate to the needs of local stakeholders; agreements between actors; and harmonized development agendas on both sides of a political border.

Spill-over of the Sangha Trinational participatory monitoring and evaluation models

The Canadian Ministry of Natural Resources has funded a project to monitor the environmental and social values of landscapes in the Dja and Campo Ma'an National Parks. The Ngoyla-Mintom project, funded by Global Environment Facility and managed by the Ministry of Forestry and Wildlife of Cameroon, also benefits from this approach: its objective is to facilitate sustainable management of the forest to ensure local and national development.

However, a long-term funding mechanism for data collection for conservation and development is still required and more needs to be done to mobilize relevant institutions to come together to build a strong participatory monitoring and evaluation system.

Prepared by: **Kenneth Angu Angu, Dominique Endamana and Jean-Marc Garreau,**

IUCN Regional Office for West and Central Africa

Further reading: Chambers and Conway (1992); Carney (1998); Campbell et al. (2001); Sayer et al. (2006); The World Bank (2008); Endamana et al. (2010); Sayer et al. (2012); Endamana et al.

(2013); Sayer et al. (2013)

Web: <http://whc.unesco.org/en/list/1380>

References and further reading

- Ali, S.H. (2007). *Peace Parks. Conservation and Conflict Resolution*. Cambridge, Massachusetts and London, England: The MIT Press.
- Ali, S.H. (2010). *Transboundary Conservation and Peace-building: Lessons from Forest Projects*. Yokohama, Japan: International Tropical Timber Organization (ITTO) and the United Nations University Institute of Advanced Studies.
- Ali, A. (2011). Siachen: A Hymn to Peace? A Battle Like No Other. *The South-Asian Life & Times* October-December 2011: 46-49.
- Allen, C.R. and Gunderson, L.H. (2011). Pathology and Failure in the Design and Implementation of Adaptive Management. *Journal of Environmental Management* 92: 1379-1384.
- APAWA and CETI (2006). *The Strategic Action Plan for Shkodra Lake*. Shkodra-Tirana-Podgorica: GEF, World Bank, LSIEMP.
- Asian Development Bank (2005). *Biodiversity Corridor Initiative*. <<http://www.adb.org/Projects/core-environment-program/>>. Accessed on 1 July 2014.
- Aune, K., Beier, P., Hilty, J. and Shilling, F. (2011). Assessment and Planning for Ecological Connectivity: A Practical Guide. Bozeman, Montana: The Wildlife Conservation Society. <http://www.wcs-ahead.org/kaza/ecological_connectivity_07_20_11_2.pdf>. Accessed on 20 January 2015.
- Baldus, R.D. and Hahn, R. (2007). *The Selous Niassa Wildlife Corridor in Tanzania: Biodiversity Conservation from the Grassroots. Practical Experience and Lessons from Integrating Local Communities into Transboundary Natural Resource Management*. FAO CIC Technical Series.
- Ballantyne, R. and Packer, J. (eds.). (2013). *International Handbook on Ecotourism*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar.
- Ban, N.C., Bax, N.J., Gjerde, K.M., Devillers, R., Dunn, D.C., Dunstan, P.K., Hobday, A.J., Maxwell, S.M., Kaplan, D.M., Pressey, R.L., Ardon, J.A., Game, E.T. and Halpin, P.N. (2014). Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use. *Conservation Letters* 7 (1): 41-54.
- Bates, S. (ed.). (2010). *Remarkable Beyond Borders: People and Landscapes in the Crown of the Continent*. Center for Natural Resources & Environmental Policy, Sonoran Institute and Lincoln Institute of Land Policy.
- Beltrán, J. (ed.). (2000). *Indigenous and Traditional Peoples and Protected Areas: Principles, Guidelines and Case Studies*. Gland, Switzerland and Cambridge, UK: IUCN and WWF International. <<https://portals.iucn.org/library/efiles/documents/PAG-004.pdf>>. Accessed on 11 February 2015.
- Bennett, A.F. (2003). *Linkages in the Landscape: The Role of Corridors and Connectivity in Wildlife Conservation*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/FR-021.pdf>>. Accessed on 11 February 2015.
- Bennett, G. (2004). *Integrating Biodiversity Conservation and Sustainable Use: Lessons Learned From Ecological Networks*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/2004-002.pdf>>. Accessed on 11 February 2015.
- Bennett, G. and Mulongoy, K.J. (2006). Review of Experience with Ecological Networks, Corridors and Buffer Zones. *Technical Series No. 23*. Montreal: Secretariat of the Convention on Biological Diversity. <<https://www.cbd.int/doc/publications/cbd-ts-23.pdf>>. Accessed on 11 February 2015.
- Besançon C. and Savy, C. (2005). Global List of Internationally Adjoining Protected Areas and Other Transboundary Conservation Initiatives. In: Mittermeier R.A., Kormos, C.F., Mittermeier, C.G., Robles Gil, P., Sandwith, T. and Besançon, C. (2005). *Transboundary Conservation. A New Vision for Protected Areas*. Mexico: CEMEX-Agrupación Sierra Madre-Conservation International.
- Bhagabati, N.K., Ricketts, T., Barano Siswa Sulistyawan, T., Conte, M., Ennaanay, D., Hadian, O., McKenzie, E., Olwero, N., Rosenthal, A., Tallis, H. and Wolny, S. (2014). Ecosystem Services Reinforce Sumatran Tiger Conservation in Land Use Plans. *Biological Conservation* 168 (147-156).
- Biggs, R., Schlüter, M., Biggs, D., Bohensky, E.L., Burn Silver, S., Cundill, G., Dakos, V., Daw, T.M., Evans, L.S., Kotschy, K., Leitch, A.M., Meek, C., Quinlan, A., Raudsepp-Hearne, C., Robards, M.D., Schoon, M.L., Chultz, L. and West P.C. (2012). Toward Principles for Enhancing the Resilience of Ecosystem Services. *Annual Review of Environment and Resources* 37: 421-448.
- Borah, J., Wangchuk, D., Swargowari, A., Wangchuk, T., Sharma, T., Das, D., Rabha, N., Basumatari, A., Kakati, N., Ahmed, M. F., Sharma, A., Sarmah, A., Dutta, D.K., Lahkar, B., Dorji, T., Brahma, P.K. Ramchiary, L., Tempa, T., Wangdi, Y., Nedup, T., Wangdi, T., Tharchen, L., Dhendup P., Bhobora, C.R., Pandav, B. and Vattakaven, J. (2012). *Tigers in Indo-Bhutan Transboundary Manas Conservation Complex*. WWF Technical report.
- Borrini-Feyerabend, G., Pimbert, M., Farvar, T., Kothari, A. and Renard, Y. (2004a). *Sharing Power. Learning by Doing in Co-management of Natural Resources throughout the World*. Tehran: IIED, IUCN/ CEESP/ CMWG and Cenesta. <http://cmsdata.iucn.org/downloads/sharing_power.pdf>. Accessed on 11 February 2015.
- Borrini-Feyerabend, G., Kothari, A. and Oviedo, G. (2004b). *Indigenous and Local Communities and Protected Areas: Towards Equity and Enhanced Conservation*. Gland, Switzerland and Cambridge, UK: IUCN. <http://cmsdata.iucn.org/downloads/pag_011.pdf>. Accessed on 11 February 2015.
- Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Pathak Broome, N., Phillips, A. and Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action*. Best Practice Protected Area Guidelines Series No. 20. Gland, Switzerland: IUCN. <https://cmsdata.iucn.org/downloads/governance_of_protected_areas__from_understanding_to_action.pdf>. Accessed on 11 February 2015.

- Borrini-Feyerabend, G., Bueno, P., Hay-Edie, T., Lang, B., Rastogi, A. and Sandwith, T. (2014). *A Primer on Governance for Protected and Conserved Areas*. Stream on Enhancing Diversity and Quality of Governance, 2014 IUCN World Parks Congress. Gland, Switzerland: IUCN. <http://cmsdata.iucn.org/downloads/primer_on_governance_for_protected_and_conserved_areas.pdf>. Accessed on 11 February 2015.
- Braack, L., Sandwith, T., Peddle, D. and Petermann, T. (2006). *Security Considerations in the Planning and Management of Transboundary Conservation Areas*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/2006-056.pdf>>. Accessed on 11 February 2015.
- Brajanoska, R., Cil, A., Civic, K., Jones-Walters, L., Heinrichs, A.K., Hristovski, S., Melovski, Lj. and Schwaderer, G. (2013). *Synthesis report of the project "Realisation of the Balkan Regional Ecological Network"*. Skopje: ECNC-European Centre for Nature Conservation, EuroNatur Foundation, Macedonian Ecological Society.
- Brunner, R. (1999). *Parks for Life: Transboundary Protected Areas in Europe. Final Report*. Ljubljana, Slovenia: IUCN (IUCN/WCPA Parks for Life Coordination Office).
- Budowski, G. (1975). Central American Meeting on Management of Natural and Cultural Resources, held in San José, Costa Rica, 19–24 December 1974. *Environmental Conservation* 2 (3): 234.
- Bushell, R. and Eagles P.F.J. (2007). *Tourism and Protected areas: Benefits beyond Boundaries. The Vth IUCN World Parks Congress*. Gateshead, UK: CABI. <<http://bizcult.info/ebooks/Tourism%20and%20Protected%20Areas.pdf>>. Accessed on 6 July 2014.
- Buuveibaatar, B., Smith, J.K., Edwards, A. and Ochirkhuyag, L. (eds.). (2014). *Proceedings of the International Conference of China-Mongolia-Russia Daurian International Protected Area*. Ulaanbaatar: Wildlife Conservation Society Mongolia.
- Campbell, B., Sayer, J. A., Frost, P., Vermeulen, S., Ruiz Perez, M., Cunningham, A. and Prabhu, R. (2001). Assessing the Performance of Natural Resource Systems. *Conservation Ecology* 5 (2): 22. <<http://www.consecol.org/vol5/iss2/art22/>>. Accessed on 9 April 2014.
- Castro, J.J., Ramírez, M., Saunier, R.E. and Meganck, R.A. (1995). The La Amistad Biosphere Reserve. In: Saunier, R.E. and Meganck, R.A. (eds.) *Conservation of Biodiversity and the New Regional Planning*. Organization of American States and the IUCN-The World Conservation Union.
- Carney, D. (1998). *Sustainable Rural Livelihoods. What Contribution Can We Make?* Papers presented at the Department for International Development's Natural Resources Advisers' Conference, July 1998. London: DFID.
- Carroll, C., Dunk, J.R. and Moilanen, A. (2010). Optimizing Resiliency of Reserve Networks to Climate Change: Multispecies Conservation Planning in the Pacific Northwest, USA. *Global Change Biology* 16 (3): 891-904.
- Chambers, R. and Conway G.R. (1992). *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. IDS Discussion Paper 296. Brighton, UK: Institute for Development Studies.
- Chan, K.M.A., Satterfield, T., Goldstein, J. (2012). Rethinking Ecosystem Services to Better Address and Navigate Cultural Values. *Ecological Economics* 74: 8–18.
- Chettri, N. (2011). Role of Actors and Institutions in Regional Tourism Development in the Hindu Kush-Himalayan Region. In: Kruk, E., Kreuzmann, H. and Richter, J. (eds.). *Proceedings of the Regional Workshop Integrated Tourism Concepts to Contribute to Sustainable Mountain Development in Nepal*. Bonn, Germany: GIZ. <http://www.geo.fu-berlin.de/geog/fachrichtungen/anthrogeog/zelf/Medien/download/Kreuzmann_PDFs/pdfs_Nov_2012/GIZ2011_Nepal-tourism-development.pdf>. Accessed on 11 February 2015.
- Chettri, N., Thapa, R. and Shakya, B. (2007a). Participatory Conservation Planning in Kangchenjunga Transboundary Biodiversity Conservation Landscape. *Tropical Ecology* 48 (2): 1-14.
- Chettri, N., Sharma, E., Shakya, B. and Bajracharya, B. (2007b). Developing Forested Conservation Corridors in the Kangchenjunga Landscape, Eastern Himalaya. *Mountain Research and Development* 27 (3): 211-214.
- Chettri, N., Shakya, B. and Sharma, E. (2008a). *Biodiversity Conservation in the Kangchenjunga Landscape*. Nepal: ICIMOD.
- Chettri, N., Shakya, B., Thapa, R. and Sharma, E. (2008b). Status of Protected Area System in the Hindu Kush Himalaya: An Analysis of PA Coverage. *International Journal of Biodiversity Science and Management* 4 (3): 164–178.
- Chettri, N., Sharma, E., Shakya, B., Thapa, R., Bajracharya, B., Uddin, K., Oli, K.P. and Choudhury, D. (2010a). *Biodiversity in the Eastern Himalayas: Status, Trends and Vulnerability to Climate Change; Climate Change Impact and Vulnerability in the Eastern Himalayas – Technical report 2*. Kathmandu: ICIMOD. <http://lib.icimod.org/record/26847/files/attachment_698.pdf>. Accessed on 11 February 2015.
- Chettri, N., Sharma, E., Thapa, S., Lama, Y., Wangchuk, S. and Peniston, B. (2010b). Transboundary Landscape Initiative in the Hindu Kush Himalayas: Developing Conservation Corridors and Regional Cooperation in the Sacred Himalayan Landscape. In: Worboys, G.L., Francis, W. and Lockwood, M. (eds.). *Connectivity Conservation Management: A Global Guide*. London, UK: Earthscan.
- Chettri N., Zomer R., Sharma E. and Oli K.P. (2012). Kailash Sacred Landscape Conservation Initiative: Towards an 'Ecosystem Approach' in Transboundary Biodiversity Conservation in the Hindu Kish Himalayas. In: Higgins-Zogib, L., Dubley, N. and Aziz, T. (eds.). *The High Ground: Biocultural Diversity and Conservation of Sacred Natural Sites in the Eastern Himalayas*. WWF Bhutan. <http://awsassets.panda.org/downloads/wwf_the_high_ground.pdf>. Accessed on 11 February 2015.
- Claudet, J., Osenberg, C.W., Benedetti-Cecchi, L., Domenici, P., Garcia-Charton, J.A., Perez-Ruzafa, A., Badalamenti, F., Bayle-Sempere, J., Brito, A., Bulleri, F., Culioli, J.M., Dimech, M., Falcon, J.M., Guala, I., Milazzo, M., Sanchez-Meca, J., Somerfield, P.J., Stobart, B., Vandeperre, F., Valle, C. and Planes, S. (2008). Marine Reserves: Size and Age Do Matter. *Ecology Letters* 11: 481-489.
- Comunidad Andina de Naciones (1999). *Política Comunitaria para la Integración y el Desarrollo Fronterizo*. <<http://www.comunidadandina.org>>. Accessed on 22 April 2014.
- Comunidad Andina de Naciones (2001). *Decisión 501 Zona de Integración Fronteriza de la Comunidad Andina*. <<http://intranet.comunidadandina.org/Documentos/Gacetitas/GACE680.PDF>>. Accessed on 22 April 2014.

- Comunidad Andina de Naciones (2002). *Decisión 523 Estrategia Regional de Biodiversidad para los Países del Trópico Andino*. <<http://intranet.comunidadandina.org/Documentos/Gacetetas/Gace813.pdf>>. Accessed on 22 April 2014.
- Comunidad Andina de Naciones (2014). *Somos Comunidad Andina*. <<http://www.comunidadandina.org/Quienes.aspx>>. Accessed on 8 March 2014.
- Consensus Building Institute (1998). How to conduct a conflict assessment. *CBI Reports* (Spring).
- Coral Triangle Initiative (2009). *Regional Plan of Action. Coral Triangle Initiative on Coral Reefs, Fisheries and Food-Security*. Jakarta, Indonesia: Interim Regional CTI Secretariat. <<http://www.coraltriangleinitiative.org/library/cti-regional-plan-action>>. Accessed on 11 February 2015.
- Costanza, R., Daly, H. and Bartholomew, J. (1991). Goals, Agenda, and Policy Recommendations for Ecological Economics. In: Costanza, R. (ed.). *Ecological Economics: The Science and Management of Sustainability*. New York: Columbia University Press.
- Council of Europe (2004). *European Landscape Convention*. <<http://www.coe.int/EuropeanLandscapeConvention>>. Accessed on 10 March 2014.
- Cowan, G.I., Mpongoma, N. and Britton, P. (eds.). (2010). *Management Effectiveness of South Africa's Protected Areas*. Pretoria: Department of Environmental Affairs. <https://www.environment.gov.za/sites/default/files/docs/management_effectiveness_saprotected_areas.pdf>. Accessed on 11 February 2015.
- de Groot, R.S., Blignaut, J., Ploeg, S., van der Aronson, J., Elmqvist, T. and Farley, J. (2013). Benefits of Investing in Ecosystem Restoration. *Conservation Biology* 27 (6): 1286–1293.
- Declaration of Tulcea* (2004). <http://www.danubeparks.org/files/187_Declaration_of_Tulcea_0407.pdf>. Accessed on 22 April 2014.
- Dudley, N., Kalemari, J.M., Cohen, S., Stolton, S., Barber, C.H. and Gidda, S.B. (2005). Towards Effective Protected Areas Systems: An Action Guide to Implement the Convention on Biological Diversity Programme of Work on Protected Areas. *Technical Series No. 18*. Montreal: Secretariat of the Convention on Biological Diversity. <<http://www.cbd.int/database/attachment/?id=1397>>. Accessed on 22 January 2014.
- Dudley, N. (ed.). (2008). *Guidelines for Applying Protected Area Management Categories*. Gland, Switzerland: IUCN. WITH Stolton, S., Shadie, P. and Dudley, N. (2013). IUCN WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types. *Best Practice Protected Area Guidelines Series No. 21*. Gland, Switzerland: IUCN. <http://cmsdata.iucn.org/downloads/iucn_assignment_1.pdf>. Accessed on 11 February 2015.
- Dudley, N. and Rao, M. (2008). Assessing and Creating Linkages Within and Beyond Protected Areas: A Quick Guide for Protected Area Practitioners. In: Ervin, J. (ed.). *Quick Guide Series*. Arlington, VA: The Nature Conservancy.
- Dudley, N., Stolton, S., Belokurov, A., Krueger, L., Lopoukhine, N., MacKinnon, K., Sandwith, T. and Sekhran, N. (eds.). (2010). *Natural Solutions: Protected Areas Helping People Cope with Climate Change*. Gland, Switzerland, Washington DC and New York, USA: IUCN WCPA, TNC, UNDP, WCS, The World Bank and WWF. <http://cmsdata.iucn.org/downloads/natural_solutions.pdf>. Accessed on 11 February 2015.
- Eagles, P.F.J., McCool, S.F. and Haynes, C. D. (2002). *Sustainable Tourism in Protected Areas: Guidelines for Planning and Management*. Gland, Switzerland and Cambridge UK: IUCN. <http://cmsdata.iucn.org/downloads/pag_008.pdf>. Accessed on 11 February 2015.
- Emerson, K., Nabatchi, T. and Balogh, S. (2011). An Integrative Framework for Collaborative Governance. *Journal of Public Administration Research and Theory* 22 (1): 1-30.
- Emerton, L., Bishop, J. and Thomas, L. (2006). *Sustainable Financing of Protected Areas: A Global Review of Challenges and Options*. Gland, Switzerland and Cambridge, UK: IUCN. <http://cmsdata.iucn.org/downloads/emerton_et_al_2006.pdf>. Accessed on 11 February 2015.
- Endamana, D., Boedhihartono, A.K., Bokoto, B., Defo, L., Eyebe, A., Ndikumagenge, C., Nzooh, Z., Ruiz Perez, M. and Sayer, J.A. (2010). Assessing Conservation and Development in a Congo Basin Forest Landscape. *Tropical Conservation Science* 3 (3): 262-281.
- Endamana, D., Angu Angu, K., Boedhihartono, I.A., Breuer, T., Elame, E., Eyebe, A., Ndadet, A.C., Ngono, L., Nzooh, Z., Ruiz Perez, M., Santos, D.D., Usongo, L. and Sayer, J. (2013). *Lessons Learned from Participatory Measurement of Conservation and Development Outcomes in the Congo Basin: The Case of the Sangha Tri National Landscape*. Paper delivered at the Central African Forests and Institutions (CAFI) Conference, Paris, France, 20-21 September 2013.
- Erg, B., Vasilijević, M. and McKinney, M. (eds.). (2012). *Initiating Effective Transboundary Conservation: A Practitioner's Guideline Based on the Experience from the Dinaric Arc*. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. <http://cmsdata.iucn.org/downloads/initiating_effective_transboundary_conservation.pdf>. Accessed on 11 February 2015.
- Ervin, J. (2003). *WWF: Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) Methodology*. Gland, Switzerland: WWF. <<http://www.panda.org/downloads/forests/rappam.pdf>>. Accessed on 9 April 2014.
- Ervin, J., Sekhran, N., Dinu, A., Gidda, A., Vergeichik, M. and Mee, J. (2010). *Protected Areas for the 21st Century: Lessons from UNDP/GEF's Portfolio*. New York: United Nations Development Programme and Montreal: Convention on Biological Diversity.
- EUROPARC Federation (2014a). *What is a TBPA?* <<http://europarc.org/uploaded/documents/1032.pdf>>. Accessed on 8 March 2014.
- EUROPARC Federation (2014b). *The Basic Standards*. <<http://europarc.org/what-we-do/transboundary-parks/evaluation-verifica/the-basic-standards/>>. Accessed on 10 March 2014.
- GDF, CEESP and IUCN WCPA (2010). Community Conservation in Practice. *Proceedings from a workshop held at Tin Wis Resort, Tofino, British Columbia, 6-8 May 2010*. Hosted by the Tla-o-qui-aht community and made possible by funding from The Christensen Fund.
- Goodman, R.L. and Tallis, H. (2009). A Critical Analysis of Ecosystem Services as a Tool in Conservation Projects: The Possible Perils, the Promises, and the Partnerships. *The Year in Ecology and Conservation Biology: Annals of the New York Academy of Sciences* 1162: 63–78.
- Graham, J., Amos, B. and Plumptre, T. (2003) *Governance Principles for Protected Areas in the 21st Century, A Discussion Paper*. Ottawa: Institute on Governance in collaboration with Parks Canada and Canadian International Development Agency.

- Grumbine, R.E. (1994). What is Ecosystem Management? *Conservation Biology* 8 (1): 27-38.
- Gunderson L. and Holling, C.S. (2002). *Panarchy: Understanding Transformations in Human and Natural Systems*. Island Press.
- Hamilton, L.S., Mackay, J.C., Worboys, G.L., Jones, R.A. and Manson, G.B. (1996). *Transborder Protected Area Cooperation*. IUCN/Australian Alps National Parks.
- Hilty, J., Lidicker, W.Z.Jr. and Merenlender, A.M. (2006). *Corridor Ecology. The Science and Practice of Linking Landscapes for Biodiversity Conservation*. Washington, Covelo, London: Island Press.
- Hockings, M., Stolton, S. and Dudley, N. (2000). *Evaluating Effectiveness: A Framework for Assessing Management of Protected Areas*. IUCN Cardiff University Best Practice Series. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/PAG-006.pdf>>. Accessed on 11 February 2015.
- Hockings, M., Stolton, S., Leverington, F., Dudley, N. and Courrau, J. (2006). *Evaluating Effectiveness: A Framework for Assessing Management Effectiveness of Protected Areas. 2nd Edition*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/edocs/PAG-014.pdf>>. Accessed on 11 April 2014.
- Holling, C.S. and Meffe, G.K. (1996). Command and Control and the Pathology of Natural Resource Management. *Conservation Biology* 10 (2): 328-337.
- Hutto, R.L. and Belote, R.T. (2013). Distinguishing Four Types of Monitoring Based on the Questions they Address. *Forest Ecology and Management*. 289: 183-189.
- ICIMOD (2012). *Project Proposal for a Collaboration between ICIMOD and the Scottish Centre for Himalayan Research (SCHR)*. By Will Tuladhar Douglas (SCHR) and ICIMOD (Rajian Kotru and Nawraj Pradhan).
- ICIMOD (2013). *Monitoring and Evaluation Framework for Kailash Sacred Landscape Conservation and Development Initiative (KSLCDI)*. Nepal: ICIMOD, Kathmandu.
- Innes, J. and Rongerude, J. (2005). *Collaborative Regional Initiatives: Civic Entrepreneurs Work to Fill the Governance Gap*. San Francisco: James Irvine Foundation.
- International Association for Public Participation (2007). *Foundations of Public Participation*. <http://c.y.mcdn.com/sites/www.iap2.org/resource/resmgr/files/iap-006_brochure_a3_internat.pdf>. Accessed on 2 April 2014.
- IUCN (1994). *Guidelines for Protected Area Management Categories*. CNPPA with the assistance of WCMC. Gland, Switzerland and Cambridge, UK: IUCN.
- IUCN (2003a). *The Durban Accord*. Vth IUCN World Parks Congress, Durban, South Africa, 12–13 September 2003. <<http://cmsdata.iucn.org/downloads/durbanaccorden.pdf>>. Accessed on 11 February 2015.
- IUCN (2003b). *The Durban Action Plan*. Vth IUCN World Parks Congress, Durban, South Africa, 12–13 September 2003. <<http://cmsdata.iucn.org/downloads/durbanaccorden.pdf>>. Accessed on 11 February 2015.
- IUCN (2008). *Resolution 4.056 on Rights-based Approaches to Conservation*. Adopted at the 4th IUCN World Conservation Congress, Barcelona, Spain. <http://intranet.iucn.org/webfiles/doc/IUCNPolicy/Resolutions/2008_WCC_4/English/RES/res_4_056_rights_based_approaches_to_conservation.pdf>. Accessed on 11 February 2015.
- IUCN (2009). *Serial Natural World Heritage Properties. An Initial Analysis of the Serial Natural Properties on the World Heritage List*. BfN and IUCN. <<https://portals.iucn.org/library/efiles/documents/2009-064.pdf>>. Accessed on 11 February 2015.
- IUCN (2014). *The Cultural and Spiritual Values of Protected Areas*. <http://www.iucn.org/about/work/programmes/gpap_home/gpap_people/gpap_tilcepa/gpap_spiritual/>. Accessed on 20 October 2014.
- IUCN Protected Areas Programme (2008). *Management Planning for Natural World Heritage Properties. A Resource Manual for Practitioners*. Gland, Switzerland: IUCN. <<http://cmsdata.iucn.org/downloads/whmanagement.pdf>>. Accessed on 11 February 2015.
- IUCN WCPA Transboundary Conservation Specialist Group (2012). *Legal Concept Paper Survey*. <<http://www.tbpa.net/page.php?ndx=75>>. Accessed on 20 March 2014.
- IUCN WCPA Transboundary Conservation Specialist Group (2014). *Transboundary Conservation Financing*. Available by authors.
- Kahn, B. (2008). *Lesser Sunda–Timor Leste (East Timor) Ecoregional Planning: Systematic GIS Mapping of Deep-Sea Yet Near-Shore Habitats Associated with Oceanic Cetaceans*. Technical Report AE08/01 for The Nature Conservancy–Coral Triangle Centre.
- Kahn, B. (2009a). *The Savu Sea Marine National Park: Management Recommendations for Critical Deep-Sea Habitats for Blue and Sperm Whales, Oceanic Cetaceans and Other Marine Megafauna*. Technical Report for The Nature Conservancy–Indonesia.
- Kahn, B. (2009b). DeepSea Yet NearShore Cetacean Habitats within the Marine Protected Area Networks of Indonesia: Managing Critical Habitats for Migratory and Oceanic Whale Species. In: Sattar, S.A., Anderson, R.C. and Adam, M.S. (eds.). *Abstracts of the Indian Ocean Cetacean Symposium, Section 3: Conservation and Management*. Maldives Research Centre, Maldives, 18-20 July 2009. <<http://www.mrc.gov.mv/publication/7>>. Accessed on 18 April 2014.
- Kahn, B. (2009c). Blue Whales of the Savu Sea National Marine Park, Indonesia. In: Sattar, S.A., Anderson, R.C. and Adam, M.S. (eds.). *Abstracts of the Indian Ocean Cetacean Symposium, Section 2: Species Reports*. Maldives Research Centre, Maldives, 18-20 July 2009. <<http://www.mrc.gov.mv/publication/7>>. Accessed on 18 April 2014.
- Kahn, B. (2010). *Seismic Surveys and Offshore Exploration in Highly Sensitive Marine Areas: Regulatory Guidelines and Best Practices for Contractors and Operators Working in the Indonesian Seas*. Technical Report for The Nature Conservancy and Conservation International–Bird's Head Seascape Programs, Papua Indonesia.
- Kahn, B. (2014). *The Rapid Ecological Assessment (REA) for Cetaceans & Seabirds in the Savu Sea National Marine Park*. Technical Report APEX03/13 on 2013 Field Activities for The Nature Conservancy Indonesia Program.
- Kahn, B. and Vance-Borland, K. (2013). *Marine Conservation Planning and the Offshore Oil & Gas, Deep-Sea Mining and Shipping Industries in the Coral Triangle and South West Pacific: Large-Scale Spatial Analysis of the Overlap between Priority Conservation Areas with Marine Extraction Blocks and International Shipping Lanes*. Technical Report AE/CP10112 for WWF Australia by APEX Environmental and The Conservation Planning Institute.
- Kareiva, P., Tallis, H., Ricketts, T.H., Daily, G.C. and Polasky, S. (2011). *Natural Capital: Theory and Practice of Mapping Ecosystem Services*. Oxford, UK: Oxford University Press.

- Kemmis, D. and McKinney, M. (2011). *Collaboration and the Ecology of Democracy*. Kettering Foundation.
- Kettunen, M. and ten Brink, P. (eds.). (2013). *Social and Economic Benefits of Protected Areas: An Assessment Guide*. Adbingdon: Routledge.
- Kothari, A. (1999). Towards Participatory Conservation in India: National Scenario and Lessons from the Field. In: Oli, K.P. (ed.). *Collaborative Management of Protected Areas in the Asian Region*. Kathmandu, Nepal: IUCN.
- Krosby, M. Tewksbury, J., Haddad, N.M. and Hoekstra, J. (2010). Ecological Connectivity for a Changing Climate. *Conservation Biology* 24 (6): 1686-1689.
- Lausche, B. (2011). *Guidelines for Protected Areas Legislation*. Gland, Switzerland: IUCN. <<https://portals.iucn.org/library/efiles/documents/eplp-081.pdf>>. Accessed on 11 February 2015.
- Lawrence, A. (ed.). (2010). *Taking Stock of Nature*. Cambridge, UK: Cambridge University Press.
- Leach, M., Mearns, R. and Scoones, I. (1999). Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development* 27 (2): 225-247. Great Britain: Elsevier Science Ltd.
- Lee, K.L. (1993). *Compass and Gyroscope: Integrating Science and Politics for the Environment*. Island Press.
- Leverington, F., Costa, K.L., Courrau, J., Pavese, H., Nolte, C., Marr, M., Coad, L., Burgess, N., Bomhard, B. and Hockings, M. (2010). *Management Effectiveness Evaluation in Protected Areas—A Global Study. Second edition 2010*. Brisbane, Australia: The University of Queensland. <<http://www.eci.ox.ac.uk/publications/downloads/coad11-protected-areas.pdf>>. Accessed on 11 April 2014.
- Locke, H. and McKinney, M. (2013). The Flathead River Basin. In: Norman, E.S., Cohen, A., Bakker, K. (eds.). *Water Without Borders: Canada, the United States, and Shared Waters*. Toronto, Buffalo, London: University of Toronto Press.
- Loh, J. and Harmon, D. (2005). A Global Index of Biocultural Diversity. *Ecological Indicators* 5 (3): 231-41.
- Lysenko I., Besançon C. and Savy, C. (2007). *2007 UNEP-WCMC Global List of Transboundary Protected Areas*. <<http://www.tbpa.net>>. Accessed on 13 February 2014.
- Mace, G.M. (2014). Whose Conservation? *Science* 345 (6204): 1558-1560.
- Maes, J., Egoh, B., Willemsen, L., Liqueste, C., Vihervaara, P., Schägner, J.P., Grizzetti, B., Drakou, E.G., La Notta, A., Zilian, G., Bouraoui, F., Paracchini, M.L., Braat L. and Bidoglio, G. (2012). Mapping ecosystem services for policy support and decision making in the European Union. *Ecosystem Services* 1 (1): 31-39.
- Maffi, L. (2005). Linguistic, Cultural, and Biological Diversity. *Annual Review of Anthropology* 34: 599-617.
- Maffi, L. and Woodley, E. (2010). *Biocultural Diversity Conservation: A Global Sourcebook*. London, UK and Washington DC, USA: Earthscan.
- Maloti Drakensberg Transfrontier Project (2007). Payment for Ecosystem Services: Developing an Ecosystem Services Trading Model for the Mnrweni/Cathedral Peak and Eastern Cape Drakensberg Areas. In: Mander, M., Blignaut, J., Schulze, R., Horan, M., Dickens, C., van Niekerk, K., Mavundla, K., Mahlangu, I., Wilson, A. and McKenzie, M. (eds.) *INR Report IR281*. Development Bank of Southern Africa, Department of Water Affairs and Forestry, Department of Environment Affairs and Tourism, Ezemvelo KZN Wildlife, South Africa. <<http://www.katoombagroup.org/documents/tools/Final%20PES.pdf>>. Accessed on 11 February 2015.
- Mani, M.S. (1974). *Ecology and Biogeography in India*. The Hague: Dr. W. Junk Publishers.
- Marzo, D., Morandi, F., Niccolini, F., Sargolini, M. and Tola, A. (2012). *Manuel Européen des Bonnes Pratiques sur l'Organisation et la Planification Ecotouristique*. Pisa: ETS.
- Margules, C.R. and Pressey, R.L. (2000). Systematic Conservation Planning. *Nature* 405: 243-253.
- Mascia, M.B., Pailler, S., Thieme, M.L., Rowe, A., Bottrill, M.C., Danielsen, F., Geldmann, J., Naidoo, R., Pullin, A.S. and Burgess, N.D. (2014). Commonalities and Complementarities among Approaches to Conservation Monitoring and Evaluation. *Biological Conservation* 169: 258-267.
- McCallum, J., Vasilijević, M., Cuthill, I. (2014). Assessing the ecological benefits of transboundary protected areas (TBPA): A questionnaire survey in the Americas and the Caribbean. *Journal of Environmental Management* 149: 245-252. <<http://www.sciencedirect.com/science/article/pii/S0301479714005039>>. Accessed on 11 February 2015.
- McDonald-Madden, E., Baxter, P.W.J., Fuller, R.A., Martin, T.G., Game, E.T, Montambault, J. and Possingham, H.P. (2010). Monitoring does not Always Count. *Trends in Ecology & Evolution* 25 (10): 547-550.
- McKinney, M. and Johnson, S. (2009). *Working Across Boundaries: People, Nature, and Regions*. Lincoln Institute of Land Policy and Center for Natural Resources and Environmental Policy, The University of Montana.
- McKinney, M. and Vasilijević, M. (2012). Guidelines for Initiating Transboundary Conservation. In: Erg, B., Vasilijević, M. and McKinney, M. (eds.). *Initiating Effective Transboundary Conservation: A Practitioner's Guideline Based on the Experience from the Dinaric Arc*. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. <http://cmsdata.iucn.org/downloads/initiating_effective_transboundary_conservation.pdf>. Accessed on 11 February 2015.
- McNeely, J.A. (2003). Biodiversity, War, and Tropical Forests. *Journal of Sustainable Forestry* 16 (3): 1-20.
- McShane, T.O. (2011). Hard Choices: Making Trade-offs between Biodiversity Conservation and Human Well-being. *Biological Conservation* 144 (3): 966-972.
- Memorandum of Agreement between the Government of the Republic of the Philippines and the Government of Malaysia on the establishment of the Turtle Island Heritage Protected Area* (1996). <<http://www.gov.ph/1996/05/31/the-philippine-claim-to-a-portion-of-north-borneo-memorandum-of-agreement-between-the-government-of-the-republic-of-the-philippines-and-the-government-of-malaysia-on-the-establishment-of-the-turtle-i/>>. Accessed on 14 May 2014.

- Millennium Ecosystem Assessment (2005). *Ecosystems and Human Well-being: Current State and Trends*. <<http://www.millenniumassessment.org/en/Condition.aspx>>. Accessed on 14 March 2014.
- Mittermeier, R.A., Kormos, C.F., Mittermeier, C.G., Robles Gil, P., Sandwith, T. and Besançon, C. (2005a). *Transboundary Conservation. A New Vision for Protected Areas*. Mexico: CEMEX-Agrupación Sierra Madre-Conservation International.
- Mittermeier R.A., Gils P.R., Hoffman M., Pilgrim J., Brooks T., Mittermeier C.G., Lamoreaux J. and da Fonseca, G.A.B. (eds.). (2005b). *Hotspots Revisited. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions*. USA: University of Chicago Press.
- Morrison, M.L., Marcot, B.G. and Mannan, R.W. (1992). *Wildlife Habitat Relationships: Concepts and Applications*. Madison, USA: University of Wisconsin Press.
- Murawski, S.A. (2007). Ten Myths Concerning Ecosystem Approaches to Marine Resource Management. *Marine Policy* 31: 681–690. Elsevier Ltd.
- Murphy, C.A. (2008). *Living in a Large-Scale Commons—The Case of Residents of a National Park in the Kavango-Zambezi Transfrontier Conservation Area (KaZa TFCA), Southern Africa*. Paper delivered at the IASC Conference, 14–18 July 2008, Cheltenham, England.
- Nichols, J.D. (1992). Capture-Recapture Models: Using Marked Animals to Study Population Dynamics. *BioScience* 42: 94–102.
- Oli, K., Chaudhary, S., and Sharma, U. (2013). Are Governance and Management Effective within Protected Areas of the Kangchenjunga Landscape (Bhutan, India and Nepal)? *PARKS* 19.1: 25–36.
- Ostrom, E. (2005). *Understanding Institutional Diversity*. Princeton University Press.
- Ostrom, E. (2010). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *American Economic Review* 100: 1–33.
- Pant, K.P., Rasul, G., Chettri, N., Rai, K.R. and Sharma, E. (2012). *Value of Forest Ecosystem Services: A Quantitative Estimation from the Kangchenjunga Landscape in Eastern Nepal*. ICIMOD Working Paper 2012/5. Kathmandu: ICIMOD.
- Papayannis, T. and Mallarach, J. M. (eds.). (2009). *The Sacred Dimension of Protected Areas: Proceedings of the Second Workshop of the Delos Initiative—Ouranoupolis 2007*. Gland, Switzerland: IUCN and Athens, Greece: Med-INA. <<https://portals.iucn.org/library/sites/library/files/documents/2009-069.pdf>>. Accessed on 11 February 2015.
- Parc National du Mercantour, Parco Naturale Alpi Marittime (1998). *Montagne sans Frontières. Charte du Jumelage*. 6 Juin 1998.
- Parco Naturale Alpi Marittime (2006). *Strategia e piano d'azione per un turismo sostenibile*, Parco Naturale Alpi Marittime.
- Paredes-Leguizamón, G. (2013). *Bases Conceptuales y Enfoques Metodológicos para la Formulación de Políticas o Normas que Integren la Biodiversidad en Procesos de Ordenamiento Territorial*. Programa BioCAN.
- Peace Parks Foundation (2011). Kgalagadi Transfrontier Park. *News* 4. February 2011. <<http://www.peaceparks.org/tfca.php?pid=19&mid=1002>>. Accessed on 12 February 2014.
- Phillips, A. (2002). *Management Guidelines for IUCN Category V Protected Areas: Protected Landscapes/Seascapes*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/pag-009.pdf>>. Accessed on 11 February 2015.
- Phillips, A. (2003). A Modern Paradigm. *The IUCN Bulletin World Conservation* 2: 6–7. <http://cmsdata.iucn.org/downloads/vth_iucn_en.pdf>. Accessed on 22 January 2014.
- Plummer, R., Armitage, D.R. and de Loë, R.C. (2013). Adaptive Comanagement and Its Relationship to Environmental Governance. *Ecology and Society* 18 (1): 21. <<http://dx.doi.org/10.5751/ES-05383-180121>>. Accessed on 3 March 2014.
- Posey, D.A. (2001). Biological and Cultural Diversity: The Inextricable, Linked by Language and Politics. In: Maffi, L. (ed.). *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*. Washington, DC: Smithsonian Institution Press.
- Peace Parks Foundation (2013). *TFCA Development—An Assessment Tool*. Version 1.0. Stellenbosch, South Africa.
- Prugh, L.R., Hodges, K.E., Sinclair, A.R.E. and Brashares, J.S. (2008). Effect of Habitat Area and Isolation on Fragmented Animal Populations. *Proceedings of the National Academy of Sciences of the United States of America* 105: 20770–20775.
- Ramsar Convention Secretariat (2010). *Inventory, Assessment, and Monitoring: An Integrated Framework for Wetland Inventory, Assessment, and Monitoring*. Ramsar handbooks for the wise use of wetlands. 4th edition, Vol. 13. Gland, Switzerland: Ramsar Convention Secretariat. <<http://archive.ramsar.org/pdf/lib/hbk4-13.pdf>>. Accessed on 2 March 2015.
- Ramsar Convention Secretariat (2013). *The Ramsar Convention Manual: A Guide to the Convention on Wetlands (Ramsar, Iran, 1971)*, 6th ed. Gland, Switzerland: Ramsar Convention Secretariat.
- Ramsar Secretariat (2013). *Transboundary Ramsar Sites*. <http://archive.ramsar.org/cda/en/ramsar-documents-trss-trs-index/main/ramsar/1-31-119%5E21073_4000_0__>. Accessed on 2 March 2015.
- Rana, L.N. (2008). *Biodiversity Status in the Potential Conservation Corridors of the Kangchenjunga Landscape: A Distribution Model of Flagship and Indicator Species*. *Biodiversity Conservation in the Kanchenjunga Landscape*. Kathmandu, Nepal: ICIMOD. <http://lib.icimod.org/record/26258/files/c_attachment_520_4757.pdf>. Accessed on 11 February 2015.
- Reed, M.S., Graves, A., Dandy, N., Posthumus, H., Hubacek, K., Morris, J., Prell, C., Quinn, C.H. and Stringer, L.C. (2009). Who's In and Why? A Typology of Stakeholder Analysis Methods for Natural Resource Management. *Journal of Environmental Management* 90 (5): 1933–1949.
- Ron, T. (2011a). *Potential for Designating Protected Areas for Conservation and for Identifying Conservation Corridors as Part of the Planning Process of the Mayombe Forest Ecosystems Transfrontier Conservation Area*. Prepared for the Governments of Angola, Congo and DRC, UNEP and IUCN. <<http://www.mayombe-tpa.org/wp-content/uploads/2013/06/Mayombe-forest-TPA-%E2%80%93-Potential-Protected-Areas-for-conservation-and-conservation-corridors.pdf>>. Accessed on 11 February 2015.
- Ron, T. (2011b). *Towards a Transboundary Protected Area Complex in the Mayombe Forest Ecosystems. Five Years Strategic Plan and Roadmap*. Prepared with the support and inputs of the Royal Government of Norway, UNEP and IUCN. Revised and adopted by the Governments of Angola, the Republic of Congo, the Democratic Republic of Congo and Gabon, February 2013.

- Rosen, T. (2012). *Analyzing Gaps and Options for Enhancing Argali Conservation in Central Asia within the Context of the Convention on the Conservation of Migratory Species of Wild Animals*. Report prepared for The Convention on the Conservation of Migratory Species of Wild Animals (CMS), Bonn, Germany and the GIZ Regional Program on Sustainable Use of Natural Resources in Central Asia.
- Rüster, B. and Simma, B. (eds.). (1975). *International Protection of the Environment: Treaties and Related Documents*. First Series. Dobbs Ferry, NY: Oceana Publications.
- Sandwith, T. and Lockwood, M. (2006). Linking the Landscape. In: Lockwood, M., Worboys, G. and Kothari, A. (eds.). *Managing Protected Areas: A Global Guide*. Earthscan.
- Sandwith, T., Shine, C., Hamilton, L. and Sheppard, D. (2001). *Transboundary Protected Areas for Peace and Co-operation*. Gland, Switzerland and Cambridge, UK: IUCN. <http://cmsdata.iucn.org/downloads/pag_007.pdf>. Accessed on 11 February 2015.
- SASEC (2004). *South Asia Sub-Regional Economic Cooperation Tourism Development Plan*. Asian Development Bank.
- Sayer, J.A. (2009). Reconciling Conservation and Development: Are Landscapes the Answer? *Biotropica* 41 (6): 649–652.
- Sayer, J.A., Campbell, B., Petheram, L., Aldrich, M., Ruiz Perez, M., Endamana, D., Nzooh, Z., Defo, L., Marikl, S., Doggart, N. and Burgess, N. (2006). Assessing Environment and Development Outcomes in Conservation Landscapes. *Biodiversity and Conservation* 16 (9): 2677–2694.
- Sayer, J.A., Endamana, D., Ruiz Perez, M., Boedhihartono, A.K., Nzooh, Z., Eyebe, A., Awono, A. and Usongo, L. (2012). Global Financial Crisis Impacts Forest Conservation in Cameroon. *International Forestry Review* 14 (1): 90–98(9).
- Sayer, J., Sunderland, T., Ghazoul, J., Pfund, J.-L., Sheil, D., Meijaard, E., Venter, M., Boedhihartono, A.K., Day, M., Garcia, C., van Oosten, C. and Buck, L. E. (2013). Ten Principles for a Landscape Approach to Reconciling Agriculture, Conservation, and Other Competing Land Uses. *Proceedings of the National Academy of Sciences of the United States of America* 110 (21): 8349–8356. <<http://www.pnas.org/content/110/21/8349>>. Accessed on 9 April 2014.
- Schoon, M.L. (2008). Building Robustness to Disturbance: Governance in Southern African Peace Parks. *PhD thesis*. Bloomington, IN: Indiana University.
- Schoon, M.L. (2012). Governance in Southern African Transboundary Protected Areas. In: Quinn, M., Broberg, L. and Freimund, W. (eds.). *Parks, Peace, and Partnerships. Global Initiatives in Transboundary Conservation*. Calgary: University of Calgary Press. <<http://uofcpress.com/books/9781552386422>>. Accessed on 11 February 2015.
- Schoon, M., Salau, K., Baggio, J. and Marco Janssen, M. (2014). Insights for Managers from Modelling Species Interactions across Multiple Scales in an Idealized Landscape. *Environmental Modelling and Software* 54: 53–59.
- Schröter, M., van der Zanden, E.H., van Oudenhoven, A.P.E., Remme, R.P., Serna-Chavez, H.M., de Groot, R.S. and Opdam, P. (2014). Ecosystem Services as a Contested Concept: A Synthesis of Critique and Counter-Arguments. *Conservation Letters*. Accessed on 2 July 2014.
- Senge, P. (2006). *The Fifth Discipline*. London, UK: Random House.
- Sharma, U.R. (2010). Kangchenjunga Landscape: Opportunities for Transboundary Sharing of Knowledge and Skills. *Biodiversity Conservation Efforts in Nepal Newsletter, Special Issue for the 15th Wildlife Week 2007*: 1–6. Kathmandu, Nepal: Department of National Parks and Wildlife Conservation.
- Sharma, E. (1997). Socio-Economic Issues Related to Conservation of the Khangchendzonga Mountain Ecosystem. In: Rastogi, A., Shengji, P. and Amatya, D. (eds.). *Proceeding of Workshop on Conservation and Management of Khangchendzonga Mountain Ecosystem*. Kathmandu, Nepal: International Centre for Integrated Mountain Development.
- Sharma, E., Chettri, N., Gurung, J. and Shakya, B. (2007). *Landscape Approach in Biodiversity Conservation: A Regional Cooperation Framework for Implementation of the Convention on Biological Diversity in Kangchenjunga Landscape*. Kathmandu: ICIMOD.
- Singh, J. (1999). *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Global Review: Lessons Learned*. Biodiversity Support Program, Reference No. 59. Washington, DC, USA.
- Southern Africa Development Community (1999). *Protocol on Wildlife Conservation and Law Enforcement*. <http://www.sadc.int/files/4813/7042/6186/Wildlife_Conservation.pdf> Accessed on 10 March 2014.
- South African National Biodiversity Institute (SANBI) (2012). *Supply Chain Management for Payment for Ecosystem Services in the Upper uThukela And Umzimvubu Catchments: PES Brokerage in the Upper uThukela*. Report compiled by Kevan Zunckel for SANBI, Pretoria, South Africa.
- Spenceley, A. (2008). *Responsible Tourism: Critical Issues for Conservation and Development*. Earthscan.
- Stolton, S., Dudley, N. and Shadie, P. (2012). *Managing Natural World Heritage: World Heritage Resource Manual*. Paris, France: UNESCO/ICCROM/ICOMOS/IUCN. <<http://whc.unesco.org/document/117412>>. Accessed on 11 February 2015.
- Stolton, S., Hockings, M., Dudley, N., MacKinnon, K., Whitten, T. and Leverington, F. (2007). *Management Effectiveness Tracking Tool: Reporting Progress at Protected Area Sites*. Second Edition. Gland, Switzerland: WWF.
- Straube, F.C. and Urben-Filho, A. (2005). Iguazu-Iguazú: One of the World's Greatest Natural Wonders. In: Mittermeier, R.A., Kormos, C.F., Mittermeier, C.G., Robles Gil, P., Sandwith, T. and Besançon, C. (eds.). *Transboundary Conservation. A New Vision for Protected Areas*. Mexico: CEMEX-Agrupación Sierra Madre-Conservation International.
- Struhsaker, T.T., Struhsaker, P.J. and Siex, K.S. (2005). Conserving Africa's Rain Forests: Problems in Protected Areas and Possible Solutions. *Biological Conservation* 123: 45–54.
- Tallis, H., Kareiva, P., Marvier, M. and Chang, A. (2008). An Ecosystem Services Framework to Support both Practical Conservation and Economic Development. *Proceedings of the National Academy of Science, USA* 105: 9457–9464.
- Tallis, H. and Polasky, S. (2009). Mapping and Valuing Ecosystem Services as an Approach for Conservation and Natural-Resource Management. *The Year in Ecology and Conservation Biology* 1162: 265–283. New York Academy of Sciences.

- Tallis, H., Levin, P.S., Ruckelshaus, M., Lester, M.S., McLeod, K.L., Fluharty, D.L. and Halpern, B.S. (2010). The Many Faces of Ecosystem-Based Management: Making the Process Work Today in Real Places. *Marine Policy* 34: 340–348. Elsevier Ltd.
- Taylor, P.D., Fahrig, L., Henein, K., Merriam, G. (1993). Connectivity is a vital element of landscape structure. *Oikos* 68: 571–572.
- TEEB-The Economics of Ecosystems and Biodiversity (2013). *Guidance Manual for TEEB Country Studies*. Version 1.0.
- The Conservation Measures Partnership (2013). *Open Standards for the Practice of Conservation. Version 3.0/April 2013*. <<http://www.conservationmeasures.org>>. Accessed on 1 June 2014.
- The Economics of Ecosystems and Biodiversity (TEEB) (2009). *The Economics of Ecosystems and Biodiversity for National and International Policy Makers—Summary: Responding to the Value of Nature 2009*. <<http://www.teebweb.org>>. Accessed on 17 March 2014.
- Thomas, L. and Middleton, J. (2003). *Guidelines for Management Planning of Protected Areas*. Gland, Switzerland and Cambridge, UK: IUCN. <<https://portals.iucn.org/library/efiles/documents/PAG-010.pdf>>. Accessed on 11 February 2015.
- Thompson, I., Mackey, B., McNulty, S. and Mosseler, A. (2009). Forest Resilience, Biodiversity and Climate Change: A Synthesis of the Biodiversity/Resilience/Stability Relationship in Forest Ecosystems. *Technical Series No. 43*. Montreal: Secretariat of the Convention on Biological Diversity.
- Thorsell, J.W. and Harrison, J. (1990). Parks that Promote Peace. A Global Inventory of Transfrontier Nature Reserves. In: Thorsell, J.W. (ed.) *Parks on the Borderline. Experience in Transfrontier Conservation*. Gland, Switzerland and Cambridge, UK: IUCN.
- Transboundary Core Secretariat (2006). *Ten Year Transboundary Strategic Plan. Central Albertine Rift Transboundary Protected Area Network*. <http://www.greatervirunga.org/IMG/pdf/transboundary_strategic_plan_feb_28_2006.pdf>. Accessed on 22 July 2014.
- UNDP and SCBD (2014). *Report on Workshop on Guiana Shield Biodiversity Corridors to Streamline Support for the Achievement of the Aichi Biodiversity Targets*. Kurupukari, Guyana, Iwokrama River Lodge and Research Centre, 21 to 23 May 2014.
- UNEP/CBD COP 5 (2000). *COP 5 Decision V/6 Ecosystem Approach*. Fifth Ordinary Meeting of the Conference of the Parties to the Convention on Biological Diversity. Nairobi, Kenya, 15–26 May 2000. <<http://www.cbd.int/decision/cop/default.shtml?id=7148>>. Accessed on 12 March 2014.
- UNEP/CBD COP 7 (2004). *COP 7 Decision VII/28 Protected Areas*. Seventh Meeting of the Conference of the Parties to the Convention on Biological Diversity. Kuala Lumpur, Malaysia, 9–20 February 2004. <<http://www.cbd.int/protected/pow/learnmore/intro/>>. Accessed on 14 February 2014.
- UNEP/CBD COP 10 (2010). *COP 10 Decision X.2 Strategic Plan for Biodiversity 2011–2020*. Tenth meeting of the Conference of the Parties to the Convention on Biological Diversity, Nagoya, Japan, 18–29 October 2010. <<https://www.cbd.int/decision/cop/default.shtml?id=12297>>. Accessed on 14 March 2014.
- UNEP/CBD COP 12/INF/30 (2014). *Peace and Biodiversity Dialogue: Promoting International Cooperation in Ecosystem Management and Transboundary Conservation*. Twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity, Pyeongchang, Republic of Korea, 6–17 October 2014. <<http://www.cbd.int/doc/?meeting=cop-12>>. Accessed on 22 December 2014.
- UNEP/CMS Secretariat (1979). *Convention on the Conservation of Migratory Species of Wild Animals*. <<http://www.cms.int/en/node/3916>>. Accessed on 1 July 2014.
- UNEP/CMS Secretariat (2010). *Background Paper to the Draft Resolution on Ecological Networks*. 37th Meeting of the CMS Standing Committee. Bonn, Germany, 23–24 November 2010.
- UNESCO (1996). *Biosphere Reserves: The Seville Strategy and the Statutory Framework of the World Network*. Paris: UNESCO. <<http://unesdoc.unesco.org/images/0010/001038/103849Eb.pdf>>. Accessed on 11 February 2015.
- UNESCO (2000). Seville +5. International Meeting of Experts. *Proceedings*. Pamplona, Spain, 23–27 October 2000. Paris, France: UNESCO. <<http://unesdoc.unesco.org/images/0012/001236/123605m.pdf>>. Accessed on 11 February 2015.
- UNESCO (2013). *Operational Guidelines for the Implementation of the World Heritage Convention*. Paris, France: World Heritage Centre. <<http://whc.unesco.org/archive/opguide13-en.pdf>>. Accessed on 11 February 2015.
- UNESCO (2014a). *World Heritage List*. <<http://whc.unesco.org/en/list/>>. Accessed on 8 March 2014.
- UNESCO (2014b). *Transboundary Biosphere Reserves*. <<http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/transboundary-biosphere-reserves/>>. Accessed on 10 July 2014.
- UNESCO (2014c). *Pyrénées-Mont Perdu*. <<http://whc.unesco.org/en/list/773>>. Accessed on 1 April 2014.
- UNESCO, ICCROM, ICOMOS, IUCN (2011). *Preparing World Heritage Nominations. 2nd edition*. Paris, France: UNESCO. <<https://portals.iucn.org/library/efiles/documents/2011-072-En.pdf>>. Accessed on 11 February 2015.
- United Nations Department of Economic and Social Affairs (2014). *Sustainable Tourism*. <<http://sustainabledevelopment.un.org/index.php?menu=243>>. Accessed on 25 March 2014.
- van der Linde, H., Oglethorpe, J., Sandwith, T., Snelson, D. and Tessema, Y. (with contributions from Anada Tiéga and Thomas Price). (2001). *Beyond Boundaries: Transboundary Natural Resource Management in Sub-Saharan Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program. <http://www.tbpa.net/docs/publications/26_Beyond_Boundaries_SubSaharan%20Africa.pdf>. Accessed on 11 February 2015.
- van der Molen, J. and Ietswaart, H. (2012). *Crossing Borders. Creating and Managing Cross-border Regional Alliances. Practical Handbook to the Crossing Borders Theory*. Crossing Borders Academy. <<http://www.crossingbordersacademy.org>>. Accessed on 14 February 2014.
- Vasiljević, M. (2012a). Challenges and opportunities of transboundary conservation in the Dinaric Arc. In: Erg, B., Vasiljević, M. and McKinney, M. (eds.). (2012). *Initiating Effective Transboundary Conservation: A Practitioner's Guideline Based on the Experience from the Dinaric Arc*. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. <http://cmsdata.iucn.org/downloads/initiating_effective_transboundary_conservation.pdf>. Accessed on 11 February 2015.

- Vasilijević, M. (2012b). Diagnostic Tool for Transboundary Conservation Planners: Suggested Questions to Determine Feasibility for Transboundary Conservation. In: Erg, B., Vasilijević, M. and McKinney, M. (eds.). *Initiating Effective Transboundary Conservation: A Practitioner's Guideline Based on the Experience from the Dinaric Arc*. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. <http://cmsdata.iucn.org/downloads/initiating_effective_transboundary_conservation.pdf>. Accessed on 11 February 2015.
- Vasilijević, M. and Pezold, T. (eds.). (2011). *Crossing Borders for Nature. European Examples of Transboundary Conservation*. Gland, Switzerland and Belgrade, Serbia: IUCN Programme Office for South-Eastern Europe. <<https://portals.iucn.org/library/efiles/documents/2011-025.pdf>>. Accessed on 11 February 2015.
- Verma, K. (2011). Siachen-From Battlefield to 'Peace Park'?. *The South-Asian Life & Times* October-December 2011: 50-59.
- Vogl, A. and Tallis, H. (2014). *RIOS: Resource Investment Optimization System. Natural Capital Project*. Stanford University.
- Walker, B., Carpenter, S., Anderies, J., Abel, N., Cumming, G., Janssen, M., Lebel, L., Norberg, J., Peterson, G.D. and Pritchard, R. (2002). Resilience Management in Social-Ecological Systems: A Working Hypothesis for a Participatory Approach. *Conservation Ecology* 6 (1): 14. <<http://www.consecol.org/vol6/iss1/art14>>. Accessed on 17 March 2014.
- Walker, B.H. and Salt, D. (2006). *Resilience Thinking: Sustaining Ecosystems and People in a Changing World*. Washington, D.C., USA: Island Press.
- Watson, J.E.M., Hedley, G.S., Kerrie, W.A. and Possingham, H.P. (2011). Systematic Conservation Planning: Past, Present and Future. In: Ladle, R. J. and Whittaker, R. J. (eds.), *Conservation Biogeography*: 1956-1976. London, U.K.: John Wiley & Sons.
- Wheatley M. and Frieze, D. (2009). Using Emergence to Take Social Innovations to Scale. *Kettering Review* 27 (2): 34.
- Westgate, M.J., Likens, G.E. and Lindenmayer, D.B. (2013). Adaptive Management of Biological Systems: A Review. *Biological Conservation* 158: 128-139.
- Westing, A.H. (ed.). (1993a). *Transfrontier Reserves for Peace and Nature: A Contribution to Human Security*. Nairobi, Kenya: CGCS, United Nations Environment Programme.
- Westing, A.H. (1993b). Biodiversity and the Challenge of National Borders. *Environmental Conservation* 20 (1): 5-6.
- Westing, A.H. (1998). Establishment and Management of Transfrontier Reserves for Conflict Prevention and Confidence Building. *Environmental Conservation* 25 (2): 91-94.
- Williams, B.K. and Brown, E.D. (2012). *Adaptive Management: The US Department of the Interior Applications Guide*. Washington, D.C.: US Department of the Interior.
- Wilson, J., Darmawan, A., Subijanto, J., Green, A. and Sheppard, S. (2011). *Scientific Design of a Resilient Network of Marine Protected Areas. Lesser Sunda Ecoregion, Coral Triangle*. Asia Pacific Marine Program. Report 2/11.
- Worboys, G.L., Francis, W. and Lockwood, M. (eds.) (2010). *Connectivity Conservation Management: A Global Guide*. London, UK: Earthscan.
- World Bank (2008). *Forests Sourcebook: Practical Guidance for Sustaining Forests in Development Cooperation*. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0. <<https://openknowledge.worldbank.org/handle/10986/6455>>. Accessed on 9 April 2014.
- WWF and ICIMOD (2001). *Ecoregion-Based Conservation in the Eastern Himalaya: Identifying Important Areas for Biodiversity Conservation*. Kathmandu: WWF Nepal.
- WWF-US Asia Programme. (2005). *Ecosystem Profile. Eastern Himalaya Region. Final report*. Critical Ecosystem Partnership Fund. Washington DC, USA: WWF-US.
- Xu, J., Grumbine, E.R., Shrestha, A., Eriksson, M., Yang, X., Wang, Y. and Wilkes, A. (2009). The Melting Himalayas: Cascading Effects of Climate Change on Water, Biodiversity, and Livelihoods. *Conservation Biology* 23 (3): 520-530.
- Young, O.R. (ed.). (1999). *The Effectiveness of International Environmental Regimes: Causal Connections and Behavioral Mechanisms*. MIT Press.
- Young O.R., Osherenko G., Ekstrom J., Crowder L. B. and Ogden J. (2007). Solving the Crisis in Ocean Governance: Place-based Management of Marine Ecosystems. *Environment* 49: 20-32.
- Zbicz, D.C. (1999). Transboundary Co-operation between Internationally Adjoining Protected Areas. In: Harmon, D. (ed.). *On the Frontiers of Conservation*. Hancock, Michigan, USA: George Wright Society.
- Zbicz, D. (2001). Global List of Complexes of Internationally Adjoining Protected Areas. In: Sandwith, T., Shine, C., Hamilton, L. and Sheppard, D. *Transboundary Protected Areas for Peace and Co-operation*. Gland, Switzerland and Cambridge, UK: IUCN. <http://cmsdata.iucn.org/downloads/pag_007.pdf>. Accessed on 11 February 2015.
- Zbicz, D. and Green, M. (1997). Status of the World's Transfrontier Protected Areas. In: IUCN/WCPA. *Transboundary Protected Areas as a Vehicle for International Co-operation. Proceedings of the Parks for Peace Conference*. Somerset West, South Africa, 16-18 September 1997.
- Zomer, R. and Oli, K.P. (eds.). (2011). *Kailash Sacred Landscape Conservation Initiative—Feasibility Assessment Report*. Kathmandu: ICIMOD.
- Zomer, R.J., Trabucco, A., Metzger, M. and Oli, K. P. (2013). *Environmental Stratification of Kailash Sacred Landscape and Projected Climate Change Impacts on Ecosystems and Productivity*. ICIMOD Working Paper 2013/1. Kathmandu: ICIMOD.

Appendices

Appendix A: Memorandum of Agreement for the establishment of the Turtle Islands Heritage Protected Area

Source: Memorandum of Agreement between the Government of the Republic of the Philippines and the Government of Malaysia on the establishment of the Turtle Island Heritage Protected Area (1996)

Memorandum of Agreement between the Government of the Republic of the Philippines and the Government of Malaysia on the establishment of the Turtle Island Heritage Protected Area

The Government of the Republic of the Philippines and the Government of Malaysia hereinafter referred to jointly as "PARTIES" and singly as "PARTY";

- RECOGNIZING the significance of the Turtle Islands as a traditional nesting area of the green (*Chelonia mydas*) and the hawksbill (*Eretmochelys imbricata*) turtles;
- REALIZING that effective conservation efforts cannot be independently realized at a national level and that bilateral efforts are necessary to ensure the long-term survival of marine turtles in this part of the region;
- DESIRING to jointly manage and protect the only remaining major green turtle habitats and population in the Southeast Asian region through a unified approach in the formulation and attainment of the management and protection strategies/goals;

HAVE AGREED AS FOLLOWS:

Article I

Location

Subject to their respective laws, the contracting PARTIES hereby agree to establish the Turtle Islands Heritage Protected Area (TIHPA) composed of six islands designated by the Philippines: Boaan, Langaan, Great Bakkungaan, Lihiman, Taganak, and Baguan; and three islands designated by Malaysia; Palau Selingaan, Palau Gulisaan, and Palau Bakkungaan Kechil with their corresponding coordinates:

ISLANDS	N Latitude	E Longitude
Boaan	6° 17' 16"	118° 04' 42"
Langaan	6° 12' 27"	118° 08' 59"
Great Bakkungaan	6° 11' 13"	118° 07' 15"
Lihiman	6° 14' 02"	118° 04' 09"
Taganak	6° 04' 38"	118° 19' 00"
Baguan	6° 06' 07"	118° 26' 58"
Palau Selingaan	6° 11' 00"	118° 04' 00"
Palau Bakkungaan Kechil	6° 10' 18"	118° 06' 00"
Palau Gulisaan	6° 09' 00"	118° 03' 00"

Article II

Purpose

1. Subject to their respective laws, the contracting PARTIES shall jointly manage and protect the Turtle Islands Heritage Protected Area as a green and hawksbill turtle sanctuary. The contracting PARTIES shall endeavor to develop an integrated management program that shall highlight, at the minimum, the following:

- 1.1. Implementation of an integrated and uniform approach to conservation and research that is oriented towards wise management of the TIHPA;
- 1.2. Establishment of a centralized database and information network on marine turtles;
- 1.3. Development of appropriate information awareness programs primarily targeted towards the inhabitants of the Turtle Islands on the conservation of marine turtles and the protection of their habitats;
- 1.4. Implementation of a joint marine turtle resource management program;
- 1.5. Development and implementation of a training and development program for the staff of the TIHPA; and
- 1.6. Development and undertaking of eco-tourism programs.

2. The contracting PARTIES shall adopt a Turtle Conservation and Research Program composed of activities included but not limited to those which appear in Annex A.

Article III

Joint Management Committee

1. The TIHPA Joint Management Committee (hereinafter referred to as the Committee) is hereby established to implement the purposes specified in Article II of this Agreement.

2. The Committee shall be composed of five members from each contracting PARTY. The representatives may be accompanied by one or more experts and advisers who may come from non-government organizations involved in the conservation of marine turtles.

3. The Committee shall serve as the policy-making body of the TIHPA and may coordinate/collaborate with international organizations involved in marine turtles conservation for the realization of the purposes of this Agreement.

4. The representatives of each contracting PARTY to the Committee shall study and recommend to their respective authorities the enactment of such laws as may be necessary to pursue the purposed of this Agreement.

5. The Committee shall render periodic reports to the Philippines-Malaysia Joint Commission for Bilateral Cooperation.

Article IV

Implementing Agency

1. Each contracting PARTY shall designate an appropriate Implementing Agency to enforce, implement and monitor the policies, laws, rules and regulations formulated for the management and protection of the TIHPA.

Article V

Coordination and Linkages

1. The Committee shall meet at least once a year on dates that shall be agreed upon by the contracting PARTIES.
2. The Implementing Agency of each contracting PARTY shall maintain active communication with each other to ensure the effective enforcement and implementation of policies and programs as agreed to by the Committee.
3. Each contracting PARTY shall alternately host the meetings of the Committee.

Article VI

Financing

1. Through funding and technical assistance from donor agencies and non-government organizations, the Committee shall formulate a Sustainable Financing Strategy (SFS) such as the establishment and management of an Environmental Guarantee Fund or Trust Fund to support its program, activities, and operations.
2. Each contracting PARTY shall be responsible for the administration of funds allocated for their respective activities in pursuance of the programs of the TIHPA.

Article VII

National Laws and Regulations

1. Matters or issues not covered by the foregoing provisions shall be subject to the respective national laws and regulations of the contracting PARTIES.
2. Nothing in this Agreement shall modify any existing agreement between the Government of the Philippines and the Government of Malaysia.

Article VIII

Interpretation and Application

The contracting PARTIES shall resolve any differences arising from the interpretation and application of this Agreement through mutual consultation. However, in instances where differences cannot be resolved through consultation, the matter shall be referred to the Philippines-Malaysia Joint Commission for Bilateral Cooperation for resolution.

Article IX

Amendment

This Agreement may be amended at any time by mutual agreement of both contracting PARTIES, provided that

such amendments shall not prejudice the execution and implementation of existing contracts, projects and programs.

Article X

Entry into Force

This Agreement shall enter into force on the date of the exchange of the diplomatic notes indicating that the legal requirements and formalities under the respective laws of the contracting PARTIES have been completed.

IN WITNESS WHEREOF, the duly authorized representatives of the Government of the Republic of the Philippines and the Government of Malaysia have signed this Memorandum of Agreement.

DONE at Manila, on the 31st day of May, 1996, in four originals, two each in the Malay and English languages, both texts being equally authentic.

In case of divergent interpretation of the Malay and English texts, the English text shall prevail.

For and on behalf
of the Government
of the Philippines

Hon. Domingo L. Siason, Jr.
Sec., Dept of Foreign Affairs

For and on behalf of the
Government of Malaysia

Yb. Datuk Abdullah Haji
Ahmad Badawi
Minister of Foreign Affairs

ANNEX A

CONSERVATION AND RESEARCH PROGRAMMES FOR THE TURTLE ISLANDS HERITAGE PROTECTED AREA

I. TURTLE CONSERVATION AND MANAGEMENT

PROGRAMME

1. Protection of nesting habitat
2. Prohibition of sand and coral excavation
3. Protection and rehabilitation of beach vegetation
4. Beach clearing activities
5. Protection of adult turtles
6. Prohibition of the use of fishing gears contributing to mortality or disturbance of turtles within the TIHPA
7. Screening of lights from buildings
8. Protection from main forms of pollution that might endanger turtles
9. Formulation of a Joint Management Plan for the TIHPA

II. RESEARCH AND MONITORING PROGRAMME

1. Population status and distribution
2. Turtle harvest management
3. Dynamics of turtle egg trade
4. DNA analysis
5. Determination of the sex ratio in ex situ hatching
6. Tagging of turtles
7. Joint resource and ecological assessment
8. Joint socio-cultural economic and investment opportunities assessment

Appendix B: Lessons from practice: regional pilot survey of transboundary conservation managers in North, Central and South America

Source: McCallum et al. (2014)

The Transboundary Conservation Specialist Group of IUCN WCPA undertook a *Regional Pilot Survey of Transboundary Conservation Managers in North, Central and South America* during 2011-2012. The survey collected information about:

- Baseline quantitative data
- Transboundary connectivity and cooperation
- Impediments to transboundary cooperation
- Ecological, political, and socio-economic effects of transboundary cooperation (see full list of questions at the end of this appendix).

Many network members were involved in aspects of the project at various stages. 53 out of 113 protected areas (46 per cent) completed the survey. The results of this regional survey are drawn from a sufficiently representative sample that they are considered relevant to transboundary conservation and cooperation across the region. They are summarised in Figures 10-13, and then the main points summarized.

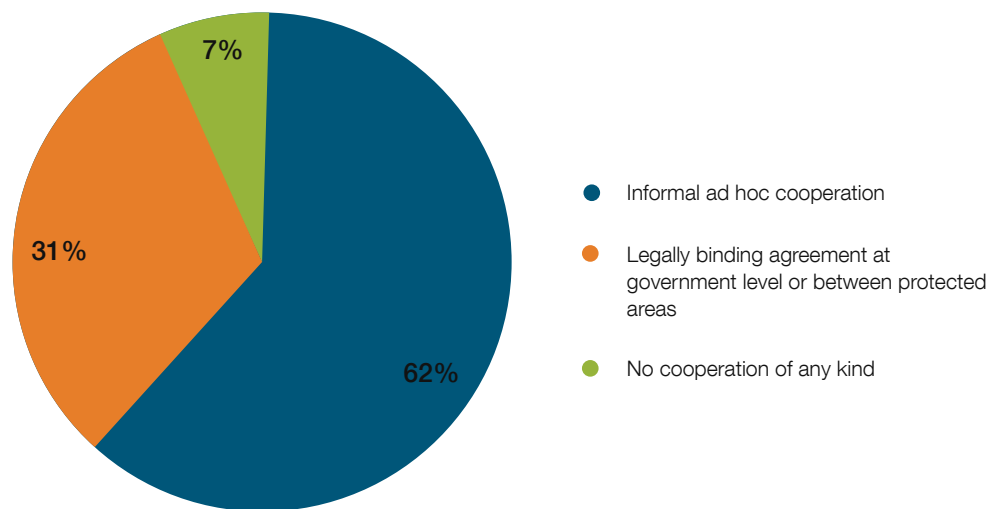


Figure 10: Cooperative relationship in Transboundary Conservation Areas

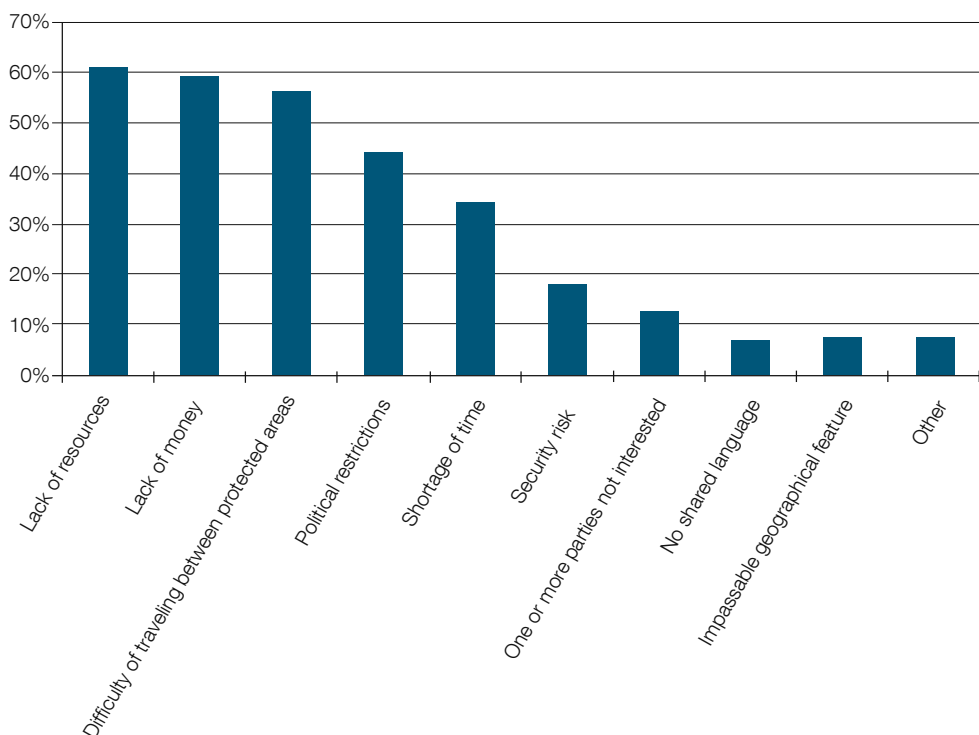


Figure 11: Obstacles to cooperation with nearby protected area(s) across the international boundary

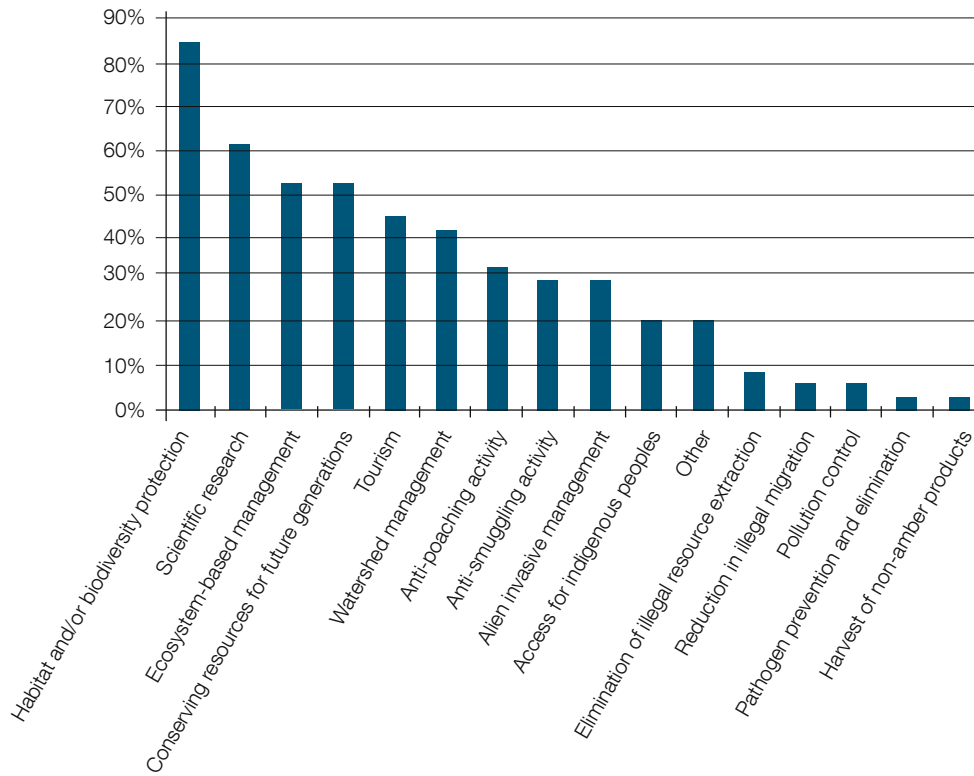


Figure 12: Fields of cooperation in Transboundary Conservation Areas

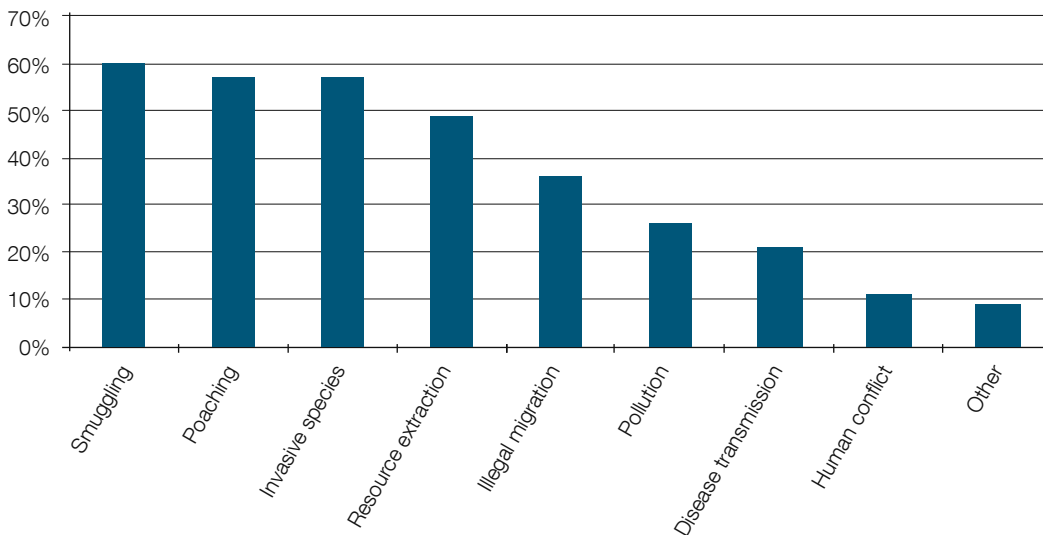


Figure 13: Key threats to protected areas from across the international boundary

Summary of the results

1. **Shared ecosystem(s)/habitats** span the international boundary.
2. **Increased habitats** for species despite **boundary obstacles to habitat connectivity** in some sites.
3. **Conservation** of nature is the key objective/reason to initiate transboundary conservation project and the main area of cooperation.
4. **Informal cooperation** is the primary form of transboundary cooperation followed by legally binding agreements.
5. **Park staff** are the main initiators and coordinators of transboundary processes, followed by governmental officials and civil society.
6. Cooperation generates **benefits for biodiversity**.
7. Increased transboundary cooperation **improves local and national political cooperation**.
8. Most TBCAs provide some **employment for local communities**.
9. **Lack of staff** and money are main impediments to transboundary cooperation.
10. Transboundary conservation does **not significantly increase** the risk of **negative transboundary effects** (e.g. smuggling, poaching, invasive species).
11. **Law enforcement** is the most effective way of combating transboundary anthropogenic threats.
12. **Increased communication** is often associated with improved spatial, management and socio-economic **benefits**.
13. **Government funding** is the main source of income for transboundary activities.

List of questions

Section 1: General Information

- 1.1. Name of protected area.
- 1.2. Country.
- 1.3. Establishment date of protected area.
- 1.4. Which authorities are responsible for management of the protected area?
- 1.5. Which of the following activities are undertaken in your protected area?
Habitat/species protection, tourism, access for indigenous communities, ecosystem-based management, scientific research, conserving resources for future generations, timber harvest, biodiversity conservation, sustainable harvest of non-timber products, watershed management, transfrontier cooperation
- 1.6. Which of the following infrastructure exists in your protected area?
Park HQ building, visitor centre, visitor accommodation, shop, other
- 1.7. How many people does your protected area employ?
0, 1-5, 6-20, 21-50, >50
- 1.8. Does your protected area adjoin another protected area across the international boundary?
Yes, no, unsure

- 1.9. If so, what is it called?
- 1.10. What is the approximate distance to the protected area named in question 1.9?
0km, <1km; 1-5km; 5km-10km; >10km
- 1.11. Which of the following best describes the relationship between them?
Legally binding agreement at government level, legally binding agreement between protected areas, non-binding written (letter/email) agreement to cooperate, informal ad hoc cooperation, no cooperation
- 1.12. How many people does the internationally adjoining protected area employ?
0, 1-5, 6-20, 21-50, >50, don't know

Section 2: Connectivity

- 2.1. Is there a shared ecosystem, which straddles the international border?
Yes, no, unsure, other (please state)
- 2.2. Does the protected area named in question 1.9. expand the total area of connected habitat for your protected area?
Yes, no, unsure, other (please state)
- 2.3. Please tick the features that mark the international boundary of your protected area.
River, road, ditch, fence, border markers, no demarcation, other (please state)
- 2.4. Please tick the land uses that apply to all land bordering your protected area.
Low intensity agriculture, intensive agriculture, livestock ranching, military encampments, subsistence agriculture, commercial developments, commercial forestry, unmanaged wilderness, other protected areas, urban, other (please state)
- 2.5. Do any species present in your protected area have territory that spans the international boundary?
Yes, no, unsure
- 2.6. If so, which ones?
- 2.7. Do the features in question 2.3. restrict their transboundary movement?
Yes, no, unsure, other (please state)
- 2.8. Please tick any threats that your protected area faces from across the international boundary.
Poaching, smuggling, resource extraction, illegal migration, human conflict, disease, invasive species, pollution, other (please state)
- 2.9. Please mark which of these border features are effective in restricting these threats.

Law enforcement, river, road, ditch, fence, border markers, other

Section 3: Cooperation

3.1. How many meetings do any representatives of your protected area have per year with the protected area named in question 1.9.?

4 or more; 3; 2; 1; 0

3.2. How many projects do representatives of your protected area cooperate on per year with the protected area named in question 1.9.?

4 or more; 3; 2; 1; 0

3.3. How often do representatives of your protected area communicate via phone/email/fax with the protected area named in question 1.9.?

Weekly; monthly; quarterly; annually; never

3.4. To what extent do representatives of your protected area share human and material resources with the protected area named in question 1.9.?

Always; often; sometimes; occasionally; never

3.5. Which of the following transport links exist between your protected area and the nearest one?

None, metalled road, marked road, track, rail, other (please state)

3.6. How long has your protected area been cooperating with the protected area named in question 1.9.?

More than five years, less than five years, don't know

3.7. Which of the following groups were involved in bringing about cooperation?

Government, NGO, local community, protected area managers, IGO

3.8. Which of the following groups are involved in coordinating on-going cooperation?

Government, NGO, local community, protected area managers, IGO

3.9. Which of the following issues were the initial focus of transboundary cooperation?

Habitat protection, alien invasive management, control of illegal human activity, tourism, access for indigenous communities, ecosystem-based management, scientific research, conserving resources for future generations, timber harvest, biodiversity conservation, sustainable harvest of non-timber products, watershed management, species protection, anti-poaching activity, anti-smuggling activity, elimination of illegal resource extraction, reduction in illegal migration, pathogen prevention and elimination, invasive species prevention and elimination, pollution control

3.10. Which of the following issues does your protected area currently cooperate with the protected area named in question 1.9.?

Habitat protection, alien invasive management, control of illegal human activity, tourism, access for indigenous communities, ecosystem-based management, scientific research, conserving resources for future generations, timber harvest, biodiversity conservation, sustainable harvest of non-timber products, watershed management, species protection, anti-poaching activity, anti-smuggling activity, elimination of illegal resource extraction, reduction in illegal migration, pathogen prevention and elimination, invasive species prevention and elimination, pollution control

3.11. Please tick impediments to cross-boundary cooperation that your protected area faces.

Lack of suitable communication equipment, lack of resources, shortage of time, no shared language, political restrictions, lack of money, security risk, difficulty of traveling between protected areas, one or more parties not interested, impassable geographical feature, other (please state)

3.12. Please explain how you think these impediments could be overcome in your particular context.

3.13. What level of cooperation do you expect with the protected area named in question 1.9. in the future?

More, less, about the same, don't know

Please explain the reasons for your answer.

3.14. Does increased cooperation correspond to improved biodiversity protection in your protected area?

Yes, no, other (please state)

Section 4: Socio-economics

4.1. Which of the following provide revenue for your protected area?

Formal material incentives to encourage transboundary cooperation, research permits, tourism, shop, hunting permits, development projects, NGO funding, IGO funding, government funding, cross-boundary trade, cultural exchanges and events, other (please specify)

4.2. Which of these revenue streams can be enhanced by transboundary cooperation?

Formal material incentives to encourage transboundary cooperation, research permits, tourism, shop, hunting permits, development projects, NGO funding, IGO funding, government funding, cross-boundary trade, cultural exchanges and events, other (please specify)

4.3. How many tourist visitors are there to your protected area each year?

0, 1-100, 101-1000, 1001-5000, 5001-50,000, >50,000

4.4. Do financial resources correspond to improved biodiversity protection in your protected area?

Yes, no, other (please state)

4.5. In which areas does your protected area cooperate with local communities?

Employment, protected area management, resource planning and distribution, joint approach to shared environmental threats, land use planning

Section 5: Politics

5.1. How would you categorize the political relations between your two countries?

Friendly; neutral; strained; conflicting; at war; skip question

5.2. How would you categorize the relations between the local communities between your two countries?

Friendly; neutral; strained; conflicting; no relations, skip question

5.3. Does cross-boundary protected area cooperation improve cross-boundary local political cooperation?

Yes, no, other (please state)

5.4. Does cross-boundary protected area cooperation improve national political cooperation between your country and the one that adjoins your protected area?

Yes, no, other (please state)

Appendix C: Benefits and challenges in transboundary conservation

Areas of cooperation	Potential benefits	Actions required to realize the benefits	Challenges to be aware of
Legal and policy frameworks	<ul style="list-style-type: none"> Achievement of the targets as set out by international conservation conventions and agreements Achievement of conservation aims and objectives common to participating countries Enhanced understanding of the legal and policy environment to support implementation 	<ul style="list-style-type: none"> Collective review of existing legal and policy instruments Identification of commonalities and the development of instruments for cooperation to capitalize on these Identification of conflicting laws and policies and the establishment of processes to bring about relevant amendments 	<ul style="list-style-type: none"> Limited resources with legal and policy capacity Long protracted processes associated with amendments of legal and policy instruments Different interpretations of and institutional responses to legal and policy implementation requirements
Ecosystem management and climate change responses	<ul style="list-style-type: none"> Increased potential for ecosystem-based management approach to be accommodated Enhanced ecosystem functionality through the improved ability to accommodate ecosystem processes and reduce the requirements for the simulation of these through management actions Increased resilience to external threats such as invasive alien species, pollution, animal diseases, etc. Enhanced capacity for the survival of threatened and migratory species, more of whose range will be protected The ability to reintroduce species that may require access to larger areas, such as top predators Decreased pressures associated with animal population management Increased capacity to accommodate the consequences of climate change impacts and to allow for ecological adaptation, and habitat and species movements/migrations 	<ul style="list-style-type: none"> Ensure that the delineation of the area is as ecologically inclusive as possible Cooperatively apply systematic conservation planning processes to guide the setting of biodiversity conservation targets and related management strategies Review and align ecosystem and species management plans Identify areas that are particularly important for climate change resilience and adaptation Assess climate change projections and related implications to habitats and species and ensure that these are accommodated in ecosystem and species management strategies and plans Derive and implement appropriate monitoring and evaluation protocols to track management effectiveness towards the achievement of ecosystem and species management objectives and targets 	<ul style="list-style-type: none"> Limitations and disparities in ecosystem and species management capacities, as well as in the capacities required to implement systematic conservation planning External social, economic and/or political dynamics, both immediately adjacent to and far removed from the area, which add layers of complexity which can frustrate natural science approaches, unless they are fully understood and integrated into management plans External biological dynamics, such as persistent invasive species infestations which compromise ecological integrity, processes and functionality
Socio-economics	<ul style="list-style-type: none"> Enhanced ecosystem functionality increases the capacity to produce and deliver a full suite of ecosystem goods and services that contribute to social well-being and economic resilience within, adjacent to and beyond the boundaries of the TBCA Thresholds of sustainable utilization may increase or become more robust as ecosystem functionality and species population dynamics improve Enhanced movement of people across international boundaries opens up and/or increases trading opportunities The opening of borders or the relaxing of border control processes allows for increased tourism opportunities 	<ul style="list-style-type: none"> A full natural capital assessment will reveal the capacity of the area to produce and deliver ecosystem goods and services, as well as the linkages to the beneficiaries An assessment of the extent to which ecosystem processes have been enhanced and may allow for increased levels of sustainable utilization, i.e. both consumptive and non-consumptive. Stakeholder engagement to ensure meaningful linkages with beneficiaries Engagement with the private sector and relevant agencies of state to ensure that tourism planning and developments are within market needs and broader development strategies 	<ul style="list-style-type: none"> Capacity to undertake natural capital assessments is limited and needs to be built Unrealistic expectations are easily created and all stakeholder engagement processes need to be handled very carefully to guard against this The ability to ensure that benefits are equitably distributed to beneficiaries can be challenging, particularly where the necessary structures and processes are either not in place or are questionable Conflicting socio-economic demands such as the exploitation of non-renewable resources can be difficult to compete with as traditional perspectives of economic growth are allowed to perpetuate

Areas of cooperation	Potential benefits	Actions required to realize the benefits	Challenges to be aware of
Cultural linkages	<ul style="list-style-type: none"> The reinstatement of both past and living cultural linkages: may enhance the social acceptance of a transboundary conservation initiative may enhance social linkages with nature through the cultural significance of natural features Work towards reducing socio-political tension through improved social cohesion Allow for prominent cultural features to contribute to enhancing the feasibility of the area as a tourism destination Enhanced ability to develop and promote a regional identity 	<ul style="list-style-type: none"> Undertake an assessment of all cultural features both within and adjacent to the area Engage with relevant stakeholders to increase the depth of an assessment as well as ensure their contributions and buy-in to its findings Develop a cultural heritage management plan that ensures that the features are preserved and the social linkages are well managed Where relevant integrate the cultural heritage management into the management of related ecological and biodiversity features 	<ul style="list-style-type: none"> Cultural heritage management capacity is usually lacking within conservation agencies and therefore needs to be built or brought in Varying degrees of sacredness are attached to cultural heritage features, and sometimes by different groups, which need to be carefully considered in all management decisions The integration of cultural heritage into a management plan adds a layer of complexity Living heritage aspects may conflict with contemporary management practices and perceptions, such as consumptive use of natural resources by a hunter-gatherer culture in an area where this is not permitted
Regional integration	<ul style="list-style-type: none"> The promotion and maintenance of peace and harmony The establishment of synergies between growth and development strategies, to the extent that transboundary conservation support such efforts The creation of a common brand/identity/logo to enhance the marketing of and trade in related goods and services, such as tourism opportunities Improved viability to attract funding either through direct investments or through donors The development of joint conservation management plans for both the natural and cultural heritage Synergized interpretation of responsibilities to and the implementation of international conventions 	<ul style="list-style-type: none"> Ensure all relevant stakeholders are included in all consultation and negotiation processes, particularly other organs of state that have a role to play in transboundary cooperation, e.g. customs and excise, animal health, trade and investment, tourism, etc. Establish and maintain a communication strategy that ensures all relevant stakeholders are kept updated with progress and developments related to the transboundary conservation initiative Ensure that all related organs of state secure mandates and resources to support their involvement in the initiative Establish and maintain joint management structure/s 	<ul style="list-style-type: none"> Language differences/barriers. Cultural, historical and political differences Development disparities, particularly as this relates to the access to resources and capacity for implementation Political tensions. A lack of leadership at appropriate levels of governance The complexities of sharing governance responsibilities and/or appointing an objective non-partisan representative to coordinate implementation Significant differences in terms of land uses and plans for adjacent areas
Day-to-day management and law enforcement	<ul style="list-style-type: none"> Management efficiencies may be enhanced through the pooling of resources, i.e. financial, human and equipment Improved communication linkages may enable more rapid responses to the management of crisis such as vegetation fires, pollution threats, poaching and poaching Improved communication and surveillance may also allow for more pro-active responses to potential threats which exploit the transboundary situation Shared capacity for managing visitor access and activities Joint patrols may contribute to enhanced law enforcement and search and rescue efforts Joint management actions can lead to improved staff morale and enhanced appreciation for the various differences that exist between the field staff of the participating countries Increased capacity to procure and deploy expensive equipment such as aircraft 	<ul style="list-style-type: none"> The joint management planning process must be used to specifically identify the management aspects that will be enhanced through transboundary cooperation Protocols and processes must be put in place to allow for the pooling/sharing of resources Communication strategies must be derived to capitalize on the transboundary cooperation opportunities Responsibilities for transboundary cooperation must be delegated as far down as possible to mandate and empower field staff to be able to work together across international borders with the minimum of bureaucratic requirements 	<ul style="list-style-type: none"> Topographical limitations such as inaccessible terrain and/or remoteness Separate/independent communication networks Language differences Conflicting resource management policies such as adjacent areas that may or may not allow trophy hunting Disparate resource availability

Areas of cooperation	Potential benefits	Actions required to realize the benefits	Challenges to be aware of
Research	<ul style="list-style-type: none"> Improved access to expertise and enhanced ability to implement applied research and find solutions to common challenges. Ensure that research methods are standardised to ensure comparable results Shared access to expensive research equipment, resource centres, herbariums, etc. Joint design and implementation of long-term research projects Improved ability to 'package' research to secure financial support Enhanced research efficiency through the avoidance of duplicated effort 	<ul style="list-style-type: none"> Scientific staff to participate actively in the joint management planning processes to provide support and to ensure scientific credibility is provided to the process The joint management plan must be carefully interrogated to extract all joint research/scientific responsibilities for implementation Shared resource allocations must form an integral part of the above Research staff can take responsibility for deriving and implementing the monitoring and evaluation framework from the joint management plan, as well as determining and facilitating the most appropriate management effectiveness tracking tool to be applied to the TBCA 	<ul style="list-style-type: none"> Language differences Disparate access to resources and expertise The remoteness of TBCAs may make tertiary institutions and related resource centres difficult to access It is a challenge for many ecologists and biologists to work in an integrated way and it is essential that the need for the integration of social, economic and political aspects is recognized and understood by researchers Ecological processes and species population dynamics require long-term research programmes while management requires answers and support in the short-term Socio-economic dynamics and/or needs can take precedence over and compromise natural resource research projects
Knowledge sharing and skills transfer	<ul style="list-style-type: none"> Skills/capacity development through the utilization of existing expertise or the joint procurement of training opportunities Broadening of perspectives that may have become narrowed through isolation or exposure to one national way of thinking and doing Improved knowledge of all aspects associated with the management of the transboundary area Improved understanding between the partners Transboundary agreements may allow for staff exchange programmes 	<ul style="list-style-type: none"> Establish strategies for joint staff training, staff exchange and secondment programmes Establish protocols for the gathering, storage and sharing of data and information Establishing a common Geographic Information System database for the entire transboundary area Ensure that joint management meetings are extended into events specifically aimed at drawing in as much of the staff as possible through focus groups and mini-seminars aimed at addressing pressing issues 	<ul style="list-style-type: none"> This aspect could be perceived as a luxury item and be lost to other more pressing issues Strong visionary leadership is required to ensure that knowledge sharing and skills transfers do take place Language differences may impede the flow of knowledge and rate of skills transfer Resource disparities may cause a perception to develop that the more advanced partners are imposing themselves, their knowledge and skills on those that are less resourced and developed

Source: Adapted from Vasilijević (2012b)



Maja Vasiljević (maja@ekohorizont.hr) is Director of Eco Horizon, Association for nature conservation, environment and sustainable development, based in Croatia. Since 2009, she has been Chair of the IUCN WCPA's Transboundary Conservation Specialist Group, a global voluntary network of more than 260 transboundary conservation experts. Maja received a Master of Arts in Geography from Australia's University of Melbourne. She has been working for the IUCN Global Protected Areas Programme on monitoring of World Heritage Sites, after which she helped establish the IUCN Programme Office for South-Eastern Europe in Serbia where she worked on the enhancement of regional cooperation in protected areas. Maja edited and co-authored several IUCN publications focused on transboundary conservation.



Kevan Zunckel (kzunckel@telkomsa.net) has a career in conservation of nearly 30 years. He has an MSc degree in Environmental Science from the University of Cape Town, South Africa. Having worked mostly in the formal conservation sector he then coordinated the South African component of the Maloti Drakensberg Transfrontier Project for the first five years of its implementation. After this he joined the world of independent consulting, first within a multi-national consultancy firm, and now in a partnership with his wife offering ecological and environmental services. He is affiliated to the IUCN WCPA Transboundary Conservation Specialist Group as Regional Coordinator for Eastern and Southern Africa.



Matthew McKinney (matt@cnrep.org), PhD, is Director of the Center for Natural Resources & Environmental Policy at The University of Montana. He has focused on land and water policy and conflict resolution in the U.S. American West for over 25 years. He co-founded two transboundary conservation governance initiatives—Roundtable on the Crown of the Continent and the Universities Consortium on Columbia River Governance—and works to transfer lessons from the American West to the international community and likewise to harvest lessons from other regions throughout the world that might have some applicability to the American West. He is an Adjunct Professor at the School of Law and Chair of the university-wide graduate program on Natural Resource Conflict Resolution.



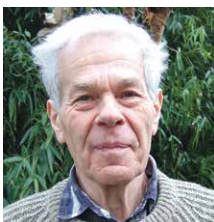
Boris Erg (boris.erg@iucn.org) is Director of the IUCN Programme Office for South-Eastern Europe. His track record includes more than 15 years of work in nature conservation. He is Regional Coordinator for Europe of the IUCN WCPA's Transboundary Conservation Specialist Group. He actively collaborates with the IUCN World Heritage and Global Protected Areas Programme. Boris is co-author of several scientific papers and books. He actively promotes the profoundly multifunctional nature of protected areas with particular emphasis on transboundary conservation aspects. His career is dedicated to cooperation and dialogue as preconditions for effective conservation and long-term sustainable development.



Michael Schoon (michael.schoon@asu.edu), PhD, is an assistant professor at Arizona State University's School of Sustainability, focusing on policy and governance in sustainable systems. His dissertation work at Indiana University's Ostrom Workshop in Political Theory and Policy Analysis, focused on transboundary conservation and Peace Parks in southern Africa, which won the American Political Science Association's best dissertation award. His current work on collaborative governance across a variety of environmental dilemmas in Arizona combines multiple methodological approaches and looks at how adaptive institutional arrangements affect social-ecological outcomes. He is vice-Chair of the IUCN WCPA's Transboundary Conservation Specialist Group and active in the complexity and resilience research communities.



Tatjana Rosen Michel (trosen@panthera.org) is Director of the Panthera Snow Leopard Program in Tajikistan, based in Khorog (in Gorno-Badakhshan Autonomous Province) and vice-Chair of the IUCN WCPA's Transboundary Conservation Specialist Group. Tanya received a Master's of Science in Social Ecology at Yale University, Master of Laws at Harvard University and a Juris Doctor from Italy's Università Statale di Milano. After practicing law in the United States and Italy, Tanya's interest in large carnivores led her back to school. Prior to joining Panthera, Tanya also worked for the Wildlife Conservation Society (WCS) on developing a framework for transboundary snow leopard conservation between Afghanistan, Pakistan, China, and Tajikistan.



Adrian Phillips (adrian.phillips@gmx.com) was formerly a staff member of IUCN and of UNEP. After a career in conservation in the UK, he was WCPA Chair from 1994-2000. He initiated the WCPA Best Practice Guidelines, edited the fourteen volumes in the series (including the first transboundary Guidelines) and wrote an influential paper: 'Turning Ideas on their Head—the New Paradigm for Protected Areas'. In recent years, Adrian has focused most of his energies on conservation within the UK, for example as a trustee of the National Trust and other conservation NGOs. Currently he devotes most of his energies to promoting the green cause in his home town, Cheltenham.



INTERNATIONAL UNION
FOR CONSERVATION OF NATURE

WORLD HEADQUARTERS
Rue Mauverney 28
1196 Gland, Switzerland
Tel: +41 22 999 0000
Fax: +41 22 999 0002
www.iucn.org



ICIMOD
30

