Beyond Boundaries:

Transboundary Natural Resource Management in Sub-Saharan Africa

2001

Harry van der Linde
Judy Oglethorpe
Trevor Sandwith
Deborah Snelson
Yemeserach Tessema

With contributions from Anada Tiéga and Thomas Price

Publication Credits

Authors:	Harry van der Linde, Judy Oglethorpe, Trevor Sandwith, Deborah Snelson and Yemeserach Tessema, with contributions from Anada Tiéga and Thomas Price
Publication services:	Grammarians, Inc.
Publication Manager:	Aziz Gökdemir
Copyediting/Production Editing:	Aziz Gökdemir
Proofreading:	Grammarians, Inc.
Illustrations and Design:	Laura Hurst and Steve Hall
Maps:	WWF-US (1, 2, 4–7); BirdLife International (8); WWF-SARPO (3, 9)
Cover Photos:	Edward Mendell, Kate Newman, and Harry van der Linde (top, left to right); and John Griffin (bottom)
Cover Design:	Steve Hall and Chris Henke
Desktop publishing:	Laura Hurst
Printing:	S&S Graphics
BSP Transboundary Natural Resource Management Project Director:	Harry van der Linde
BSP Director of Communications:	Sheila Donoghue
Director of BSP's Africa & Madagascar Program and BSP Executive Director:	Judy Oglethorpe

Please cite this publication as: van der Linde, H., J. Oglethorpe, T. Sandwith, D. Snelson, and Y. Tessema (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.

About the Biodiversity Support Program

The Biodiversity Support Program (BSP) is a consortium of World Wildlife Fund, The Nature Conservancy and World Resources Institute, funded by the United States Agency for International Development (USAID). BSP's mission is to promote conservation of the world's biological diversity. We believe that a healthy and secure living resource base is essential to meet the needs and aspirations of present and future generations. BSP began in 1988 and will close down in December 2001.

A Commitment to Learning

Our communications activities are designed to share what we are learning through our field and research activities. To accomplish this, we try to analyze both our successes and our failures. We hope our work will serve conservation practitioners as a catalyst for further discussion, learning and action so that more biodiversity is conserved. Our communications programs include print publications, Web sites, presentations and workshops.

BSP Web Sites

We invite you to visit our Web sites.

***Biodiversity Support Program:** www.BSPonline.org

***Biodiversity Conservation Network:** www.BCNet.org

CARPE: Central African Regional Program for the Environment: http://carpe.umd.edu

*****Until the end of 2006, these two sites will be available at the addresses above. WWF-US will be hosting these sites on its Web site. BSP thanks WWF for providing this service.

BSP Publications

Many of our publications are available online at www.BSPonline.org. On our home page, click on publications. You can view publications online until the end of 2006. You may contact us by mail, phone or fax until December 2001.

Biodiversity Support Program
c/o World Wildlife Fund
1250 24th St. NW
Washington, DC 20037 USA
Phone: 202-861-8347; Fax: 202-861-8324; E-mail: BSP@wwfus.org;
Web Site: www.BSPonline.org

Printed on recycled paper.

The Biodiversity Support Program (BSP) is a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute, funded by the United States Agency for International Development (USAID). This publication was made possible through support provided to BSP by the Africa Bureau of USAID, under the terms of Cooperative Agreement Number AOT-A-00-99-00228-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID.

© 2001 by World Wildlife Fund, Inc., Washington, D.C. All rights reserved. Reproduction of this publication for educational and other noncommercial purposes is authorized without prior permission of the copyright holder. However, WWF, Inc. does request advance written notification and appropriate acknowledgment. WWF, Inc. does not require payment for the noncommercial use of its published works and in no way intends to diminish use of WWF research and findings by means of copyright.

Table of Contents

Acronyms and Abbreviations vii

Acknowledgements ix

Preface xiii

Is This Publication for You? xiii

Purpose, Scope and Overview of This Publication xiv

Background on the TBNRM Project xv

Executive Summary xvii

Background and Context xvii

TBNRM Elements and Process xviii

General Conclusions xviii

Conclusions on the TBNRM Process xix

Conclusions on Social, Economic, Political and Institutional Aspects xix

Gaps and Future Needs xx

Chapter 1: Transboundary Natural Resource Management: An Overview 1

1.1 A Brief History of Transboundary Interests 3

1.2 TBNRM Definition and Continuum 8

1.3 Potential Transboundary Opportunities 12

Chapter 2: The Key Elements of The TBNRM Approach 17

2.1 Stakeholders and Their Interests 19

2.2 Roles in the TBNRM Process 23

2.3 Levels in Transboundary Collaboration 31

2.4 Agreements 40

2.5 Organizational and Individual Capacity 48

2.6 Communication in the TBNRM Process 52

2.7 Constraints and Enabling Conditions for TBNRM 56

Chapter 3: The TBNRM Process 67

3.1 Process Overview 69
3.2 Making Choices and Determining the Relevant Issues for Transboundary Initiatives 69
3.3 Strategic Planning for TBNRM Initiatives 89
3.4 Monitoring, Evaluation and Adaptive Management 95

Chapter 4: TBNRM Lessons, Conclusions and Future Needs 103

4.1 Lessons and Conclusions from the Analysis 105
4.2 Gaps and Future Needs 115
4.3 Closing Remarks 119

References 121

Annex 1: A Non-Exhaustive List of Regional and Global Conventions and Agreements and Organizations with Relevance for TBNRM 130

Annex 2: Analyzing Potential Transboundary Issues: An Illustration Using TBNRM Case Studies 135

Maps 155

Acronyms and Abbreviations

ACTS	African Centre for Technology Studies
Algiers Convention	African Convention on the Conservation of Nature and Natural Resources
AWF	African Wildlife Foundation
BSP	Biodiversity Support Program
CAEMC	Central African Economic and Monetary Community
CAR	Central African Republic
CBD	Convention on Biological Diversity
CBNRM	Community-Based Natural Resource Management
CCD	Convention to Combat Desertification
CEFDHAC	Conference on Central African Moist Forest Ecosystems
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DRC	Democratic Republic of the Congo
EAC	East African Community
ECOWAS	The Economic Community of West African States
EIA	Environmental Impact Assessment
FFI	Fauna and Flora International
GEF	Global Environment Facility
HQ	Headquarters
IGAD	Intergovernmental Agency for Development
IGCP	International Gorilla Conservation Programme
IUCN	The World Conservation Union
MAB	Man and Biosphere (program of UNESCO)
MOU	Memorandum of Understanding
NGO	Nongovernmental Organization
NP	National Park
NR	Natural Resource
NRM	Natural Resource Management

NRMP	Natural Resource Management Programme (USAID funded)
PPF	Peace Parks Foundation
Ramsar	Convention on Wetlands of International Importance, especially as Waterfowl Habitat
RCSA	Regional Center for Southern Africa (USAID)
SADC	Southern Africa Development Community
SARPO	Southern Africa Regional Programme Office (World Wide Fund for Nature)
SASUSG	Southern African Sustainable Use Specialist Group (IUCN/SSC)
SSC	Species Survival Commission (IUCN)
SUSG	Sustainable Use Specialist Group (IUCN/SSC)
TBCA	Transboundary Conservation Area
TBNRM	Transboundary Natural Resource Management
TBNRMA	Transboundary Natural Resource Management Area
TBPA	Transboundary Protected Area
TBR	Transboundary Biosphere Reserve
TFCA	Transfrontier Conservation Area
TFP	Transfrontier Project
TNC	The Nature Conservancy
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USAID	United States Agency for International Development
WCPA	World Commission on Protected Areas (IUCN)
WCS	Wildlife Conservation Society
WRI	World Resources Institute
WTO	World Trade Organization
WWF	World Wildlife Fund (in other parts of the world, World Wide Fund for Nature)

Acknowledgements

The authors wish to thank all the many people who have contributed to BSP's Transboundary Natural Resource Management (TBNRM) project and this publication. First, the authors would like to thank USAID's Regional Center for Southern Africa (RCSA) for supporting the first phase of the project. Several people in RCSA were involved in various ways, and special thanks go to Donna Stauffer, Pat Foster-Turley, Oliver Chapeyama, Elizabeth Soderstrom, Candace Buzzard and Peter Gore. Support for all activities in the second phase of the project (covering West, Central, Eastern Africa and the pan-African analysis) was provided by USAID's Bureau for Africa, Office of Sustainable Development. Special thanks go to Tim Resch, Jon Anderson and Greg Booth for their support, interest and critical contributions to the study. Mary Rowen of USAID's Global Bureau worked on both phases of the project providing a wide variety of valuable inputs.

In BSP many people were very supportive on various fronts, and special thanks go to Connie Carrol, Sheila Donoghue, Julia Ellis, Rose-Marie Gay, Susan Grevengoed, Cristin Haggard, Rebecca Ham, Stephanie Hando, Ida Jenkins, Julia Karki, Aline Martinez, Sheila McGroder, Angela Reading, Tracie Sam, Jamie Shambaugh, Laurent Somé, Josh Stevens and Theresa Woodard.

The authors would like to express gratitude to the many consultants for their valuable inputs, and for the dedication and long hours they gave to the project. In the first phase they were John Griffin (team leader), David Cumming, Simon Metcalfe, Mike t' Sas-Rolfes, Jaidev "Jay" Singh, Ebenizário Chonguiça and Mary Rowen.

In the second phase consultants involved were as follows:

West Africa: Steven de Bie, Chris Geerling, Jean-Baptiste Kambou, Juliette Koudenoukpo, Rixta Lycklama à Nijeholt and Mohamadou I. Magha

Central Africa: Stephen Asuma, Bryan Curran, Bernard Difara, Norbert Gami, Elie Hakizumwami, José Kalpers, Anecto Kayitare, Annette Lanjouw, Helga Rainer, Eugène Rutagarama, Mbake Sivha, Lisa Steel and David Wilkie

Eastern Africa: Katharine Frohardt, Christine Mathenge, John Mugabe, Philip Muruthi, Robert Nabanyumya, Alan Rodgers and John Salehe

Many thanks are due to all those who reviewed reports in both phases. The authors also would like to thank the many organizations affiliated with the study: African Centre for Technology Studies (ACTS), African Wildlife Foundation (AWF), GEF-UNDP Cross Borders Biodiversity Project, International Gorilla Conservation Programme (IGCP), IUCN—The World Conservation Union, UNEP World Conservation Monitoring Centre, Wildlife Conservation Society (WCS), World Wildlife Fund and World Wide Fund for Nature (Southern Africa Regional Programme Office—SARPO). Peace Parks Foundation (PPF) provided valuable support during the first phase in many forms, including consultations, information and development of databases and literature collection; special thanks go to John Hanks and Werner Myburgh. Madeleine Howard and Kuda Mhwandagara of WWF/SARPO provided effective and timely support in producing a wide range of maps; as did Tim Green, Jennifer D'Amico, Michele Thieme, Wesley Wettengel and David Olson of WWF-US, and Martin Sneary and Mark Balman of BirdLife International in the second phase.

Zimbabwe Trust provided valuable and efficient administrative, logistical and technical support to both phases of the study. In particular, the authors would like to thank Barry Fowlds for his help with the organization of the large workshop in the first phase, and Champion Chinhoyi, Emmanuel Koro, Petronella Pasipamire and Anne Gova for the excellent organization of the pan-African workshop in the second phase of the project, together with Angela Reading from BSP.

Many valuable discussions were held and comments provided during both workshops. The authors would like to thank all participants for taking time out of their busy schedules to participate in, and contribute to these workshops. The pan-African TBNRM workshop was held in April 2001 in Victoria Falls, Zimbabwe; discussions were guided by the skilled facilitation of Oliver Karkoschka and the discussions benefited significantly from the attendance of Jon Anderson, Richard K. Bagine, Champion Chinhoyi, Chieftainess Chinhoyi, Rod de Vletter, Mamadou Ilias Diallo, Amadou Matar Diouf, George Doerken, Jean-Baptiste Kambou, André Kamdem Toham, Anecto Kayitare, Almaz Tadesse Kebede, Mohamadou Issaka Magha, Samy Mankoto Ma Mbaelele, Joseph Matlhare, Lota Melamari, Simon Metcalfe (also for sharing his insights from a both a general and specific initiative perspective), Sedia Modise, Philip Muruthi, Bihini Won wa Musiti, Sophie Mutsekwa, Edith Muza, Henry Mwima, Robert Nabanyumya, Humphrey Nzima, Graeme Patterson, Thomas Price, Alan Rodgers, Mary Rowen, John Yonazi Salehe, Leonard Seelig, James Shambaugh, Laurent Somé and Anada Tiéga. We would like to thank the Honorable Edward Chindori-Chininga, Deputy Minister of Environment and Tourism in Zimbabwe for his inspiring address at the workshop, which echoed the urgency and concern we heard throughout the study in sub-Saharan

Africa for the promotion of sustainable livelihoods through conservation and wise use of transboundary natural resources.

We would like to recognize the amazing support and inputs from numerous stakeholders and specialists from across sub-Saharan Africa. Many people provided their time, knowledge, opinions and insights into the current TBNRM situation in the four regions, as well as their views of opportunities and constraints. These individuals represented a broad range of stakeholders, including government, nongovernmental organizations (NGOs), communities, and the private sector. Unfortunately, there is not enough space to recognize them all sufficiently here, but for the first phase we would like to mention in particular Sedia Modise, Steve Johnson and his SADC NRMP colleagues, Leon Viljoen, Simon Munthali, Bartolomeu Soto and Rod de Vletter. Many thanks to all those from the region who attended the consultative meeting in Harare, the transboundary session of the SASUSG members' meeting in Gaborone and the workshop in Midrand. For the second phase we would like to mention in particular Seydina Issa Sylla, Ibrahim Thiaw, Abdoulaye Kane and René Bosman for their support during Harry's visit to West Africa. Many thanks to Thomas Price, Anada Tiéga, David Wilkie and John Griffin for their ongoing support, input and contributions during the second phase.

The authors also would like to thank Jon Anderson, Simon Anstey, Edmund Barrow, Richard Margoluis, Thomas Price, Alan Rodgers, Mary Rowen, Leonard Seelig, Anada Tiéga, Rod de Vletter, David Wilkie and Dorothy Zbicz for reviewing a draft of this document. Their comments made a substantial contribution to the publication. The final opinions expressed in the publication are those of the authors and not necessarily those of the reviewers.

Finally, Judy and Trevor would like to thank the Oglethorpe and Sandwith families for their support, tolerance and forbearance while we were working long hours on this project.

Throughout the whole study, we were impressed by the enthusiasm for, ownership of, and healthy skepticism about transboundary natural resource management, across all stakeholder groups, and in all countries. We wish you all success in transboundary developments where appropriate in sub-Saharan Africa in future years!

Harry van der Linde
Judy Oglethorpe
Trevor Sandwith
Deborah Snelson
Yemeserach Tessema

Washington, D.C.
September 2001

Preface

Interest is rapidly growing in transboundary natural resource management (TBNRM) as a way to improve natural resource management and biodiversity conservation, and promote regional economic development. Many different TBNRM approaches are being undertaken in Africa, producing a rich and extensive body of experience. The purpose of this publication is to present the results of an analysis undertaken by the Biodiversity Support Program (BSP) on current TBNRM developments in sub-Saharan Africa. Results are presented in the form of a framework for TBNRM, covering a wide range of TBNRM approaches. The publication provides general guidance about when (and when not) to work across boundaries, what TBNRM involves, what its limitations are, and pitfalls to avoid. Since each TBNRM situation has its own unique set of circumstances, there is no fixed blueprint approach. Findings and lessons are drawn from practical experience, and case studies are used to illustrate and expand many of the points.

This publication does not give all the answers (they are not all known yet!), but aims to help people to think through what best to do in a particular situation. It reflects the current state of TBNRM in sub-Saharan Africa, and we hope that it will encourage more TBNRM development where appropriate. It should also be seen as a step in a longer-term process of developing this approach and understanding both its potential and limitations. Our intent with this work is to contribute to stimulating discussions, practices and analyses to further the TBNRM process.

Is This Publication for You?

This publication is written both for people who are considering embarking on TBNRM for the first time, and for people who have many years of experience in TBNRM. It also covers a wide range of TBNRM situations, from transboundary protected areas to natural resource management integrated in regional development. Different sections are relevant for different situations and levels of experience, so we suggest that you select those parts that are most useful to you. We provide guidance on this in the next section and the start of Chapters 2, 3 and 4.

The main audiences are African practitioners and decision makers active in natural resource management and biodiversity conservation who have an interest in TBNRM. This includes:

- Senior technical staff in natural resources and environment government ministries;
- Senior staff in natural resource government departments and parastatals;
- Park wardens and community project managers;
- Senior conservation staff of national and international nongovernmental organizations (NGOs);
- Teachers and students at natural resource colleges and university departments; and
- Donors with an interest in natural resource management and biodiversity conservation.

Purpose, Scope and Overview of This Publication

This publication aims to present a framework for TBNRM including general concepts, the transboundary process, and lessons learned, based on a review and analysis of TBNRM experiences to date in sub-Saharan Africa.

There is currently great interest in TBNRM. As with any new process that has yet to be fully tried and tested, there is a high learning curve as successes and failures occur. TBNRM may not always be the most effective or appropriate approach. We hope that this publication will help to share lessons from the wealth of knowledge and experience that has accumulated so far, and assist those who are currently thinking about embarking on TBNRM to use approaches that have worked elsewhere, and avoid some of the pitfalls that others have encountered. For those already involved in TBNRM, the publication may provide new insights and ideas, help them to analyze their own situations holistically, and find some solutions to current problems.

Chapter 1 provides an overview of TBNRM. Chapter 2 outlines key elements of TBNRM. These elements are building blocks for the TBNRM process, which is described later. All these key elements are similar to those of natural resource management (NRM) within a country, but they are reviewed in a specific transboundary context. The chapter covers stakeholders and their interests, and the different roles people play in the TBNRM process. Levels in the TBNRM process are outlined, followed by a review of the need for and types of agreements in TBNRM. Capacity and communication needs are reviewed, and finally constraints and enabling conditions are listed.

Chapter 3 describes the process of scoping and analysis to help assess whether or not it makes sense to apply this approach in a particular situation. This also helps to distinguish objectives that can be achieved effectively by working collaboratively across borders and those where internal actions alone would suffice. The chapter then covers the need for

the development of a joint vision, and planning and design of the initiative. The first part of Chapter 3 is most relevant to those considering whether to adopt a transboundary approach, and those in the early stages of planning and developing transboundary initiatives. The final section on monitoring, evaluation and adaptive management is relevant for people already working in TBNRM.

Finally Chapter 4 outlines major findings and conclusions from the project, and reviews gaps and future needs.

Background on the TBNRM Project

BSP's TBNRM project was initiated in 1998 with a study on the opportunities and constraints for TBNRM in Southern Africa, at the request of USAID's Regional Center for Southern Africa (RCSA). The second phase of the project expanded to include West, Central and Eastern Africa; BSP commissioned regional overviews and case studies in each region, and undertook a pan-African analysis. Findings from all four regions were used as basis for a preliminary analysis. A workshop was then organized in Zimbabwe in April 2001 with practitioners from all four regions in sub-Saharan Africa, for in-depth discussions on the current thinking on and understanding of TBNRM. A small writing team of BSP staff and consultants incorporated the project findings in this publication. The first phase was managed by Judy Oglethorpe and the second phase by Harry van der Linde.

Reports upon which this publication is based are listed before the reference section, and more detailed information on individual regions or areas can be found in those reports. They are also posted on our Web site, at *www.BSPonline.org*. Some of these publications are available in more than one language (English, French and one in Portuguese). They include the following:

Southern Africa: Biodiversity Support Program (1999), Cumming (1999), Griffin *et al.* (1999), Metcalfe (1999) and Singh (1999)

West Africa: Lycklama à Nijeholt *et al.* (2001) and Magha *et al.* (2001)

Central Africa: Lanjouw *et al.* (2001), Steel and Curran (2001) and Wilkie *et al.* (2001)

Eastern Africa: Muruthi and Frohardt (2001), Rodgers *et al.* (2001a) and Rodgers *et al.* (2001b)

Bibliography: van der Linde, Zbicz, and Stevens (2001)

The focus of the analysis was mainly on wildlife, forestry and protected areas. Time and financial constraints meant that not all transboundary natural resources could be given equal coverage. Water, aquatic and marine resources, and rangeland for livestock are not covered in depth although we recognize that they are extremely important transboundary resources in many African regions.

Executive Summary

Background and Context

Interest in transboundary natural resource management (TBNRM) is growing rapidly in Africa and the rest of the world. TBNRM is seen as an important new tool in broad landscape approaches to sustainable natural resource management and biodiversity conservation; a way to promote regional economic development, reunite divided communities and bring peace to troubled regions; and a way to fulfill many other opportunities. Large investments are being made in it.

The Biodiversity Support Program's transboundary project aimed to review current TBNRM developments in sub-Saharan Africa; analyze the process involved; and identify opportunities, constraints and enabling conditions to see how effective the TBNRM approach is. The analysis was based on reviews of TBNRM development in Southern, Eastern, Central and West Africa; a series of case studies with a wildlife, forestry and protected areas focus; and results from workshops and consultations over the past three years.

TBNRM is defined in this publication as *any process of collaboration across boundaries that increases the effectiveness of attaining natural resource management or biodiversity conservation goal(s)*. (Note that the countries sharing resources that are candidates for transboundary management do not have to be neighbors.) The approach covers a wide continuum of TBNRM initiatives and activities ranging from transboundary community-based natural resource management and transboundary protected areas (TBPAs) management to large-scale natural resource management integrated in regional economic development.

Ecological opportunities include maintaining or restoring linkages in ecological landscapes that cross borders, and reducing transboundary threats to promote sustainable use of natural resources. Social and cultural opportunities include renewal of cooperation and cultural ties among communities severed by borders, and increased welfare and development opportunities for populations. Economic opportunities include the development of regional economic opportunities such as tourism, and economies of working on a larger

scale. Political opportunities include improved security in border areas and enhanced transparency and accountability in the use of natural resources. There are also many constraints to TBNRM. These are documented in the publication and many are outlined in the conclusions below.

TBNRM Elements and Process

The key elements of TBNRM are similar to those of in-country natural resource management (NRM); this publication reviews them in a specific transboundary context. They are as follows: stakeholders and their interests, the different roles in the TBNRM process, levels in the TBNRM process, the need for and types of TBNRM agreements, capacity and communication needs, and constraints and enabling conditions.

Scoping and analysis tools are presented, to help decide whether or not to embark on transboundary management in a particular situation. These tools also help to distinguish those objectives within an initiative that can be achieved more effectively by working collaboratively across borders from those where internal actions alone would suffice. The process continues with the development of a joint vision, and the planning and design of a TBNRM initiative. The importance of monitoring and evaluation is outlined to enable learning from successes and failures and adaptive management. The whole process is illustrated in a TBNRM cycle.

General Conclusions

The analysis concludes that TBNRM can be an effective approach for natural resource management and biodiversity conservation, where shared cross-border threats can be tackled jointly and/or mutual benefits can be gained collaboratively across a border. TBNRM is not, however, a universal panacea for management of natural resources on borders. In some cases it is more effective for countries to manage their shared resources independently because there is little net gain from collaboration.

TBNRM should not replace NRM within each country involved, but should be an extension of it. TBNRM will not succeed if internal NRM does not work. Many of the requirements for collaboration called for by TBNRM are similar to those for internal NRM. Since each TBNRM situation has its own unique set of circumstances, there is no blueprint for the approach; it needs to be planned, implemented, evaluated and adapted around the specific circumstances of each situation.

The few existing formal TBNRM agreements among countries have only recently been negotiated and as yet are not yet broadly tested and proven. The formal approach appears to take considerable time and larger amounts of funding before showing any results in terms of improved resource management or better conservation on the ground.

Conclusions on the TBNRM Process

Since TBNRM is costly and time-consuming it is crucial to undertake an adequate assessment of TBNRM feasibility before embarking on transboundary collaboration. It is best to work at the lowest transboundary level(s) possible. A bottom-up approach has the greatest chance of resulting in participation, buy-in and ownership of the process at the local level where the resources are managed. Involvement of higher levels can change over time, and as needed. It is important not to wait for all the enabling conditions to be in place before starting, but to take a pragmatic approach and start in areas where there are feasible opportunities, even if these are limited.

TBNRM must be built on trust and partnerships. Trust takes time and patience to establish and cannot be rushed. TBNRM should be a flexible process evolving on the basis of real need. It is important to monitor and evaluate the effectiveness of this collaboration frequently, and adapt as appropriate. Learning should be done both internally and jointly across the border, which requires transparent sharing of information. Learning is also important across different TBNRM areas.

Conclusions on Social, Economic, Political and Institutional Aspects

Cooperating across borders increases the complexity of stakeholders. Diversity of interests can be very high, covering ecological, sociocultural, economic, institutional and political issues. Ensuring adequate stakeholder participation and seeking win-win situations take time but are essential for success.

TBNRM must increase the efficiency of natural resource management in order to be worthwhile. Synergism is essential for successful TBNRM: *the whole must be greater than the sum of the parts, otherwise individual countries are better off managing their resources independently.* In the right situations TBNRM can increase the efficiency of managing and monitoring natural resources through avoiding or reducing duplication of effort, creating economies of scale, and enhancing economic opportunities such as

increased tourism. However, TBNRM requires additional investments of money and time. Funding for TBNRM should be incremental, and not at the cost of internal NRM.

Political will and long-term commitment are essential for successful TBNRM. Good international political relations can facilitate TBNRM; sovereignty and security issues can constrain it. Collaboration can resolve local-level cross-border conflict by finding common ground and shared objectives. It can help to increase security and control over resources in border areas. Its potential role in larger-scale peace processes among countries, however, was less clear from this study.

TBNRM at a formal scale tends to increase the involvement of upper government levels, with a risk that these levels will exert influence and control that is not in the best interests of local levels. Good governance within a country is therefore essential for successful TBNRM, including subsidiarity and two-way transparency and accountability between higher and lower levels in control of land and resources.

Harmonization of relevant policies and legislation across boundaries can be an important enabling condition for TBNRM. Despite their good potential to facilitate TBNRM, some of the international environmental conventions are not currently playing a strong role. Certain regional economic agreements (e.g., SADC) seem to be playing a larger facilitating role.

TBNRM should work through existing organizations where possible. Capacity is frequently a constraint, and weak national structures cannot create strong TBNRM. Outside facilitators may be able to help build capacity. TBNRM is sometimes constrained by governments' narrow NRM approach—i.e., through isolated treatment of single resources/land uses—which does not facilitate multiple resource use.

Gaps and Future Needs

TBNRM's potential role in economic development needs to be further promoted. Greater collaboration across sectors and disciplines is needed to enhance the effectiveness of TBNRM, and it should be mainstreamed in regional and international forums. Financing is an issue that requires addressing. Capacity building will be a need for many years to come.

As new experiences are gained, they need to be analyzed and the existing understanding of TBNRM expanded. Further studies are recommended on how TBNRM is influenced by political relations, and more specifically on the potential role of TBNRM in

peace building between nations. The role environmental conventions can play in promoting TBNRM merits further investigation. New techniques for economic valuation of TBNRM are urgently required, with cost/benefit analysis tools for practitioners.

TBNRM results and lessons should be disseminated widely in Africa and indeed globally. To promote the exchange of experiences and learning, mechanisms for information sharing and networking need to be created or enhanced. These measures will help to ensure the most effective management of natural resources in transboundary areas.

1

Transboundary Natural Resource Management: An Overview

Transboundary Natural Resource Management: An Overview

Millions of people depend on the African continent's renewable natural resources for food, shelter, medicines, and fuel — and as a means of income generation. Natural systems also provide ecological services such as water supplies, soil protection and fertility. In addition, they have broader values—such as cultural heritage and intrinsic values. However, international boundaries cut across many natural resource systems, which can have serious management implications.

International border areas contain some of the most intact ecosystems in the world, many of which are located in remote and inhospitable areas (Westing 1998; Griffiths 1995). However, international borders are political, not ecological boundaries. Consequently many key ecological systems and components are dissected by borders (see Maps 1-9), and may be subject to different management and land-use practices across borders. Sometimes these practices are incompatible, damaging the resource base and causing hardship to stakeholders. In these cases, to ensure that present and future generations can have sufficient access to natural resources and thereby secure their livelihoods, the management of water catchments, ecosystems, and migratory wildlife must become more compatible and participatory across local, national and international levels. Planning and management should take into account the ecological, sociocultural, economic, political and institutional concerns of stakeholders across national boundaries.

Over the last few decades, management of natural resources and biological diversity has moved from a site-level focus toward broader landscape approaches. This has been

accompanied by growing interest in transboundary natural resource management (TBNRM), particularly over the past decade. The TBNRM concept means different things to different people, and there are many different incentives for involvement in transboundary initiatives and activities. This publication shares experiences and current understanding of TBNRM in Africa and presents an overall continuum for TBNRM as well as practical guidance. Since it is not always easy to determine when a TBNRM approach is appropriate (e.g., having a natural resource in two adjacent areas across a border does not automatically mean that TBNRM will provide the most effective management), the publication also aims to provide more clarity on that front. Recognizing that TBNRM is a relatively new discipline, the reader should see the publication as one step in the longer-term development of thinking and understanding to further the TBNRM process and its application.

Given the broad origins of TBNRM, this chapter gives a brief history before moving on to provide a definition of TBNRM and outline a continuum of types of TBNRM initiatives. Different groups of stakeholders are interested in TBNRM activities for different reasons, such as economic development, strengthening of sociocultural ties, political stability, or sustainable management of natural resources and ecological processes. In an appropriately holistic and effective process, all these interests need to be taken into account. Since the main audiences for this publication are natural resource managers and conservation practitioners, the publication uses this as the entry point and rationale for instigating TBNRM.

1.1 A Brief History of Transboundary Interests

Many local communities have been implementing TBNRM at a local level for a long time, which is not surprising since cultures often straddle international borders. Borders often dissect ethnic groups and the traditional natural resource management systems which were in place before colonial boundaries were imposed (see Box 1.1). International politics have in some cases eroded these traditional systems. Metcalfe (1999) provides an overview of components of community-based natural resource management (CBNRM) that are relevant in the context of TBNRM, as well as opportunities and constraints for TBNRM from a community perspective. Provided principles such as efficiency, equity and sustainability are met, single-country CBNRM approaches near borders could develop into TBNRM initiatives. A shared identity with neighboring communities is one of the key elements for restoring or building collaboration across a border.

The Albert National Park was the first park crossing international borders in Africa, established by the Belgian colonial regime in 1925 to conserve natural resources occurring in two nations. It spanned the colonial states of Ruanda-Urundi and the Congo.

Box 1.1 Transhumance in West Africa

Traditional land-use systems in West Africa are to a large extent determined by climatic conditions. Average annual rainfall and variation in rainfall within and between years determine the type and organization of land-use systems. As a strategy to deal with this high rainfall variation, pastoralists move around extensively with their herds. Centuries-old mobile livestock systems make use of resources in (semi)arid and more humid zones, varying routes depending on resource availability in different areas. However, opportunities for herders to move around with their livestock have decreased over time, as a result of the conversion of pastures and transhumance passages into agricultural lands. It also has become more difficult for pastoralists to cross international borders, notwithstanding existing bilateral or regional agreements securing transboundary movements of livestock through stipulating issues related to vaccination, places of entry and departure, grazing zones, etc. In extreme cases, conflicts between local residents (farmers) and foreign herders reach the government level and put pressure on international relationships. Overall, the viability of these transhumance systems is becoming more limited because key resources no longer exist or are becoming less accessible.

Source: Lycklama à Nijeholt *et al.* (2001).

After independence in the early 1960s, the Rwandan part became Parc des Volcans (Volcanoes National Park), while the Congolese part became Virunga National Park (Wilkie *et al.* 2001).

The world's first International Peace Park was established in 1932, linking Glacier National Park in the United States with Waterton Lakes National Park in Canada. A Memorandum of Understanding (MOU) exists between the park departments of both countries, and management is implemented through a combination of internal and transboundary management activities. The two parks are largely managed separately; they cooperate on joint nature tours, search-and-rescue operations, and fire management. Prior to that Poland and Czechoslovakia had signed the Krakow Protocol in 1925 to set a framework for establishing international cooperation to manage border parks (Thorsell 1990). The first of these parks, however, was not established until after1945.

The number of Transboundary Conservation Areas (TBCAs) grew gradually in the second half of the twentieth century until around 1990, at which point it started to increase rapidly. By 2001 the number of identified adjoining protected area complexes had more than doubled since 1990, to 169 in 113 countries including 667 individual protected areas (see Table 1.1). As of 2001, in Africa alone there are 35 complexes involving 34 countries and including 148 individual protected areas (Zbicz 2001). With this increasing interest—and building on a meeting held in 1995 by the IUCN's World Commission on Protected Areas (WCPA) and Australian Alps National Parks—

TABLE 1.1 — INTERNATIONALLY ADJOINING PROTECTED AREA COMPLEXES IN AFRICA AND WORLDWIDE

	Number of protected area complexes	Number of countries involved	Number of protected areas involved
Worldwide	169	113	667
Africa	35	34	148

IUCN/WCPA generated materials outlining guidelines for Transboundary Protected Areas at three meetings convened in Somerset West, South Africa (1997), Bormio, Italy (1998) and in Gland, Switzerland (2000) (Sandwith *et al.* 2001). On April 7, 1999, the first post-colonial African Transfrontier Park was created when Botswana and South Africa signed a bilateral agreement for the Kgalagadi Transfrontier Park. The whole area is to be monitored by a new Kgalagadi Transfrontier Park Foundation; a joint management agency will implement some activities jointly, and others will be done by each nation independently.

At the same time, integration of economic development on a regional level has become more and more important across the world, particularly over the past two decades. In Africa this is seen in the development of regional institutions such as the Economic Community of West African States (ECOWAS), Central African Economic and Monetary Community (CAEMC), the revived East African Community (EAC) and the Southern Africa Development Community (SADC). As expressed by SADC (1994, p. 3), *regional cooperation is not an optional extra; it is a matter of survival*. While the primary reasoning for the establishment of these institutions is economic development, given people's dependency on natural resources, increasing attention is being given to integrating broader environmental concerns and natural resource management under these agreements. As concluded, for example, in the Biodiversity Support Program's study on TBNRM in Southern Africa, the potential for nature-based tourism there is very high in a transboundary context, and as yet under-exploited (Griffin *et al.* 1999).

This increased interest and need for TBNRM is in line with broader landscape priority-setting exercises developed and undertaken during the past few years by international conservation organizations and others, which recognize the ecological need to work on larger scales (WWF-US in press). This work highlights the strong correlation between areas of high biodiversity value and proximity to international boundaries. All this increased interest is also reflected in the incorporation of transboundary aspects in certain international conventions, and a number of regional and African conventions and agreements

Box 1.2 Development of TBNRM Approaches in Regional and Global Conventions and Agreements

There are a number of formal regional and global agreements and conventions that contain sections calling for transboundary collaboration. There are also others that are primarily set up to facilitate transboundary collaboration between two or more nations. A number of these are mentioned here, regardless of current level of implementation or enforcement.

Early formal evidence in Africa of the need for transboundary collaboration lies in the African Convention on the Conservation of Nature and Natural Resources (Algiers) signed in 1968. The Algiers Convention calls for consultation between upstream and downstream states on water issues. Following Algiers, the Ramsar Convention (Convention on Wetlands of International Importance, especially as waterfowl habitat, 1971) requires interstate consultation on matters affecting shared wetland resources. Ramsar was followed by the recognition of international identification and stewardship of natural resources in the World Heritage Convention (Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972), which called for international recognition and support of cultural and natural heritage sites. And finally, the Convention on International Trade in Endangered Species (CITES), signed in 1973, requires participatory states to conform to specified interstate practices for trade in listed threatened species. These four conventions foreshadowed the broader use of TBNRM principles in treaties to come.

The late 1970s saw the Convention on the Conservation of Migratory Species (Bonn Convention, 1979) calling, for example, for the prevention of obstacles to migration, coordination of antipoaching efforts, and exchange of information. Interstate cooperation moved beyond migratory species in the 1985 Nairobi Convention for the Protection, Management and Development of Marine and Coastal Environment of the Eastern Africa Region. The Nairobi Convention calls for international cooperation on the development of marine and coastal resources and for the protection of migratory, so-called fly-over species, as well as the protection (under international and NGO supervision) of an entire swath of coastline shared by the signatory states.

Around the mid-1990s the full application of TBNRM principles started on an interstate scale. The Convention on Biological Diversity (CBD, 1992) established an ecosystem approach to managing resources, formalized consideration of resources in adjacent countries, and called for the involvement of all relevant sectors of society and science. The United Nations Framework Convention on Climate Change (1992) and Convention to Combat Desertification (1994) express similar principles. In 1994 and 1996 the Agreement on the Conservation of African-Eurasian Migratory Waterbirds and the Conference on Central African Moist Forest Ecosystems were opened for signing and ratification, representing more stringent procedures for international supervision of wetlands and moist forest ecosystems respectively.

A more complete list of conventions, along with their articles relevant for TBNRM, can be found in Annex 1. The annex is not a comprehensive list, but a representative sampling of treaties.

(see Box 1.2). Investment by both bilateral and multilateral donors in TBNRM initiatives has also increased.

Building on national activities, originating from regional institutions, or stimulated by international conventions or interest by donors and international NGOs, many transboundary initiatives are now being planned or underway. The Biodiversity Support Program (BSP) initiated a study on TBNRM in Southern Africa in 1998 at the request of USAID's Regional Center for Southern Africa. This was later on expanded to include West, Central and Eastern Africa, and an overall pan-African analysis. Results of this work are reflected in this publication. Box 1.3 shows some similarities and differences in TBNRM-enabling conditions and developments among the four regions.

Box 1.3 TBNRM Development in African Regions

The Biodiversity Support Program's TBNRM project undertook reviews of TBNRM development in each of the four regions in Sub-Saharan Africa (see Map 2). There are many important similarities but also differences in the circumstances and degree of TBNRM development in these regions.

General similarities in circumstances across the regions include the fact that many border areas are relatively remote, sparsely populated and less developed compared to the interior of the countries. People living near the borders are thus particularly dependent on natural resources for their livelihoods. Often their ethnic groups have been divided by political borders, and they may be marginalized because of their remote location. Ecosystems in border areas are often cut by artificial boundaries as well. Many protected areas are located in border areas (see Map 7). Hence in many countries there are important natural resources and biodiversity concentrated near borders.

None of the regions is homogeneous. There is tremendous variation among countries within regions in terms of country size; population density; degree of economic development; amount of remaining intact vegetation cover, natural resources and biodiversity, and pressure on them; warmth (or as the case may be, chilliness) of diplomatic relations with neighboring countries; and degree of economic collaboration. All of these factors affect the opportunities, constraints and enabling conditions for TBNRM.

TBNRM has been occurring at the community level ever since political borders were imposed by colonial powers, in places where traditional management systems dissected by borders have not been eroded by international politics. TBNRM still occurs at an extensive scale in the range management practiced by transhumant pastoralists in Eastern and West Africa, and on a more intensive and local scale in many other resource systems in all the regions. However, traditional management systems have become increasingly constrained by political and national economic forces in many areas.

Continued on page 8

Continued from page 7

Transboundary collaboration among government organizations has been more limited. Informal collaboration has occurred for decades in a few transboundary protected areas, for example in certain adjacent protected areas in Southern and West Africa. In some cases this is being formalized in agreements among governments. Agreements exist in many regions on the management of water resources. Collaboration on animal health, transhumant pastoralism and control of desertification occurs in West Africa, and on many economic development and natural resource aspects in Southern Africa through the Southern Africa Development Community.

In the field of official government transboundary collaboration over wildlife management, Southern Africa is furthest ahead with several large TBNRM projects in place. Threats to wildlife are serious in the region, but in turn opportunities are significant because of the great potential for regional tourism development. TBNRM is occurring as part of a wider regional economic development rather than in isolation. This combination of factors has enabled the region to move ahead rapidly with TBNRM. In West Africa opportunities for developing tourism based only on wildlife are more limited; for this reason there is consideration of combining wildlife with cultural tourism. There is a great deal of interdependence between the Sahel and the coastal areas in terms of livestock production in transhumant systems in the north, and meat markets in the more populous south.

In Central Africa there is much less regional collaboration. In much of the region there are still very large blocks of relatively intact forest, and the need for TBNRM is not as great, except in areas of very high pressure and with high resource value, such as in the Virungas where successful TBNRM is carried out to conserve mountain gorillas. In Eastern Africa there has been relatively little transboundary wildlife management, despite the connectivity across borders and the high potential for cross-border tourism in East Africa. The newly revived East African Community may change this situation in that part of the region.

Some initiatives include two or more regions—the Nile Basin Initiative, for example, involves 10 countries from Central, Eastern and North Africa.

Sources: Griffin *et al.* (1999), Lycklama à Nijeholt *et al.* (2001), Rodgers *et al.* (2001a), Wilkie *et al.* (2001).

1.2 TBNRM Definition and Continuum

The increase in TBNRM activities is motivated by multiple interests, involves multiple actors, and has various origins. It is not always clear what is meant by TBNRM. The following sections provide a definition for the term as used in this publication and outline a continuum for TBNRM.

1.2.1 TBNRM Definition

The definition of TBNRM, as it has evolved and been used in this study, is presented in Box 1.4. TBNRM is defined in such a way that it covers a broad continuum of initiatives and approaches, while being focused enough to share practical experiences and guidance from the specific angle of natural resource management and biodiversity conservation. Note that TBNRM refers to the management process rather than the transboundary natural resources themselves. Resources may be shared across a boundary, but if there is no collaboration, there is no TBNRM. As defined, TBNRM only makes sense if it increases the effectiveness of attaining the goals. In all other cases it would be hard to justify the efforts and expenses needed.

While the actual implementation of TBNRM often takes place at a specific site (a TBNRM Area—or TBNRMA) through transboundary activities, TBNRM is broadly defined as a *process* of NRM across boundaries. The focus of this document is mainly on the process. It emphasizes the need for flexibility when applying this approach. **There is no blueprint model, and the experiences documented and guidance provided should be put in that context—each situation is unique, and requires its own flexible process and approach.**

Two additional notes apply to this definition. First, given the nature of certain goals such as conservation of migratory species (e.g., lesser flamingos) or ecosystem functions, sites concerned may not necessarily be *contiguous* across the boundaries (see Box 1.5), but the process of TBNRM may still be relevant. In most cases, however, examples are drawn from contiguous areas. Second, given the multiple use of certain transboundary sites and the multiple interests of different stakeholders, numerous parties may be *involved for different reasons* (ecological, social, economic, political and institutional). Potential opportunities provided by TBNRM and related to these different reasons are listed in Section 1.3.

In order to take full advantage of these opportunities, and for natural resource managers to be effective in the long term, it is essential to have an open mind and a broad vision on TBNRM—hence the presentation of an overall continuum within which TBNRM can be applied.

1.2.2 The TBNRM Continuum

Using the definition above, the TBNRM process is applicable in a broad continuum of natural resource management and conservation strategies as reflected in Figure 1.1. The continuum ranges from Transboundary Protected Areas (TBPAs) at one end, to large regional economic development plans and activities that integrate NRM and biological diversity conservation objectives at the other end. While certain approaches are listed at points along this continuum, they should not be seen as separate, discrete entities—in

Box 1.4 Transboundary Natural Resource Management (TBNRM) Definition

TBNRM is any process of collaboration across boundaries that increases the effectiveness of attaining a Natural Resource Management or Biodiversity Conservation goal(s).

- "Across boundaries" — in the broadest context, this term covers transitions across geographical, legal and land-use borders. While this is relevant in the overall context of TBNRM discussions, this study has limited itself mainly to situations across international borders.

- "Collaboration" — an actively, consciously decided way of working with partners on the other side of the boundary; the process through which TBNRM manifests itself.

- "Increases the effectiveness of attaining" — obtaining the maximum NRM or conservation payoff for every unit of investment; investment can be in staff time and other resources (including but not limited to financial resources).

- "Natural Resource Management or Biodiversity Conservation goal(s)" — Goals can be defined in terms of:
  – species productivity and species and genetic diversity;
  – habitat and its productivity; or
  – ecosystem functions and services.

  Goals are to be achieved at a particular site as agreed by, and to the benefit of stakeholders. Areas where TBNRM is applicable span conservation areas with solely biodiversity conservation goals, water-based systems (rivers, lakes, wetlands), and pastoral and agricultural land-use systems that include natural resource management goals.

practice they are often applied in combination with the other strategies at different points on the continuum. Each situation has its own specific mix of complementary strategies, depending on types of land use, juridical and tenure arrangements, and the different actors involved.

While this publication aims to provide general guidance on the application of the TBNRM process across this continuum, other organizations have recently developed guidance for specific approaches. The World Conservation Union (IUCN) coordinated the development of concepts and guiding principles for TBPAs for Peace and Cooperation (Sandwith *et al.* 2001). It provides a working definition for Parks for Peace, consolidates guidelines for transboundary cooperation in protected areas, and presents a Draft Code for Transboundary Protected Areas in Times of Peace and Armed Conflict. UNESCO developed the Man and Biosphere (MAB) Seville 5+ Recommendations for the Establishment and Functioning of Transboundary Biosphere Reserves (TBRs) (UNESCO 2000), which describe procedures for the establishment of a TBR, its functioning and relevant institutional mechanisms, all in the context of the goals of the Seville Strategy.

Box 1.5 Transboundary Management of Migratory and Ranging Species

Animals do not respect borders unless they are forced to—by fences, for instance. Some terrestrial species such as elephants range over large areas and frequently cross international borders. Access to critical areas at certain times of the year for adequate food, water, shelter and breeding sites within the range of a species is essential for its survival. Some areas may only be used in extreme years: for example, Kalahari wildebeest traditionally move farther in very dry years to seek perennial water sources. Transboundary planning should take these needs into account, and aim to maintain access for migratory and ranging species to critical sites and resources across borders, including those needed in extreme years. Requirements during El Niño and La Niña years may be a useful guide for the latter. Land-use plans on both sides of a border should include viable corridors linking resources if traditional ranges are encroached by other land uses.

Sustainable harvesting of migratory and ranging species poses extra challenges. There is less sense of ownership of a resource that is only present at certain times of the year, and that may be used by others elsewhere. However, when the resource is under pressure, collaboration over quota setting and enforcement is essential to prevent the loss of the resource. There is probably more experience in transboundary management of shared fisheries than terrestrial species.

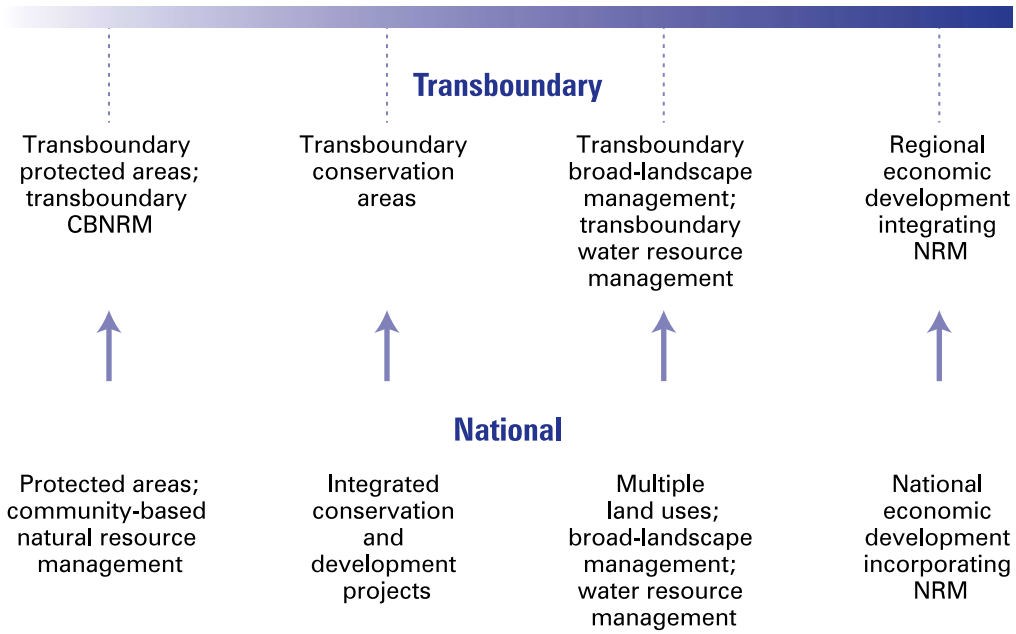
A different form of transboundary management may be needed for species that swim or fly between noncontiguous sites in mainland Africa (e.g., turtles, migrating African and Palearctic wetland birds). In this case it is important to maintain habitat in the mainland sites to meet their needs, and control threats such as excessive harvesting. This is much easier for species that use a few very specific sites at high density, such as flamingos, than for species that migrate over a broad front and occur at low densities. There are very clear in-country roles for each country involved, to conserve sites they have jurisdiction over and limit threats there. However, international collaboration is important for activities such as inventories (e.g., pan-African census), pooling of expertise and helping to build capacity. Where one country poses a threat to the resource, the other countries may be able to take action to encourage changes in the problem country. International conventions can play an important role here.

Wetlands International is planning a GEF-funded capacity-building project to support conservation of critical wetlands along the African/Eurasian migratory waterbird flyway, to assist the countries concerned to implement the Ramsar Convention and the Convention on the Conservation of Migratory Species of Wild Animals. The project will review training, communication, management and gaps in protected areas along the flyway, and identify best practices. A capacity-building program will follow, including demonstration site-management projects. Participating countries in Africa are likely to include Mauritania, Niger, Nigeria, The Gambia, Senegal, South Africa and Tanzania.

(with contributions from David Olson, WWF-US; Anada Tiéga, Ramsar Convention Secretariat; Holly Dublin, WWF International; and Peter Jones, University of Edinburgh)

For some of the other approaches across the continuum no specific guidance has been developed (for example, there is none for integrating TBNRM into regional economic initiatives/projects). While the latter approach is mainly driven by national governments' and donors' priorities to alleviate poverty, and by private sector investment,

FIGURE 1.1 — TRANSBOUNDARY NATURAL RESOURCE MANAGEMENT CONTINUUM



it is very important that it is linked to people's dependence on natural resources. An integrated and holistic approach is required. Given the scale and anticipated impacts of these regional economic developments on the landscape in the coming decades, natural resource managers and conservationists should not only be aware of these developments but become more strategic about getting engaged in these processes and mainstreaming conservation. They should become involved in discussions and development of plans, and collectively increase and improve the understanding and approaches toward these developments over the coming years.

1.3 Potential Transboundary Opportunities

Given the multiple use of certain transboundary sites and the multiple interests of different stakeholders, numerous parties may be *involved for different reasons* (ecological, social, economic, political and institutional). Potential opportunities provided by TBNRM are outlined below. Note that not all opportunities will be relevant in each case. Constraints to TBNRM are covered separately in Section 2.7. [Sources for listed opportunities: Biodiversity Support Program (1999), Cumming (1999), Griffin *et al.* (1999),

Lanjouw *et al.* (2001), Lycklama à Nijeholt *et al.* (2001), Magha *et al.* (2001), Metcalfe (1999), Muruthi and Frohardt (2001), Rodgers *et al.* (2001a), Rodgers *et al.* (2001b), Sandwith *et al.* (2001), Shambaugh *et al.* (2001), Steel and Curran (2001), Wilkie *et al.* (2001), David Olson, WWF-US (pers. comm.)].

Ecological Opportunities

- Maintain linkages in ecological landscapes that cross borders to maintain ecological processes and functions (e.g., hydrological systems, biological corridors, animal migrations (see Box 1.5), wild animal access to critical resources, flow of genetic material) and as a strategy to approach anticipated impacts of climate change (see Box 1.6)
- Re-establish key linkages previously disrupted by political borders (e.g., restoring migrations disrupted by border fences, repopulation of species devastated on one side of a border during war)
- Enable an increase in the size of land under ecologically sustainable management
- Ensure appropriate use of marginal land in border areas to promote economic development and prevent environmental degradation (e.g., safari hunting, transhumant pastoralism)
- Reduce transboundary threats to promote sustainable use of natural resources (e.g., through collaborative control of resource exploitation and trade, control of invasive species, integrated river basin management, fire management, livestock and range management for transhumant pastoralists)

Social and Cultural Opportunities

- Facilitate formal contact and cooperation between divided communities, renewing cultural ties that have been severed by the boundary
- Help to legalize cross-border movement
- Strengthen marginalized groups located in border areas
- Increase opportunities for communities through improved social security and welfare, for example by strengthening of community property rights and increasing natural resource value and income-generating options for communities

Economic and Financial Opportunities

- Exploit underused tourism potential for economic development (e.g., development of multi-country destinations to increase the variety of attractions, or use of infrastructure such as an international airport in a neighboring country to improve access)
- Make use of existing and developing regional economic opportunities that can provide incentives to invest in TBNRM activities (e.g., spatial development initiatives in Southern Africa)

Box 1.6 TBNRM and Global Climate Change

Although Africa contributes relatively little to global climate change in terms of gas emissions, it is extremely vulnerable to it (Biodiversity Support Program 1992). Climate change predictions suggest profound changes in Africa, affecting water resources, food production, human health, desertification and coastal zones. The frequency of extreme weather events—particularly droughts and floods—is likely to increase. A synergy of land-use and climate change will exacerbate desertification (Intergovernmental Panel on Climate Change Working Group II 2001).

While wild species and natural systems have evolved in fluctuating conditions and have a certain amount of resilience and adaptability, they require space and time to adjust. Some of the space they need is across international boundaries. For example, in extreme weather events such as floods and droughts, ranging and migrating animals need temporary access to areas with suitable conditions for them. Temperature rise will cause more permanent altitudinal shifts of species and vegetation types up slopes, mountains, escarpments and river valleys (if plant and animal species can disperse and re-establish fast enough and maintain complex ecological interrelationships). It is therefore very important to maintain landscape linkages—along temperature and rainfall gradients, among different vegetation types in a landscape, and along critical corridors to refugia from extreme events—so that species have space to adapt to these changes. Ecotones and vegetation boundaries are particularly important areas.

As natural systems and species come under increasing stress from climate change, they will be more vulnerable to other stresses. For example, coral is more susceptible to bleaching from temperature rise if it is also stressed from other problems such as sedimentation, pollution and physical damage from tourists or dynamite fishing. Wildlife suffers more from extreme weather conditions if it is already confined in marginal areas and competing with livestock. Climate change is likely to cause profound changes in agriculture practices and settlement patterns. Natural systems will have to contend not only with existing human pressures and climate changes, but also with new pressures caused by climate change–induced alterations in land uses. Loss of genetic diversity in wild species further reduces chances for adaptation and acclimation. Natural resource managers should work to relieve stresses on natural systems wherever possible.

Some countries in Africa have already prepared climate change adaptation plans (e.g., Uganda; see Bwango *et al.* 2000). Since changes to natural systems and species distribution will occur across boundaries, it will be important to expand these plans to include transboundary elements. Natural resource managers should stay abreast of climate change prediction developments and early signs of climate change, and collaborate across boundaries as appropriate following the recommendations above to maintain ecological linkages and alleviate stresses. It is important to keep options open now for possible drastic changes later this century.

(with contributions from Kate Newman, Lara Hansen, Stephen Kelleher and David Olson, WWF-US; Barend Erasmus, University of Pretoria; and Peter Jones, University of Edinburgh)

- Increase opportunities for community-private sector collaboration and income-generating options for communities
- Use tourism development to fund conservation
- Benefit from politically correct "green image" for private sector investing in nature-related activities with high transboundary profile
- Enhance opportunities for free movement of people, goods, services and money
- Attract additional donor funding based on the opportunities TBNRM offers; tap into regional funding sources
- Channel funds flexibly, to the country/activity that needs them most at a particular time and where the opportunity for management impact will be greatest (e.g., as the International Gorilla Conservation Programme did in the Virungas)
- Make use of potential efficiencies and economies of scale by working across borders: e.g., sharing human, material and financial resources for control of illegal activities, research, monitoring and evaluation

Political Opportunities

- Lay a foundation for deeper cooperation between neighboring communities and possibly nations, which can help to reduce tensions and conflicts, improve security for communities in border areas, and rebuild divided communities
- Promote global recognition of countries' conservation efforts through the higher profile possible with transboundary management
- In case of armed conflict in a neighboring country, provide as much support as possible to promote sound natural resource management in border areas during and after the conflict
- Enhance transparency, representation and accountability in land and resource use decisions at national level, if international commitments are involved

Institutional Opportunities

- Enhance the capacity of partners across the border to manage resources more effectively, e.g., through sharing of information and experiences, and through training
- Enhance the ability of organizations to respond more rapidly to changing situations (e.g., through joint monitoring)
- Develop structures that can effectively plan and guide sustainable development based on holistic natural resource management

2

The Key Elements of the TBNRM Approach

The Key Elements of the TBNRM Approach

This chapter outlines a number of elements that are key to the overall transboundary process. It covers stakeholder identification, consultation and involvement; roles of stakeholders; levels to be involved; the need for and type of agreements; organizational and individual capacity; communication; and enabling conditions and constraints for TBNRM.

Many of the issues covered are similar to those that arise in in-country natural resource management (NRM). The transboundary context adds additional challenges and complexities, which are outlined below. It is important to bear in mind that internal (in-country) NRM must still continue even if TBNRM is being added. "Going transboundary" merely adds an extra layer of complexity to an already complicated process. TBNRM takes more time owing to an increase in the number of actors and stakeholders; differences in policy, legislation, tenure and land-use systems; and political situations across borders.

How to Use This Chapter

People considering a new transboundary initiative may find most of the following sections useful.

People already involved in TBNRM may want to dip into sections where they need advice, have problems, want lessons from elsewhere, or want to know how to move on to the next stage. The conclusions at the end of each section provide a quick guide to what is covered.

2.1 Stakeholders and Their Interests

As in NRM, stakeholder participation is an essential element of TBNRM. Although initially it may require a considerable financial and time investment, it ensures that key individuals, groups and organizations are involved in an equitable, democratic and effective natural resource management process. Failure to establish stakeholder involvement risks losing the opportunity to ensure stakeholder ownership of the process, and undermines the long-term viability of the TBNRM initiative. It may ultimately undermine the resource base itself.

In a TBNRM process, the involvement of stakeholders occurs both in-country and across the border. In-country interests, and roles and responsibilities are defined in a parallel exercise in the participating countries. Cross-border exchanges involve key counterpart organizations as well as representatives of all stakeholder groups across the border meeting and establishing a common TBNRM vision. Both in-country and across-the-border interactions should be maintained throughout the process. Although cross-border interaction is somewhat an extension of national processes, differences in culture, language and policy environment, as well as the inevitable increase in the number of parties, may pose additional challenges to collaboration among countries.

2.1.1 Who Are the Stakeholders?

The natural resource base and system of land and resource tenure determine the players to be involved in a TBNRM process. Organizations and individuals laying claim to all or part of the land and resources in various ways (including historical, political, cultural, economical, spiritual) should be involved early in a TBNRM process, so that they have ownership of it. This includes local communities and private landowners. Although it would be ideal to involve all stakeholders, financial and other limitations dictate categorization of stakeholders into those that are critical to the process and others that may have direct or indirect impact on it. It is important to understand who the really important stakeholders are and to analyze the decision and power issues at play in a given situation.

Fowkes (1999) uses the following categories of stakeholder:

- Those who will directly **influence** the outcome because of their mandate or close interest and who will ultimately **inherit** the program once it has been developed; and those who are directly **influenced by** the outcome because of their close interest;
- Those who will **interact** with the developing program, and maintain close contact as it develops, e.g., focal interest groups;

- Those who will give **input**, comment on proposals, submit their views and responses to questionnaires, etc., and who can in turn provide information and perspective; and
- The general public, which may need to be kept **informed**, but may not be directly affected.

Box 2.1 provides a case study involving different stakeholder categories summarized above.

Stakeholder analysis for TBNRM is similar to that for internal NRM, though it is more complex. For information and tools on the latter see WWF (2000), Grimble and Chan (1995), MacArthur (1997) and Byers (2000).

2.1.2 Who Should Be Involved, When and How?

There are no hard rules on who should be involved in a TBNRM process since every situation is different. Stakeholder analysis should take into consideration the prominent and

Box 2.1 Stakeholder Types in the Sangha River Trinational Initiative

The Sangha River Trinational Initiative is a collaborative effort among three central African countries [Central African Republic (CAR), Republic of Congo, and Cameroon], and also comprises four projects located in the three countries. It is located in the Western Congolian lowland forest. The original people of the area are the pygmies (Bavska or BaAka and the Bangombe)—traditionally hunter-gatherer communities. Relatively new settlers attracted to farming, logging, ivory and other prospects have largely displaced the "pygmies" from the forest and are now settled in villages. They are hired by farmers, sport-hunting groups and logging companies and are often underpaid and disadvantaged.

This transboundary initiative seeks to redress shared problems of unchecked hunting quotas and differences in hunting policies, and illegal activities such as diamond mining, hunting for ivory, and bush meat trade. Through the projects, and facilitated and supported by international organizations and joint agreements, the three countries set targets to stem poaching through joint patrols to establish ecological monitoring and research, and to improve communication.

In this particular case, the general population needs to be kept *informed;* donors and international NGOs *give input* to the process; hunting-tourism departments, safari companies and customs officials are to *interact* with the initiative; and the protected area departments, government ministries and local communities are those that directly *influence* and are *influenced by* any outcome—they are the *inheritors* of the process. The BaAka and Bangombe, among others, are historically marginalized stakeholder groups that the process has to take into consideration (Steel and Curran 2001).

Specific examples of stakeholder categories using other case studies are provided in Section 3.2.1.

obvious players as well as those groups whose influence on the resource has historically been marginalized owing to their low level of economic power and cultural and political clout. Implementers should also recognize those individuals and groups that are likely to oppose the TBNRM process or components of it. Although it is difficult to ensure a win-win situation for all stakeholders, it is important to ameliorate perceived threats early on, and endeavor to establish constructive engagement with opposition stakeholders (WWF 2000). Many transboundary stakeholders are close to the natural resources, but others may be geographically far removed from them—for example, foreign donors, potential tourists, and so on. It is also key to avoid a simplified categorization of stakeholders—such as "the local community" or "the private sector"—and to recognize inter- and intra-dynamics within stakeholder groups.

The range of levels involved (Section 2.3) determines the levels of stakeholders to be involved in the process on both sides of the border (e.g., local, district, line ministry, etc.). In addition, each objective within a transboundary initiative should further dictate relevant categories of stakeholders. Some stakeholders can belong in different categories depending on the type of objectives. For example, an objective to reduce illegal trafficking of wildlife products across a border would place customs officers at the borders as stakeholders of "influence," while an objective to improve communication among protected area managers would place these customs officers in the category of the "need to be informed" public.

Initiators of the TBNRM process will have to explore incentives with key stakeholders in order to promote the idea. Following an assessment and decision on the TBNRM approach, stakeholders should define and clarify individual roles and responsibilities early in the process (Section 2.2).

2.1.3 Establishing Partnerships

Fostering existing partnerships and working relationships is extremely important in the TBNRM process. This includes horizontal relationships, e.g., between villages or resource users across a border, and vertical linkages, e.g., between a village and its district government. In addition to existing relationships, new ones are likely to be required. Early in the TBNRM process, there is a need to determine historical and current relationships among the various stakeholders in-country and across the border. This will highlight any existing tensions and conflicts that may otherwise slow or stall processes.

Constraints to effective partnership building—such as overly centralized planning and decision-making systems, weak community organizations, precarious tenure systems, bad governance and mistrust between central and local government/communities—should be recognized and addressed wherever possible. They should be taken into

account during planning to ensure realistic targets. Hidden agendas and vested interests also should be identified.

Interactions should be promoted among counterpart organizations of participating countries through collegial forums. Such forums should be planned with sensitivity to language, culture and established modes of interaction to explore common interests, set targets and review progress. Trust building, accountability, transparency and equity need to be established and exercised throughout the process (see Box 2.2 for an example of an equity issue). It is important to recognize that although creating and maintaining viable partnerships can be an expensive process, it is a necessary investment of resources.

There are instances where exact or mirror-image counterpart organizations do not exist across the border, hence organizations with similar mandates or those that have the capacity to take on a role may have to be integrated into the process. Where there is a significant disparity between the capacity of an organization and that of its across-the-border counterpart, capacity building should be a priority in order to avoid major imbalances in input and decision-making power (see Section 2.5).

Stakeholder analysis and establishment or strengthening of cross-border partnerships is imperative at the beginning of a TBNRM process. This step should not be viewed as a one-off activity, though; it should be a continuing process that takes likely changes in

Box 2.2 Local Communities and TBNRM

An example of an equity issue caused by the existence of an international border comes from the Nyika plateau on the Malawi-Zambia border. It centers around conflict between traditional transboundary resource management and protected areas created later. Traditionally the local community used resources on both sides of the border, controlled by a chief residing in Malawi. When national parks were established on both sides of the border, community access to traditional resources became restricted. A few years ago the Malawi park introduced a community resource management program for local people living near the park boundary inside Malawi. The project was enthusiastically received by those people, but members of the same community living in Zambia—who, despite their traditional customs, were not allowed access to the benefits—threatened to undermine it. This prompted the consideration of transboundary management as a way to resolve the conflict: the Malawi-based chief initiated efforts (legally and at times reaching beyond what the law allowed) to enable community members on both sides of the border to participate in the utilization and management of park resources in Malawi. He also lobbied the Zambian park authorities to carry out a similar transboundary program.

(John Griffin, pers. comm.)

stakeholder composition into account. Changes could occur, for example, because of changes in the biological resource base, changes in the economic situation (e.g., discovery of minerals and resultant cross-border trade), and changes in the political environment (e.g., refugees moving across a border). New stakeholders should be identified and incorporated in rolling plans; the TBNRM process should remain adaptable and flexible to accommodate this.

Conclusions on Stakeholders and Their Interests

- To ensure sound TBNRM, key individuals, groups and organizations on both sides of the border must be involved in and have ownership of an equitable, democratic, transparent and effective natural resource management process.
- Stakeholder involvement in establishing and working toward a common TBNRM vision occurs in two ways: parallel in-country involvement and interaction across the border. Cross-border interaction poses additional challenges and increases the number of stakeholders, but is key to overall long-term sustainability of the process.
- Categorization of stakeholders, based on their interests, dependence on and power over the resources, helps to prioritize who should be involved.
- Exact mirror-image counterpart organizations may not exist across the border, or they may have different degrees of empowerment and responsibilities, which can present problems.
- Capacity building may have to be a major activity early on in the process to secure balanced input into the process from each country, and to ensure equitable decision-making power.
- It is advantageous to build on any existing transboundary relations or partnerships across the border.
- In interactions across borders, it is important to be aware of sensitivity to language, cultural, political and other differences.

2.2 Roles in the TBNRM Process

Section 2.1 outlined the various types of stakeholders at many levels that need to be involved in TBNRM. Many stakeholders play important roles, contributing to the overall success of the process. This section looks at the roles that individuals and/or organizations fulfill in developing and implementing TBNRM. Five distinct roles have emerged from work done in Africa to date—leaders, facilitators, drivers, champions and implementers. These are outlined in more detail below, after some general points on roles.

It Is Important to Define and Clarify Roles and Ensure That They Are Fulfilled and Respected

Many players are drawn into the TBNRM process at many levels. Government organizations (e.g., government departments, parastatals, universities) have defined mandates and it is usually clear which organizations will need to be involved in TBNRM work and what their roles will be. When joining or being asked to join the process, an organization must examine why it is getting involved, what its mission is, and what it wants from the transboundary process. This allows an organization to define or clarify its role at the outset, which is important for four reasons:

- To develop an internal understanding of its role and where to place emphasis on its efforts;
- To allow the organization to check for any overlap with another organization to avoid confusion or conflict;
- To allow the organization to promote its intended role and impact to external partners and hence be held accountable for fulfilling its role; and
- To ensure that its role is respected.

Organizations such as national or international NGOs usually set their own mandate in that they define their areas of interest and where and how they work. In order to be supportive of government organizations, it is very important that NGOs understand the role they are fulfilling or being asked to fulfill in the TBNRM process—and that they do not usurp roles but rather fill gaps and provide capacity support.

Roles Are Not Always Fixed; They May Change over Time

TBNRM is a dynamic process; as various stages are completed and momentum builds or falls it may be necessary for roles to start, change or cease over time. In most cases the thrust of the input remains broadly similar but is tailored to respond to emerging issues or new challenges. In some cases, however, it may mean that an organization or individual ceases to fulfill one role and either drops out or moves into another specific role. If this is the case it is very important that the new role is clearly articulated and communicated for the reasons outlined above.

Roles Are Complementary and Implemented Simultaneously

If roles have been clearly defined there should be no conflicting overlap and they should be complementary. Complementarity includes the existence of parallel roles across borders, where partners on each side of the border play similar roles in their own countries. In a complex process the various roles are implemented simultaneously. The challenge

here is for players to recognize which components of the TBNRM process are milestones—i.e., need to be put in place before other activities can flow—and to understand their role vis-à-vis these milestones. Only in this way can the TBNRM process proceed efficiently with players kept engaged in their roles. It is also worth noting that an organization or individual can fulfill multiple roles at the same time.

External Organizations Must Let National/Local Organizations Take over When They Can

Because the TBNRM process can cut across conventional lines in terms of thinking/mandates/roles and has the added dimension of needing to work across a border (or borders), in many cases external organizations are often heavily involved in the initiation of the process. An external organization in this case may be a donor or an NGO. While it is recognized that these external organizations have an important role initially, it is important that as soon as possible national or local organizations be given the roles that they can implement. This may also apply when a government department from one country works with its counterpart across the border, particularly in cases of unequal capacity (see also Section 2.5).

Creating a Process That Is Not Just Dependent on Individuals Presents a Challenge

In complex multicomponent undertakings often a few individuals emerge as key fulfillers. These players grow into a mutual-support group that holds the main "vision" for the TBNRM process. While this is an important mechanism for moving the process along, this group has to be very sensitive:

- To ensuring that it is not excluding other mandated groups;
- That its individual members are cognizant of their role on behalf of their organizations;
- That individual members are keeping their organizations abreast of ideas, direction, future commitment, and so on; and
- That by not following the above three points the group may jeopardize the longer-term sustainability of the overall process.

Only in this way can the roles of organizations be emphasized and not hijacked by individuals' enthusiasm or professional interests.

Some of these general principles are discussed further in Margoluis *et al.* (2000).

Five types of role are outlined below. Note that not every type of role must be played in every TBNRM project for it to succeed. Especially in smaller projects, some of the roles may be merged, and one person or organization may take on multiple roles. Roles and responsibilities should be defined and clarified early on in the process.

2.2.1 Leaders

Leaders are vanguards—they show the way and anticipate progress. Leaders need to "hold the vision" for what a TBNRM process is trying to achieve and to develop a strategy that moves toward this goal. To be successful, leaders need to be proactive and they need to get buy-in—i.e., gain acceptance—from a critical mass of stakeholders in order to get the momentum for the process underway. They may also need to have an official mandate to play their role effectively (See Box 2.3). Leaders need to have commitment to the process and be prepared to be involved over a long time period. They need credibility within the sector. Most importantly they need to recognize that TBNRM will need a team of players. They should build this team with players that bring relevant skills and expertise to the process. They should identify where there are gaps in the team and fill them, either with new players or by providing the input themselves. And finally they should foster team spirit and encourage individual team members, tracking progress and ensuring communication within the team.

Regional institutions are well placed to be leaders in the TBNRM process—their regional mandates can often help to overcome some of the complexities of working across borders. Regional protocols can in theory provide an umbrella for TBNRM, though from the project case studies, it appears that regional organizations have taken very limited advantage of opportunities to instigate TBNRM under regional protocols. National organizations are less well placed, in part because of their more limited mandates, but also because of the problem of perceived status or lack of parity that a national organization has with others within the system. This can be a very big stumbling block when needing to work across sectors.

Box 2.3 An Example of a Lead Role Undertaken by a Government Agency

In Mozambique the Forestry and Wildlife Directorate was named the lead agency in the development of the Gaza-Kruger-Gonarezhou Transfrontier Conservation Area (TFCA). The Directorate worked at getting the concept of a TFCA on the political agenda, and getting international agreements signed. It also managed to re-establish a field presence in the protected areas within the TFCAs, and assist with some important policy and legal work in terms of forestry and wildlife regulations and policy, and policies for communities and the private sector. The fact that there was a dedicated process for TFCAs was very important. However the Directorate did not really have a mandate for broader ecosystem-based planning and the associated sustainable development needed for creating the TFCA, as this falls within a number of different government agencies. In response, the establishment of a TFCA Secretariat is proposed, and it is under consideration to bring this secretariat under the Ministry of Tourism to lead the development of inter-sectoral planning frameworks.

(Rod de Vletter, pers. comm.)

At a local level, leaders interested in promoting TBNRM may be in place—their primary interest often being in resurrecting traditional resource use and trading agreements among communities that have been disrupted through the imposition of national borders. There is, however, a limit to the extent local leaders will be able to influence the bigger picture.

At present much of the leadership in promoting TBNRM is coming from external organizations that are also fulfilling the roles of facilitators and drivers. This may not be a problem in the early stages of the process but at some point internal leaders have to emerge if the whole process is to root itself more sustainably.

2.2.2 Facilitators

Facilitators make things go more easily. Facilitation can cover a wide range of activities from originating the concept, through initial coordination and neutral brokering, and then fulfilling a continuing neutral role—mediating, brokering of conflict resolution and ensuring fair and equitable treatment by all players. Facilitators can also bring to the table technical capacity, capacity-building support and financial resources. They can often make meaningful contributions to developing climates (national and international) conducive to investment in TBNRM.

In order to fulfill their role, facilitators need to have a strong and varied network of partners to be able to catalyze participation. They need to recognize the relevance of establishing strategic (often non-traditional) partnerships. Facilitators need not necessarily have been long-term players—in some cases already knowing many of the players can help but in other cases it can constrain innovation as players are mindful of the partnerships already built up over many years. However, to be effective, facilitators must be able to provide sufficient time and flexibility to build trust; and they should maintain neutrality. Facilitators need a certain degree of independence to be able to work effectively but this should of course be within the overall agreed-upon larger context of the TBNRM process. Good facilitators should have good networking skills, good communication and interpersonal skills, good listening skills and open-mindedness, good analytical skills, good vision but also attention to detail, good technical understanding of the subject matter, and uninflated egos.

To date this role mainly has been fulfilled by NGOs and international projects (see Box 2.4 for examples). This is primarily because these groups have broader than national-level mandates and are thus in a position to be able to create platforms or venues that bring various national organizations from several countries together. National/local institutions are constrained by their mandates and have to go higher up to get authority formally to instigate such activities.

Box 2.4 Examples of Facilitators

The International Gorilla Conservation Programme (IGCP)—which at the request of the protected area authorities of the Democratic Republic of the Congo (DRC), Rwanda and Uganda fulfills the central role in establishing a framework for regional collaboration toward the goal of conserving the mountain gorillas and their habitat in the Virunga-Bwindi region (Lanjouw *et al.* 2001).

The Global Environment Facility (GEF) Cross Borders Biodiversity Project working to conserve the Minziro-Sango Bay Forest Reserves across the Tanzania-Uganda border—which is primarily implemented through national agencies but which also has a regional component (agreed on by the respective natural resource management agencies) that specifically supports studies and fosters regional linkages (Rodgers *et al.*, 2001b).

In both these cases the project regional director is the prime facilitator supported by national-level project staff. These two organizations have a very clear mandate to work as facilitators.

In some cases an NGO may originate the TBNRM process and then foresee itself continuing to fulfill a facilitation role. This is illustrated in the Kilimanjaro Heartland case study, where the African Wildlife Foundation (AWF) on the border between Kenya and Tanzania identified the area to work through its own internal selection process and will continue to provide the motor for moving regional conservation planning forward (Muruthi and Frohardt 2001). In reality it may be quite a fine line between NGOs/international projects couching their interventions in terms of facilitation but in fact fulfilling the role of leaders or drivers in the process. Finally, there are also instances where a government agency has fulfilled the role of facilitator, for example the KwaZulu-Natal Parks in the development of the Maloti/Drakensberg Transfrontier Conservation and Development Area.

2.2.3 Drivers

A driver provides resources or exerts pressure to promote TBNRM, without necessarily becoming directly involved. Drivers can play a very important role in ensuring that TBNRM processes are initiated and move forward. A politician could be a driver by exerting pressure without becoming visibly directly involved, for example. NGOs and donors can be drivers, providing funding for TBNRM projects. Financial inputs are needed for TBNRM and can greatly fuel the process.

Occasionally the agendas of the governments, donors or NGOs may not dovetail exactly to the aspirations of the primary stakeholders—instead they gain prominence or even distort the process. Facilitators can be very important in encouraging donors and NGOs to fulfill their roles so that they are perceived as positive partners in the TBNRM process.

2.2.4 Champions

Champions promote a cause. They are people who can pick up an idea (sometimes originate it), advocate for it and continue to support it once it gets going. Champions need to have a high profile, be charismatic, operate in a sphere of influence, be respected and see the big picture. They do not necessarily have to be technically involved in implementation.

Players involved in TBNRM processes talk about the role for champions at all levels as a crucial one. Interestingly, however, this is the one key role that has been least well articulated or described in the project case studies. There may be several reasons for this:

- Facilitators may have been fulfilling this role under the guise of facilitation;
- Facilitators may have not given enough attention to identifying champions and getting them involved;
- Organizations in Africa may be more used to the concept of patrons who fulfill a more benign, less aggressive supporting role; and
- Champions may be most easily found at the national level and there may be few individuals with the appropriate stature who can reach across the border(s).

In the case of TBNRM, champions are particularly important in influencing potential players that have not traditionally linked the importance of sound natural resource management to their arenas. (Other sections of this document will discuss the importance of mainstreaming natural resource management and biodiversity conservation into broader development planning—which is where champions have a major role.)

2.2.5 Implementers

Implementers carry out the detailed work of the various steps of the process. The bulk of the effort involved in TBNRM processes includes collecting and analyzing data, identifying threats and opportunities, planning, piloting and implementing responses, monitoring and evaluation, creating strategic alliances, etc. These activities are described in greater detail in other parts of this document.

Implementers often work on component parts of the process at certain levels. They do not each need to understand or keep track of all aspects of the overall picture—but they do need to recognize that their activities are important steps in achieving the overall picture. For example a park warden will ensure that a ranger in the Virungas National Park in DRC is assigned to collect data about gorilla movements, that the data are fed into a regional database allowing the warden to make management decisions to meet the objectives of a regional gorilla conservation strategy. The chairman of a committee

might establish a working group to tackle the specific task of reviewing policies with a view to harmonization. The director of a protected area authority would ensure that a minister has all the appropriate information and a briefing before a meeting that will discuss TBNRM progress. A researcher will work with communities to design a monitoring program and then train individuals to be data collectors. These are all pieces of the group effort.

In the initial stages, organizations that work as the facilitators of a TBNRM process often fulfill also the role of implementers—and in some cases continue in these dual roles. This is particularly the case when an initiative is specifically designed to work on TBNRM and an organization is appointed to coordinate and implement the many facets of it.

Conclusions on Roles in the TBNRM Process

- Roles need to be well defined and players should respect them.
- Roles can change over time because TBNRM is a dynamic process.
- Roles should be complementary to avoid overlap; an organization/individual can fulfill multiple roles at the same time.
- NGOs should avoid usurping the roles of others, and focus on filling gaps and providing capacity support.
- External organizations must let national/local organizations take over when they can.
- The TBNRM process should not be dependent only on a few individuals to ensure the longer-term sustainability of the overall process.

Different roles for successful TBNRM (for individuals or organizations):

- **Leaders** are vanguards who show the way. Regional organizations are well placed to lead but have not done much so far. Local leaders are well placed, but are limited in how much they can influence the bigger picture.
- **Facilitators** fulfill a neutral role coordinating, brokering and resolving conflicts. NGOs and international projects often facilitate because their mandates are not limited by national-level considerations.
- **Drivers** are key to ensuring that TBNRM processes are initiated and move forward. Politicians, NGOs and donors can be drivers. Drivers should ensure that their agendas are compatible with the aspirations of key stakeholders.
- **Champions** are high-profile, influential people who promote TBNRM on multiple levels. They are particularly important to get messages about relevance of sound natural resource management integrated in a broader context.
- **Implementers** ensure the detailed implementation of the process. They do not need to know all aspects of the process, but they do need to recognize that their activities are important steps to achieving the overall vision.

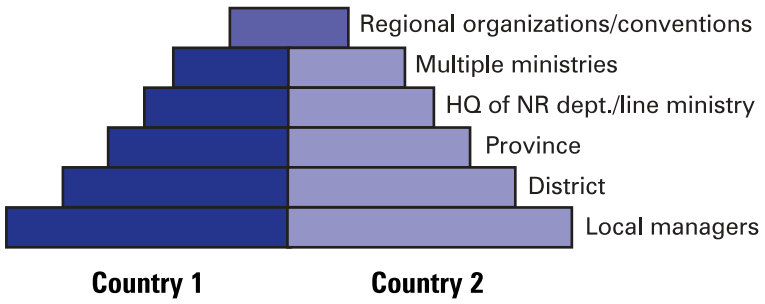
2.3 Levels in Transboundary Collaboration

2.3.1 The Different Ranges of Levels

There are many different possible ranges of levels of TBNRM collaboration, each appropriate for different situations. At the simpler end, collaboration occurs purely at a local level. For example, two protected area managers and their staff across a border may collaborate over fire management programs, joint surveys and limited joint law enforcement activities (e.g., exchange of information about illegal resource use). Similarly, a community that is divided by an international border, but whose traditional management systems have not been eroded by international politics, may continue to manage natural resources across the border at a local level with no need for higher-level intervention.

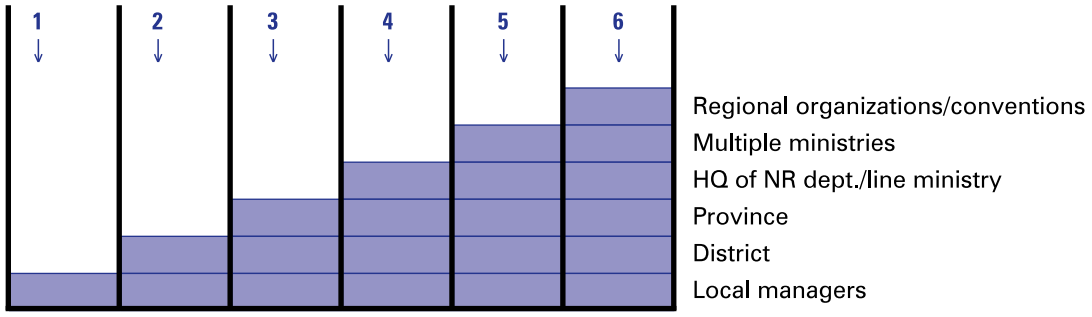
The amount that can be achieved at the local level is limited, however. For more ambitious TBNRM goals, a wider range of levels of collaboration is necessary, along with the involvement of multiple levels of authority (see Figure 2.1). For example, authority to undertake joint law enforcement patrols may have to come from forestry or wildlife department headquarters in both countries, or even the ministries responsible for foreign affairs. Development of a transboundary wildlife corridor involving multiple forms of land use is likely to involve different government ministries on both sides of the border, and local or national land-use planning authorities if they exist. Development of international nature tourism as part of a regional economic development strategy is likely to involve multiple government ministries including those dealing with finance, planning, commerce and tourism, immigration and customs, transport, and natural resources—as well as regional organizations if they exist [e.g., the Southern Africa Development Community (SADC)].

FIGURE 2.1 — LEVELS OF AUTHORITY



Note that not every level exists in every country. In some cases, there may be additional levels (for example, wards in Zimbabwe).

FIGURE 2.2 — POSSIBLE RANGES OF LEVELS OF TBNRM INTERVENTION



Sometimes levels in different countries do not correspond, or they have different degrees of empowerment. This can be a constraint to transboundary collaboration, if people have difficulty determining the appropriate level to work with across the border, or need to work with more than one level.

Within this structure of authority levels (shown horizontally), Figure 2.2 indicates with vertical lines the possible ranges of levels at which TBNRM interventions may operate at a particular time. For convenience, only one country is shown, but this would obviously apply to both/all countries involved.

The range of levels increases from 1 to 6. Note that when it is necessary to involve high levels, it is key to ensure that the lower levels also remain involved in the overall transboundary process. The level most dependent on the resource, which is often the local level, is particularly important. Ultimately TBNRM is implemented at the local level, with support as necessary from higher levels. It is therefore very important to ensure local-level involvement, buy-in, and ownership during planning and implementation, however many levels are involved in the process (see also Section 2.1).

This is not always easy to achieve, especially in transboundary projects covering large geographical areas, which may have a considerable number of people living in remote, scattered communities in border regions. Ensuring their participation requires extensive resources and takes time. Pragmatically, it may not be possible to involve every community in every decision along the way. However, it is important to ensure sufficient participation and representation in key decisions that affect people directly or indirectly, and enough time to consider the implications beforehand.

If adequate participation does not occur, there is a risk that upper levels will exert influence and control that is not in the best interests of local communities or private landowners. At worst, TBNRM can present an opportunity for corrupt national-level powers to gain personally from TBNRM benefits. Donors, the private sector and NGOs can also drive the TBNRM agenda in a way that usurps local interests. Two-way transparency and accountability are very important.

It is not necessary to operate at the same range of levels for each transboundary objective. For example, control of illegal hunting may be done locally at community or warden level, or by this level in collaboration with district officials, and perhaps with the involvement of wildlife department headquarters. The creation of a border post to enable border crossings by tourists, however, is likely to be done at the multiple ministerial level, with the involvement of lower levels such as the district level.

Each individual action to achieve a transboundary objective does necessarily involve every level within the range of levels the process is operating at. For example, the passing of legislation to create a new border post in the example above would be done at the ministerial level, once the need for the border post has been discussed and proposed by lower levels. The lower levels benefit, but are not involved in the legal process itself.

The levels of formal authority and decision making shown in Figure 2.2 mostly involve government, and traditional authorities at the community level. Other actors such as NGOs, the private sector and academic organizations may be involved at various levels, and often move flexibly across levels during the TBNRM process. While communities may have inputs at higher levels, they are most frequently involved at the local level for obvious reasons (see Section 2.1). Roles that different organizations can play were discussed in greater detail in Section 2.2.

2.3.2 Deciding on the Appropriate Range of Levels

There is no single optimal, predetermined, range of levels at which to work. Each transboundary situation is different, with its own combination of ecological, social, economic, political and institutional factors. Leaders in each transboundary situation have to decide what the best range of levels is for them at a particular time in the process. It is important to have a flexible approach, and to be ready to move up or down the range of levels as appropriate. For example, it may be necessary to get the headquarters of the two immigration authorities on either side of a border involved to agree to establish a new border crossing (range of level 5 in Figure 2.2). Once that is done, it may be possible to return to working at a local level (range of level 1). **There is one general rule: work at the lowest range of levels possible to achieve the goals set for the transboundary collaboration.** This is where efficiency will be greatest. Another example is provided in Box 2.5.

Box 2.5 Good Neighbors Meetings

Uganda and Tanzania presently have noncompatible logging policies. This has proved an issue within the Minziro-Sango Bay Forest Ecosystem. The current ban on harvesting timber in Sango Bay Forest, Uganda, has triggered more harvesting of trees on the Tanzania side of the forest in order to meet the heightened demand for timber in Uganda. The situation also encouraged dealers to move illegally cut Ugandan timber through the forest into Tanzania where it was "hammer stamped" to become legal and exported back to Uganda.

In December 1999 the Cross Borders Biodiversity Project hosted the first of a series of cross-borders "Good Neighbors" meetings between the two sides' district officials including district commissioners. Cross-borders biodiversity management was on the agendas. The meetings brought together key sectors that are relevant to conservation and sustainable development on both sides of the border, including immigration, trade, revenue authority, livestock, agriculture, security systems, natural resources and environment. The meetings discussed, among other things, the need to control and regulate timber movement across the borders. While Ugandan officials acknowledged that much timber was moving from Tanzania into Uganda, they also noted that the timber was allowed to enter the country without any restrictions imposed by Tanzania. The meeting brought together a common understanding of regulating agencies across the borders, and steps to take in implementing collaborative approaches to control movement of illegal timber. Results to date indicate a positive impact as the amount of timber transiting the border has decreased. Field patrols suggest that the number of illegal pit-saw sites has decreased significantly. District-level Tanzanian authorities have requested timber movement to Uganda to be temporarily restricted. Forest management bodies have approved a complete ban of pit sawing in the forests, pending the harmonization of logging policies and harvesting regimes.

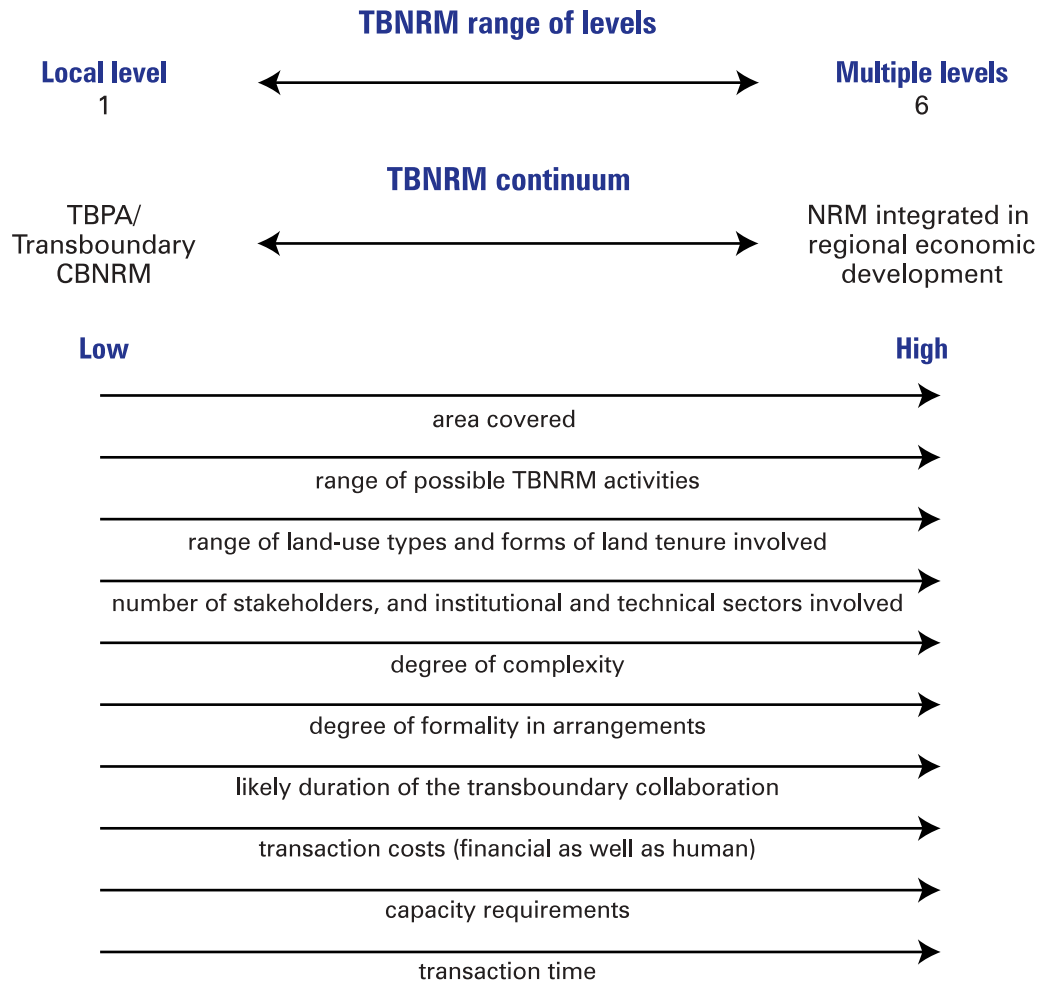
This example shows what sort of action that can be effectively achieved at the district level, while waiting for formal policy harmonization to be completed at the national level.

Source: Rodgers *et al.* (2001b).

When working at lower ranges of levels without involving the highest levels, it is still very important to keep people at higher levels on both sides of the border informed of developments, achievements and constraints. They do not need to know all the details, but should know the basic facts. People do not like to be surprised by learning about things indirectly rather than through their direct chain of command. This can be particularly sensitive because of the transboundary nature of the work.

When deciding at which range of levels to work, it is important to understand the benefits and constraints of the different ranges. Figure 2.3 summarizes some of the main variables affected by the range of levels, and the way the variables may change. Note that these trends are not hard and fast, but are general observations. Figure 2.3 builds on the continuum concept presented in Figure 1.1.

FIGURE 2.3 — SOME VARIABLES AFFECTED BY THE TBNRM RANGE OF LEVELS



There are advantages to working at a complex range of levels, as shown above. A greater variety of transboundary activities may be possible. Larger geographical areas generally can be covered, with a wider variety of land uses and forms of land tenure. Agreements are more likely to endure as they are more formal. However, for TBNRM to be successful with a more complex range of levels, a larger number and variety of stakeholders and actors must be involved, coming from a broader range of institutional and technical backgrounds (see Section 2.1). The degree of formality of transboundary agreements tends to increase as range of levels increases (see Section 2.4).

There are therefore also disadvantages to working with a complex range of levels. Transaction time greatly increases as higher levels of government and a greater number of stakeholders become involved. Financial costs increase, including communications and costs of meetings. There are also other types of costs, including consequences of channeling scarce management resources into TBNRM. This can be to the detriment of domestic, or internal, natural resource management—often essential ongoing work that still has to be done in addition to transboundary commitments.

Based on input from participants at the pan-African TBNRM workshop (April 2001), Table 2.1 shows some of the advantages and disadvantages of working at each level, and Box 2.6 shows how the collaboration between Botswana and South Africa over the management of the Gemsbok and Kalahari Gemsbok National Parks increased the range of levels involved over time.

2.3.3 Choosing the Entry Point for Transboundary Collaboration

There is no rule about the **level or range of levels** at which to start. The entry point may well be opportunistic: where a particular champion (see Section 2.2) is working, or where initial dialogue and collaboration is easiest. It is often advisable to build on existing non-transboundary activities in each country. It may be that once the transboundary process is started, there is a rapid move up or down the range of levels as discussions develop, scope of possible collaboration becomes clearer, and constraints are identified and weighed against opportunities. Table 2.2 shows entry points for some existing TBNRM projects.

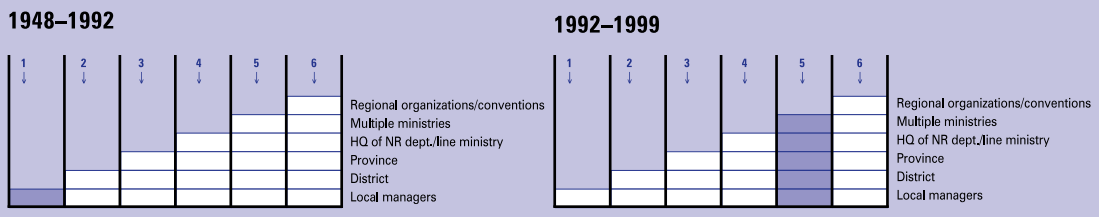
There is strong advice about **how** to start. If initial discussions start above the local level, it is very important to bring discussions down to lower levels as soon as possible, and have stakeholders at these levels fully involved very early on. This is particularly crucial for the local level. There is also a need for iterative dialogue—going back and forth between issues and stakeholders—within a country and across the border. Communication is very important throughout the process, but it is particularly crucial in the early stages (see Section 2.6).

TABLE 2.1 — OPPORTUNITIES AND CONSTRAINTS ENCOUNTERED AT DIFFERENT LEVELS

Level	Opportunities	Constraints
Local	• Empowerment, ownership and buy-in of resource managers • Can be high motivation to collaborate owing to high dependence on resource • Benefits may stay at local level • Application of indigenous knowledge systems, combined with appropriate scientific techniques if introduced by extension workers	• Often limited capacity for implementation and limited empowerment from higher levels • Enabling conditions may not exist, e.g. necessary legislation • Duration mainly dependent on personalities
District/ province	• Good understanding of local issues; multisectoral approach • Greater decision-making power than local level • Better connected to higher levels than local level • Better capacity to resolve local conflicts than national level has	• Dependent on the personality and interest of district commissioner • Power often restricted by limited decentralization, particularly for making internationally significant decisions • Higher transaction costs than local level
HQ of natural resource dept/line ministry	• Greater capacity, planning and decision-making power (decisions more binding than at lower levels) • Key role in policy/legislation (enabling conditions) • Better access to donor resources	• Greater bureaucracy, costs and delays in decision making • Incentives for TBNRM are less direct than for lower levels, since there is less direct dependence on resources • Risk of political interference • Risk of national agenda sidelining local priorities
Multiple ministries	• Integration of natural resource management/conservation with general development • Better buy-in and collaboration with other sectors • Broader opportunities, greater chance of being more sustainable economically	• Risk of natural resource context becoming lost in multiple agendas and visions across many sectors • Risk of national agendas sidelining local priorities • Greater bureaucracy, costs and delays • Less dependent on resources
Regional organizations/ international conventions	• Provides framework for international agreements and collaboration • Helps to clarify policy/strategy • Greater access to expertise • Greater awareness of resource value • Greater sharing of experiences/ knowledge/responsibility	• Lack of appreciation of local values • Time-consuming, bureaucratic, costly • Generally least dependent on resources

Box 2.6 Kgalagadi Transfrontier Park

Informal collaboration occurred from 1948 at a local level between wardens of the Gemsbok National Park in Botswana and the Kalahari Gemsbok National Park in South Africa. The two areas functioned as one ecological unit without fencing and with free movement of wildlife. Limited cooperative activities included joint monitoring of large animals. In early 1992, the two countries decided to make the arrangement more formal to enable a wider range of benefits. This led to the involvement of various ministries at the national level (e.g., those responsible for wildlife, customs, immigration) and the attorneys general to harmonize relevant policies and legislation. A formal agreement was signed by the two presidents establishing the Kgalagadi Transfrontier Park in 1999.



The arrangement comprises the following:

Bilateral agreement between the two countries
(level = multiple ministries, signed by the presidents)

- sovereign equality and territorial integrity recognized and maintained
- national laws applied but harmonized
- authority devolved to the two national parks departments
- Kgalagadi Transfrontier Park Foundation established

Kgalagadi Transfrontier Park Foundation
(levels = line ministries, provincial government/member of parliament, national parks departments)

- enabled to receive funds for management and disburse to the national parks departments
- empowered to monitor the implementation of the management plan

Record of understanding between the two national parks departments
(level = headquarters of natural resource departments)

- detailed management plan provided for
- joint Kgalagadi Management Agency created

Kgalagadi Management Agency
(level = local managers)

- management plan developed and implemented, covering wildlife and ecosystem conservation, sharing of expertise, harmonized tourism development, revenue sharing, promotion of economic opportunities for adjacent local communities, compliance with international laws to protect the environment, and integration of managerial, research, marketing and other functions as much as possible

Sources: Sandwith *et al.* (2001, Appendix 5.5); Griffin *et al.* (1999).

TABLE 2.2 — ENTRY LEVEL FOR A SELECTION OF TBNRM PROJECTS IN AFRICA

Entry level	Examples	Initial reasons for collaborating
Multiple ministries	Caprivi/ Chobe/ Okavango/ Hwange/S. Zambia	Tourism development
Headquarters of natural resource department/line ministry	Gaza/Kruger/Gonarezou	Wildlife conservation/restoration
	"W" Park	Control of illegal hunting
	Virungas	Conservation of mountain gorillas
Province	Maloti-Drakensberg	Threats to shared biological and cultural resources
District	Minziro/Sango Bay	Sustainable use of biodiversity
Local	Gemsbok/Kalahari Gemsbok (wardens)	Wildlife research
	Nyika/Nyika (community)	CBNRM

Conclusions on Levels in Transboundary Collaboration

- TBNRM is more efficient if it involves the simplest range of levels possible to achieve the goals.
- There is no rule about the level or range of levels at which to start.
- TBNRM is probably more effective if it is not driven from the top.
- Involvement of the local level is essential from the start, since this is where natural resource management occurs.
- The amount that can be achieved at local level only is limited; more ambitious TBNRM goals require involvement of a wider range of levels.
- Flexibility is essential on the range of levels of intervention; be prepared to involve higher levels when needed, but come back down to simpler ranges of levels again whenever possible.
- Communication is essential within and among levels in each country, and with the equivalent levels across the international border.
- Within the range of levels implementing TBNRM, all the levels should participate in key decisions that affect them directly or indirectly.
- It is key to determine the appropriate level(s) to work with across the border—sometimes levels in different countries do not correspond directly.
- Different transboundary objectives may be implemented by different ranges of levels.

2.4 Agreements

Transboundary interactions can take many forms, ranging from very informal relationships among local resource users (e.g., local trading agreements) to international treaties governing resource management programs between countries (e.g., joint river basin management) (Singh 1999; Zbicz 1999). These agreements encapsulate the purpose, principles and programs for interaction across boundaries. At the global scale, there are many examples of such agreements, some of them just symbolic. These include one of the earliest agreements for transboundary protected areas—i.e., the 1932 Waterton/Glacier International Peace Park in the Rocky Mountains of Canada and the United States. In general, agreements can increase the sustainability of outcomes by making the process less dependent on the immediate actions of individuals.

In Africa, on the other hand, despite there being many instances of transboundary natural resource management opportunities and needs, there are relatively few examples of negotiated agreements. Notable exceptions in the field of biodiversity and conservation areas are the recent designations of transfrontier conservation areas by countries within the Southern African Development Community (SADC), e.g., the Maloti-Drakensberg Transfrontier Conservation and Development Area MoU signed on June 11, 2001. A general treatment of agreements for the development of transboundary protected areas is contained in the IUCN/WCPA Protected Area Guidelines series (Sandwith *et al.* 2001).

Agreements can take many forms, and there is no ideal form or blueprint. The specific terms are likely to depend upon the prevailing ecological, social, economic and political context, the objectives of the stakeholders, the specific institutional frameworks, and scale. The general guidance provided in this section is intended to create awareness of the diversity of issues to bear in mind when embarking on transboundary agreements, but clearly, it must be adapted to each specific situation. Note that this section describes what is involved, but not how to write an agreement, which would require specialist legal input.

2.4.1 Reasons behind TBNRM Agreements

It may sound obvious, but the success of any agreement is directly related to the outcomes that result from the agreement. Negotiating agreements is costly in terms of time and effort, and the purpose of the agreement should be clearly identified before embarking on this process. There are a variety of reasons why transboundary agreements are entered into, including the following:

- Resolving disputes over access to resources;
- Developing joint economic opportunities, e.g., for tourism;
- Fostering international cooperation;

- Jointly seeking international donor assistance;
- Dealing with or avoiding transboundary environmental impacts;
- Regulating cross-border movement of people and goods;
- Restoring and maintaining peace;
- Enhancing natural resources or protected areas management;
- Fostering exchange visits and capacity-building; and
- Facilitating research.

On the whole, agreements are necessary in situations where either party would be unable to achieve a necessary or desirable goal without the participation of the other. Where there is a difference of opinion or conflicting goals, it may be more difficult, though possibly no less necessary, to promote some form of agreement. There are some cases, however, where agreements have been entered into that do not achieve these objectives. There may be a variety of reasons for this, including a lack of understanding or participation in the formulation of agreements by various stakeholders; a lack of political will and commitment at a high level, which prevents effective cooperation at a lower level; no real need for transboundary activities at the level of resource managers; or a lack of resources committed to implementing the agreements. A sustainable agreement is usually only possible when the net benefits exceed the net costs for all parties involved.

Some form of agreement is usually necessary as a means of declaring common interests, stating guiding principles, identifying objectives or ensuring commitment among all parties. Agreements ensure that the parties are clearly identified and that their roles and responsibilities are defined. They enable a holistic focus on the broad issues involved, as in many cases single jurisdictions are dealing with ecosystems and communities that have been artificially separated by boundaries. They ensure that issues of national sovereignty are not compromised, and they empower governmental and nongovernmental stakeholders to operate within an agreed framework. As agreements run over a determined time frame (and can be extended) they can increase the sustainability of the outcomes by making the TBNRM process less dependent on the immediate actions of individuals. Problems that arise can be dealt with collectively, and this promotes the development of trust and understanding. A collective effort results in more robust strategies and a higher profile at the national or even international level. One of the motivations may be to ensure a joint and more coherent approach to international agencies, particularly those that promote regional integration.

It is also important to guard against "paper agreements"—those that are not sufficiently grounded in reality to yield useful results. An agreement on its own will not necessarily be sufficient to achieve a desired outcome. If agreements are too informal, they might be easily overridden by powerful interests. If the problems identified at a national level are intractable—e.g., lack of security, landlessness, poverty—it is unrealistic to expect these to be resolved by introducing an international component. It is also possible that an

agreement may expose conflicting interests or even generate new conflict, so it is important that the fundamental purposes and principles for implementing agreements are well thought out.

2.4.2 Agreements to Serve Different Purposes

Agreements are developed for many purposes, and therefore involve a variety of stakeholders in each case. For example, agreements in the wildlife and biodiversity fields have been developed for:

- Cooperation among resource/protected area managers, e.g., for planning of adjacent protected areas or for the sustainable exploitation of a transboundary marine resource;
- Joint implementation of resource management programs, e.g., for a migratory population of large herbivores;
- Reciprocal assistance agreements, e.g., fire management or rescue operations;
- Joint/cooperative implementation of projects;
- Information exchange, and the setting of data management standards and protocols;
- Financing development of resources or tourism;
- Revenue generation and sharing;
- Restoring and maintaining peace, or avoiding conflict; and
- Community management of natural resources.

An example of an agreement is provided in Box 2.7. There could also be agreements in one area for different purposes, or an umbrella type agreement that determines overall policies, within which operational agreements are framed.

Box 2.7 The Sangha River Trinational Cooperative Agreement

The Sangha River Trinational Initiative aims to promote TBNRM among three contiguous conservation areas—Nouabale Ndoki NP (Republic of Congo), Dzanga-Sangha Forest Reserve (CAR) and Lobeke Reserve (Cameroon) in order to help reduce elephant and bush-meat poaching. Various meetings were held between 1995 and 1999 to move this idea forward. In March 2000 a meeting of legal experts and project leaders from each country drafted a cooperative agreement. The cooperative agreement is intended to:

- Solidify the commitment of the different partners to the transboundary initiative;
- Provide an institutional framework for the development, execution and monitoring of relevant activities; and
- Serve as the base for the future possible creation of a trinational park.

Source: Steel and Curran (2001).

2.4.3 Different Types and Levels of Agreements

The variety of transboundary processes and purposes suggest that different types of agreements would be appropriate. Agreements can be highly informal verbal agreements between two adjacent villages, they can be written agreements between protected area managers, or they can involve bilateral or multilateral treaties between adjacent or non-contiguous states. Descriptions follow:

- **Informal agreement**—e.g., to notify the adjacent resource manager of a fire management program, or for two adjacent protected area managers to appoint a representative to serve on one another's management committee. These agreements are usually driven by a mutually identified need, but are difficult to sustain if key role-players change;
- **Traditional arrangement**—e.g., mutual recognition of the rights of an adjacent community to undertake resource harvesting across the boundary. This type of agreement is often deeply rooted in the history and interaction between communities, perhaps even before current boundaries were established. The arrangements can be at risk if the rights and obligations are not recognized by central governments. There is the need to secure—as well as an opportunity to include—traditional arrangements in new and more formal agreements within a TBNRM program;
- **Letter of intent**—e.g., at any level, to develop increasing cooperation in the future. This type of agreement can symbolize developing cooperation, while allowing the flexibility and opportunity to consult and determine the elements of a more formal agreement;
- **Declaration**—e.g., among delegates at a transboundary workshop, stating that an understanding has been reached, and that further actions will be undertaken to enhance cooperation or to pursue specific objectives;
- **Protocol or contingency plan**—e.g., an agreed course of action to address specific incidents such as an oil spill. This type of agreement is very practical, and may engender a sound working relationship, which could extend the scope and level of the agreement at a later stage;
- **Memorandum of Understanding**—e.g., an administrative arrangement, usually appropriate where the level of consultation is advanced sufficiently for representatives to agree on their common objectives, and to set out interim institutional arrangements and delegations to accomplish specific tasks;
- **Bilateral agreement**—This is usually an international agreement, formally ratified by the countries or jurisdictions involved. It goes further than a Memorandum of Understanding and sets out a legal agreement between countries (see Box 2.8); and
- **Treaty**—Similar to a bilateral agreement, but with the suggestion that the agreement formally resolves a dispute or binds the parties to an agreed course of action.

It may also be an option to negotiate an enabling agreement or protocol, which empowers stakeholders at different levels of authority or in different sectors to negotiate sub-agreements.

Box 2.8 Bilateral Agreements on Transhumance in West Africa

Transhumance is practiced widely in West Africa and has an extremely well-established pattern of TBNRM. Bilateral agreements have been developed between Ivory Coast, Benin, Burkina Faso and Niger that fix regulations for transhumance and the principle of authorization of transhumance between the countries. Specifically they include the following:

- Foreign herders will receive the protection of the host authorities and their rights are guaranteed by the judicial structures of the host country;
- Herders have to respect the laws of the host country;
- Herds have to be guarded continuously by a sufficient number of herders;
- Herders are required to keep, and produce upon request, an international transhumance certificate (showing origin, destination, composition of the herd and the vaccinations received);
- Every country has to specify the places where animals can officially enter and leave the country; and
- The host country has to fix the period, duration and number of animals authorized for a stay in the country during the transhumance circuit.

Source: Lycklama à Nijeholt *et al.* (2001).

The parties to agreements also vary, and could involve any or all of the following stakeholders, depending on the nature and scale of the agreement:

- National governments or states;
- Provincial governments, or states in a federation;
- Statutory bodies;
- Community structures;
- Local governments;
- Subnational jurisdictions;
- NGOs;
- Research institutions;
- International organizations; and
- Private enterprises.

The initial idea or need for an agreement may be generated at any level and by any party. However, especially when crossing an international boundary is involved, the complexity of negotiation and decision making increases rapidly, and it is necessary to involve a complex set of stakeholders and protocols. In particular, it is difficult for sub-national jurisdictions to operate with any authority without the requisite endorsement of the competent authority at a national level. It takes time to set up an agreement properly and this needs to be planned for. There is, too, a need for adaptive management; at one stage of the process a very informal agreement may be needed, but as activities continue and trust

builds up, different levels of formality for agreements will become appropriate among the different levels of players involved (Lanjouw *et al.* 2001; and also see Section 2.3).

2.4.4 Process for Reaching Agreement

There is no ideal process, and it is usually incumbent on those who identify the need for agreement to lobby the relevant stakeholders and convince them of the need and involve them in the steps to follow. In some cases, it may be useful to start with local-level initiatives, e.g., contact between two villages across the border. In other cases, the initiative may come from a high-level diplomatic process. Often, the process is slow and moves over many years from one type of agreement—e.g., an informal one—to another, more formal one.

The following points indicate aspects of the process that need to be considered:

- **Identification of the need.** The necessity and sufficiency of an agreement should be debated in relation to ecological and social and economic objectives;
- **Consideration of the opportunity.** A regional economic development agreement may provide an incentive for forging bilateral or multilateral linkages for TBNRM. Existing agreements may provide the most natural focal point; and it is logical to build on existing national or international agreements, rather than starting from scratch;
- **Consideration of the constraints.** An analysis of the likely constraints should be undertaken early, as a lack of resources, for example, will severely impede the implementation of an agreement;
- **Consideration of the timing.** An agreement would be more likely to flourish in an atmosphere of reconciliation after conflict, than when conflict prevails;
- **Starting point.** The stakeholders with the greatest interests are likely to be successful champions of a process (see also Section 2.2);
- **"Nested" agreements concluded at different stages.** It might be necessary to consider a framework agreement before considering agreements at a more operational level;
- **Existing agreements incorporated.** Existing agreements should be identified, and referred to or incorporated into new agreements. This is particularly relevant for informal agreements;
- **Negotiating partners.** A clear mandate for negotiation must be achieved by involving the relevant authorities;
- **Developing agreements** (drafting, reviewing, reaching consensus). There are international precedents and international norms for developing agreements, usually requiring specialist legal expertise, as both domestic and international legal matters must be considered. The process will vary according to the circumstances. In the case of agreements in the SADC region, mandated bilateral steering committees of officials usually

draft the agreements, building on precedents where possible. These are then tested in the respective countries for their compatibility with domestic law and international law. They often have to be reviewed by the political desk of the foreign affairs departments, and usually require approval at cabinet level and certainly by the head of state before authority is given for their signature; and

- **Concluding agreements** (legal review, diplomatic processes). There are protocols for interaction among states that must be observed. Agreements usually enter into force on the date of the last signature, unless otherwise specified.

2.4.5 Contents of Agreements

The drafting of an international agreement is a technically complex matter, requiring the services of skilled and experienced professionals. It does, however, help to identify some of the aspects that might be considered in such an agreement, and for the parties to discuss and even prepare notes that might aid in the drafting of an agreement that will address their specific purpose and circumstances. The following aspects might be considered:

- **Preamble.** This is a clear statement of why this particular agreement is necessary, and what the origin of the initiative is.
- **Definitions and scope.** Terms used in the agreement are defined.
- **Objectives framework.** The specific objectives are outlined.
- **Parties.** All of the signatories to the agreement are identified.
- **Acknowledgements.** Reference is made to issues that are understood as given, e.g., the international significance of the ecosystem.
- **Guiding principles.** The major political or procedural principles are outlined, e.g., desirability of cooperation, the need for transparency, or the recognition of sovereignty.
- **Points of agreement.** This is the substantive section, which addresses the issues about which the parties have reached consensus and that are recorded in the agreement.
- **Competence.** Each party designates the competent authority to implement the agreement.
- **Delegation of powers.** A mechanism is provided for the delegation of powers to implementing agencies; and the agreement may also assign or delegate specific powers to identified agencies.
- **Working arrangements.** The way in which the agreement is to be put into effect is described.
- **Structures and functions.** The various structures and their functions are identified and their roles and responsibilities described, e.g., steering committee, working groups, coordination structures.
- **Institutions.** Specific institutional structures and the manner in which they will operate are identified, e.g., trusts and foundations.

- **Special provisions.** Reference is made to specific aspects that require elaboration depending on the purpose of the agreement, and the need to spell out specific procedures, e.g., regarding information flow and exchange, environmental impact assessment, protocols during times of conflict.
- **Financial matters.** The manner in which the process will be funded, and the means of receiving and disbursing funds are detailed.
- **Dispute resolution.** The means of addressing and resolving disputes is identified, including any processes of mediation or arbitration.
- **Entry into force and termination.** The specific process whereby an agreement enters into force should be identified, as well as the process whereby the agreement would be terminated, and the method of disposing of assets and liabilities.
- **Limitation of liability.** Depending upon the prevailing domestic or international laws, there may be a need to limit the liability of the parties.

Conclusions on TBNRM Agreements

Agreements are necessary in situations where one party would be unable to achieve a goal without the other's participation. The purpose of an agreement determines the level and type of agreement appropriate to a particular situation. Other conclusions are as follows:

- Transboundary interactions can take many forms, ranging from very informal or traditional relationships among local resource users, to Memorandums of Understanding or international treaties governing resource management programs among countries. To date, there are only a few examples of negotiated agreements of this sort in Africa.
- Negotiating agreements is costly in terms of time and effort; therefore, the purpose(s) should be clear before embarking on this process.
- Agreements can take many forms, adapted to the particular situation and purposes being considered; there is no ideal or blueprint since a variety of stakeholders is involved in each case.
- The initial idea or need for an agreement may be generated at any level and by any party; however, it may quickly require the involvement of a complex set of stakeholders.
- Agreements should:
  - encapsulate the purpose, principles and programs for interaction across boundaries. A number of key aspects should be considered for inclusion;
  - ensure that the parties are clearly identified and that their roles and responsibilities are defined; and
  - be supported by a strong commitment from all parties.
- Agreements can increase the sustainability of outcomes by making the process less dependent on the immediate actions of individuals.
- Depending on scale, an option is to negotiate an enabling agreement or protocol, empowering stakeholders at different levels to negotiate sub-agreements.

- There is no ideal process to reach agreement owing to a variety of circumstances. It is often slow, should depend on the circumstances that prevail and numerous aspects should be considered.
- There is a need for adaptive management—an agreement may start informally and turn, over a number of years, into a more formal agreement.

2.5 Organizational and Individual Capacity

The capacity of individuals, communities, agencies and countries is key for effective implementation of the TBNRM process. Each player needs to have the capacity to undertake its role. Capacity can be described as having the knowledge, skills and abilities needed to fulfill a role. Increasingly access to financial resources and to equipment are also included under capacity. This section is not going to discuss capacity building per se but will focus on how the status of organizational and individual capacity affects performance in the TBNRM process.

2.5.1 Critical Minimum Capacity of National Agencies and Organizations

Experience to date has shown that the levels of capacity of national agencies and organizations is a crucial factor in determining whether TBNRM processes will be successful. Good natural resource management practice comes from strong capacity and plans and programs at national and lower levels within a country. The presence of strong national counterpart agencies in two countries greatly facilitates the progress that can be made in TBNRM because these agencies have an understanding of how NRM works and what the additional areas of focus would be to ensure good TBNRM. The development of the capacity of many communities and national agencies to coordinate community-based natural resource management (CBNRM) projects in Southern Africa bodes well for these players to now engage in TBNRM. In reality, however, many national agencies and organizations in Africa do not have the necessary capacity, and are not therefore in a position to maximize impacts from TBNRM.

At its simplest, if a national organization is extremely weak, it will need to be strengthened to a certain minimum capacity before being able to play a role in TBNRM. Ideally this would be done before the organization becomes involved in the more complex realm of TBNRM. For example, in Eastern Africa GEF-UNDP funded a four-year project that focused on developing national institutional capacities in biodiversity conservation before it developed the current Cross Borders Conservation Project. Agencies, although

not necessarily equal in capacity, were thus poised to work with others both from within and outside the country—and indeed many professional relationships had already been established through shared training in the first project (Rodgers *et al.* 2001b).

In many cases, however, projects try to develop the capacity of the national organizations at the same time as they expect them to engage in TBNRM—and as a result, the often complex TBNRM process is adversely affected when players are not yet able to fulfill their roles completely. This is of particular concern with the current trend in donor funding for TBNRM projects. Donors anticipate that a project's objectives will be achieved. But with the short time frame of many projects and the understandable emphasis on directing the bulk of the effort to building national capacity, many projects will fail to deliver on the transboundary aspects of the process and may well contribute to disillusionment about the efficacy of TBNRM.

If there is a combination of a strong and not so strong partner then there are opportunities for the strong partner to provide support to the other—as for example in the development of the Drakensberg/Maloti TFCA and the Kgalagadi Transfrontier Park (TFP). The challenge in that case was to establish a relationship based on equality between the partners, but for the strong partner to be responsive to requests for technical support and the like when asked. The strong partner had to recognize that the other one might work more slowly at producing deliverables but provided there was openness about reasons for delay and a continued commitment from both sides the process could continue. However, extremely uneven capacity is a constraint for TBNRM. The stronger partner can become frustrated at the failure of the weaker partner to participate fully. In turn, the weaker partner feels threatened and dominated by the stronger partner. Mutual trust and cooperation are hard to foster in these circumstances.

Can weak organizations work together toward TBNRM? This type of situation is the one least likely to be effective. For example in the "W" Park (a park in Benin, Burkina Faso and Niger, so named after the distinct curve of the Niger river that runs through it) the initial collaboration dwindled as the three protected area authorities suffered significant reduction in capacity (Magha *et al.* 2001). However, the case studies have shown that with the help of an outside facilitator (or facilitators) progress can be made—as shown, for example, by the development of the Sangha River Trinational park concept in CAR/Congo/Cameroon instigated by three international conservation NGOs working in projects in each country at the common border site (Steel and Curran 2001). When funds and technical assistance are available for regional components, it is possible to achieve a high level of TBNRM despite constraints in available capacity—for example, in the case of IGCP working to conserve mountain gorillas and their habitat with three protected area agencies of uneven capacities (Lanjouw *et al.* 2001).

2.5.2 Learning by Doing

Besides the need to acknowledge/recognize the importance of a critical minimum level of national capacities for TBNRM processes to proceed, it is important to remember that implementing TBNRM has a major learning component to it. The deeper partners/organizations are involved in TBNRM the better they get at doing it. Those countries participating in TBNRM over a long period of time are the ones that build up their capacity and experiences and are then able to transfer those to new, similar initiatives (Rodgers *et al.* 2001a).

2.5.3 Organizational Space and Establishing Special Institutional Arrangements

The discussion in this section has so far implied that existing organizations are brought into the TBNRM process. It is important to remember, however, that there can be a danger of imposing structures upon people rather than allowing organizations to evolve on the basis of need (Metcalfe 1999) and that the concept of allowing for "organizational space" is important in TBNRM. New organizations may form as a result of the process and these will emerge with varying capacity. The principles discussed above will apply to these new organizations.

The TBNRM process experience has shown the importance of setting up platforms as mechanisms where information and ideas are exchanged in a transparent and participatory way to ensure the appropriate involvement of all relevant stakeholders. These may be informal in the beginning but often evolve into more formal structures later based at varying levels—e.g., from district/local level groups forming committees to the establishment of bilateral/multilateral-level steering committees. In terms of capacity much will be gained through learning by doing—although facilitators may need to invest considerable effort to ensure that these specifically established institutions start off on the right track that furthers the TBNRM process.

2.5.4 The Role of Regional Institutions

Established regional institutions are uniquely placed, if they themselves have the capacity, to play a role in TBNRM. For example SADC has a natural resources management program with three technical coordination units. SADC recognizes that these units have a responsibility to provide clear and concise guidance for the management of the region's natural resources and ecosystems—especially those that are transboundary in character (SADC 1999). [It is acknowledged, however, that they are underresourced,

that there has been some duplication of effort among units and that there is a need for more efficient sharing of lessons within SADC if its role is to be maximized. See Griffin *et al.* (1999) for details.] To cite another example, in 2000 the three countries of East Africa reestablished the East African Community (EAC). While it is still in the early stages there will, under the protocol, be many opportunities for cooperation in environment and natural resource management. Similarly the Intergovernmental Authority on Development (IGAD) working in the Horn of Africa has recently added NRM to its program because of the links between land degradation and food insecurity. (The role of NGOs as regional institutions was discussed in Section 2.3.) The capacities of these institutions will need to grow in order to fulfill a maximal role as TBNRM takes root on the continent. Technical and financial investment in these institutions will be needed if there are to be mechanisms that are truly regional. This is an important area where future donor support should focus.

At this point several training institutions have been established on a regional level. Examples from the wildlife sector include the College of African Wildlife Management at Mweka, Tanzania; the Ecole de Faune at Garoua, Cameroon; and the Southern African Wildlife College in South Africa. Their courses and regional seminars could provide opportunities to integrate TBNRM approaches.

Conclusions on Organizational and Individual Capacity

TBNRM will draw in organizations either with regional mandates or national ones that have to learn to work in partnership with counterpart agencies across borders. Conclusions regarding their capacity are as follows:

- Adequate capacity of all implementers in necessary knowledge, skills and abilities is key for the effective implementation of the TBNRM process, and often depends on the availability of financial resources, equipment and training.
- When adequate capacity does not exist in national organizations it should be built before starting a TBNRM initiative—or expectations of effective implementation should be time adjusted.
- When weak organizations exist on both sides of the boundary an outside facilitator can support the process by providing financial and technical assistance for regional components and building capacity.
- In practical terms "learning by doing" will continue to remain one of the main ways organizations build capacity.
- It is better to work with existing organizations that can evolve their mandate and expertise to include TBNRM, but if this is not possible new organizations may have to be formed.

- Establishing platforms, either formal or informal, provide a mechanism where information and ideas are exchanged in a transparent and participatory way.
- Existing regional institutions are uniquely placed to fulfill a role in TBNRM, but may require technical and financial investments to be effective. This applies also to the regional wildlife colleges in Africa.

2.6 Communication in the TBNRM Process

In any situation where there are multiple players communication is a crucial component and this is most certainly the case in any TBNRM process. Effective communication will need messages to be put across to different target audiences in different ways and be sensitive to cultural differences across borders. It must not be assumed that such complex communication will happen by default, communication plans and approaches must be actively thought about and prepared. While these will be specific to each situation, some broad principles can be cited here.

2.6.1 Getting Buy-In

The first communication challenge in the TBNRM process is getting buy-in, or gaining acceptance from a critical mass of players to get the process started. This is likely to start within a country and then move to the transboundary level, but it is likely to be an iterative process as broader buy-in is sought both within and between countries. How a leader goes about getting buy-in will depend greatly on scale—the magnitude of the issue to be addressed, the extent of collaboration that is going to be needed and the size of the geographical area. Also of importance is the need to identify whom should be approached and whether certain target groups should be given priority. An example in reference to aforementioned three aspects of scale was the Lake Tanganyika Biodiversity Conservation Project. Based on research findings from several countries, GEF was interested in supporting a project to address unsustainable NRM practices in and around Lake Tanganyika. Presentations were made at the ministry level in the four countries within which the lake falls. Once there was clarity at the national level of the need to address the issue through a transboundary approach, a regional meeting (again at the ministry level) was arranged to agree to initiate a regional project. After that the process of getting buy-in from other stakeholders continued at local and national levels.

The importance of gaining clarity as to the need for a transboundary approach to ensure buy-in needs to be stressed. In establishing the Kilimanjaro Heartland project, AWF describes how it hired a senior conservation professional specifically to foster relationships

in support of landscape-level conservation with relevant statutory authorities, land owners and other stakeholder groups. Interestingly, when the first participatory planning meeting was held, several agencies did not attend as they still wanted further clarification about why they should interest themselves in transboundary issues (Muruthi and Frohardt 2001). This illustrates how TBNRM practitioners must allow enough time for this kind of process, which often takes longer than anticipated.

Another important aspect of getting buy-in is being able to demonstrate that information needed for the TBNRM process has been (and will continue to be) collected in a transparent way. And concomitant with this must be the agreement to share information (see below).

2.6.2 Forging a Common Focus across Sectors, within Levels, within Organizations, up and down Levels and across Countries

In sections 3.1 and 3.3.2 the need for a vision and focus for the TBNRM process is highlighted. Developing the common focus is primarily through a good scoping process, followed by a design and planning phase (see Chapter 3)—communication is a crucial tool for this to happen. Any planning process will involve participants who are selected for the constituency they represent. For TBNRM to be successful it is vital that these participants communicate the vision and progress (or lack of it!) on the TBNRM process to their constituents who need to be kept informed and involved.

Developing a common focus is relatively simple if players come from the same sector and speak the same technical language. However, several TBNRM practitioners are looking to mainstream TBNRM in broader regional economic processes (see Chapter 1). This involves the need to communicate across technical sectors and with people who have very different goals—and made all the more complicated by needing to do this across borders. Practitioners need to develop strong communication skills to be convincing proponents of TBNRM.

2.6.3 Sharing Information Widely

Much TBNRM work involves the need for cross-sectoral interaction; participants in the TBNRM process may need to reach out to key target audiences beyond their normal sphere of influence in order to be effective. TBNRM practitioners should always have uppermost in their minds the question—who needs to know this information and who would be the most appropriate individual/agency to share it with? It is worth noting here

that people do not need to have expertise in other sectors—collaboration and willingness are the factors that matter.

Mechanisms need to be set up to share information. The important aspect with respect to TBNRM is how information is shared across boundaries. Players need to be aware that despite the intention to be transparent with information—which should be inherent in any TBNRM process—there may be issues of national sensitivity in some situations.

Mechanisms for sharing can be formal or informal, and they can take advantage of existing mechanisms or specifically establish new approaches. The most obvious approach is to establish regular regional meetings that bring specific players together for the purpose of moving the process forward and that also provide an opportunity for updating and other information exchange. The focus of discussions should be on the transboundary aspects of the TBNRM process. IGCP holds quarterly regional meetings that bring wardens of the gorilla parks, as well as other players, together. At each meeting the next set of activities toward TBNRM are agreed on jointly by all players (Lanjouw *et al.* 2001). However, in many situations regional meetings can be very costly—and as a result need to be well structured to be efficient and effective.

One other method of sharing information is to establish links with counterpart institutions across borders that then work at the national level to promote TBNRM. The Minziro-Sango Bay forest project across the Uganda/Tanzania border, for example, has established Site Steering Committees that discuss TBNRM with counterparts across the border. Each Site Steering Committee then makes a similar report and set of recommendations to its respective district meetings. In this way the TBNRM process is moved forward through national mechanisms (Rodgers *et al.* 2001b).

Feeding information into regional institutions can be another effective way of sharing. Most regional institutions have formal systems of reporting to the countries of the region.

2.6.4 Keeping up a Dialogue

Sometimes aspects of the TBNRM process can get slowed down or delayed. This is not surprising in something so complex. In many cases it may take a long time for the vision to be finally achieved but, provided the key players keep up a dialogue, the process can be resumed at any point along the way. The formation of the Kgalagadi TFP, for instance, took over seven years. The protected area authorities from South Africa and Botswana started collaborating informally in 1948; in 1992 they decided to formalize the arrangement, but it was not until 1999 that they were able to finalize the agreement. During that

period a lot of joint "on the ground" activities were put in place that paved the way to managing the area as a transfrontier park.

Obviously the principle of regular contact should not be followed rigidly if nothing of immediate concern is happening; funds should not be wasted on bringing groups to regional meetings if there is no substantive agenda.

2.6.5 Constraints for Communication

There are, however, many constraints to communication in transboundary contexts. Many of these can be anticipated at the start of the TBNRM process but others will emerge. Examples of constraints that have come out of project case studies include the following:

- Language barriers (although often a local language can be understood at the site level);
- Legality of cross-border radio communications (in many countries it is not legal to communicate across the border for security reasons);
- Lack of hardware (the telephone may not be an option in remote areas or lines may be unreliable; agencies on opposite sides of the border often do not have compatible radio systems);
- Costs of communications (many methods of communication are expensive);
- Scale of the area (in areas such as Central Africa the distance between counterpart agencies may be so great that a huge investment of time and possibly travel expense would be involved in arranging a meeting; and
- Conflict between two countries (several countries in Africa are currently at war and this usually affects direct communication between TBNRM players).

Some of these can be got round quite simply, others may be more difficult: solutions are often costly or need a lot of effort to put in place. Practitioners should try and tackle constraints because good communication is fundamental to the success of TBNRM.

Conclusions on Communication

Good communication is an important component to the success of TBNRM, and a mechanism to get support and understanding of key players. Communication plans and approaches must be actively planned and prepared. Key considerations are as follows:

- A common focus and vision must be forged early on and communicated broadly.
- TBNRM needs transparency—information must be shared widely and dialogue maintained throughout, both internally and across borders.

- Communication requirements need appropriate messages for an array of different target audiences. This may require regular communication with other sectors and disciplines.
- Multiple mechanisms, both formal and informal, exist to communicate.
- Sometimes the TBNRM process gets slowed down or delayed and it is particularly important at those times to keep up the dialogue and to believe in the vision.

2.7 Constraints and Enabling Conditions for TBNRM

TBNRM initiatives do not happen in an isolated ecological context. They are developed and implemented in a broad framework, which includes social, economic, political and institutional aspects as well. Within this broad framework there are both in-country and international aspects that have a direct or indirect impact on the success of transboundary initiatives. While it is not always possible or easy to change or influence this broad framework, it is necessary to be aware of the opportunities, enabling conditions and constraints imposed by it in order to assess the likelihood of achieving TBNRM objectives.

This section reviews common constraints and enabling conditions for TBNRM. Opportunities were outlined in Section 1.3. For the purpose of this review, an enabling condition is a condition that facilitates, supports or is essential for successful TBNRM. Not every factor mentioned below will be relevant in every TBNRM situation. Constraints, enabling conditions and opportunities vary among sites, with scale, and with changes over time. There is frequently a close relationship between constraints and enabling conditions: when a constraint is overcome, an enabling condition is often created. Many of the constraints for TBNRM are the same as constraints to good natural resource management within a country. If the conditions for in-country natural resource management are absent, the situation will generally not be improved by "going transboundary."

Ideally enabling conditions should be in place before starting a TBNRM initiative. However, it would take a long time to create all the necessary enabling conditions, if indeed this were ever feasible. It is important to be pragmatic and start off on an approach where there are feasible opportunities, even if they are limited. Some enabling conditions will be created along the way. Practitioners should be proactive and try to anticipate and tackle constraints before they become severe limiting factors. New avenues should be explored to get around constraints that are not easily resolvable.

The review below draws on earlier sections in this chapter, and on other project documents: Biodiversity Support Program (1999), Griffin *et al.* (1999), Lanjouw *et al.* (2001), Magha *et al.* (2001), Muruthi and Frohardt (2001), Lycklama à Nijeholt *et al.*

(2001), Rodgers *et al.* (2001a), Rodgers *et al.* (2001b), Steel and Curran (2001), and Wilkie *et al.* (2001).

2.7.1 Ecological Context

Constraints

Constraints include intrinsically low productivity and value of the natural resource base, ecosystem services, and biodiversity, which may mean that transboundary collaboration is not worthwhile. While restoration activities are often possible for degraded areas, it can take much time, effort and expense to repair severely damaged habitats and this can constrain TBNRM success. The presence of economically important animal diseases in a region may limit TBNRM collaboration owing to the necessity of control measures (e.g., border veterinary fences that constrain wildlife movement).

Enabling Conditions

- Natural resource base and ecosystems with adequate actual or potential productivity and value to justify collaboration.

2.7.2 Social and Cultural Context

Constraints

Participation of Key Stakeholders

It is important that all key stakeholders participate in the TBNRM process, from the planning stage through implementation (see Section 2.1). However, if the stakeholders have different degrees of empowerment and some are poorly organized there can be serious consequences. Organization in communities is particularly important, in order to be able to negotiate and collaborate effectively with other stakeholders within and among countries. A weakly organized community can become marginalized, and thus neither contributes its existing traditional knowledge fully nor benefits from TBNRM. In particular the private sector has difficulty in working with weakly organized communities, since it usually wants results faster than NGOs and government and does not have time to help communities to build capacity. If these problems exist within a country, it is unlikely that transboundary management will be successful.

Ownership of the TBNRM Process

Who and what drives the process and who facilitates it have a major impact on the success of a TBNRM initiative (see Section 2.2). Initiatives driven only by the interest

of a donor or NGO are likely to be less sustainable than those that build on existing activities and structures. TBNRM imposed from above on the local level is less likely to succeed.

Lack of Trust

Lack of trust among stakeholders is a serious constraint. This includes trust among stakeholders on the same side of the border (e.g., government and communities; communities and private sector; NGOs and government) and among stakeholders across the border. Trust takes time to develop and cannot be rushed. In particular, it takes a long time to develop community trust and participation.

Cultural Heritage and Language

Language barriers may constrain TBNRM. For example, transboundary partner countries with different official languages may have severe communication problems, and incur additional costs for translation and dual language documentation. This occurs on the margins of the Anglophone and Francophone blocks of countries, with all the Lusophone countries and their neighbors, and is a particular problem on the West African coast where English- and French-speaking countries alternate.

The cultural heritage of local communities may become subordinated in the TBNRM process: communities value cultural as well as biological heritage, but other TBNRM stakeholders value the biological or economic side more and may force this at the expense of cultural factors.

Enabling Conditions

- Trust exists or is established among key stakeholders so that they can commit themselves to the process. In order to develop trust the importance of transparency and accountability in the process, as well as reciprocity and equity, must be recognized. It takes time to build trust.
- All key stakeholders participate in an equitable way in the process, starting with the design phase.
- Any current and/or potential conflicts among stakeholders are not so great that they prohibit TBNRM.
- Tenure and user rights are devolved adequately to communities (see Section 2.7.4).
- Key actors are empowered so that they can fulfill their roles in TBNRM, gain appropriate benefits and have adequate incentives.
- Common history, ethnic grouping, language and traditional resource management systems across a border can greatly enhance the likelihood of success at local level.

2.7.3 Economic-Financial Context

Constraints

High Costs Relative to Benefits

Transaction costs for TBNRM initiatives are often high. The benefits should be greater than the costs in order to justify working across borders. The net benefits of transboundary collaboration also should be greater than the net benefits of working separately at country level. While initial activities and start-up costs may need to be financed by external sources, longer-term sustainability depends on the bottom line: do the benefits outweigh the costs?

Costs and benefits should be analyzed before embarking on TBNRM projects. It is necessary to identify all costs and benefits, not only those that can be easily quantified in financial terms. It is important to review indirect use values such as ecosystem services, and nonmaterial values such as cultural, scientific and intrinsic values. It is also important to look at the distribution of costs and benefits across the range of stakeholders, on both sides of the border. Inequitable distribution of benefits is a major constraint to the success of initiatives.

Unfortunately this type of comprehensive economic analysis is difficult. Natural resource economists are still developing tools and techniques that can assist in the process. There is an urgent need to adapt existing valuation techniques to TBNRM situations, developing a valuation system that stakeholders can participate in and understand, and where linkages among resource production, ecological services and different types of economic benefits are understood.

More specific economic and financial constraints are listed below.

Economic Development

Differences in stage of development among neighboring countries can result in corresponding differences in priorities for TBNRM objectives, which may not always be compatible. Countries with more highly developed economies (e.g., South Africa and Nigeria) may overshadow their neighbors and make collaboration difficult. Similarly, differences in economic powers of individual stakeholders may cause difficulties.

TBNRM programs often have limited economic opportunities. Some rely on tourism to promote economic development and sustainability of the venture (to date this is more the case in Southern Africa than in the other regions). However, heavy reliance on tourism alone creates a very narrow economic base for TBNRM. The tourism industry is fickle and risks impacts of changing fashions, regional and global economic recessions, and

insecurity anywhere in the region. Safari hunting tends to be less affected by insecurity than photographic tourism. Even so, a broad economic base is desirable.

Private Sector Investment

Private sector partnerships and investment are an essential part of many TBNRM programs. However, conditions in many African countries are not very conducive to investment. Constraints include the following:

- An unstable economic environment—for example, high inflation rates and risk of foreign exchange rate fluctuations;
- Restrictive financial environment—for example, restrictions on capital flows for investment and repatriation of profits; and
- Restriction in access to land—in many African countries, for example, there is no freehold land and tenure of leasehold land by the private sector may not be very secure.

Trade

Trade can be an important part of TBNRM. However, there are many restrictions and disparities that have a range of effects on the viability of TBNRM. They include the following:

- National financial policies that impose barriers to free trade or subsidize land-use practices that are inimical to sustainable natural resource management;
- Market distortions may be caused by outside forces: for example, the European beef market competes with West African producers to supply coastal countries in West Africa. The coming of globalization and promotion of free trade policies may enhance this; and
- Disparities in tariffs, taxes and prices among countries, which create opportunities for smuggling and re-exportation of natural resources.

Donor Funding

Constraints to donor funding include the following:

- Donor time frames are typically three to five years, which is not long enough for a complex TBNRM project to develop long-term sustainability;
- Funding for regional projects is not always available from bilateral and multilateral donors, which prefer to fund nationally (though there are exceptions, e.g., USAID);
- Donors may cease funding if political differences develop between donor and recipient country or if there is insecurity in one or more of the TBNRM countries (e.g., DRC funding was lost in Virungas); and
- There is a risk that funding is diverted from national-level NRM activities to TBNRM rather than being funded incrementally; such a reallocation does not take into account the fact that national-level activities are still essential, and are a base for TBNRM.

Enabling Conditions

- The benefits of TBNRM are greater than the costs.
- National financial policies are supportive of TBNRM initiatives and approaches—or at least, they do not impose constraints.
- The status of the overall economy is appealing to investors.
- Benefits occur on both sides of the border, are shared equitably, and the people living with the natural resources have incentives to manage them sustainably.
- Resources are available to start up the initiative and long-term sustainability is built into the planning (especially if externally funded).
- There is a flexible and multiple-source funding base.
- Economic opportunities exist and are recognized; there is a clear link among local benefits and the costs (e.g., in the case of Virungas, link among ecological services and forest conservation; tourism revenues and gorilla conservation).

2.7.4 Political and Policy Context

Constraints

Inadequate Political Will

Insufficient political commitment to transboundary initiatives—at local, national or regional levels—can impose major constraints to TBNRM success. The importance of trying to find win-win situations among stakeholders cannot be overstressed, but in some cases it just is not possible. There may be other agendas and vested interests, for example, in favor of other land uses. Corruption may preclude the transparency, openness, devolution of power and equitable benefit sharing that are necessary for successful TBNRM. In this case improved internal governance may be a necessary precondition before TBNRM can work.

National Sovereignty and Security

Issues of national sovereignty and security can be constraints to TBNRM. These include actual or perceived dominance by one country over another (perhaps in terms of size, financial means and the like); concern about losing control of sovereign territory; and security risks (including the risk of animal diseases spreading across borders). If governments are uneasy about TBNRM collaboration because of security or sovereignty issues, higher levels of government may insist on being involved. However, the fact that diplomats and officials at higher levels of government place high priority on the resolution of transboundary security issues may sometimes open doors and opportunities for TBNRM to hasten the process and increase the chances for success (Dorothy Zbicz, pers. comm.).

Insecurity and unrest pose extra challenges for TBNRM. If a government is not in control of areas near its country's borders and there is a breakdown of social, economic, political and administrative structures, there may be nobody for a neighboring country to collaborate with at the local or national level. TBNRM collaboration is likely to be very low on the list of the beleaguered government's priorities. There are also risks to the neighboring country. Control of shared natural resources may collapse, and illegal exploitation may damage the resource base. Problems may spread across the border: illegal extraction may occur on the peaceful side; refugees may cross the border and cause impacts; armed insurgents may cause instability; and animal diseases and invasive species may spread from one country to others owing to breakdown of controls.

Collaboration during times of instability is not impossible (as has been very ably demonstrated by the continued TBNRM collaboration in the Virungas despite 10 years of insecurity). There are even opportunities for transboundary collaboration to mitigate the impacts of conflict (see Shambaugh *et al.* 2001), such as exchange of information, joint monitoring and control of resource extraction.

Poor International Political Relations

Poor diplomatic relations among countries can inhibit TBNRM, particularly larger-scale initiatives. It may not matter so much in smaller, less formal initiatives (as the Virungas case demonstrates so well), but it can be a constraint to formalizing the collaboration and increasing the range of possible benefits from it.

Devolution, Decentralization and Empowerment

As for NRM within a country, TBNRM can be constrained if devolution of control over land and resource use is inadequate for those at lower levels to play their roles effectively. In particular, local communities must have adequate empowerment and incentives for long-term participation. TBNRM at a formal scale tends to increase the involvement of upper government levels (e.g., the line ministry in each country and sometimes multiple government ministries). There is a risk that these levels will exert influence and control that is not in the best interests of local communities or private landowners. Other groups such as private sector, NGOs and donors may also drive the TBNRM agenda in a way that conflicts with local interests. The situation is often complicated by the existence of a dual tenure system (state and traditional), sometimes with lack of clarity over their juxtaposition. In addition to community empowerment, it is important for central government to devolve adequate power to local government in order for it to undertake transboundary collaboration. Buy-in of private landowners to the transboundary process is also necessary, and national-level agendas do not always take this fully into account.

Equity across Borders

Equity issues across borders may limit the success of TBNRM unless they are resolved. Benefits have to be shared, and perceived inequities may seriously constrain collaboration to manage shared resources. Types of benefit-sharing arrangements include establishment and implementation of quotas for harvesting of shared resources and revenue sharing (as found in, for example, the Kgalagadi Transfrontier Park).

Lack of Enabling Policies and Legislation

Inadequate policies and legislation to support sustainable natural resource management, as well as policy and legal inconsistencies among countries, can severely limit the effectiveness of collaboration. Examples include situations where tenure and user rights have not been devolved to local authorities or users, or where regional planning initiatives have not incorporated NRM adequately. Sometimes these problems have their origins in the legacies of colonial legislation. Policies may also promote perverse incentives, e.g., land uses in marginal areas that are not compatible with TBNRM. National legislation rarely makes provision for TBNRM (although South Africa is an exception).

Inadequate Application of Policies and Legislation

If laws are not applied equally to all stakeholders then one group may become too powerful and influence the TBNRM process to its own advantage.

Inadequate Role of Regional Organizations and Agreements

There is a wide range of regional organizations, protocols and economic agreements that could help to promote TBNRM. A few appear to be having positive effects, though judging by the case studies and regional TBNRM reviews of this project, impacts in general have been limited so far. Many of them have no strong powers and rely on countries to collaborate voluntarily, rather than playing a strong enforcing role to ensure implementation of regional policies. Regional institutions are often under-resourced, have poor coordinating structures, are in some cases bureaucratic, and are divided by sector (e.g., SADC)—with consequent challenges in coordinating a multisectoral approach TBNRM requires. However, they do have the potential to play a very significant role in the future, if the right conditions are found.

Inadequate Border Crossings

In cases involving neighboring countries, new border crossings are often required to promote TBNRM and to enable transboundary processes such as tourism development and sustainable trade of natural resources. However, many countries have concerns about illegal immigrants, rebel movements and smuggling. These constraints may be too great in many cases to permit more permeable borders for legitimate TBNRM activities.

Enabling Conditions

- Strong political will and commitment to transboundary collaboration.
- Policies and legislation supporting sustainable natural resource management in place in neighboring countries and at a minimum non-conflicting, and preferably harmonized laws (it is an advantage if the neighboring countries have similar legal systems).
- Independent and effective judiciary in each country, which applies laws to all citizens, private sector, government officials and departments.
- Transparent and democratic policy and law-making process representing the majority.
- Political stability and security.
- Support as needed by national-level stakeholders to local-level stakeholders.
- Strong regional integration.
- Regional protocols and economic agreements in place that can provide a framework for collaboration—e.g., SADC, East African Community, Yaounde Process/ CEFDHAC, Club du Sahel.
- Integrated land-use plans on both sides of the border that cover multiple land uses and objectives without significant conflict or ambiguity among different land users within a country.
- Compatible land-use plans for neighboring countries.

2.7.5 Institutional Context

Constraints

Capacity

Weak capacity on both sides of the border to manage natural resources will not result in good TBNRM. Uneven capacity, with only one partner having high capacity, is likely to limit success, affecting the project's ability to make lasting partnerships. This refers to both individual and organizational capacity—the latter referring to government institutions, NGOs and civil society. Finally, the lack of a process for transboundary planning or coordination can challenge people's potential to contribute significantly to TBNRM. (See Sections 3.3 and 3.4 for more information.) Capacity can be limited by financial, equipment, personnel and skills needs.

Organizational Mandates

In some cases, organizations may be well placed to play a transboundary role, but lack the mandate to do so. This is often the case particularly in government, where roles tend to be highly compartmentalized. It is much easier for the private sector and NGOs to play flexible roles. Governments through their bureaucratic colonial inheritance

compartmentalize resources in different government departments (e.g., for forestry, wildlife, water or agriculture), so that individual departments have mandates for only a single resource. This is sometimes aggravated by funding agencies that have their own sectoral approaches. Similarly, land is often designated for single land uses. Communication and collaboration among government departments is often limited. Yet sustainable development, integrating economic development with sound natural resource use and ecosystem management, requires an integrated approach, working across existing land-use boundaries. TBNRM on a large scale requires coordinated multisectoral government inputs. If these are not forthcoming from within a country, there is a risk that TBNRM will revert to single-sector management structures that are too weak to exert any influence except in their own jurisdiction.

Information and Communication

One of the basic requirements for TBNRM is an efficient information gathering and sharing system. This forms the basis of TBNRM planning, implementation and monitoring. Capacity to collect priority information is often limited, owing to lack of resources. Even if countries have reliable information, they may not be willing to share it, especially on crucial issues such as water.

Similarly the high cost and time for travel and electronic communication within Africa is a severe limitation to TBNRM. Key stakeholders often have limited access to means of communication. The resources required by organizations to communicate adequately with communities to ensure that they are fully involved are often not available.

Enabling Conditions

- Existence of well-established partners in each country, with compatible missions and experience of cross-sectoral collaboration.
- Strong (or reasonably robust) and balanced capacity among institutions, or an agreed mechanism to develop it.
- Resources available to invest in capacity building and the transboundary process.
- Long-term commitment of the organizations involved, and motivated staff.
- Well-designed transboundary planning and coordination process.
- Networks in place for collecting and sharing information.
- Existence of organizations/individuals to play supporting roles.
- Good national-level NRM including appropriate structures and systems as a basis for TBNRM.

Conclusions on Constraints and Enabling Conditions for TBNRM

- Constraints and enabling conditions are unique to each TBNRM situation, and often cover a wide range of ecological, social, cultural, economic, financial, political, policy and institutional factors.
- It is very important to understand and analyze constraints and enabling conditions for TBNRM in order to review which constraints are the main limiting factors, assess whether it is practical to tackle them, or to choose another course of action.
- It is impractical to try to create all enabling conditions before embarking on TBNRM; it is more realistic to start small on activities that can be done easily, and work to overcome constraints and create enabling conditions along the way.

3

The TBNRM Process

The TBNRM Process

This chapter outlines how to decide whether it is worthwhile to embark on a TBNRM initiative, by scoping and analyzing the situation. In the event that it is worth going transboundary, the chapter helps to review which activities should be managed collaboratively across the border, and which ones should continue internally. The chapter then covers transboundary vision and planning. Finally it deals with monitoring and evaluation to enable learning from successes and failures, and adaptive management. The whole process is illustrated in the TBNRM cycle. This chapter has been written to address the very real need to be cautious in undertaking TBNRM programs. In particular there is an enormous investment of time, commitment and money involved, and those promoting or undertaking initiatives should not do so lightly.

How to Use This Chapter

People considering embarking on a TBNRM initiative should focus on Sections 3.1 and 3.2.

People currently involved in an initiative and wishing to review critically whether or not to continue should focus on Sections 3.1, 3.2.2 and 3.4.

People currently involved in an initiative who feel that their program needs to be more focused should concentrate on Sections 3.1, 3.3 and 3.4.

Sections of this chapter will be more useful to some readers than others, and it is suggested that each reader scan the headings and determine which aspects to use. In writing the chapter, the authors were well aware that any TBNRM initiative would have some value even if the rationale for embarking upon it happened to be weak. It proved to be far more difficult, however, to identify a clear-cut case where TBNRM should not have been promoted at all, especially without undermining an existing situation and the countries and agencies involved. Bearing in mind this sensitivity, only a hypothetical case has been used to illustrate when not to choose a transboundary approach. Readers should take a highly critical approach to the appraisal and analysis of any proposed or current initiative using the guidance given in this chapter, and ensure that the rationale for proceeding is sound.

3.1 Process Overview

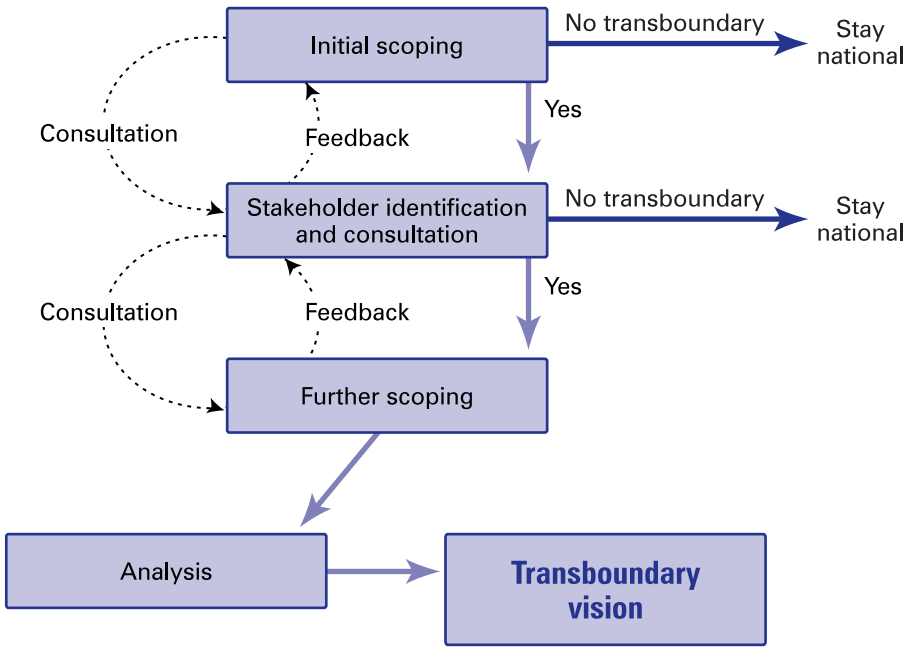
The first step in the TBNRM process involves weighing whether a transboundary approach is the most appropriate way to achieve the objectives; and if so, which activities should be handled through TBNRM and which ones internally. Section 3.2 outlines a two-stage method to address these questions. First, scoping identifies the main issues, before committing more resources to the second stage of detailed analysis (see Figure 3.1). The methodology is applicable to initiatives that span the whole TBNRM continuum.

For situations where it is worthwhile going transboundary, a TBNRM cycle has been developed (see Figure 3.2). This has been adapted from an iterative project cycle (Margoluis and Salafsky 1998). Once a decision has been made to choose the transboundary approach, a joint vision should be developed and agreed upon. Next, transboundary management and monitoring plans should be developed. These plans provide the basis for TBNRM implementation, and for monitoring and evaluation in order to adapt and learn. Developing and implementing TBNRM initiatives should be an iterative process with frequent review and adaptation—that is, repeatedly going through a series of steps in the process, thereby revisiting the cycle numerous times as outlined at the bottom of Figure 3.2. This should be undertaken in close collaboration with multiple partners in-country and across the border.

3.2 Making Choices and Determining the Relevant Issues for Transboundary Initiatives

In this section, the crucial question of whether to initiate, promote or support a transboundary initiative will be examined, and guidance will be provided on how to undertake such an appraisal. In deciding whether to embark upon TBNRM two questions must

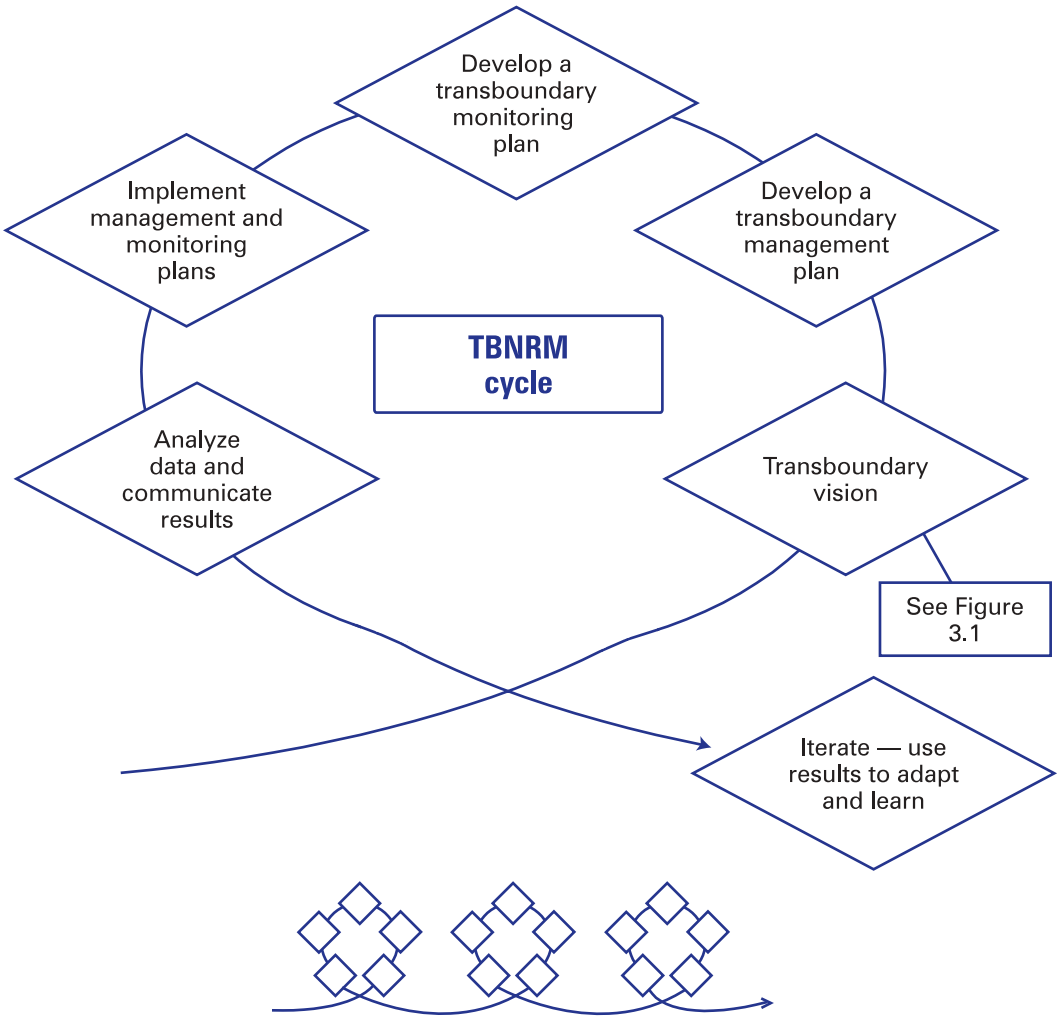
FIGURE 3.1 — DEVELOPMENT OF A TRANSBOUNDARY VISION



be answered—whether or not there is a need for a transboundary program and secondly, which issues demand a transboundary approach and which are capable of being addressed within each country. In a preliminary appraisal of the issues (Section 3.2.1), the commonly used approach to environmental impact assessment called "scoping" is described. During scoping, the objective is to understand the main issues or "scope" of the evaluation. Before committing large resources to detailed analysis, it is often much simpler to test the water and judge the need for a more in-depth probe of the issues—reducing the risk of wasting time and money if the answer comes up that there is good reason not to go ahead. If scoping turns up some important issues, it would then be justified to undertake a more detailed analysis.

A suggested method for undertaking this more detailed analysis is described in Section 3.2.2, and project case studies from transboundary situations in Africa are used to illustrate the analysis in Annex 2. In particular, the case studies illustrate those issues that demand a transboundary approach, and those that can be addressed nationally. The purpose is to refine the understanding of a transboundary situation and avoid the unnecessary expense and complication of attempting to address all issues through transboundary cooperation. The method is applicable to initiatives that span the whole continuum of

FIGURE 3.2 — TBNRM CYCLE

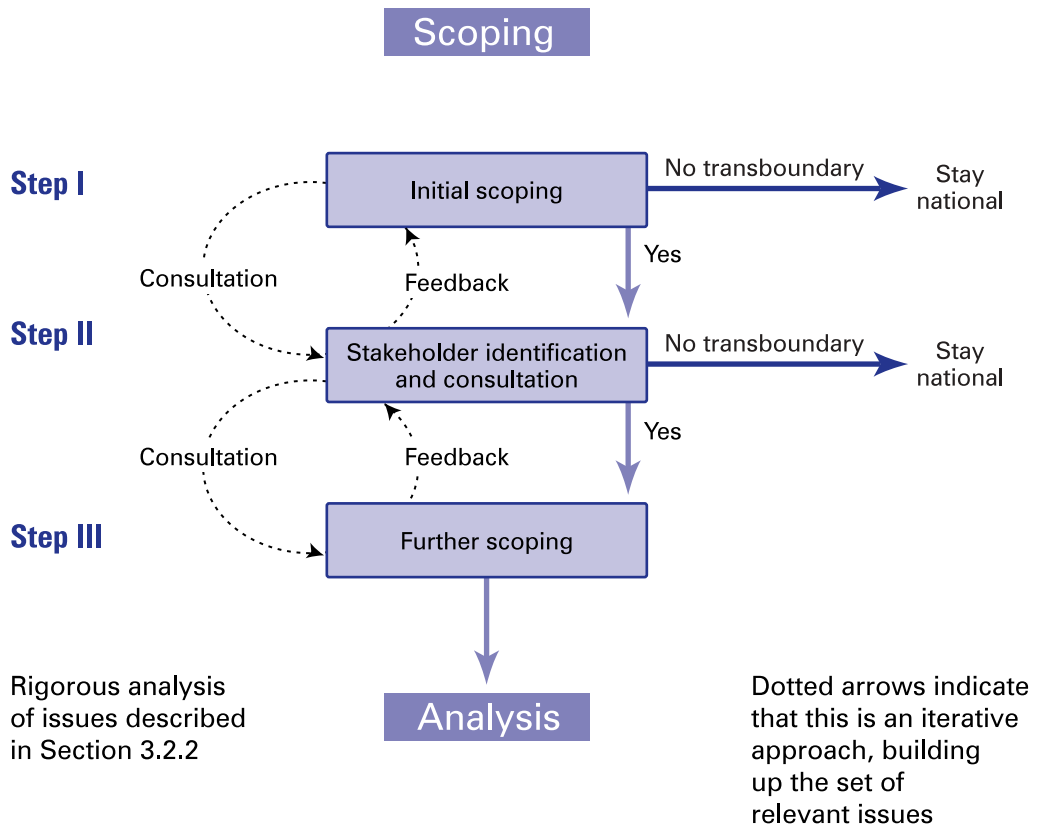


[Adapted from Margoluis and Salafsky (1998) to the context of TBNRM]

transboundary situations—from establishing transboundary protected areas (TBPAs) to integrating NRM and biological diversity conservation objectives into larger regional economic development plans and activities.

In some cases, an initiative or project may already be underway, without the necessary scoping, analysis or reflection on the issues having been accomplished. Scoping and analysis can be used in these situations to review the existing transboundary program, and perhaps to focus it for greater effectiveness and efficiency.

FIGURE 3.3 — THE PROCESS OF SCOPING AND ANALYSIS



A step-wise approach to appraisal is presented, as represented in Figure 3.3. It deals with Scoping and Analysis, and will be described more fully in the sections which follow.

3.2.1 Scoping—A Preliminary Appraisal of the Issues

Scoping is a term that is used extensively in the Environmental Impact Assessment (EIA) literature. It refers to the identification of all those factors that must be considered when making a decision regarding the merits of a particular project. It also helps to identify which factors are so large (magnitude), important (significance), or long-lasting (duration) that they merit in-depth investigation.

The most visible TBNRM programs are large-scale, long-term programs with significant impacts, and therefore fall into a class of programs deserving intensive scrutiny before they are implemented, or even initiated. This enables those embarking on such a

program to have their eyes wide open regarding the expected or unexpected outcomes. Further, TBNRM programs involve the integration of perspectives from several disciplines. Biophysical, social, economic, political and cultural aspects must be considered together in an interdisciplinary manner. Decision making, likewise, is complex, as it involves multiple criteria and an analysis of trade-offs among competing objectives. To further illustrate the complexity in some cases, TBNRM programs are developing as major thrusts of regional economic development, and may be motivated by factors far removed from the relatively simple concept of cooperation for better coordinated transboundary protected areas, or even for biodiversity conservation in a transboundary natural resources context.

The complexity of TBNRM makes it imperative for stakeholders to undertake a very clear appraisal of the opportunities and risks of embarking on such a program. Naturally the rewards can also be significant, and an emphasis on complexity is not meant to deter the proponents of a transboundary initiative, but to argue for an appropriate level of caution. One approach to dealing with this complexity is to break it down into manageable pieces, but without losing the interdisciplinary focus, which is crucial to our understanding. It is therefore recommended that scoping be undertaken by including the steps outlined below. It should, however, be noted that this is an iterative process, i.e., each step results in slightly more information being provided, until all of the issues have been identified in sufficient detail for decision making. If it is clear at an early stage that there is no clear rationale for a transboundary program, then further scoping is unnecessary.

The following steps should be included in a preliminary, iterative scoping exercise:

Step I: An initial scoping of the important natural resource issues, conducted by the relevant government department, nature conservation agency, NGO, district council, etc. At the end of this step, it should be possible to list likely transboundary issues pertaining to natural resource management. If none have been identified, it may not be necessary to continue any further.

Step II: The identification of stakeholders followed by exploratory meetings to discuss the issues identified in Step I with key actors and to broaden the initial scoping beyond the natural resource issues. Any new transboundary issues should be listed.

Step III: A further, more detailed scoping where the identified likely transboundary issues are explored to determine whether they are significant or not. The purpose of this step is to make a clear distinction among those activities that require a transboundary approach, those where a simple exchange of information would suffice, and those that should rather be implemented at a national level.

In Section 3.2.2, a more rigorous method is presented for analyzing the transboundary management implications of issues raised in scoping. Scoping and analysis is not necessarily a linear progression. In some cases it is iterative, going back and forth between issues and stakeholders. At any point, it may be preferred to apply more rigor—therefore the possibility of applying the method described in Section 3.2.2, even if just for a few key issues, should be considered. For the purposes of simplicity, the following sections are concerned only with identifying the issues, i.e., scoping.

A good starting point is to focus initially on specific natural resources or biodiversity objectives of the possible management program. The reason for this is that natural resources are the ultimate source of economic value, and sustaining natural resources is a primary goal of natural resource management. Once the proposed program has been screened for its suitability on the natural resource/biodiversity criteria, other linked factors relating to the social, economic and political environments can receive greater attention. It should be noted that it is never the intention to separate these factors in either scoping or analysis as they represent different facets of a single complex situation.

Step I: Initial Scoping

In Step I, it is important to determine whether there is a biological basis for a TBNRM program, before introducing the complexity of additional factors. Any candidate TBNRM area will contain natural resources or components of biodiversity. The respective managers or users of the adjacent areas will have objectives for their management or use, whether or not these are explicit. For example, the managers of the area in one of the countries may recognize that there is an important population of plants or animals that must be protected in the national or even international interest. Alternatively, the users of an area may recognize the productivity of an ecosystem component, e.g., sedges growing in a wetland, and their need to use these plants for making traditional sleeping mats. There are two components of Step I to consider, namely: identifying the important natural resources and determining whether there is any spatial or ecosystem relationship regarding the identified management objectives that is transboundary in nature. These considerations can be used to formulate management objectives for the area and its resources.

The initial scoping must therefore identify the important resources in an area. If these are already known, this may be a relatively easy step. If the resources are completely unknown, it will be necessary to first undertake an analysis of the resources that are present.

The second part of Step I is to determine whether there is any spatial or ecosystem relationship regarding the identified management objectives that is transboundary in nature. For example, a population of elephants on one side of the border may periodically

use a wetland area on the other side of the border. If the wetland was not accessible during a period of below-average rainfall in the region, then the elephant population might be forced into a bottleneck of resources at a critical time, and this could lead to their decline or possibly even extermination. The resource on one side of the border is therefore dependent upon the persistence of the resource on the other side, and there is a clear argument to consider a transboundary program.

Example 1: "W" Park

The "W" Park complex is made up of three adjoining protected areas in Benin, Burkina Faso and Niger with the Niger River as the eastern boundary. The river's course there forms a large *W* shape, giving the area its name. The elephant population would previously have been fairly evenly distributed in their natural habitat shared among the three countries. In response to human pressure, and its effects on habitat quality in Benin and Burkina Faso, the elephants have become concentrated in the Niger section, and this has implications for habitat management, as well as the relative opportunities for tourism in each country. This is clearly a case where the objectives for managing elephant populations in one country are being impacted by the policies and management regimes of the others. From a biodiversity perspective, there is a key transboundary biological process in operation, which must be taken into account in management; e.g., a harmonized policy and management regime may be required.

The protected areas in the "W" Park complex share riverine systems. In Burkina Faso, there has been a recognition of community rights to seasonal fishing. In strong contrast, the authorities in Niger do not allow any fishing. At the local community level, this has resulted in inequitable access to natural resources and conflict among users. Managers also find it difficult to apply laws that appear contradictory, and the application of different rules makes nonsense of any attempt to regulate use in a shared ecosystem by focusing only on one group of users. These contrasting policies affect other resources as well, which confound attempts to manage the interlinked system compatibly. This situation indicates the need to investigate the possibilities for harmonizing relevant policies and legislation.

Example 2: The Maloti-Drakensberg mountains of Southern Africa

In the Maloti-Drakensberg mountains of Southern Africa, a high-altitude globally significant ecosystem is shared by the Kingdom of Lesotho and South Africa, and within South Africa by three adjacent provinces, each with exclusive legislative and executive competence for natural resource management matters. The ecosystem consists of grasslands, shrublands and wetlands with approximately 30 percent plant endemism. The diversity of slope, aspect and moisture regime across the watershed creates the diversity of habitat units across the international boundary.

Fire and grazing are major disturbance factors and determinants of ecosystem composition and structure. The disturbance regime, i.e., fire and grazing cannot be controlled

unilaterally by any one of the countries concerned. Pastoralists set fires to improve grazing for their livestock, and the high winds coupled with the remoteness of the area mean that fires rapidly spread through the mountain ecosystem. People who traverse the border illegally transporting stolen livestock and drugs also set fires to distract the management authorities or to destroy property. Fires set in South Africa can destroy grazing resources and threaten villages and infrastructure in Lesotho and vice versa, particularly in the dry winter months. Frequent and out-of-season burning markedly affects the structure and composition of the vegetation—hence the persistence of important species and other components of biodiversity.

The only possibility for regulating this situation is to foster a cooperative fire management program, with shared understanding of the ecological impacts of fire, and practical day-to-day cooperation to establish firebreaks, undertake prescribed burns, and to jointly attempt to control illegal transboundary movement. Consequently there is a strong rationale for a transboundary approach to be adopted for the achievement of biodiversity conservation objectives.

Example 3: The Virunga/Bwindi mountain gorilla population in Central Africa

A high profile example of transboundary biological interdependence is provided by the highly threatened mountain gorillas in the afromontane forests shared by Uganda, Rwanda and the Democratic Republic of the Congo. Occurring in relict forests, the total population is relatively small in terms of maintaining genetic diversity, and groups of gorillas range freely across the national boundaries. It could be argued that if there were sufficient capacity to manage the forests in each country effectively and in a compatible way, a transboundary program might not be necessary. This is not the case, however, and the striking disparities in management capacity, and the absence of political stability is driving transboundary impacts throughout the area. The only hope of sustaining these populations is to take a transboundary view of the situation, and to attempt to facilitate compatible management and monitoring programs across the national boundaries.

Example 4: A Central African forest straddling the borders of two countries

Consider, for a moment, the hypothetical example of a large tropical forest (e.g., the size of France) that extends across the boundary between two countries. At one level, it is clear that the two sections of forest form a greater whole, and would benefit from compatible management. However, based on our knowledge of tropical forest ecosystems, and the sheer extent of the forest in each country, it can be assumed that the forest forms a complete ecosystem in each country. There may be a functional relationship between the forests in the transboundary zone, but this is probably minor and does not have management implications. In this case, there does not appear to be any rationale to support any site-level transboundary conservation program. National activities in each country would appear to be sufficient to manage the ecosystems in each country.

In conclusion, it is clear that a crucial step in determining whether or not to embark on a transboundary program is to establish whether there is any natural resource or biodiversity basis for this. If there is a clearly identified need, then it would make sense to address only this focal issue in a transboundary program. Other issues can be dealt with at a national level.

Step II: Initial Stakeholder Analysis and Consultation

If a biological rationale for TBNRM has been established in Step I, then it is appropriate to begin to identify and involve a wider range of stakeholders and their views. This would expand the preliminary assessment, and introduce some of the social, economic, institutional and political perspectives. First, it is necessary to identify stakeholders who should be consulted (see section 2.1), and thereafter to interact with stakeholders. It is in this stage that the interests or "stake" of the stakeholders may become apparent, and every attempt should be made to encourage the frank and open sharing of perspectives and to keep the agenda as open as possible. In particular, if socioeconomic issues have not emerged in Step I, they will quickly become apparent here, as people will be wondering, "What's in it for me?"

It is also important not to raise expectations in Step II. A series of meetings with key stakeholders is simply an opportunity to inform, be informed and to explore, and is a key aspect of any scoping exercise. Stakeholder consultation is always a risky endeavor, as the wider the range of people and groups that are involved, the greater the diversity of opinions and perspectives that emerge. Consultation is an ever-changing engagement of people and issues, which may lead to consensus, conflict or new ideas, and most often to all of these in some degree. It is most important that any proposal that is likely to result in impacts, whether positive or negative, be thoroughly discussed with all the stakeholders. It is common for this process to generate a wealth of new ideas that the original proponents did not identify, which can strengthen a complex proposal. This step usually also results in new stakeholders becoming participants in the process, and this is generally one of the objectives of TBNRM. To be effective, this process of engagement with stakeholders must be initiated early in the process, before any irreversible decisions are made. If this is not done, conflicts may emerge later on that are more difficult to deal with. Also, stakeholders may conclude that they are being co-opted into a process over which they cannot exert any significant influence, which does not lead to an open, transparent and trusting relationship.

The initial stakeholder consultation will identify in more detail who is involved or affected by the natural resources and their management, and the degree to which their concerns and perspectives are central to the program objectives. It also enables project proponents to communicate their ideas, and to solicit a response. In general, four groups of stakeholders need to be considered [after Fowkes (1999); see also Section 2.1 above].

In the four examples mentioned under Step I above, it is possible to discern the possible categories of stakeholders and their interests in the transboundary initiative as follows (Table 3.1). It is important to realize that stakeholders can play different roles at different stages, and for different issues, and so they should not be regarded as locked in to a particular category.

(i) In the case of "W" Park, the protected area authorities, governments and local communities are primary stakeholders. The nature of the resource use and the rights to resources will immediately identify powerful user groups whose interests in the area

TABLE 3.1 TRANSBOUNDARY STAKEHOLDERS

Example	Influence and inherit the result	Interact	Give input	Be informed
"W" Park	• Protected area agencies • Government ministries • Local communities	• Fishers • Herders • Farmers • Neighboring communities	• Donor organizations • International NGOs • International conventions	• General public
Maloti-Drakensberg	• Nature conservation agencies • Government departments • World Heritage Authority • Statutory local boards • Community conservation forums • Pastoralists	• Local communities • Tourism association • Traditional authorities • Community trust	• Regional councils • Environmental NGOs • Recreational users • Harvesters • Funding agencies	• General public
Virunga/ Bwindi	• Protected area agencies • Local communities • Tourism entrepreneurs	• Neighboring communities • IGCP • Security forces • Rebels • Refugees • Conservation Trust • Humanitarian agencies • Tourism departments	• District-level government • International NGOs • National conservation and research institutions • Development agencies • Donors	• General public

may be diametrically different from the authorities, e.g., in the case of the control of fishing by the authorities. Similarly, the differing policies and degree of application in the field that have resulted in uneven distribution of elephants has had impacts on communities living in and adjacent to the protected areas, and communities who are negatively affected have strong views on the control of elephant populations.

(ii) The Maloti-Drakensberg example further emphasizes these linkages. The pastoralists using the high-altitude grasslands, traditionally in the summer, have begun to make more perennial use of the area as human populations have grown and lower-altitude resources have degraded. The unseasonal burning of grasslands has been introduced in an attempt to improve the palatability of the grasslands for livestock, and animals have been left to graze on the fragile alpine wetlands all year round. Biodiversity goals and human survival goals are on a collision course in this scenario, even despite the common understanding that these unsustainable practices are deleterious for humans as well as the resource. At least with consultation, the real issues can be put on the discussion table, since without consensus, there is unlikely to be any really effective means of addressing the problem in the short term.

(iii) In the Virunga/Bwindi example, despite laws that establish protected areas, the management reality is often of neighboring communities directly using park resources. In the kind of conflict that has engulfed this region, there is a strong involvement by the security forces, humanitarian and development agencies, international NGOs, and displaced communities that have flooded into the area. There are also informal groups such as rebels; these groups can markedly influence the situation, but are not necessarily inheritors of the result.

(iv) In the hypothetical forest example, the resource managers would be primary stakeholders. In this case there might also be resource users whose use of the forest must be taken into account. However, there may be no interaction between resource users across the international boundary, and hence no issue affecting stakeholders that would provide a rationale for transboundary cooperation. At the end of Step II, in this example, there would be no point in pursuing scoping any further, as no likely significant transboundary issues would have been identified.

The purpose of this explanation is to suggest at an early stage that there are other key issues apart from natural resource and biodiversity objectives that must be taken into account. In addition to the primary ecological issues generated by scoping, the identification of stakeholders and their concerns will raise new concerns that cut across social, cultural, economic and political dimensions. Issues, including threats and opportunities, that are likely to involve transboundary implications should be analyzed further in Step III. If there are none, the proposed initiative should not be pursued further.

Step III: Further Scoping

In many cases, although an issue may have been identified in Steps I and II, no detail will have been provided that can be taken into a detailed analysis. The purpose of Step III is to conduct such further information gathering as will enable the merits of a transboundary initiative to be determined, and especially to answer the question of which issues require a transboundary approach.

For example, Steps I and II may have identified the prospects for a world-class tourism destination if two countries work together to promote the use of a transboundary wildlife resource for tourism. It is unlikely, however, that there will be any insight into the tourism issues beyond this simple identification. In Step III, further scoping would entail a rapid literature scan and sufficient consultation with tourism stakeholders to determine the availability of information. The insights gained would help to determine whether the opportunity is really significant, and whether it is truly necessary to consider it as a transboundary concept.

Conclusions on Scoping

Scoping enables those involved in a potential transboundary initiative, and assisted by key stakeholders:

- To identify key natural resource issues with an initial scoping;
- To identify and start to involve stakeholders;
- To identify other issues with a broadening circle of stakeholders (social, economic, political, institutional issues in addition to further ecological issues);
- To make a judgement as to whether transboundary cooperation is needed; and
- To identify issues that require a transboundary approach and those that can be dealt with internally.

It does not however, enable the threats and opportunities, or costs and benefits, to be rigorously examined. This is the role for more detailed analysis (see below). The progressive search for clarity is illustrated in Figure 3.3.

3.2.2 Analysis—A Method for Assessing the Need and Priorities for Transboundary Natural Resource Management Programs

The level of investment currently occurring in TBNRM underlines the need to be extremely careful to evaluate and continually monitor whether a TBNRM approach is the

most appropriate to achieve the identified objectives. To this end, it is suggested that in addition to the site-specific scoping outlined above, a detailed analysis be applied to all proposed initiatives, and even existing ones, to ensure that sensible decisions are being made. In the following sections, a method of analysis is described in detail; project case studies are used to illustrate its application in practice.

In its most basic form, the approach includes three steps:

1. Identifying a biodiversity or natural resource management target;
2. Placing the target on an ecological spectrum with respect to each transboundary partner country; and
3. Analyzing the threats and opportunities for achieving the natural resource management objectives and targets.

Identifying a Biodiversity or Natural Resource Management Target

Most people are familiar with methods of planning. At its simplest there is usually an overall goal. In order to get to that goal a set of objectives are defined and then management actions are developed to accomplish the objectives. The managers who determine the objectives and set about achieving them could be protected area managers, communities managing natural resources, user groups, private landowners and so on, depending upon the relevant tenure system.

As planning has become more sophisticated—and especially with the increasing importance of monitoring and evaluating—there has been a growing trend to set specific targets as a means of achieving an objective. Objectives may even be stated as targets. Some typical examples of objectives and targets are given below:

Objective	Target
Improve antipoaching performance	Improve control of poaching through Mobile Strike Force operations out of headquarters and two new fortified outposts
Conserve the mountain gorillas	Population of mountain gorillas maintained at level found in 2000 survey
Maintain the viability of wildlife populations by allowing continued use of their natural dispersal areas	Safeguard adequate dry-season grazing to support sustainable safari hunting and subsistence hunting at 1998 quota levels
Promote sustainable use of non-timber forest products	Promote good harvesting practices of medicinal plants in order to continue to meet traditional needs of village X

A manager, then, needs to have objectives and preferably a set of targets to form the basis of the proposed management actions. Ideally in developing a plan for managing natural resources at a site, a manager needs to have chosen which targets are the crucial ones to achieve the overall goal—and also have some idea of priority and importance.

Determining Whether There Is a Transboundary Ecological Relationship

In a transboundary situation involving two or more national or subnational jurisdictions, a further element is added—as the manager's objectives must be considered in relation to the natural resource linkage across a boundary. In addition, it must be kept in mind that there would be a corresponding set of objectives, targets, etc., determined by managers in the adjacent jurisdiction. For now, we will continue to consider this from the point of view of one country with only one neighboring country.

Once the targets have been identified, the manager next needs to assess the targets in terms of their ecological relationship with the neighboring country. For example a population of animals may migrate back and forth between two countries, suggesting an ecological interdependence, but there may be no ecological linkage between two adjacent water-catchment areas. It will be necessary to assess the relationship for each identified target. This assessment allows a manager to understand whether there are any ecological linkages with areas across country boundaries that may or may not affect the prospects of achieving the biodiversity or natural resource management target.

Table 3.2 illustrates a spectrum of ecological linkages and provides pertinent examples.

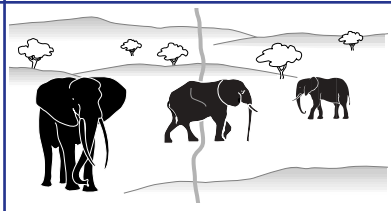
After undertaking a detailed resource analysis, and conducting these "pair-wise" comparisons of connectedness, the managers will be able to conclude whether or not there is a crucial transboundary component. In the case of **interdependent resources and one-way dependent situations**, there is a good chance that some form of transboundary cooperation will be required. However, it should not be assumed that this is self-evident, as will be made clearer in the next section. In the case of **independent resources**, there would appear to be no compelling rationale for transboundary cooperation, at least for the achievement of a biodiversity or resource management goal.

Analyzing the Threats and Opportunities That Affect the Achievement of Natural Resource Management Objectives and Targets

(i) Threats and Opportunities

Managers are interested in anything that affects achievement of the set management targets. In other words, they are interested in the nature of any threat and the potential of any opportunity. Increasingly, people view conservation in terms of threat reduction and threat abatement. The opposite also is true as natural resource managers must be ready

TABLE 3.2 — SPECTRUM OF ECOLOGICAL RELATIONSHIPS BETWEEN ADJACENT AREAS

	Country X	Country Y	Ecological status of X to Y	Examples
A			**Independent:** A resource that is ecologically isolated from resources in the neighboring country	Plants high up on a mountain, e.g., Mt Cameroun, Mt Kilimanjaro, Mt Mulanje
B			**One-way dependent:** A resource that depends upon the continued supply of a resource from the other side	A frog living in a swamp that depends on the water flowing from a neighboring country feeding its wetland habitat
C			**Interdependent:** A resource that moves back and forth across a border and needs to migrate or has a home range across the border	Wildebeest moving between Mara/Serengeti (Kenya/Tanzania) Elephants moving between Chobe and Hwange (Botswana/Zimbabwe)

to respond to opportunities and maximize potential benefits. Threats comprise three parts: stresses, sources and root causes. Stresses are concerned with the types of degradation and impairment affecting the biological system, whereas sources are the proximate agents generating the stresses. Root causes are the underlying reasons for sources to cause these stresses, and where possible the focus of change should be on root causes to alleviate pressures.

In addition to threats, there are significant opportunities that can be seized or enhanced and thus contribute to the achievement of the goal or target. For example, resource managers may identify a latent opportunity—e.g., the community skills in harvesting a resource and preparing it in a traditional way—that might lead to the development of a unique product. Alternatively, within a framework of regional cooperation, one country may advocate better infrastructure development, such as roads or harbors. These opportunities can assist in establishing better transport routes for the linking and marketing of attractions in a tourism program, or engendering better regional communication.

(ii) Internal and External Threats

Threats can be generated from within a country (**internal** threats), or be caused by an activity taking place in another country (**external** threats). A country usually carries the

responsibility to deal with its own internal threats, and an appropriate management response will be required. However, in the case of an external threat, the situation becomes complex if the neighboring country does not appreciate the impact, or is unable to deal with the threat adequately. Table 3.3 below illustrates how the type of threat to a

TABLE 3.3 — THE MANAGEMENT IMPLICATIONS OF THREATS

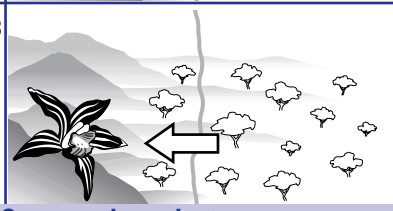
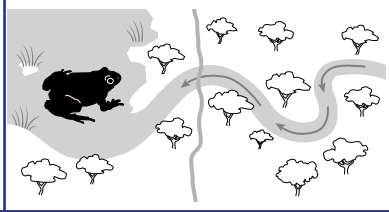
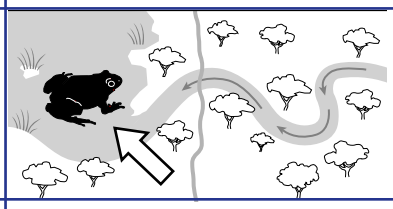
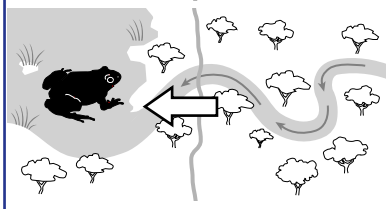
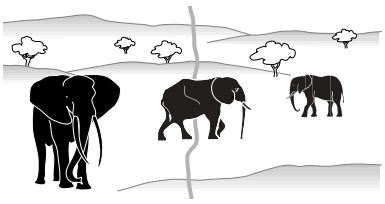
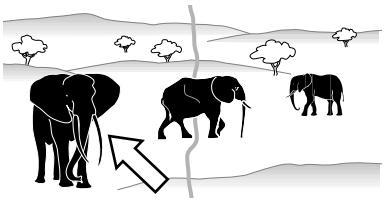
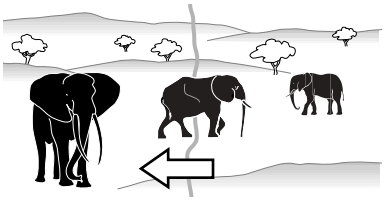
	Country X	Country Y	Type of Threat ⇦	Implications for Management
A: Independent				
A1			None	O No action needed.
A2			Internal	O National level management will address the threat.
A3			External	X There may be an opportunity to assist the neighboring country, but no requirement.
B: One-way dependent				
B1			None	X A manager needs to be aware of the vulnerability in this sort of situation and should keep watch over developments across the border.
B2			Internal	O National-level management will address the threat.
B3			External	✓ There is ecological discontinuity or incompatible management across the border. This is a rationale for transboundary cooperation.

TABLE 3.3 (CONT.)				
	Country X	**Country Y**	**Type of Threat** ⇦	**Implications for Management**
C: Interdependent				
C1			None	O There is no compelling reason for transboundary cooperation in this situation. X There may, however, be an opportunity for transboundary appreciation of a common goal.
C2			Internal	O If effective management is in place, then national management will address the threat. X If not, it may be an opportunity for Country X to foster transboundary cooperation, if Country Y can help.
C3			External	✓ There is ecological discontinuity or incompatible management across the border. This is a rationale for transboundary cooperation.

target, placed on the ecological spectrum, will influence the kind of management action that will be needed—and especially whether there is a need to consider transboundary cooperation to remove or mitigate an external threat.

Similarly, opportunities may be generated internally, such as the resource harvesting example referred to above, or externally, such as the regional infrastructure example.

(iii) Transboundary Threats and Opportunities

When considering the above hypothetical situations, it is important to note that these are describing the situation for one biodiversity or natural resource management target at a single point in time, and from the perspective of one manager. In reality a manager will have a set of targets and these will each be different in terms of both the ecological spectrum and the kind of threat, as well as in terms of whether there is any transboundary element.

The table shows that in certain cases, marked with O, there is no compelling rationale for promoting a transboundary approach, although in some cases, there would be no harm in doing so, and indeed, previously unidentified opportunities may arise. In the cases marked with ✓, i.e., B3 and C3, where there are external threats that may impact achieving the target, the manager needs to take a transboundary approach, and the costs of doing so might be justified. In the case of B3, it is also possible that the impacting country may be less sensitive to the need for collaboration, and this may have an impact on success.

In other cases, marked with ✕, there may be an opportunity to benefit from transboundary cooperation, although it is not essential. In case C2, there may be an opportunity to seek assistance from a neighboring country as that country may also have an interest in ensuring that the resource is conserved and it may have the capacity to help. In cases B1 and C1 there may be advantages in investing a small proportion of time/funds in establishing some form of transboundary contact as this could be both proactive and preemptive of future problems.

(iv) Factors Driving Threats and Opportunities

Although the general approach being described above primarily considers biodiversity and natural resource management goals, it is readily discernible that the nature of threats and opportunities may not be biological or resource based at all. In the majority of cases, threats and opportunities are social, cultural, economic or political in nature. The means of averting or mitigating a threat, or the process of seizing or beneficiating an opportunity will have to be directed to the ultimate source or cause of the threat or opportunity. Some examples of sources and remedies in the above situations are given below in Box 3.1.

Having examined the situation as it appears from the perspective of one country, it is not difficult to envisage such an analysis being done in parallel for two countries. An issue that is transboundary in nature for two adjacent countries would lend weight to a transboundary management intervention. Conversely, a mismatch in priorities between two countries could make it difficult to pursue a cooperative program.

The analysis that was begun in Table 3.3 could be extended by including further columns that describe opportunities, and that elaborate the source of threats and opportunities. These include biological, social, cultural, economic, political and institutional aspects. In this way, a more comprehensive and also inter-sectoral assessment of the transboundary elements will be achieved, and the analysis could be more appropriately labeled as a transboundary risk/opportunity assessment.

Starting with an empty matrix (Table 3.4), the following step-wise approach is suggested as a means of identifying and analyzing the various issues.

Box 3.1 Some Examples of Sources or Causes of Threats and Opportunities

The examples below refer to case scenarios described in Table 3.3 above.

A3: Independent situation with an external threat. For example, when dealing with a poaching threat to a species, poor security or management capacity across the border may be the source of the problem. The apparent cause may be a disparity in capacity between resource managers on either side of the border. The ultimate cause may be disputed tenure and access rights, a lack of training, poor resources and funding, or a lack of political will. Addressing the problem is not simply a matter of stopping the poachers at the border, but of ensuring compatible levels of management on either side of the border, and of addressing root causes. The opportunity that arises immediately is to leverage the greater capacity on one side of the border to assist the other, and to remove obstacles in the way of managers to achieve this.

B1: One-way dependence, with no immediate threat. An example might be the dependence of a fish species on a particular flow regime in a river that has its source in the adjacent country. Although there is no immediate threat to be considered, it is precisely in this sort of situation that transboundary cooperation can be effective in ensuring that compatible approaches to environmental impact assessment are adopted on both sides of the boundary. If this mutual reciprocity is in place, the affected country could rely on the other notifying it of any activities that might result in transboundary impacts, e.g., if the country higher up the catchment notified the other of its intention to abstract water from the river and alter the flow regime. Communication and a spirit of cooperation, as well as a mutual appreciation of the respective international obligations of the two countries may forestall any problems. Of course, if there are stark economic disparities, political differences or institutional weaknesses, these may need to be taken into account.

C2: Interdependent situation with an internal threat. An example might be where control of tourist activities in an area have broken down. Although national-level action may be sufficient to control this internal threat, there may be an opportunity to benefit from the experience in the adjacent country. The ultimate threat may be a poor regulatory system or lack of appropriate impact assessment procedures. Although not imperative, the adjacent area managers may be able to provide cost-effective advice. The enhanced neighborliness may lead to new opportunities and benefits for political cooperation in other spheres, and even to more effective management of a transboundary tourism destination.

Step 1. The first step is to consider the biodiversity or natural resource components in each country (i.e., fill in the top row for each country).

Step 1.1 The next move is determining what national or transboundary management implications there are (i.e., fill in blocks on the right-hand side of the table).

Step 1.2 At the same time, the impact of the natural resource management target on social, economic, institutional or political dimensions in

each country is considered and noted in the relevant row. Where there are corresponding impacts on the natural resources, these should be added to the natural resources (top) row.

Step 2. The second step is to consider all of the social components in each country.

Step 2.1 Then it needs to be determined what national or transboundary management implications there are (i.e., fill in blocks on the right-hand side of the table).

Step 2.2 At the same time, the impact of the social targets on natural resources, economic, political or institutional dimensions in each country is considered and noted in the relevant row. Where there are corresponding impacts on the social resources, these should be added to the social issues row.

Step 3. Finally in the transboundary column (far right), these implications are further examined to determine whether they are one-way dependent or interdependent.

When the matrix is complete it reflects the pertinent issues, their impacts and whether these are national or transboundary. By examining the national and transboundary management implications, it is now possible to determine which issues require a transboundary approach. Although conducting a cost-benefit analysis of the relevant issues would be

TABLE 3.4 — A STEP-WISE ANALYSIS OF THREATS AND OPPORTUNITIES FOR TRANSBOUNDARY NATURAL RESOURCE MANAGEMENT

Issue	Risks and opportunities			Management implications	
	Country A	Country B	Country C	National	Transboundary Interdependent One-way dependent
Natural resource					
Social					
Economic					
Institutional					
Political					

better, it is still possible at this level to gain a fairly good understanding of whether a national approach would suffice, without the overheads of going transboundary.

In Annex 2, the application of the method of analyzing the issues is illustrated by three case studies, which explore the range and diversity of TBNRM contexts.

Conclusions on Analysis

In the recommended analytical process, relevant issues are analyzed by:

- Identifying biodiversity or natural resource management targets;
- Placing each target on an ecological spectrum with respect to each neighboring country (the spectrum covers independent, one-way dependent and interdependent situations among countries, with interdependent and one-way dependent situations being most likely to require transboundary collaboration); and
- Analyzing ways to abate threats and realize opportunities in order to achieve natural resource management objectives and targets for each country, and whether these should be done collaboratively across boundaries, or internally.

This analysis must be done for all targets separately, and should be conducted from the perspective of each country involved in a potential transboundary program. Where threats and opportunities with a distinct transboundary implication occur in all adjacent countries, there is a strong rationale for implementing a transboundary program. Where they do not, the rationale is weaker, and it would be advisable not to embark on a transboundary program, rather than risk failing to meet objectives.

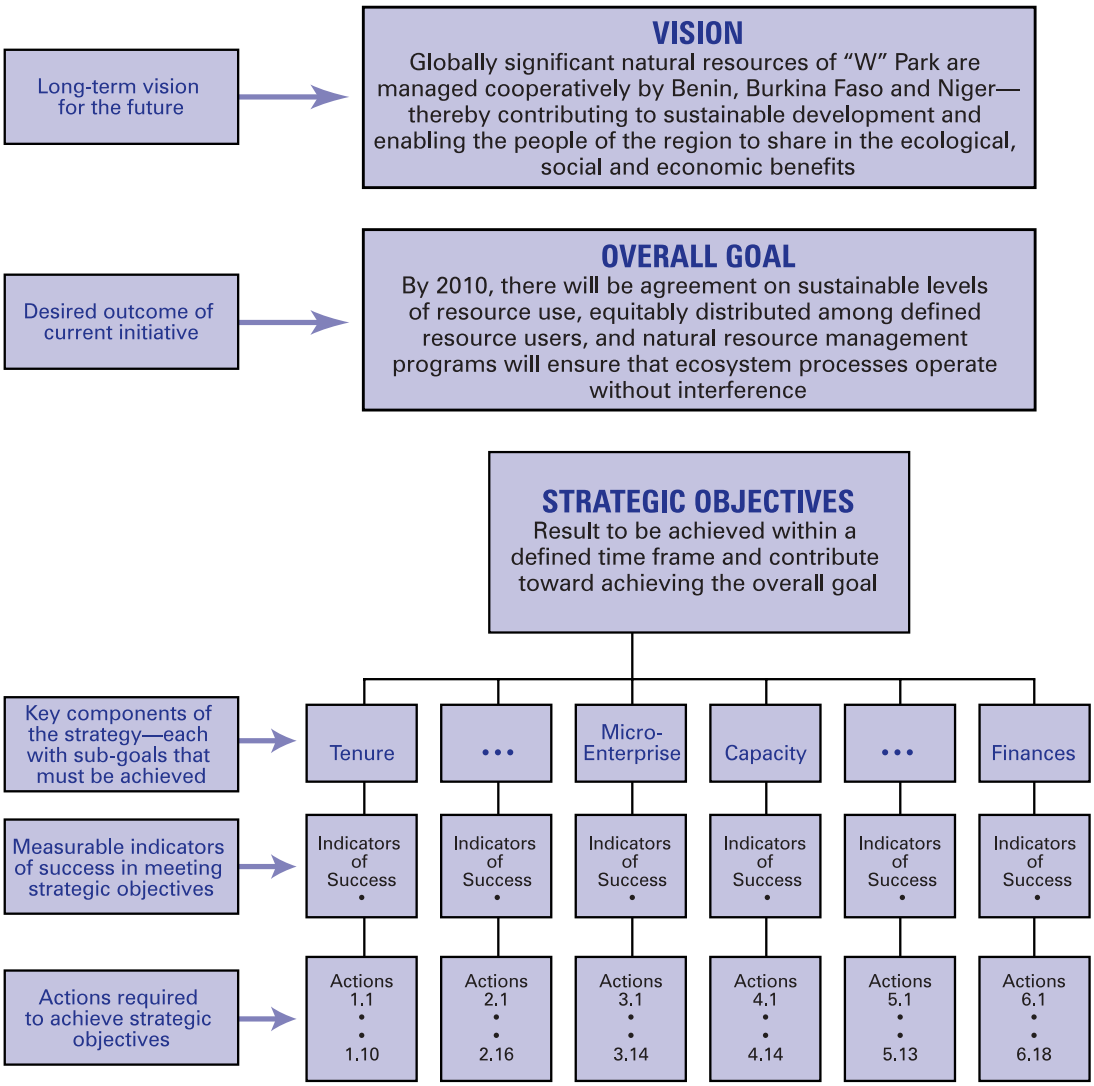
3.3 Strategic Planning for TBNRM Initiatives

3.3.1 The Need for a Strategic Approach

The earlier descriptions of the nature of TBNRM initiatives have illustrated their complexity. Generally, these initiatives are implemented over a wide geographical area, involve a diverse group of stakeholders in at least two countries, require inter-sectoral cooperation within countries, operate over an extended period of time, require high levels of commitment and sustainability, and can be very expensive. The commitment of these levels of resources requires that sufficient strategic thinking and planning be carried out so that the potential for expensive and frustrating mistakes is avoided, and that there is no wastage of precious resources.

Strategy development is concerned with providing a road map of the initiative, which helps to anticipate the path that must be followed, problems that might be encountered, and the options that are available to overcome them. The tools of strategy for developing a transboundary initiative are not really different from those used in the planning and implementation of any major national project. However, the

FIGURE 3.4 — AN EXAMPLE OF A STRATEGY MAP



Notes:
- The strategic objectives of the plan must be achieved to meet the overall goal
- Meeting the overall goal will in turn make a significant contribution to achieving the vision
- Each identified action is needed to achieve each strategic objective

achievement of a transfrontier natural resource management strategy is more difficult, not because it is technically more demanding, but because the level of communication, trust, understanding and collaboration must be greater and more sustained, and because strategy development is set to operate in a context of greater uncertainty with respect to achieving consensus or results.

Putting together a strategy requires a logical approach, and it is therefore helpful to follow a broad outline and to adapt this to the circumstances at hand. This is not necessarily a complicated or expensive process, and is within the capability of most management and planning teams once the basic approach has been grasped. It should be appreciated, however, that there is no ideal approach, nor is there any perfect strategy. As people involved work to put together a strategy and to implement it, they will have opportunities to learn from the experience, and to refine their strategy. This requires that indicators are set and monitored, and that an adaptive management approach is applied. These aspects will be described more fully in Section 3.4. It is important at this stage to obtain an understanding of the elements of strategy and how these can be put together as a framework for an implementation program. A strategy might consist of the following elements, as reflected in Figure 3.4.

3.3.2 A Shared TBNRM Vision

The purpose of a vision is to create a mental image of the desired future, i.e., to envisage what the situation will be at a point in the future, say 10 or 20 years from now, once all the proposed activities have been implemented. Anticipating the future—particularly if stakeholders agree with this desired future state—enables those implementing an initiative to prioritize those activities that will contribute toward achieving these ends.

The vision may not be achievable in the short or medium term, and certainly not within the time frame of the current management programs or projects. Just like a mountain in the distance to be climbed, it sets the overall direction and level of achievement, which enables the strategy team to concentrate on the immediate process of overcoming obstacles in pursuit of the vision. The vision is, therefore, the pinnacle of the strategy. The vision is usually worded in such a way that it conveys to the reader an image of the desired future state. For example a possible vision for "W" Park might be as follows:

> *Our vision is that the globally significant biodiversity and natural resources of "W" Park are managed cooperatively by Benin, Burkina Faso and Niger thereby contributing to sustainable development, and enabling the people of the region to share in the ecological, social and economic benefits.*

A useful way to determine a vision is to use a "nominal group technique" whereby all of the workshop participants write down in a few words (less than 15) what their personal vision would be. The facilitator can then read out the various statements and, using a process of "visual gathering," group the elements of a vision on a wall. Statements that deal with similar elements are grouped together. Outliers, or those statements that seem to differ markedly from the rest, offer an opportunity for discussion. The discussion either results in the statement being made more understandable and therefore incorporated into the vision, or it is discarded as the person who made the statement comes to understand that it does not fit the developing consensus in the group. Once the elements of a vision have been identified, it is useful to task a subgroup with the responsibility of coming up with suitable wording. This can then be discussed with the whole group and suggestions made for improvement. It is obvious that the selection of workshop participants defines to a large extent the workshop outcome and results (see Chapter 2). In a TBNRM context this could be undertaken through, for instance, a staged process, if necessary, or national meetings followed by transboundary meetings.

It is also important to identify indicators that will signify whether this vision has been achieved and to put a monitoring and evaluation system in place to ensure that progress is measured (see Section 3.4). A subgroup could be tasked to formulate indicators.

3.3.3 Overall Goal

Whereas the vision sets the overall direction, and acts as a compass for implementation, it usually is not specific enough to guide an initiative in the short to medium term. An overall goal for a specific time period and with defined resources is usually needed. The overall goal of a current implementation program should make a significant contribution toward the stated vision. The goal must be specific about what has to be achieved, when it has to be achieved and who will ensure that it is achieved.

An overall goal for "W" Park within the framework of the vision stated above might be as follows:

> *By 2010, all stakeholders in the "W" Park region will have reached agreement on sustainable levels of resource use, equitably distributed among defined resource users, and natural resource management programs will ensure that ecosystem processes operate without interference.*

A similar nominal group process and visual gathering, as described in Section 3.3.2 above, can facilitate the development of the overall goal. Once again, indicators for measuring whether the overall goal has been achieved should be stated.

3.3.4 Identifying Obstacles and Strategic Objectives

A contemporary approach to strategy formulation is to identify the obstacles that would prevent the overall goal from being achieved. Taking the mountain example, the kinds of problems that might get in the way of ascending the mountain would have to be anticipated. These might be the need for supplies of drinking water along the way, or the weather conditions that might be experienced. The key question is, "What would prevent us from getting to the top?" Having identified these obstacles and understanding what causes the problem brings us much closer to dealing with the problem.

In the "W" Park example, obstacles might include the difficulties of contacting and consulting with stakeholders in a remote area, or existing conflicts that would preclude consensus being achieved among some groups of users. By carefully addressing obstacles, it is possible to state strategic objectives. The reasoning is that if the objective is met, the obstacle will have been removed. A precondition for achieving consensus among user groups in "W" Park would probably entail resolving tenure issues—i.e., the rights of any particular group of users to use resources—through including it as a strategic objective. This would be a necessary condition to achieving the overall goal.

Stakeholders find it remarkably easy to identify obstacles. Small "buzz groups" can usually come up with long lists of them. These need to be grouped so that the task of identifying ways to overcome these obstacles is not bogged down by detail. It is also necessary to determine whether there is any "problem tree," i.e., whether obstacles are consequences of other obstacles, and so to build up a hierarchy of obstacles. Often a neutral facilitator is useful in keeping the process on track. Also, indicators for monitoring the achievement of the strategic objectives must be identified.

3.3.5 Strategy Maps

A strategy map consists of the logical linkage of the strategic objectives—a whole chain of issues that must be achieved before the strategic objective can be reached. For example, a strategic objective in the .0277 Twe 4imbng txample,might be tho nsuse thet the r areasupf

nature of any historical use patterns, examining the validity of perceived rights to use resources, identifying other stakeholders, conducting the necessary consultation and so on. These would all be necessary conditions to achieve, some in-country and some jointly, before the strategic objective could be reached. The strategy team would have to continue identifying issues until it becomes quite clear that there were no unforeseen issues that would remain as obstacles to achieving the strategic objective.

3.3.6 Plan Documentation

Plans should document the vision, goal, strategic objectives and actions identified by the strategy maps. For transboundary protected areas the plans are likely to be joint management plans; for areas with other forms of land tenure they may be strategic resource use plans, community forest management plans, joint tourism and biodiversity development plans, spatial development plans, etc. For complex levels of collaboration, there may be one overall plan upon which more specific, detailed plans are based.

There is no blueprint for plan format; this will depend on circumstances, the complexity of the situation, number of key implementers, etc. Whatever the format, all plans should contain certain features. They should state the vision, goal and strategic objectives, and outline clearly the actions to achieve the objectives. It is also good to document how decisions were made, including the obstacles and assumptions as to why the chosen strategies and actions are the best way to achieve the goal. This will be useful to review once results of monitoring are available, as part of adaptive management. Plans should indicate the time frame for each action and who is responsible. They should also include a detailed budget, and indicate the source(s) of funding.

Monitoring may be included in the overall plan, or covered in a separate monitoring plan. The planning of monitoring is covered in Section 3.4 below. The plan should indicate a date by which the TBNRM process is to be reviewed and the plan revised if necessary. However, a flexible approach is very important. If monitoring indicates that there is a need to make small or large changes to the strategies and actions, these should be done as and when needed.

TBNRM poses an extra layer of complexity for planning. A joint management plan will include actions to be undertaken within each country, and actions that will be handled jointly. Key stakeholders from both countries should be involved in producing the plan document. If adequate consultation and participation have occurred in planning the TBNRM process up until that point, the plan will represent stakeholders' contributions. Nevertheless, major stakeholders should be given the chance to comment on the plan before it is finalized and adopted.

Conclusions on Strategic Planning for TBNRM Initiatives

- Sufficient strategic thinking and planning should be carried out to avoid expensive and frustrating mistakes.
- The tools for developing a strategy for transboundary initiatives are similar to those used in the planning and implementation of major national projects, but establishing a TBNRM strategy is more difficult owing to the extra layer of complexity created by joint activities.
- There is no ideal approach, nor is there any perfect strategy.
- There are opportunities to learn from experiences and to refine the strategy. This requires that indicators are set from the beginning and monitored, and that an adaptive management approach is applied.

A joint TBNRM planning process should cover:

- Longer-term vision;
- Overall goal to guide the initiative in the short to medium term;
- Identified obstacles to achieve the goal;
- Strategic objectives and concrete objectives under the goal;
- Time frame for each action, and who is responsible;
- Detailed budget and the source(s) of funding; and
- Monitoring plan with date for review (either included or in a separate plan).

3.4 Monitoring, Evaluation and Adaptive Management

3.4.1 The Importance of Adaptive Management

This section outlines how monitoring, evaluation and adaptive management are an essential part of successful TBNRM. These tasks close the loop of the scoping, analysis, vision development, planning and implementation process (see Figure 3.2) by enabling learning about how effective current actions are, and hence making improvements so that the next phase is more effective. They also allow the program to monitor and adapt to changing circumstances in the complex and dynamic ecological, social, economic, political and institutional environment of transboundary opportunities, enabling conditions and constraints.

The process entails planning of monitoring and collection of relevant indicator information to enable an analysis of the effectiveness of the implementation actions in achieving the overall goal and strategic objectives. This learning process about which actions worked, and which did not work so well and why, provides a basis to test the assumptions upon which the original planning was based, and adjust future actions to better achieve the objectives. Human and financial resources to support TBNRM are limited, and learning about which strategies and actions will give best returns on these investments means that they can be used more effectively in the future to achieve better resource management.

Adaptive management in NRM is the integration of design, management and monitoring to systematically test assumptions about the best way to manage natural resources, in order to learn and adapt to improve effectiveness.

[Adapted from Salafsky, Margoluis, and Redford (2001) to the context of TBNRM]

The theory and practice of monitoring, evaluation and adaptive management is covered in more detail elsewhere [e.g., Margoluis and Salafsky (1998, 2001); Salafsky and Margoluis (1999)]; this section draws from that work but specifically considers monitoring, evaluation and adaptive management in a TBNRM context.

3.4.2 Developing and Implementing a Monitoring Plan

A monitoring plan describes how the success of the actions in meeting the strategic objectives will be assessed. It should start by outlining who the key audiences are, what their information needs are, what monitoring strategies will be employed to get the data needed to meet each of these needs, and the specific indicators to be measured.

As outlined in the previous sections, management actions will be undertaken at different levels including local and national, some transboundary and some in-country. Similarly, some cross-border monitoring is likely to be undertaken jointly (e.g., trends in large mammal populations that range across the border; effectiveness of joint antipoaching patrols). Some will be undertaken in-country—either locally (e.g., rate of extraction of medicinal plants) or at the national level (e.g., changes in national legislation or fluctuations in foreign exchange rate).

Even if certain indicators are monitored internally, the results may be very important to stakeholders across the border. For example, success in reducing illegal charcoal production in one country may risk an increase in the other country if charcoal makers cross the border. The second country needs information on progress so that it can

enhance its own monitoring of charcoal making or markets, and step up law enforcement if necessary.

Where indicator information is being collected separately on both sides of the border it should be standardized so that direct comparisons are feasible. It may be possible to pool resources and undertake some monitoring jointly, thereby increasing efficiency. The monitoring plan should identify who is responsible for collecting indicator data. Ideally, the people who use the information should also collect it, though this is not always possible. It is important to look for incentives for stakeholders implementing the actions to be involved in the monitoring, so that they will take an interest and do it well, getting direct feedback on the results of their efforts.

Since resources for monitoring are likely to be limited, it is important to be realistic when designing the monitoring plan. Do not aim to collect large amounts of information that have limited use; it is better to be selective, and focus on very specific indicators that can give results in time to take action, before it is too late. For example, abundance of a tree species favored to make charcoal might not be as good an indicator as the number of bags of charcoal being transported out of the forest per day.

Indicators are units of information gathered over time that document changes in a specific condition. A good indicator is:

- **Measurable**—can be recorded and analyzed in quantitative or qualitative terms;
- **Precise**—defined in the same way by all people;
- **Consistent**—not changing over time so that it always measures the same thing; and
- **Sensitive**—changing proportionately in response to actual changes in the condition or item being measured.

Source: Margoluis and Salafsky (1998).

Do not rely only on biological indicators. They can often be slow to yield results, difficult and expensive to collect, difficult to link to project actions, and only show one part of the picture. They generally indicate the symptoms of a problem, rather than the proximate or root cause. They may also not be very meaningful to many stakeholders. For example, a local community may not be at all interested to know that a rare species of butterfly is increasing in numbers in a forest that straddles the border owing to forest conservation efforts on both sides of the border. The community will, however, be very interested to know whether forest conservation measures have improved water quality and dry season flows in the shared river that supplies its water because forest cover has increased. The community will have a greater incentive to promote forest conservation for water management if it can use indicators showing this directly.

Social, socioeconomic, macroeconomic, political and institutional indicators are all likely to be useful in TBNRM. Some of these will monitor the proximate or root causes of threats to and opportunities for natural resource conservation and management. As such they may be able to give earlier indications than biological indicators as to whether interventions are successful, and whether new interventions are needed. For example, if the border area in one country becomes insecure, as indicated by an increase in banditry or even a general breakdown of law and order, it may be necessary to provide strong support to traditional authorities in the other country to continue to manage and control their natural resources. In this case, political indicators will be quicker than biological ones indicating, for instance, that numbers of wild animals are declining because of cross-border poaching.

Threat reduction assessment is one way to measure project success, by identifying threats, designing actions specifically to reduce them, and monitoring the degree to which the actions succeed (Margoluis and Salafsky 2001). This could be used in a transboundary situation, particularly where common threats are being addressed across a border.

Results of sound natural resource management/conservation impact can be difficult to monitor, particularly in the early years of long-term projects. It will be necessary to use process indicators as well. Process indicators should link as much as possible to the desired conservation outcome. For example, rather than recording that 10 cross-border communities participated in a training course on fuel-efficient stoves, it would be more useful to record that of the 10 communities that participated, 5 from one country adopted these techniques effectively and were still using them a year after the course, whereas the 5 from the other country were not. The impact on the natural resources may not yet be apparent, but these results can be used to plan future actions.

Monitoring should include an assessment of whether transboundary collaboration is working well and is worth the investment. An important factor will be the degree of political buy-in. Indicators for TBNRM could be harmonized legislation, establishment of transboundary protected areas, approval and implementation of joint management plans, resource allocation, and economic growth due to regional nature tourism development. Monitoring should also look at any impacts on in-country management that may not be happening adequately because of the focus on transboundary management.

3.4.3 Implementation

Having developed both a transboundary management and monitoring plan, the plans should now be implemented (see Figure 3.2). It is beyond the purpose of this document to describe how to implement these plans in detail. Furthermore, given the broad continuum

of TBNRM initiatives and huge diversity of possible initiatives within it, it would be impossible to provide even a general description of implementation.

3.4.4 Analyzing Data and Communicating Results

Once monitoring data have been collected during implementation, they should be analyzed. Adequate staff time and financial resources should be allocated for this, on both sides of the border. It is very important to communicate the results of monitoring to those who are implementing the actions or are affected by them. However, there may be sovereignty and security issues about the exchange of certain information and analyses across a border, particularly if the two countries are not on very friendly terms. Any required confidentiality should be respected. Apart from this, there may be extra logistical obstacles to communicating results across a border: language, access and travel time, electronic communication difficulties, etc. (see Section 2.6). Again, adequate resources are essential. It is very important not to get carried away with the transboundary nature of resource management, and forget to communicate results internally to stakeholders in the same country.

3.4.5 Using Results to Adapt and Learn

This is where the work invested in monitoring can pay off by helping to incorporate the information to improve the natural resource management and move forward. It involves putting to the test the original assumptions about the most effective actions to achieve the strategic objectives, in light of the results obtained from the indicators. If achievement of some objectives and actions has not been satisfactory, is there a different course that might be more effective under the existing circumstances? If so, work with stakeholders to redesign these parts, adapting the actions and perhaps strategic objectives, based on new assumptions about the most effective course to take.

This is a good opportunity to review candidly the effectiveness of the transboundary nature of resource management, and assess whether the benefits do in fact exceed the costs. This should be done both internally in each country, and jointly with stakeholders in the other countries to identify transboundary synergies. The effectiveness of internal NRM should also be reviewed. Use the latest developments in natural resource accounting to do the cost-benefit analysis as effectively as possible (see Section 2.7.3).

If results are not satisfactory (e.g, because of external circumstances or because the project is inherently flawed), it may be necessary to repeat some of the scoping, analysis and vision work to revise the vision and make it more realistic. Perhaps different stakeholders need to be involved. This should be followed by a revision of the goal, strategic

objectives, actions and monitoring plan in light of experience. If the vision is still appropriate and only a few minor adjustments are required to make the NRM more effective, the early steps in the process can be omitted, revisions made to only those actions and perhaps strategic objectives that require changing.

This process is iterative as Figure 3.2 shows. As a project progresses, a larger body of experience is built, and the actions can be refined further and further. Adjustments are also made iteratively to take into account the changing social, economic, political and institutional circumstances.

It is very important to share what has been learned. This enables other stakeholders to learn from experience and avoid making the same mistakes themselves. There is a need for openness and positive attitude to learning, with recognition and analysis of failures as well as successes.

3.4.6 Learning across TBNRM Sites

Learning is very important for the development of TBNRM in general. TBNRM especially at more formal levels is a relatively new approach to conservation and consequently not much is known about the opportunities and enabling conditions that make it work or the constraints that cause it to fail. Since very large investments are being made in TBNRM, it is extremely important to learn rapidly from existing TBNRM experience, and disseminate these lessons widely in Africa and indeed globally. This will help to ensure that effective management approaches are designed and implemented, and avoid costly investments in less effective approaches.

Conclusions on Monitoring, Evaluation and Adaptive Management

- Collaborative monitoring, evaluation and adaptive management should be an integral part of the TBNRM cycle to enable learning, in order to adapt to changing circumstances and in light of project achievements and failures.
- The process entails planning of monitoring, collection of relevant indicator information, analysis of the effectiveness of implementation, learning, and adaptation in order to achieve the objectives better.
- Given the relatively new nature of many TBNRM initiatives and the large investments made in TBNRM, it is very important to learn rapidly from experiences and to disseminate lessons across Africa and beyond, to channel funds into the most effective approaches and avoid costly investments in less successful ones.

A monitoring plan should include:

- Specific indicators to be measured, by the different levels both in-country and across the border. Indicators should be specific, easy to collect and analyze, and indicative of the proximate or root cause as well as the symptoms of a problem. Social, economic, political and institutional indicators should be used, as well as selected ecological ones;
- Standardized methods of collecting and analyzing data to make comparison possible among transboundary partners;
- Provision to assess whether transboundary collaboration is working well and is worth the investment; and
- Provision to share results, and apply them to learn and adapt. This requires openness and a positive attitude to learning, with recognition and analysis of failures as well as successes.

4

TBNRM Lessons, Conclusions and Future Needs

TBNRM Lessons, Conclusions and Future Needs

This chapter presents summary lessons and conclusions from the project analysis. It then outlines gaps in current understanding of TBNRM, and lists future priority needs to enhance natural resource management effectiveness in a transboundary context. The content of the chapter has been drawn from regional reviews, case studies, the pan-African workshop, comments from collaborators and other sources.

How to Use This Chapter

People considering a new transboundary initiative should find the lessons and conclusions in Section 4.1 particularly useful.

People already involved in TBNRM may want to skim the headings of the lessons and conclusions in Section 4.1 and pick those most useful to them. Section 4.2 outlining gaps and future needs should be relevant; people already involved should be able to advance some of these ideas and address needs.

4.1 Lessons and Conclusions from the Analysis

4.1.1 General and Ecological Aspects

TBNRM Can Be an Effective Approach—Under the Right Conditions

TBNRM can be an effective approach for natural resource management and biodiversity conservation, where shared threats can be tackled jointly and/or mutual benefits can be gained collaboratively. Key to success is the existence of a *win-win situation* for major stakeholders in each country involved, when potential *benefits outweigh costs*. TBNRM can work in a variety of situations, including conservation of threatened species or resources; sound use of limited resources such as water, rangeland, wildlife and forests; and ecosystem management. The objective is to provide a mechanism to achieve conservation and natural resource management results that cannot be achieved as easily by the countries in isolation.

This is illustrated by collaborative work undertaken in the Virunga region. Recent monitoring data shows an increase in the mountain gorilla population over the past decade, despite the conflicts and war in that region and the related movement of thousands of displaced civilians seeking refuge in the mountains. The conservation achievement is a direct result of the dedication of field staff at the in-country level, and the undertaking of collaborative activities under a regional framework for joint management addressing shared threats and opportunities. Although there are likely to be future ecological benefits from many of the transboundary conservation case studies reviewed in this project, most of them are relatively new ventures and it is too early to assess their ecological success fully.

Transboundary practices can be found in many places in sub-Saharan Africa, mostly through informal mechanisms at community or other local levels. Formal arrangements are much more recent, particularly in conservation. They have been developed to the greatest extent in Southern Africa, probably because of the frequent combination of intense threats to natural resources and very good economic opportunities. TBNRM also can promote important social, political and institutional benefits. Potential benefits of TBNRM are listed in Section 1.3.

TBNRM Is Not a Universal Panacea

TBNRM is not, however, a universal panacea for joint management of natural resources by different countries on borders. In some cases it is more effective for transboundary

partner countries to manage their shared resources independently because there is little to gain from collaboration, or because the costs involved in TBNRM are too high in relation to the potential benefits (see below). *The existence of a shared resource or ecosystem is not enough justification per se to go transboundary.* It is very important to have a sound rationale for TBNRM before embarking on it; it needs to be demand-driven. There are many constraints to TBNRM, and sometimes they are insurmountable, or the cost of overcoming them and creating enabling conditions is too high. Constraints and enabling conditions are listed in Section 2.7.

TBNRM Is Dependent on Good Internal NRM; It Is Not Meant to Replace It

TBNRM should not replace NRM within each country involved; it should be an extension of it. Many NRM activities must continue to be implemented internally, as this is more appropriate and efficient. A limited number of other activities will require transboundary collaboration because they can be implemented more efficiently this way. It is important that TBNRM not be done at the expense of internal NRM activities—that extra resources be found to cover it. Otherwise it may do more harm than good.

In the same vein, *TBNRM will not succeed if internal NRM does not work*. When internal conditions for good NRM are absent, the situation will not be improved by going transboundary. Many of the requirements for TBNRM collaboration (e.g., good governance, organizational capacity, bottom-up approach, clarity of vision, flexibility, sustainable funding, building trust and teamwork, and strategic partnerships) are similar to those for internal NRM. In places where internal NRM is weak, it may be more important in the short term to improve that rather than going transboundary.

There Is No Blueprint for TBNRM

TBNRM has an extremely wide range of applications—across a continuum from transboundary CBNRM and transboundary protected areas to integration into regional economic development. There is a tremendous *range of scales and degree of complexity,* and variation in social, economic and political factors. Thus there is *no set paradigm or formula* for TBNRM; it needs to be planned, implemented, evaluated and frequently adapted around the specific circumstances of each situation.

TBNRM Is Gaining in Popularity, but It Is Largely Unproven Especially at Formal Levels

Over the past decade TBNRM has become an increasingly popular approach to natural resource management in many regions of sub-Saharan Africa, heralded as the next big approach after CBNRM in some places. It is becoming a major focus of NRM efforts and is attracting large donor investments. However, knowledge and understanding of the

conditions for success are as yet limited, and TBNRM has not yet been broadly tested and proven. Transboundary practice adds another layer of complexity to NRM, which is already a complex subject.

There is, however, a significant amount of experience with TBNRM collaboration at local, informal levels, and there have been some striking successes (e.g., conservation of the mountain gorilla in the Virungas, despite a long war in the region). Much less is known of TBNRM effectiveness at formal levels, where Memorandums of Understanding in the conservation sector have only recently started to be negotiated among countries (although agreements for resources such as water have been in existence longer). It is clear that this approach takes considerable time and larger amounts of funding before showing any results in terms of improved resource management or better conservation on the ground. With TBNRM there is also higher risk of being disconnected from the local level, and failing to bring local benefits (see Section 4.1.5). Formal agreements should recognize and harmonize with appropriate existing traditional or informal agreements to help to avoid this problem.

Indiscriminate application of TBNRM, including situations where it is less likely to work, will result in failures. This will discredit TBNRM as an approach. It is very important *to proceed with care* (see Section 4.1.2 below).

4.1.2 Process

TBNRM Feasibility Should Be Assessed before Starting

Since there are *many costs*—related to funding and human resources as well as less quantifiable factors—*to TBNRM in time,* it is crucial to undertake an adequate assessment of TBNRM feasibility before embarking on it. Which objectives can be better met by working transboundary, and which ones internally? Do the ecological and other benefits outweigh the costs of working transboundary? Will the major stakeholders benefit? Methods for conducting the assessment were outlined in Chapter 3. As yet there is unfortunately no well-developed, rigorous quantitative cost-benefit analysis methodology for TBNRM assessment and evaluation. *If the qualitative assessment outlined in Chapter 3 suggests that costs exceed benefits, TBNRM should not be initiated and shared natural resources should continue to be managed independently by the countries concerned.*

TBNRM Should Work at the Lowest Level Possible

Experience to date in Africa suggests that it is best to work at the lowest transboundary level(s) possible. Many successful initiatives have worked from the bottom up, starting at

the local level and involving higher levels as and when needed to achieve objectives and create enabling conditions. A bottom-up approach has the greatest chance of ensuring participation, buy-in and ownership of the process at the local level where the resources are managed. Building on existing practices and common cultures, it can create a solid base of *trust* at the local level for future collaboration, where people are motivated to find practical and realistic solutions. Involvement of higher levels can change over time: for example, ministry headquarters may become involved temporarily in order to create an enabling condition such as a new policy, or to develop an international agreement. *Different functions are performed at different levels. Ultimately, effective TBNRM is the combination of strategies involving different levels that has the optimum net gain in benefits versus costs stakeholders are willing to pay.*

There Is No Need to Wait for All the Enabling Conditions before Starting

Alongside the point made about assessment above, it should be pointed out that it would take a long time to create all the missing enabling conditions (see Section 2.7), if indeed this is ever feasible. It is important to *be pragmatic* and start off on an approach where there are feasible opportunities, even if they are limited. Some enabling conditions are likely to be created along the way. Be proactive and try to anticipate and tackle constraints before they become limiting factors. Explore new avenues to get around those constraints that are not easily resolvable.

TBNRM Must Be Built on Trust and Partnerships

Trust takes *time and patience* to establish and cannot be rushed—this includes trust both across borders and within countries. Teamwork at the local level is particularly important. There is a need for sound partnerships with *clearly defined roles and responsibilities*. *Good, practical coordination* is important, focused on achieving results rather than coordination for its own sake.

TBNRM Should Be a Flexible, Evolving Process

The TBNRM process needs to *evolve on the basis of real need*. At its heart, a complex series of partnerships is developing and exploring opportunities and limitations of working together. Many trade-offs have to be assessed to see what works and what does not. It is important to *monitor and evaluate* the effectiveness of this collaboration frequently, and *adapt* as appropriate. Learning should be done jointly across borders, which requires transparent sharing of information. This includes comparing TBNRM results with those that might have been gained through internal NRM alone, to assess whether TBNRM participation is worthwhile.

At the same time external social, economic and political conditions are frequently changing, all of which affect the shared natural resources. Approaches to TBNRM need refining in light of changing background conditions as well. Adapting to change necessitates working flexibly but staying within an overall strategic framework for collaboration, keeping a joint vision firmly in sight.

Since understanding of TBNRM is still incomplete, it is important to learn about its degree of effectiveness not only within an initiative, but also to *exchange experiences* across different initiatives.

Good Communication Is Essential for Successful TBNRM

Communication is essential across the border, within countries, within and across levels, and across institutional and technical sectors. This includes sharing of information in a transparent and timely way.

4.1.3 Social Aspects

Going Transboundary Increases the Complexity of Stakeholders

The number and range of stakeholders tend to be greatest in large-scale, multiple tenure/land-use TBNRM initiatives involving many different levels. The *diversity of interests* can be very high, covering sociocultural, economic, political and institutional issues including sovereignty. There are many constraints but also opportunities that can inhibit or reinforce the effectiveness of these initiatives in trade-offs and win-win situations. Ensuring adequate *stakeholder participation* is costly in terms of time and human and financial resources.

Going Transboundary Can Unite Local Communities across Borders

Increasing the scope of existing CBNRM across borders can facilitate formal contact and cooperation among communities that have been estranged by international borders. It can renew cultural ties and traditions that have been severed or restricted by borders, strengthen marginalized groups, and increase social stability in border areas.

Note that further issues concerning local communities are documented in section 4.1.5 below as part of the discussion on political and policy aspects.

4.1.4 Economic and Financial Aspects

TBNRM Must Increase the Efficiency of NRM in Order to Be Worthwhile

Synergism is essential for successful TBNRM: *the whole must be greater than the sum of the parts,* otherwise individual countries are better off managing their resources independently. TBNRM needs to be a *value-added* product, and should strive for the maximum output with minimum input. Transaction costs must be kept as low as possible, otherwise the endeavor will not be worthwhile. In addition, all key stakeholders need to gain net benefits. In the right situations TBNRM can increase the efficiency of managing and monitoring natural resources through avoiding or reducing duplication of effort, creating economies of scale, and enhancing economic opportunities such as increased tourism potential. But there are also many situations where TBNRM is not feasible—hence the need for the initial assessment (Section 4.1.2).

TBNRM Requires Additional Investments of Money and Time

Funding for TBNRM should be incremental, over and above NRM funding (Section 4.1.1). Where there are strong economic development opportunities, some or all of this funding may be generated from economic activities. In many cases today donors are providing funding, either to single countries or on a regional basis. Donor funding can cover the start-up costs of TBNRM, until longer-term benefits kick in and fuel the process sustainably. However, it is often difficult to make that transition. The length of donor project cycles is often too short, especially in light of the extra complexity of TBNRM over internal NRM, and the need to get adequate participation for success. A *flexible, broad funding base* rather than reliance on a single donor can help. This can include different mechanisms such as trust funds and economic activities. In the long term, TBNRM initiatives should aim for *financial self-sufficiency* in order to be sustainable.

TBNRM Can Be a Valuable Tool in the Face of Global and Regional Market Forces

Transboundary collaboration can create cartels to manage and market shared resources in the face of external market pressures. This not only can benefit individual countries economically, but also help to manage resources sustainably. One example could be the collaboration by West African countries to develop collaborative approaches to protect their shared marine fishery resources against external pressures from, for instance, the European Union.

4.1.5 Political and Policy Aspects

Political Will and Long-Term Commitment Are Essential

Political will is essential for successful TBNRM. Regardless of the established level of formal transboundary collaboration, it is necessary to have political will at the local level. Some transboundary activity can take place without formal commitment from top levels in a country (e.g., community-based TBNRM, or limited, informal protected area collaboration), provided there is no interference to it from above. However, in more complex and formal TBNRM initiatives, political will at top levels is also necessary. Long-term commitment from both countries is essential as well. Since successful NRM is by nature a long-term process, and since partnerships take time to evolve and mature, TBNRM is also a long-term process.

Sovereignty and Security Issues Can Constrain TBNRM

There is often concern that countries will lose sovereignty by going transboundary, through loss of control over some of their land and/or resources to a neighbor. In reality, by being prepared to give away a little control to the TBNRM process, a country may gain significantly from it, through improved management of shared resources. There also may be concern over security. This can include fear of borders becoming more porous, with, for example, movement of illegal immigrants or contraband among countries with differing economies; influx of arms; and spread of disease and pests. Security and sovereignty concerns may limit the degree to which a country is prepared to collaborate.

Good International Political Relations Help TBNRM

Good diplomatic relations between neighboring countries can greatly aid TBNRM, and are very important for larger-scale initiatives. At the level of local, small-scale initiatives this is not always essential, but its absence can be a limiting factor to effectiveness and further development of the initiative (as is the case, for example, in the Virungas).

Does TBNRM Promote Peace?

TBNRM can resolve local-level cross-border conflict by finding common ground and shared objectives. It can help to increase security and control over resources in border areas so that their rightful owners/users benefit more from them. Its potential role in larger-scale peace processes is less clear. Certainly in the Virungas, TBNRM has helped to

protect the gorillas during conflict, and to identify and realize transboundary economic opportunities (through gorilla tourism), which are an important foundation for postwar development and local livelihoods in all three countries. In theory TBNRM collaboration can lay a foundation for deeper cooperation and development of trust among countries with poor diplomatic relations. Initial collaboration over natural resources may pose little risk for governments if there is not much at stake politically. This study did not focus specifically on this issue and was not able to assess how effective this approach could be at a national as opposed to local level.

Devolution, Good Governance and Participation Are Essential Elements of Successful TBNRM

The principle that those who own, manage and live with natural resources should benefit from them and be involved in related decision making is widely accepted in CBNRM and broader environmental governance circles. Much has been talked about *devolution and subsidiarity*. However, TBNRM at a formal scale tends to increase the involvement of upper government levels (e.g., the line ministry in each country, and sometimes multiple government ministries). These levels may exert influence and control that is not in the best interests of local communities or private landowners. At worst, TBNRM can present an opportunity for corrupt national-level powers to gain personally from TBNRM benefits. Donors, the private sector and NGOs can also drive the TBNRM agenda in a way that conflicts with local interests.

Good governance within a country is therefore essential for successful TBNRM, including two-way *transparency and accountability* between higher and lower levels in control of land and resources. Those at the lowest levels should have ownership of the TBNRM process, including involvement in design and implementation, and should benefit from it. Where and when needed, higher levels should be involved. This reinforces the recommendation in Section 4.1.2 to work at the lowest levels possible in TBNRM. There are advantages to keeping initiatives small and at an appropriate scale, so that key stakeholders can remain in control and retain ownership of the process. Stakeholders should benefit in proportion to the costs they incur in the process, so that the process is *equitable*.

The Existence and Implementation of Compatible Policies and Legislation Enhances TBNRM Success

Harmonization of relevant policies and legislation across boundaries can be an important enabling condition for TBNRM. This can take a long time, though, and hold up the TBNRM process. Enforcement of control over access to and use of resources (whether by government or traditional structures) is also important. TBNRM is unlikely to succeed if national laws controlling resource use cannot be enforced.

TBNRM Arrangements Are Characterized by a Broad Continuum of Agreements

Agreements are necessary in situations where either party would be unable to achieve a necessary or desirable goal without participation of the other. It is the *purpose* of agreements that determines the level and type of agreement *appropriate to a particular circumstance*. Transboundary interactions can take many forms, ranging from very informal or traditional relationships among local resource users, to Memorandums of Understanding or international treaties governing resource management programs among countries. Agreements may start informally and be developed over a number of years into more formal arrangements.

In large-scale TBNRM initiatives, an umbrella agreement or protocol may be negotiated to empower stakeholders at different levels to negotiate sub-agreements.

International Conventions Are Currently Playing only a Limited TBNRM Role; Regional Economic Agreements May Be More Influential

From the regional reviews and case studies, conventions such as the Convention on Biological Diversity and CITES do not seem to be playing a highly significant role in promoting or facilitating TBNRM in sub-Saharan Africa to date. Given their international coverage and technical mandates, these conventions could probably be much more effective in TBNRM. The Ramsar Convention and the Convention on the Conservation of Migratory Species of Wild Animals are more involved, particularly at specific sites. Some of the regional economic agreements (e.g., SADC) seem to be playing a larger role in facilitating transboundary collaboration, either directly or indirectly—and opportunities exist to expand this role.

4.1.6 Institutional Aspects

TBNRM Is Constrained by Governments' Narrow NRM Approach through Isolated Treatment of Single Resources/Land Uses

This issue is observed at the national level in African countries, and is often a constraint to sound and integrated ecosystem management internally as well as across international boundaries. While communities have complex traditional systems for managing multiple natural resources and land uses, governments through their bureaucratic colonial inheritance compartmentalize resources. Different departments deal with forestry, wildlife, water, agriculture, etc., and land is often designated for single land uses. Communication and collaboration among government departments is often limited. Yet *sustainable development*—that is, integrating economic development with sound natural resource use and

ecosystem management—*requires an integrated approach, working across existing land-use boundaries*. TBNRM on a large scale requires coordinated, multisectoral government inputs. If these are not forthcoming there is a risk that TBNRM will revert to single-sector management structures that are too weak to exert any influence except in their own jurisdiction. The key challenge is to *build coalitions* among management authorities with overlapping jurisdictions, in order to attain a *common vision*.

Weak National Structures Cannot Create Strong TBNRM

Adequate national organizational capacity is necessary for TBNRM to ensure reciprocity in terms of "carrying the weight." If capacity is weak on both sides of the border TBNRM is not likely to succeed. To a limited extent, a stronger partner can help to build capacity in a weaker transboundary partner. However, extremely uneven capacity is a constraint for TBNRM. The stronger partner can become very frustrated at the failure of the weaker partner to participate fully. The weaker partner feels threatened and dominated by the stronger partner. Mutual trust and cooperation are hard to foster in these circumstances. Outside facilitators can fulfill an important role in building capacity in weak partners.

Capacity Strengthening Is an Important Need for TBNRM in Africa

Many of the regional reviews and case studies cited above referred to the need for capacity strengthening. Needs vary depending on scale, resource, complexity, stakeholders and so on, and consideration should be given to organizational development, technical NRM skills and business and finance skills including fundraising. Capacity strengthening is required of many different stakeholders including community-based organizations and different levels of government.

TBNRM Should Work through Existing Organizations—Rather than Attempting to Build New Ones

Just as TBNRM should build on existing internal NRM rather than inventing totally new initiatives, it should also work through existing organizations where possible. In the long run this is more likely to be successful, rather than creating new organizations that may not have buy-in or acceptability by other stakeholders, or sustainability.

The Success of Early Stages of TBNRM Initiatives Is Often Greatly Dependent on a Few Individuals

TBNRM initiatives are particularly vulnerable in the early stages, before trust and partnerships are well established. Very often a few key people are responsible for *facilitating and leading* the developing initiatives to more formal arrangements. As TBNRM initiatives

mature, the role(s) of these key players often change, as capacity is built and national partners assume more leadership. Agreements can increase the sustainability of outcomes by making the process less dependent on the immediate actions of individuals.

4.2 Gaps and Future Needs

Given the relative youth of many TBNRM initiatives, the natural resource and conservation sectors are still on a high learning curve when it comes to transboundary practices. At the same time, the rapid gain in popularity of the TBNRM approach is attracting large investments across sub-Saharan Africa. It is therefore very important that as experiences build up, they are evaluated and lessons from both successes and failures are distilled and communicated broadly—in order to ensure that these investments are applied in the most effective ways. The TBNRM approach needs to evolve over time and develop its status as one of several resource management approaches—and practitioners need to develop a good understanding of its benefits and limitations.

In terms of gaps and future needs, there are many internal, country-specific aspects that are relevant to TBNRM. There are also aspects that are specifically international in nature. Some of the internal aspects are generic to all forms of good natural resource management, including political will, sound environmental governance and adequate capacity in participating organizations. These are enabling conditions for TBNRM (and their absence causes constraints), but since they are of a non-specific nature they are not covered in detail here. The paragraphs below outline some of the more specific internal and international aspects that need to be further developed in order to ensure successful TBNRM processes in Africa.

4.2.1 A Continuous Learning Process

Overall Analysis

As new experiences are gained the existing understanding of TBNRM needs to be augmented; the analytical work must be continued. Griffin *et al.* (1999), Sandwith *et al.* (2001), Singh (1999), Zbicz (1999), BSP's pan-African TBNRM project (this publication), and others have undertaken analyses of TBNRM experiences to date and created a foundation of knowledge about the TBNRM process, and its opportunities, enabling conditions and constraints. Lessons should be drawn from all natural resources sectors including water and freshwater and marine resources. Organizations that are well placed to take the lead in continuing analyses include regional analytical organizations such as the African Centre for Technology Studies (ACTS), IUCN (with involvement of commissions

such as WCPA, SSC/SUSG), and international NGOs that have adopted a broad landscape approach to conservation.

Specific Analyses and Development of Tools

- **Economic Valuation of TBNRM:** There is an urgent need to *develop cost/benefit analysis techniques* for TBNRM. Very little systematic economic valuation has been done so far for specific TBNRM ventures to determine the costs and benefits of managing resources collaboratively across borders versus managing them independently in each country. Good economic valuation tools exist, although there are still difficulties in valuing some of the indirect and non-material uses of natural resources and biodiversity, as well as some of the externalities. There is an urgent need to use the tools that do exist to develop systems for economic valuation to *find the optimum balance* of TBNRM interventions and internal management interventions for each country involved. This includes reviewing the option of completely internal management on both sides of the border—i.e., not pursuing the transboundary route.
- **TBNRM and Political Relations:** There is a need to increase our understanding of how political relations among countries affect TBNRM at different levels and scales, and determine what types of transboundary collaboration are possible and desirable under different political relations. A clear understanding will help practitioners to determine the most appropriate approach to TBNRM in a particular situation. A special case is that of peace-building—determining how much of a role TBNRM can play in building a foundation of trust and collaboration among neighboring countries.
- **TBNRM and Environmental Conventions:** Several international conventions have the potential to facilitate TBNRM. The potential role that environmental forums—such as CBD, CITES, CCD, the Ramsar Convention and the Convention on the Conservation of Migratory Species of Wild Animals—can play in TBNRM should be investigated more fully, since at the moment the role of several international conventions seems to be limited. Avenues of promising findings should be followed up on.
- **TBNRM Assessment Tools:** These help with the process of deciding whether to go transboundary or not, and if so, to determine which objectives require further testing and refinement.
- **TBNRM and Compartmentalized Government:** TBNRM needs holistic, multi-level and inter-sectoral approaches. A review across a number of countries should be undertaken to see whether and how the existing limitations are being tackled and what kind of solutions are being considered.

Communicating Results and Lessons

TBNRM results and lessons should be disseminated widely in Africa and indeed globally. This will help to ensure the most effective management of natural resources in transboundary areas. To promote an *exchange of experiences and learning,* mechanisms for

information sharing and networking need to be created or enhanced. Possibilities worth exploring include:

- **Networks:** Networks of natural resource policy makers and managers should be established. In order to succeed, networks should have clear objectives and roles—they should fill a specific need;
- **Information centers:** These can be set up to collect regional and international publications and other information on TBNRM, as Peace Parks Foundation does in Southern Africa;
- **Exchange visits to TBNRM sites:** Visiting other TBNRM sites and exchanging experiences on TBNRM can be extremely valuable to policy makers and managers;
- **Training courses:** Colleges and universities should incorporate TBNRM aspects into natural resource curricula, so that students can have a head start on TBNRM principles when they work; and
- **Conferences:** These can be used as platforms to exchange and discuss new information and increased understanding.

Database(s) of TBNRM Expertise in Africa

As expertise in TBNRM develops in African sites, experts can play important capacity-building and technical-assistance roles for other TBNRM initiatives. This includes expertise in legal aspects, planning, facilitation, organizational aspects and technical NRM issues, as proposed in Griffin (1999). A database should include the names of experts, their skill areas and experience, languages they speak and their availability. A fund might be made available to cover travel and consultancy fees to make this expertise available, thus supporting TBNRM development on a broad front in Africa.

4.2.2 Approaches to Focus On

Given the many TBNRM initiatives underway and the broader developments surrounding and affecting natural resource management and biodiversity conservation, a number of topics have been identified that could enhance the implementation of TBNRM.

Promoting TBNRM's Role in Economic Development

TBNRM needs adequate political support in order to integrate it into broader economic regional planning and development, supporting livelihoods through sound natural resource management. *Investment opportunities and partnership with the private sector* should be promoted in this vein. The range of economic activities should be *as broad-based as feasible* to avoid devastating impacts of possible single market collapses (e.g., tourism). However, TBNRM objectives should not be sidelined by the larger regional

planning objectives. Managers need to recognize when to *negotiate and trade-off wisely* where there are perceived net benefits, but should work to avert unacceptable adverse consequences to the natural resource base.

Collaborating across Sectors and Disciplines

TBNRM practitioners should increase their understanding of and collaboration with other sectors and disciplines within their countries and across their borders, as appropriate. This may include areas such as planning, immigration, transport, agriculture, energy and foreign affairs. New strategic partnerships need to be developed across institutional sectors: civil society, government and the private sector. Closer to home, greater collaboration among the various natural resource sectors is needed for sound integrated ecosystem management and multiple land use, in order to maximize possible benefits from TBNRM. This need is particularly prevalent in government, where compartmentalism of single natural resources limits the implementation of TBNRM.

Mainstreaming TBNRM in Regional and International Forums

Where appropriate, TBNRM needs to be mainstreamed to a greater extent in regional and international economic forums (e.g., EAC, SADC, WTO). Existing regional protocols should be put to greater use to facilitate and catalyze TBNRM processes; natural resource managers in government, civil society and the private sector need to increase their understanding of and participation in these regional forums.

Financing TBNRM

Adequate financing of TBNRM initiatives is a challenge, particularly for large ones. Donor funding cycles are often too short for developing financial sustainability. Donors should be realistic about the time TBNRM takes to develop, especially when operating at high levels with formal agreements, and commit to supporting for *longer time frames* if interim evaluations indicate successful progress. Donors should place emphasis on supporting the process and building capacity rather than looking for quick and direct results. TBNRM implementers need to plan for reliable long-term funding, including involvement where feasible of the private sector and other, more *independent and sustainable funding mechanisms* besides donor-funded project cycles.

Building Capacity for TBNRM

Capacity building is needed for key organizations and institutions up to a minimum critical level. While the capacity development should cover a broad range of skills concerning natural resource management and biodiversity conservation, in the TBNRM context special attention should be given to negotiating and conflict resolution skills.

4.3 Closing Remarks

The rationale for TBNRM is strong, and there is growing interest in the subject in sub-Saharan Africa. Opportunities for TBNRM development are being explored and recognized rapidly by many practitioners and decision makers. At the same time, the constraints are numerous and varied. In some cases the costs are too high in relation to the benefits and it is more effective and efficient for countries to manage their shared resources independently.

Many transboundary initiatives are likely to remain at a small and less formalized level rather than becoming larger and more formal. Given the huge range of complex individual circumstances in transboundary areas, there is no one ideal formula for TBNRM development. Capacity building, flexibility, experimentation, adaptive management and the learning and sharing of experiences will be important ingredients in TBNRM development in sub-Saharan Africa in the foreseeable future.

References

References

Biodiversity Support Program Transboundary Project Publications

Biodiversity Support Program. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa: Highlights and Findings.* Washington, D.C., U.S.A.: Biodiversity Support Program.

———. 2001a. *Beyond Boundaries: Transboundary Natural Resource Management in West Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program. *

———. 2001b. *Beyond Boundaries: Transboundary Natural Resource Management in Central Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program. *

———. 2001c. *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Cumming, D. H. M. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Environmental Context: Natural Resources, Land Use, and Conservation.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Griffin, J., D. Cumming, S. Metcalfe, M. t'Sas-Rolfes, J. Singh, E. Chonguiça, M. Rowen, and J. Oglethorpe. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Lanjouw A., A. Kayitare, H. Rainer, E. Rutagarama, M. Sivha, S. Asuma, and J. Kalpers. 2001. *Beyond Boundaries: Transboundary Natural Resource Management for Mountain Gorillas in the Virunga-Bwindi Region.* Washington, D.C., U.S.A.: Biodiversity Support Program. *

Lycklama à Nijeholt, R., S. de Bie, and C. Geerling. 2001. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in West Africa. In

Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in West Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program. *

Magha, M. I., J-B. Kambou, and J. Koudenoukpo. 2001. Beyond Boundaries: Transboundary Natural Resource Management in "W" Park. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in West Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program. *

Metcalfe, S. C. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Community Perspectives*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Muruthi, P., and K. Frohardt. 2001. Beyond Boundaries: Transboundary Natural Resource Management in the Amboseli-Longido-Kilimanjaro Area. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Rodgers, A., J. Mugabe, and C. Mathenge. 2001a. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in Eastern Africa. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Rodgers, A., R. Nabanyumya, and J. Salehe. 2001b. Beyond Boundaries: Transboundary Natural Resource Management in the Minziro-Sango Bay Forest Ecosystem. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Singh. J. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Global Review.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Steel, L., and B. Curran (with contributions from Henk Hoefsloot). 2001. Beyond Boundaries: Transboundary Natural Resource Management in the Sangha River Trinational Initiative. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Central Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program. *

van der Linde, H., J. Oglethorpe, T. Sandwith, D. Snelson, and Y. Tessema (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. *

van der Linde, H., D. Zbicz, and J. Stevens. 2001. *Beyond Boundaries: A Bibliography on Transboundary Natural Resource Management in Sub-Saharan Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Wilkie, D. S., E. Hakizumwami, N. Gami, and B. Difara. 2001. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in Central Africa. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Central Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program. *

All listed publications are available online at www.BSPonline.org. Publications marked with an asterisk [*] are also available in French.

References Cited in This Publication

Biodiversity Support Program. 1992. *Central Africa: Global Climate Change and Development. Synopsis*. Washington, D.C., U.S.A.: Biodiversity Support Program.

————. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa: Highlights and Findings*. Washington, D.C., U.S.A.: Biodiversity Support Program.

————. 2001a. *Beyond Boundaries: Transboundary Natural Resource Management in West Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

————. 2001b. *Beyond Boundaries: Transboundary Natural Resource Management in Central Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

————. 2001c. *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Bwango, A., J. Wright, C. Elias, and I. Burton. 2000. Reconciling national and global priorities in adaption to climate change: With an illustration from Uganda. *Environmental Monitoring and Assessment* 61: 145–159.

Byers, B. 2000. *Understanding and Influencing Behaviors: A Guide*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Cumming, D. H. M. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Environmental Context: Natural Resources, Land Use, and Conservation.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Fowkes, S. 1999. *Cape Action Plan for the Environment: Situation Assessment and Review, Public Involvement Programme.* Metaplan (Pty) Ltd.

Griffin, J., D. Cumming, S. Metcalfe, M. t'Sas-Rolfes, J. Singh, E. Chonguiça, M. Rowen, and J. Oglethorpe. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Griffiths, I. L. 1995. African boundaries and national parks. In G. Blake *et al.*, eds., *The Peaceful Management of Transboundary Resources,* pp 357–370. London, U.K.: Graham&Trotman/Martinus Nijhoff.

Grimble, R. J., and M-K. Chan. 1995. Stakeholder analysis for natural resource management in developing countries: Some practical guidelines for making management more participatory and effective. *Natural Resources Forum* 19(2): 113–124

Intergovernmental Panel on Climate Change, Working Group II. 2001. *Technical Summary. Climate Change 2001: Impacts, Adaption and Vulnerability.* Accepted paper for the Sixth Session of IPCC Working Group II, 13–16 February 2001. IGPP, Geneva, Switzerland.

Lanjouw A., A. Kayitare, H. Rainer, E. Rutagarama, M. Sivha, S. Asuma, and J. Kalpers. 2001. *Beyond Boundaries: Transboundary Natural Resource Management for Mountain Gorillas in the Virunga-Bwindi Region.* Washington, D.C., U.S.A.: Biodiversity Support Program.

Lycklama à Nijeholt, R., S. de Bie, and C. Geerling. 2001. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in West Africa. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in West Africa.* Washington, D.C., U.S.A.: Biodiversity Support Program.

MacArthur, J. 1997. *Stakeholder Roles and Stakeholder Analysis in Project Planning: A Review of Approaches in Three Agencies—World Bank, ODA and NRI.* New Series Discussion Papers (#73, 22 pp.), Development and Project Planning Centre, University of Bradford, Bradford, U.K.

Magha, M. I., J-B. Kambou, and J. Koudenoukpo. 2001. Beyond Boundaries: Transboundary Natural Resource Management in "W" Park. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in West Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Margoluis R., C. Margoluis, K. Brandon, and N. Salafsky. 2000. *In Good Company: Effective Alliances for Conservation*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Margoluis, R., and N. Salafsky. 1998. *Measures of Success: Designing, Managing and Monitoring Conservation and Development Projects*. Washington, D.C., U.S.A. and Covelo, Calif., U.S.A.: Island Press.

———. 2001. *Is Our Project Succeeding? A Guide to Threat Reduction Assessment for Conservation*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Metcalfe, S. C. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Community Perspectives*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Muruthi, P., and K. Frohardt. 2001. Beyond Boundaries: Transboundary Natural Resource Management in the Amboseli-Longido-Kilimanjaro Area. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Rodgers, A., J. Mugabe, and C. Mathenge. 2001a. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in Eastern Africa. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Rodgers, A., R. Nabanyumya, and J. Salehe. 2001b. Beyond Boundaries: Transboundary Natural Resource Management in the Minziro-Sango Bay Forest Ecosystem. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Eastern Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

SADC. 1994. *SADC Policy and Strategy for Environment and Sustainable Development, ELMS*.

———. 1999. *Protocol on Wildlife Conservation and Law Enforcement in the Southern African Development Community*. SADC Wildlife Sector TCU: Lilongwe, Malawi. 14 pp.

Said, M.Y., R. N. Chunge, G. C. Craig, C. R. Thouless, R. F. W. Barnes, and H. T. Dublin. 1995. *African Elephant Database 1995*. Gland, Switzerland: IUCN.

Salafsky, N., and R. Margoluis. 1999. *Greater Than the Sum of Their Parts: Designing Conservation and Development Programs to Maximize Resources and Learning*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Salafsky, N., R. Margoluis, and K. Redford. 2001. *Adaptive Management: A Tool for Conservation Practitioners*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Sandwith, T. S., C. Shine, L. S. Hamilton, and D. A. Sheppard. 2001. *Transboundary Protected Areas for Peace and Cooperation*. Gland, Switzerland and Cambridge, U.K.: IUCN.

Shambaugh, J., J. Oglethorpe, and R. Ham, with contributions from Sylvia Tognetti. 2001. *The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Singh. J. 1999. *Study on the Development of Transboundary Natural Resource Management Areas in Southern Africa—Global Review*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Steel, L., and B. Curran (with contributions from Henk Hoefsloot). 2001. Beyond Boundaries: Transboundary Natural Resource Management in the Sangha River Trinational Initiative. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural Resource Management in Central Africa*. Washington, D.C., U.S.A.: Biodiversity Support Program.

Thorsell, J. 1990. Through hot and cold wars, parks endure. *Natural History* 6(90): 59–60.

UNESCO. 2000. *MAB Seville 5+ Recommendations for the Establishment and Functioning of Transboundary Biosphere Reserves*. Available online at http://www.unesco.org/mab/mabicc/2000/eng/TBREng.htm.

Westing, A. H. 1998. Establishment and management of transfrontier reserves for conflict and prevention and confidence building. *Environmental Conservation* 25(2): 91–94.

Wilkie, D. S., E. Hakizumwami, N. Gami, and B. Difara. 2001. Beyond Boundaries: Regional Overview of Transboundary Natural Resource Management in Central Africa. In Biodiversity Support Program, *Beyond Boundaries: Transboundary Natural*

Resource Management in Central Africa. Washington, D.C., U.S.A.: Biodiversity Support Program.

World Wildlife Fund. 2000. *Stakeholder Collaboration: Building Bridges to Conservation*. Washington, D.C., U.S.A.: World Wildlife Fund.

World Wildlife Fund-US. In press. *Learning Across Boundaries: Broad-Scale Conservation*. Proceedings from November 19–22, 2000 USAID Global Conservation Program Workshop. Washington, D.C., U.S.A.: World Wildlife Fund. Forthcoming in 2001.

Zbicz, D. C. 1999. *Transboundary Cooperation in Conservation: A Global Survey of Factors Influencing Cooperation between Internationally Adjoining Protected Areas*. Ph.D. diss., Nicholas School of the Environment, Duke University, Durham, N.C., U.S.A.

———. 2001. Global list of internationally adjoining protected areas. In T. S. Sandwith, C. Shine, L. S. Hamilton, and D. A. Sheppard, *Transboundary Protected Areas for Peace and Cooperation*. Gland, Switzerland and Cambridge, U.K.: IUCN.

Annexes

Annex 1

A Non-Exhaustive List of Regional and Global Conventions and Agreements and Organizations with Relevance for TBNRM

(Note: The endnotes provide references to Web sites containing texts on conventions and agreements or information on the listed organizations.)

Convention/ Agreement/ Organization	Year (opened for signing/adopted/ established)	Relevant sections/ notes
1. Regional Conventions, Agreements and Organizations		
African Convention on the Conservation of Nature and Natural Resources (Algiers)[1]	1968	Article V.2, Articles XIV.1 and 3 and Article XVI Focuses in general on the sustainable use and conservation of soil, water, flora and faunal resources and calls in particular for consultation between upstream and downstream parties regarding the joint development and conservation of shared surface or underground water resources to ensure that conservation and management of natural resources are treated as an integral part of regional development plans. It also calls for, where any national development plans are likely to affect the natural resources of another state, the planning state to consult with the latter; and stipulates rules regarding interstate cooperation.
Comité Inter-Etats de Lutte contre la Sécheresse au Sahel (CILSS) (Inter-State Committee for the Fight against Desertification in the Sahel)	1973	CILSS had developed into a structure that plays an important role in West Africa concerning food security and natural resource management, as regards, for example, desertification. In 1999 ECOWAS and CILSS wrote an action program for West Africa and assigned a chapter to transboundary natural resource management focusing on protected areas, pastoral resources and transboundary transhumance, forests and fragile ecosystems (the humid and arid zones, mountain and mangrove areas). CILSS can provide

Continued on page 131

Continued from page 130

Convention/ Agreement/ Organization	Year (opened for signing/adopted/ established)	Relevant sections/ notes
		proposals to national governments, but has no power of implementation. It comprises nine countries: Gambia, Guinea-Bissau, Cape Verde, Senegal, Mauritania, Mali, Burkina Faso, Niger and Chad.
Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African region[2]	1981	Preamble, Article IV.1, Article IV.4 and Article XIII.3 Calls for cooperation among parties, joint action, collaboration with international organizations and NGOs, and shared research.
Protocol Concerning Protected Areas and Wild Fauna and Flora in the Eastern African Region	1985	Preamble and Article VI Calls for close cooperation, especially regarding migratory corridors.
Nairobi Convention for the Protection, Management and Development of Marine and Coastal Environment of the Eastern African Region[3]	1985	Preamble and Articles X, XI, XIII, XIV, XV Calls for international cooperation on protection, management and development of marine and coastal resources through, for instance, establishing jointly protected areas; cooperation in combating pollution; and scientific and technical collaboration.
Southern African Development Community (SADC)[4]	1992	Calls for protection of biodiversity; development, promotion and harmonization of policies and programs aimed at effective and sustainable utilization of natural resources; and development and harmonization of sound environmental management policies. The Southern African Development Co-ordination Conference (SADCC), the forerunner of the SADC, was established in April 1980.
Agreement on the Conservation of African-Eurasian Migratory Waterbirds[5]	1994	Article III — d, f, h, l These articles call for the coordination of efforts, especially where wetlands extend over the area of more than one party; international cooperation for emergency situations; and joint research and monitoring.

Continued on page 132

Continued from page 131

Convention/ Agreement/ Organization	Year (opened for signing/adopted/ established)	Relevant sections/ notes
Intergovernmental Authority on Development (IGAD)[6]	1996	IGAD is the authority superseding the Intergovernmental Authority on Drought and Development (IGADD), which was created in 1986 by the six drought-stricken countries of Djibouti, Ethiopia, Kenya, Somalia, Sudan and Uganda to coordinate development in the Horn of Africa, with Eritrea now as seventh member. Food security and environment protection is identified as one of three priority areas. It is recognized that the subregion has abundant natural and human resources that could be developed and exploited to achieve collective self-reliance where peace and security prevails, while preserving the natural resource base and environment. Within this priority area the IGAD aims to harmonize NRM policies and initiate and promote programs and projects to achieve regional food security, sustainable development of natural resources and environmental protection.
Conference on Central African Moist Forest Ecosystems (CEFDHAC, launched by the Brazzaville Declaration)	1996	Collaborative efforts to manage the forests of the Central Africa region; involves Burundi, Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda and São Tomé and Principé.
Yaoundé Declaration	1999	Calls for accelerating transboundary protected area development, adopting harmonized national forest policies, making concerted efforts to stamp out large-scale poaching, and promotion of national and subregional exchanges of experiences, research and information.
Convention on the Conservation of European Wildlife and Natural Habitats (Bern)[7]	1979	Chapter IV – Article 10; Chapter V – Article 11a Calls for coordinating research and other efforts for migratory species, cooperating where possible. Focus is on European states that are party to the convention, but may provide relevant connections regarding shared migratory species.

Continued on page 133

Continued from page 132

Convention/ Agreement/ Organization	Year (opened for signing/adopted/ established)	Relevant sections/ notes
2. Global Conventions and Agreements		
Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar)[8]	1971	Article 5, Objective 7.1 Calls for consultation on wetlands extending over territories of more than one contracting party or for shared water systems; identification of international and/or regional needs for managing shared wetlands and shared catchments; and developing and implementing common approaches.
Convention concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)[9]	1972	Global recognition and support of specified cultural and natural heritage sites—recently being applied to transboundary sites to a greater extent as well.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[10]	1973	Provides a framework for international trade of species listed in the Appendices of the Convention.
Convention on the Conservation of Migratory Species (Bonn)[11]	1979	Article III – 4b, Article IV-4, ArticleV-5f, Article V-5k, Article V-5l Calls for the prevention of obstacles to migration; taking of action with respect to animal populations that periodically cross boundaries; maintenance of habitats in migration routes; coordinating antipoaching efforts and exchange of information.
Convention on Biological Diversity[12]	1992	Preamble, Article 5, 14-1c, 15-2, 18-1, 10-5 Global cooperation regarding sustainable use of natural resources, biodiversity conservation and equity in benefit sharing; cooperation in areas beyond national jurisdiction and other matters of mutual interest; encouraging bilateral, regional, or multilateral agreements for activities affecting other parties; making genetic resources available to other parties; and scientific cooperation/joint research.

Continued on page 134

Continued from page 133

Convention/ Agreement/ Organization	Year (opened for signing/adopted/ established)	Relevant sections/ notes
The Malawi Principles for Ecosystem Management for the Convention on Biological Diversity	1998	Establishes a holistic and ecosystem-based approach to natural resource management—a key rationale for TBNRM initiatives. Principles state that managers should consider effects of activities on adjacent and other ecosystems, and involve all relevant sectors of society and scientific disciplines.
United Nations Framework Convention on Climate Change.[13]	1992	Regional and subregional collaboration to combat elements that cause land degradation. Calls for NGO and international organizational support for developing countries.
United Nations Convention to Combat Desertification[14]	1994	Provides international framework for the prevention of desertification and calls for international and NGO participation and oversight of internal and interstate projects.

1. http://www.fletcher.tufts.edu/multi/texts/african_convention.txt
2. http://sedac.ciesin.org/pidb/texts/marine.coastal.west.central.africa.1981.html
3. http://sedac.ciesin.org/entri/texts/marine.coastal.east.africa.1985.html
4. http://www.sadc.int
5. http://www.wcmc.org.uk/cms/aew_text.htm
6. http://www.igadregion.org
7. http://www.nature.coe.int/english/cadres/berne.htm
8. http://www.ramsar.org/index_key_docs.htm#conv
9. http://www.unesco.org/whc/archive/convtext.htm
10. http://www.cites.ec.gc.ca/
11. http://www.wcmc.org.uk/cms/
12. http://www.biodiv.org/convention/articles.asp?lg=0
13. http://www.unfccc.de/
14. http://www.unccd.int/

Annex 2

Analyzing Potential Transboundary Issues: An Illustration Using TBNRM Case Studies

Case Study A.2.1: "W" Park

The region spanning the contemporary convergence of the borders of Benin, Burkina Faso and Niger constitutes the "W" Parks complex in the Guinea savanna of West Africa. The French colonial administration first established the heart of this complex as a hunting area in the 1930s—and later, as protected areas in the 1950s. With independence, each new government created distinct services for the environment covering protected areas and wildlife. As a result, subsequent cooperation regarding parks management and the protection of common wildlife resources has remained very limited. There have been modest efforts at collaboration to ensure compatibility and complementary action in administration, local planning and efforts to conserve and use resources—but the driving forces have essentially remained national factors specific to each country.

There has, however, been increasing recognition of the transboundary impacts of resource management in these three countries. The nature conservation authorities have increasingly come to terms with the need to collaborate more closely on a common approach to the protected areas and adjacent areas to ensure sustainability and increase the environmental viability and cost effectiveness of management. As described in Section 3.2.1, elephants are unevenly distributed among the three countries—as a result of human pressures with direct consequences on the natural habitat in Niger and on the attractiveness of the parks in Benin and Burkina Faso for tourism. The three countries have come to agreement on legislation and measures to reduce poaching.

Infrastructure, government services, parks management, legislation and local administration vary significantly for each national park and the adjacent areas. For example, Burkina Faso has hunting areas licensed to private operators but has failed to successfully share benefits with local communities. The result has been disaffection and disagreements in these communities on the value of conservation. The government has reinstated pre-existing local rights to seasonal fishing in rivers in the park. In strong contrast, the services in Niger have barred all fishing and only recently authorized some hunting licenses for

birds and other small game. State officials responsible for the environment have met to agree on common positions that would avoid divergent practices among the three park areas that negatively affect the others.

The principal issues in this case, and the risks and opportunities associated with each are summarized in Table A.2.1. If one begins with some of the natural resource management issues, e.g., the competition for water and forage resources among wildlife, transhumant pastoralists and local communities, it quickly becomes apparent that there are social, economic, institutional and political impacts. Some of these can be addressed by national efforts in each of the countries—e.g., by ensuring the equitable flow of benefits at a local level. However, the risks and opportunities have transboundary impacts, and there is no means of separating all of these issues or of dealing with them in a country-specific manner. The matrix therefore reflects an interactive set of issues across sectors, and the imperative for both national and transboundary management actions either to avoid or mitigate an impact, or to create or enhance an opportunity. In the example of "W" Park, there is a real requirement to build the respective national capacities for natural resource management, and to undertake the planning for a strategic program to do this. At the same time, the issues resonate across the boundaries, and there would be a significant advantage in undertaking these activities collectively, which would build confidence and enhance cooperative management for some of the more difficult conflicts that have a transboundary nature.

After almost two decades of frequent contacts, consultations and regional meetings, the three countries have agreed on a regional program to improve "W" Park management. The European Union will provide external financing for the effort, which covers a broad field of issues from scientific research and information sharing to infrastructure and diversification of economic activities. Agreement on the program has been the result of considerable negotiation and the growing awareness in both government and civil society of the risks of no coordinated action, both in terms of growing conflicts over natural resources and the resources' quality and availability.

In addition, the region is in the process of becoming a focal point for the application of international conventions to protected areas and biodiversity. The three national parks are in the process of becoming simultaneously transboundary sites for the Man and the Biosphere, Ramsar, and World Heritage Conventions. Responding to the opportunities and responsibilities that result from these classifications, with the accompanying regulation and monitoring, will constitute a force for more rigorous, complementary management mechanisms and measures.

The challenge for the new level of collaboration among the three countries will be coordination among government services, the development of an effective process for ensuring compatibility in law and administrative measures, and reaching agreement on

sharing responsibility for joint resources such as the maintenance of road infrastructure and tourist venues. The sustained impact and viability of the exceptional support offered by the European Union will depend on the political commitment and negotiations to satisfy the interests of each country. Building the financial mechanisms and autonomy necessary for future management will prove crucial to sustainability. The opportunity appears timely given the general recognition of the various threats to the parks. The overall context of progressive decentralization of powers to localized government empowers local actors including rural groups and creates an environment that is favorable to greater transparency in public affairs.

TABLE A.2.1 THREATS AND OPPORTUNITIES FOR TRANSBOUNDARY NATURAL RESOURCE MANAGEMENT IN "W" PARK

Issue	Risks and opportunities			Management implications	
	Benin (Be)	Burkina Faso (BF)	Niger (Ni)	National	Transboundary ↻ Interdependant → One-way dependent
Natural resource	• Poaching pressure results in elephants dispersing to BF and Ni *(transboundary natural resource and social impact)* • Competition over use of water resources including dams and access to water for livestock and wildlife *(social and political impact)*	• Elephant density exceeds park carrying capacity *(natural resource impact)* • Competition over use of water resources including dams and access to water for livestock and wildlife *(social and political impact)*	• Elephants degrade park area due to heavy pressures in riparian zone and restrictions curtailing their cross-border mobility. *(natural resource impact)* • Competition over use of water resources including dams and access to water for livestock and wildlife *(social and political impact)*	• Improved surveillance needed in Be • Measures need to be taken to counter long-term impacts of exceeding carrying capacity • A better understanding is required of the composition and functions of biodiversity in all three components of "W" Park (there is a collaborative element to this national activity) • Conservation planning in each country is required	• Managers perceive the need for cooperative planning of water points to distribute elephants more evenly ↻ • There is a need for compatible hunting laws and regulations to avoid unsustainable levels of use ↻ • There is an urgent requirement to reach agreement on dams and flow regimes of rivers ↻
Social	• Herders move through park and bordering areas on annual transhumance in conflict with farmers, with extreme pres-	• Herders pass freely through national borders within the park and into the neighboring areas in order to escape conflicts with wildlife service in Be	• Herders move through park and adjacent areas on annual transhumance in conflict with farmers and wildlife service *(natural resource impact)*	• Need for adjudication building on local governance in areas bordering the parks complex in order to resolve conflict with	• Need for agreement on the best way to handle the transboundary impacts on water resources, which affect wildlife movement and transhumance ↻ →

	sure on riparian habitats, forage and water resources *(transboundary natural resource impact)*	and Ni *(transboundary natural resource impact)*		farmers and consolidate herder rights to pasture and water	
Economic	• Lack of equitable distribution of resources among countries, communities, private sector (this applies to all three countries) • Opportunity to ensure better benefits from hunting from concession area southwest of park *(social impact)*	• Risk of unsustainable use of private hunting concessions adjacent to park, drawing animals from parks in each country *(natural resource impact)* • Limited village benefit from hunting *(social impact)*	• Seasonal hunting of small game licensed in area immediately north of the park (the Tamou region)	• Negotiate and recognize the legitimacy of pasture and other natural resource access rights • Ensure a more equitable flow of benefits from the transboundary hunting resource • Generally secure the equitable distribution of resources among communities and private sector	• Ensure the equitable distribution of benefits from the use of shared resources • Harmonize hunting policies to remove distortions and transboundary impacts • Share responsibility for joint resources, e.g., maintenance of infrastructure • Plan an integrated tourism product area
Institutional	• Little capacity to manage protected areas *(natural resource impact)*	• Little capacity to manage protected areas *(natural resource impact)*	• Few resources to manage protected areas *(natural resource impact)*	• Decentralize powers to localized government that includes rural communities and is a catalyst for greater transparency in public affairs • Determine roles and responsibilities to ensure effectiveness, e.g., in antipoaching	• Jointly approach donors to finance a program to ensure compatible levels of capacity in the three countries • Introduce effective inter-sectoral and inter-agency mechanisms and agreements for natural resource management at the regional level

TABLE A.2.1 (CONTINUED)

Issue	Risks and opportunities			Management implications	
	Benin (Be)	Burkina Faso (BF)	Niger (Ni)	National	Transboundary Interdependant → One-way dependent
Institutional (continued)				operations or coordinated tourism development • Clarify role of government officers and other actors on best practice for sustainable management • Introduce effective inter-sectoral and inter-agency mechanisms and agreements for natural resources management	• Regional (and/or national): Establish financial basis for sustainability of management and autonomous mechanism for raising funds and making decisions
Political	• Lack of transparency in government • Resistance to changes in law and legislation to harmonize with the other countries (e.g., with regard to hunting season, fishing and so on) • Conflicts, with most powerful groups appropriating resources with persistent problems for disadvantaged/excluded groups • Perceived loss of national sovereignty in entering into transboundary agreements			• Broker political commitment and negotiations to satisfy the interests of each country • Reinforce local democracy and governance with national and regional implications	• Joint applications for transboundary World Heritage, Ramsar and Biosphere Reserve status increases international focus on region

Case Study A.2.2: The Maloti-Drakensberg Transfrontier Conservation and Development Area

The Maloti-Drakensberg mountains straddle the 300km-long border between South Africa and Lesotho, and represent a remnant of the Great Escarpment, rising to an altitude of 3482m, the highest point south of Kilimanjaro. The area is globally significant, with exceptional biodiversity and cultural resources. Component areas in South Africa have been listed as a Ramsar site, and as a World Heritage Site based on both cultural and natural criteria. The area is also highly significant as the major watershed and the source of most of the rivers in the subregion. Both Lesotho and South Africa are fundamentally dependent upon these mountains for their water resources, and ultimately their economic development.

The marginal agricultural land of the Natal Drakensberg and Lesotho occupied a geographically central, but politically marginal, position in the scramble for land in Southern Africa that took place in the nineteenth century. The distribution of people in and around the original mountain kingdom and the state of Lesotho is, however, crucial to these resources. The mountain ecosystem is fragile and the settlement of people in the higher reaches has had devastating consequences for both people and the environment. In South Africa, the policies of the apartheid government restricted certain communities to specific locations. In many cases these areas were of insufficient size or productivity to enable any sustainable form of land use, resulting in their general degradation and lack of development. Those areas adjacent to the mountains are among the most poverty-stricken in present day KwaZulu-Natal. In Lesotho, a pattern of transhumant livestock production has placed pressure on the grazing resources at high altitude during the summer months, especially through the injudicious use of fire, which respects no boundaries. Growing land hunger and a lack of alternative employment or economic opportunity have resulted in more permanent settlement and cultivation of high-altitude wetlands, a major threat to sustaining the quantity and quality of water production, as well as a direct threat to the area's globally significant biodiversity.

The changing political and economic relations between Lesotho and South Africa have had important impacts on joint natural resource management. Totally surrounded by South Africa, Lesotho has been heavily influenced by South Africa since independence in 1966. Although a destination for refugees from the apartheid policies, Lesotho cooperated with South Africa economically, and the official policy was one of peaceful coexistence during this period. The years of conflict within South Africa were reflected in the internal politics of Lesotho, with a division between those for and against collaboration with South Africa. A political standoff between the countries, which led to an economic blockade by South Africa in 1986, resulted ultimately in greater cooperation and the signing of the Lesotho Highlands Water Treaty, the establishment of a joint trade mission, and full

diplomatic relations in 1992. Following the political transformation in South Africa, President Mandela stressed the importance of good relations between the two countries. The growing involvement of the two countries in the Southern African Development Community (SADC) has led to greater interaction and collaboration at many levels. Friction remains, however, over persistent problems of livestock theft, drug smuggling and unresolved land claims. These activities have rendered certain areas difficult to govern, and have affected the viability of traditional farming practices on both sides of the border.

Economic ties and exchange, as well as the exploration of common development and tourism relationships, have grown in recent years. One example of the new relationship is the Drakensberg-Maloti Programme, which was initiated in 1982 at the request of the Lesotho Government as a collaborative effort between the two countries. Supervised by an Intergovernmental Liaison Committee, the program continued until 1993 when funding was withdrawn at a stage when most of the necessary baseline information had been collected, but without subsequently developing land-use planning and implementation strategies. Since that time, the authorities in each country have consulted with a range of role players including international donor organizations to maintain the initial momentum of the program. This has culminated in the preparation of a comprehensive proposal for a transfrontier conservation and development program supported by the Global Environment Facility, and the signing of a bilateral Memorandum of Understanding committing each country to a cooperative program to plan and develop this region strategically.

As with most large-scale conservation and development programs, there is an interplay of issues here (summarized in Table A.2.2). The recognition of the shared biological and cultural resources and the risk of their degradation initiated the transboundary discussions. From the point of view of biodiversity conservation and resource management, the program promotes the concept of a transboundary protected area with a potential for development as a transboundary World Heritage Site. It also envisages ecosystem linkages across the boundary to ensure that priority conservation areas effectively represent globally significant biodiversity. Although major parts of this program could be undertaken at a national level, the areas of richest biodiversity and the underlying ecosystem are inherently transboundary in nature.

It is, however, the broader regional economic development agenda that is the major driving force for the program. From a natural resource management perspective, the only viable alternative to continued degradation of natural resources is to develop economic alternatives to subsistence agriculture. Large tracts of the area are under communal land tenure, but with a relatively recent history of exploitation. There is an urgent need to understand the degree to which this ecosystem can sustain livelihoods and to exchange lessons between the countries on range management, local governance for natural resource management, and co-management agreements. The involvement of local communities in the management of existing protected areas (and the establishment of new ones),

as well as in the implementation of effective management programs to counter the threats of alien plant invasives and soil erosion, is crucial.

Without a major economic driver, it is unlikely that the obstacles to sustainable natural resource management can be overcome. The economic development potential of the area based on developing and marketing the transboundary area as a global tourism destination is indeed possible if the investment gap can be narrowed by substantial government support for infrastructure. The realization has led to the identification of the area by both countries as a candidate for rapid investment in the form of a Spatial Development Initiative, which can build on the political will and commitment of the bilateral agreement. The transboundary program consequently demands a high level of cooperation, capacity building and technical support for strategic planning. This will ensure that development goals are achieved in a way that is acceptable to and benefits local communities while ensuring that the area's natural and cultural resources are protected and sustained.

TABLE A.2.2 THE RATIONALE FOR TRANSBOUNDARY NATURAL RESOURCE MANAGEMENT IN THE MALOTI-DRAKENSBERG MOUNTAINS SHARED BY THE KINGDOM OF LESOTHO AND THE REPUBLIC OF SOUTH AFRICA

Issue	Risks and opportunities		Management implications	
	Kingdom of Lesotho (Les)	South Africa (SA)	National	Transboundary ↻ Interdependent → One-way dependent
Natural resource	• Degradation of high altitude wetlands and grazing resources *(social and economic impact)* • Unsustainable burning regime, with uncontrolled fires crossing boundary into South Africa *(natural resource and economic impact)* • Lack of protected area systems that represent globally significant biodiversity • Poor management infrastructure for nature conservation in Sehlabathebe National Park and new protected areas	• Alien plant invasions threaten biodiversity and are very expensive to remedy *(economic impact)* • Artificially accelerated erosion is caused by human activities • Rock art heritage is threatened by human and environmental factors *(social impact)* • The uKhahlamba-Drakensberg Park has been declared a World Heritage Site and Ramsar site	• Enhance conservation management plans for component protected areas (Les and SA) • Establish new protected areas for irreplaceable components of globally significant biodiversity • Enhance management of protected areas (Les and SA) • Prepare species recovery programs for priority species (Les and SA) • Develop protected-area management infrastructure (Les)	• Develop common strategic vision and implementation program for transboundary area ↻ • Develop compatible information and knowledge-building capacity ↻ • Develop compatible land-use zonation across international boundary ↻ • Develop compatible resource management programs and implement these cooperatively, e.g., for fire management ↻
Social	• Experience with participatory range management and protected area man-	• Disparities caused by previous government policies result in stark contrasts in	• Prepare integrated development plans with full involvement of	• Transfer experience of high-altitude rangeland management from

	agement approach *(natural resource impact)* • Human encroachment into globally significant and fragile mountain environment *(natural resource impact)*	socioeconomic development across the landscape *(economic and natural resource impact)*	stakeholders (SA and Les) • Enhance community conservation programs in communal land areas (Les and SA)	communal areas in Lesotho to similar area in SA → • Share approaches to local level institutions ↑↓
Economic	• Transhumance pastoralism leads to tragedy of the commons *(natural resource impact)* • Few alternative economic opportunities to sustainable use; high levels of poverty *(social and natural resource impact)* • Huge potential for tourism development in the highlands (Les)	• There is potential to accelerate the development of tourism industry based on key attractions • There is an opportunity to contribute to sustainable development of economically marginalized areas based on accelerated tourism development *(natural resource impact)*	• Undertake capacity building for entrepreneurial development and involvement in tourism (Les and SA)	• Develop an internationally significant transboundary tourism destination (The Roof of Africa) with linked marketing and development between SA and Les ↑↓
Institutional	• Fragmented institutional arrangements for highland region *(natural resource impact)* • Nature conservation activities limited to one national park *(natural resource impact)*	• Risk of fragmented institutional arrangements for nature conservation and land-use and development control *(natural resource and economic impact)* • Local board model provides opportunity for direct involvement of communities in protected area management *(social impact)*	• Develop Community Conservation Forums (Les) and Local Boards for Protected Areas (SA) • Harmonize nature conservation legislation and management over national and subnational jurisdictions (SA) • Establish an effective nature conservation agency (Les)	• Seek bilateral agreement and manage a transboundary steering committee of key stakeholders in each country ↑↓ • Prepare joint nomination proposal for world heritage and Ramsar status for transboundary area ↑↓ • Leverage transboundary capacity building for improved natural resource management →

TABLE A.2.2 (CONTINUED)

Issue	Risks and opportunities		Management implications	
	Kingdom of Lesotho (Les)	South Africa (SA)	National	Transboundary ⇄ Interdependent → One-way dependent
Political	• Political instability remains unresolved *(social and economic impact)*		• Foster cooperation between national and provincial levels of government, and with local government structures (SA and Les)	• Foster political reconciliation and cooperation between Lesotho and South Africa ⇄

Case Study A.2.3: The Virunga-Bwindi Mountain Gorilla Population

Mountain gorillas live in the afromontane forests astride three countries—the Democratic Republic of Congo, Rwanda and Uganda. These forests are divided into two forest blocks—the Virunga Volcanoes and Bwindi—that are separate ecological units. Within the Virungas, where the borders of the three countries meet, there are three contiguous national parks and there is a fourth park at Bwindi in Uganda. The conservation of the population of endangered mountain gorillas is thus under the mandate of three national protected area authorities. The national parks are interlinked; their viability is essential to the survival of the gorillas.

The International Gorilla Conservation Programme (IGCP) has been working in the Virunga-Bwindi region in Central Africa since 1991. The program is conducted by a coalition of three international NGOs: the African Wildlife Foundation (AWF), Fauna and Flora International (FFI) and World Wide Fund for Nature (WWF). IGCP's mission is the conservation of mountain gorillas and regional afromontane forests shared by the three countries. While much of its work is done in support of the three protected area authorities, it has a mandate from the authorities to work on transboundary issues that pertain to gorilla conservation.

Prior to the arrival of IGCP, the four parks were managed as separate entities by the national protected area authorities. Very high human population density, human encroachment, poaching, deforestation and civil unrest threaten the forest habitats, and these threats come from all sides and across the borders. It has been recognized that only by addressing these threats from all sides can the habitat be effectively protected.

Table A.2.3 summarizes the issues involved in considering this transboundary program. The perilous state of the gorilla populations has catalyzed intervention and, to some extent, the focus on gorillas and the expansion of related tourism have resulted in strengthened capacity for nature conservation. The transboundary program has identified a range of social, economic and political as well as institutional factors that must be addressed simultaneously with the natural resource management ones. Politically, the area is highly unstable, with two countries at war with the third—thus creating an extremely difficult context for collaborative programs. In addition, the large-scale movement of refugees has had enormous deleterious consequences for biodiversity and natural resources. In this situation, the ability of the program to operate nationally, while maintaining a transboundary perspective, has ensured that cooperation developed among the three protected area authorities is not completely lost. Indeed, the trust and understanding built among the three administrations for the parks is one seed to nurture as a basis for a lasting peace in the region.

IGCP has worked with the national protected area authorities toward transboundary regional conservation using a number of different strategies to establish non-conflictual

management practices for full collaboration. The choice of strategies has been based on the needs, opportunities and constraints in the region. The fact that the incentives and benefits, along with the costs of effective management, are comparable in the three countries has meant that strong synergy and similar approaches could be developed for the overall program. The emphasis has been on effective conservation at the field level, building gradually toward the recognition and institutionalization of these approaches into formal mechanisms and agreements at political levels.

The Virunga-Bwindi case is illustrative of the need to evaluate the rationale for undertaking some form of transboundary program or collaboration. IGCP has essentially focused on national level interventions by creating capacity in each of the three countries. It has therefore not been necessary for the three countries themselves to attempt to establish a transboundary program. As the national activities have progressed, the transboundary impacts of the program have become more obvious, as has the need for specific areas of collaboration. IGCP has played the role of facilitator for international cooperation and brokered political agreements to ensure commitment to transboundary natural resource management. It also has been able to identify the opportunities for social and economic development. These are enhanced by a stronger regional focus, which the three countries might not have achieved independently. Ultimately, the enhanced opportunities from a joint program have catalyzed negotiations for the more formal establishment of a transboundary protected area supported by political agreement among the countries.

TABLE A.2.3 THE RATIONALE FOR TRANSBOUNDARY NATURAL RESOURCE MANAGEMENT IN THE VIRUNGA/BWINDI PROTECTED AREA COMPLEX SHARED BY UGANDA, THE DEMOCRATIC REPUBLIC OF CONGO AND RWANDA

Issue	Risks and opportunities			Management implications	
	Uganda (Ug)	Democratic Republic of Congo (DRC)	Rwanda (Rw)	National	Transboundary ⇄ Interdependent → One-way dependent
Natural resource	• Shared afromontane forest with DRC and Rw. World Heritage Site in Ug • Mobile gorilla population that crosses borders *(economic impact)* • Effective law enforcement of mountain gorillas requires coordination *(institutional and social impact)* • Forests are important in terms of biodiversity and species endemism and have critical ecological role as important watershed and in controlling soil erosion in adjacent areas under agriculture; also non-extractive multiple use underway (*social, economic and political impact)*	• Shared afromontane forest with Ug and Rw. WHS in DRC • Mobile gorilla population that crosses borders *(economic impact)* • Effective law enforcement of mountain gorillas requires coordination *(institutional and social impact)* • Forests are important in terms of biodiversity and species endemism and have critical ecological role as important watershed and in controlling soil erosion in adjacent areas under agriculture; also non-extractive multiple use underway *(social, economic and political impact)* • Little forest remains outside of parks—so	• Shared afromontane forest with DRC and Ug. Newly proposed WHS in Rw • Mobile gorilla population that crosses borders (*economic impact*) • Effective law enforcement of mountain gorillas requires coordination *(institutional and social impact)* • Forests are important in terms of biodiversity and species endemism and have critical ecological role as important watershed and in controlling soil erosion in adjacent areas under agriculture; also non-extractive multiple use underway *(social, economic and political impact)* • Little forest remains outside of parks—so	• Protected area authorities to ensure regionally compatible management policies	• Cooperate to secure landscape-level strategy for shared afromontane forest ecosystem ⇄ • Cooperate to manage the shared single population of endangered mountain gorillas ⇄ • Threats to biodiversity operate in all three countries with transboundary impacts and only common and cooperative approaches can resolve this ⇄ • Establish a compatible ranger-based monitoring system and means of integration with management ⇄

TABLE A.2.3 (CONTINUED)

Issue	Risks and opportunities			Management implications	
	Uganda (Ug)	Democratic Republic of Congo (DRC)	Rwanda (Rw)	National	Transboundary ↺ Interdependent → One-way dependent
	• Little forest remains outside of parks—so forests viewed as a source of resources and arable land *(social, economic, institutional and political impact)* • Very few families displaced establishing the park	forests viewed as a source of resources and arable land *(social, economic, institutional and political impact)* • Very few families displaced establishing the park • Pressure and damage from war/refugees has led political, humanitarian and conservation agencies to work together and build expertise *(social and institutional impact)*	forests viewed as a source of resources and arable land *(social, economic, institutional and political impact)* • Very few families displaced establishing the park		
Social	• Decades of repression inhibited national economic development *(economic impact)* • Co-management arrangements with local communities exist for gorilla-based	• Decades of repression inhibited national economic development *(economic impact)* • Continuing war from 1996 to date *(natural resource, economic and institutional impact)*	• Decades of repression inhibited national economic development *(economic impact)* • War from 1990 to 1994 and problems with insurgency to date *(natural resource, economic and institutional impact)*	• Institutional arrangements for participation by communities and local government can be strengthened	• Experience of participatory management in Ug can be shared with Rw and DRC → • Build on the common history and social groupings for regional cooperation ↺

	tourism *(institutional and social impact)* • Participation by communities and local authorities has been implemented for several years *(institutional impact)* • Jobs created inside and outside protected area linked to NRM activities *(economic impact)*	• Jobs created inside and outside protected area linked to NRM activities *(economic impact)*	• Jobs created inside and outside protected area linked to NRM activities *(economic impact)* • Strengthened social involvement in participation in NRM *(natural resource and economic impact)*		
Economic	• Gorilla-based tourism can cover costs of park management, and contribute significantly to park authority budget and development of national economies at all levels *(natural resource, social, institutional and political impact)* • Regional conflict has negatively affected tourism and park revenues *(social, natural resource and institutional impact)* • Benefit-sharing mechanisms have been developed *(social and natural resource impact)*	• Gorilla-based tourism can cover costs of park management, and contribute significantly to park authority budget and development of national economies at all levels *(natural resource, social, institutional and political impact)* • Regional conflict has negatively affected tourism and park revenues *(social, natural resource and institutional impact)* • Mechanisms to avoid crop damage by gorillas have been identified and are	• Regional conflict has negatively affected tourism and park revenues *(social, natural resource and institutional)* • Gorilla-based tourism can cover costs of park management, and contribute significantly to park authority budget and development of national economies at all levels *(natural resource, social, institutional and political impact)* • Benefit-sharing mechanisms being developed *(social and natural resource impact)*	• Ensure that benefit-sharing mechanisms are enabled • Ensure full involvement of local communities in entrepreneurial opportunities	• Promote the regional growth of tourism based on protected areas to the benefit of all three countries ↑↓ • Establish a common set of principles and rules for the management of tourism in each country ↑↓ • Extend experience on management of gorilla crop damage to neighbors → • Consider the development of a joint trust fund for financing transboundary activities ↑↓

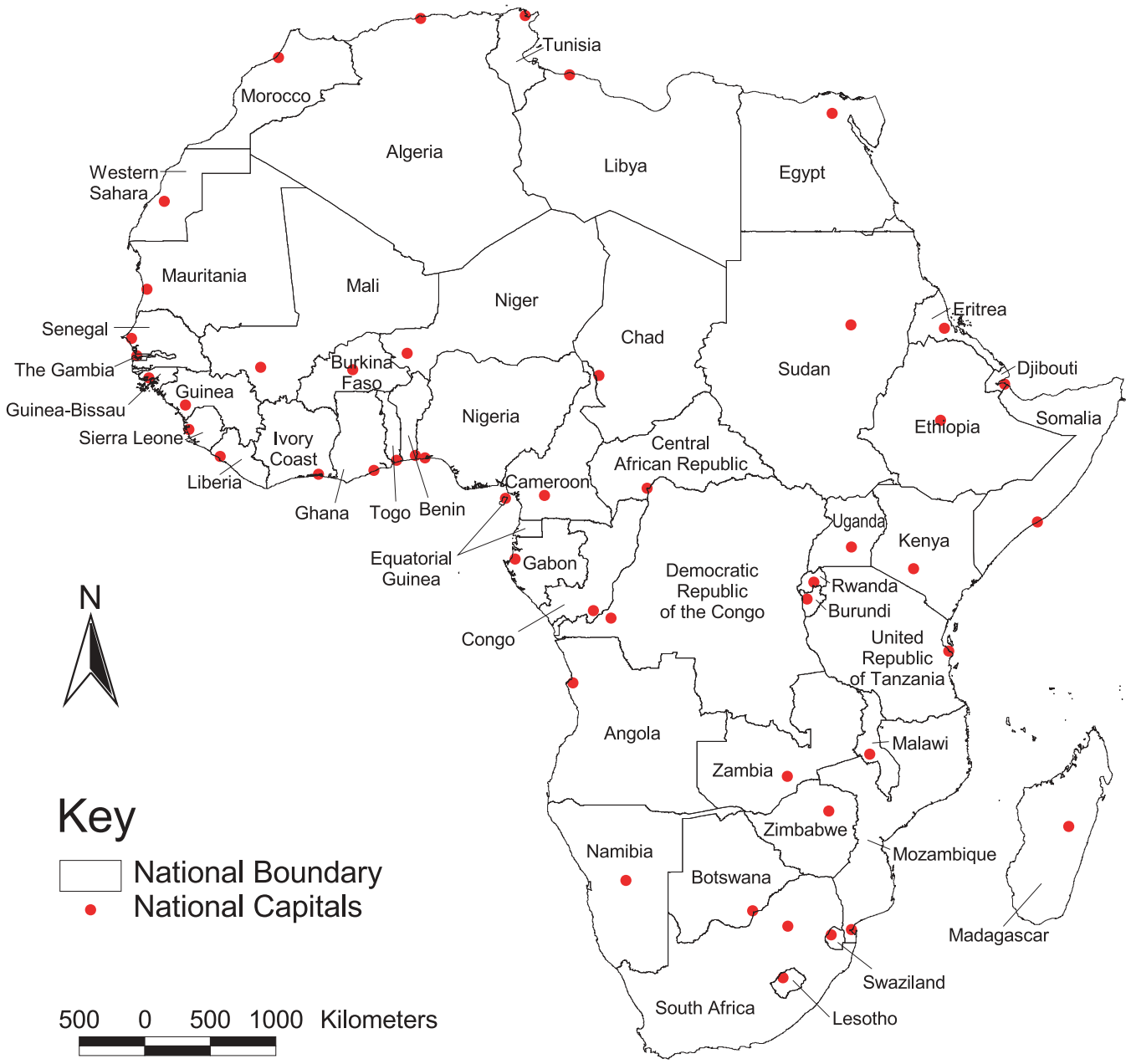
TABLE A.2.3 (CONTINUED)

Issue	Risks and opportunities			Management implications	
	Uganda (Ug)	Democratic Republic of Congo (DRC)	Rwanda (Rw)	National	Transboundary ↻ Interdependent → One-way dependent
	• Mechanisms to avoid crop damage by gorillas have been identified and are being implemented (social impact) • Tourism has the potential to negatively impact gorillas through disease and disturbance (*natural resource impact*)	being implemented *(social impact)* • Tourism has the potential to negatively impact gorillas through disease and disturbance *(natural resource impact)*	• Mechanisms to avoid crop damage by gorillas have been identified and are being implemented *(social impact)* • Tourism has the potential to negatively impact gorillas through disease and disturbance *(natural resource impact)*		
Institutional	• Parastatal has appropriate mandate and structure for effective conservation management and tourism within the parks	• Parastatal has appropriate mandate and structure for effective conservation management and tourism within the parks • No regular income owing to war and therefore no payment of salaries for conservation staff *(natural resource and economic impact)*	• Parastatal has appropriate mandate and structure for effective conservation management and tourism within the parks	• Regional NGOs collaborate to support national, but compatible activities in the three countries • Promote accession to international conventions • Strengthen the national capacity to implement effective nature conservation management in all three countries	• Harmonize nature conservation laws and policies in the three countries ↻ • Use international conventions to provide a consistent framework for concerted conservation action ↻ • Foster field-level cooperation among the four protected areas making up the complex ↻

				• Conduct training nationally within transboundary framework • Strengthen links and coordination between park authorities and parent ministries	• Establish common communication protocols and a compatible radio system in all three countries • Compatible training system established • Enable joint approaches to funders to ensure appropriate funding allocated to each component of the transfrontier complex
Political	• Regional instability due to conflict and rebel action (*natural resource, social and economic impact*)	• Regional instability due to conflict and rebel action *(natural resource, social and economic impact)* • Effect of conflict on civil society has curtailed livelihoods as there is no market economy and little legitimate employment; people harvest resources from the park illegally to survive (*natural resource, social, economic, and institutional impact)*	• Regional instability due to conflict and rebel action *(natural resource, social and economic impact)* • Problems with insurgents from DRC *(social, economic and institutional impact)*	• Foster cooperation between park authorities and existing forms of government and the military	• Promote the adoption of a transboundary TBNRM agreement involving all three countries • It is imperative to forge closer political commitment to the transboundary program to sustain field-level cooperation in the long term

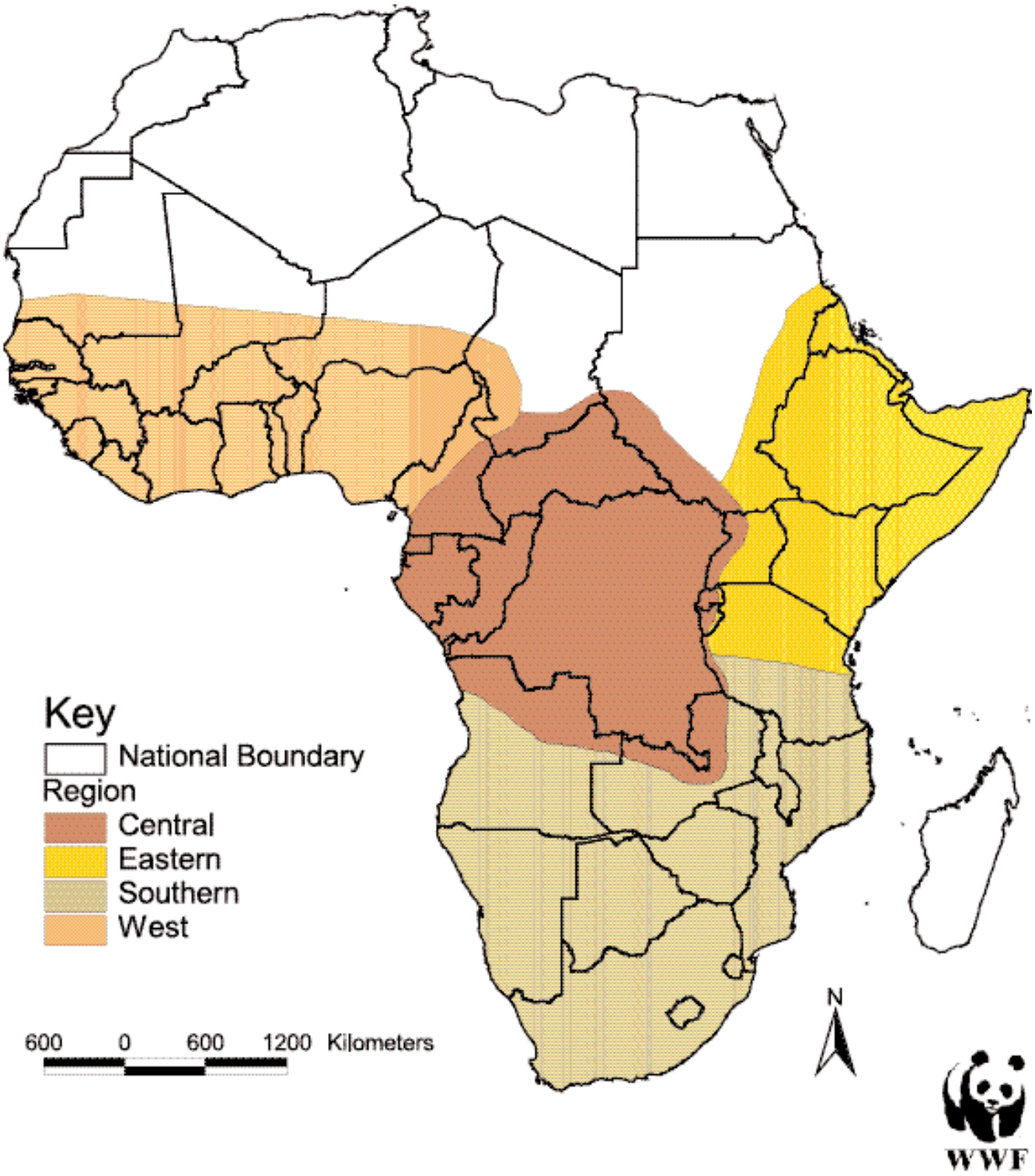
Maps

MAP 1 — COUNTRIES OF AFRICA



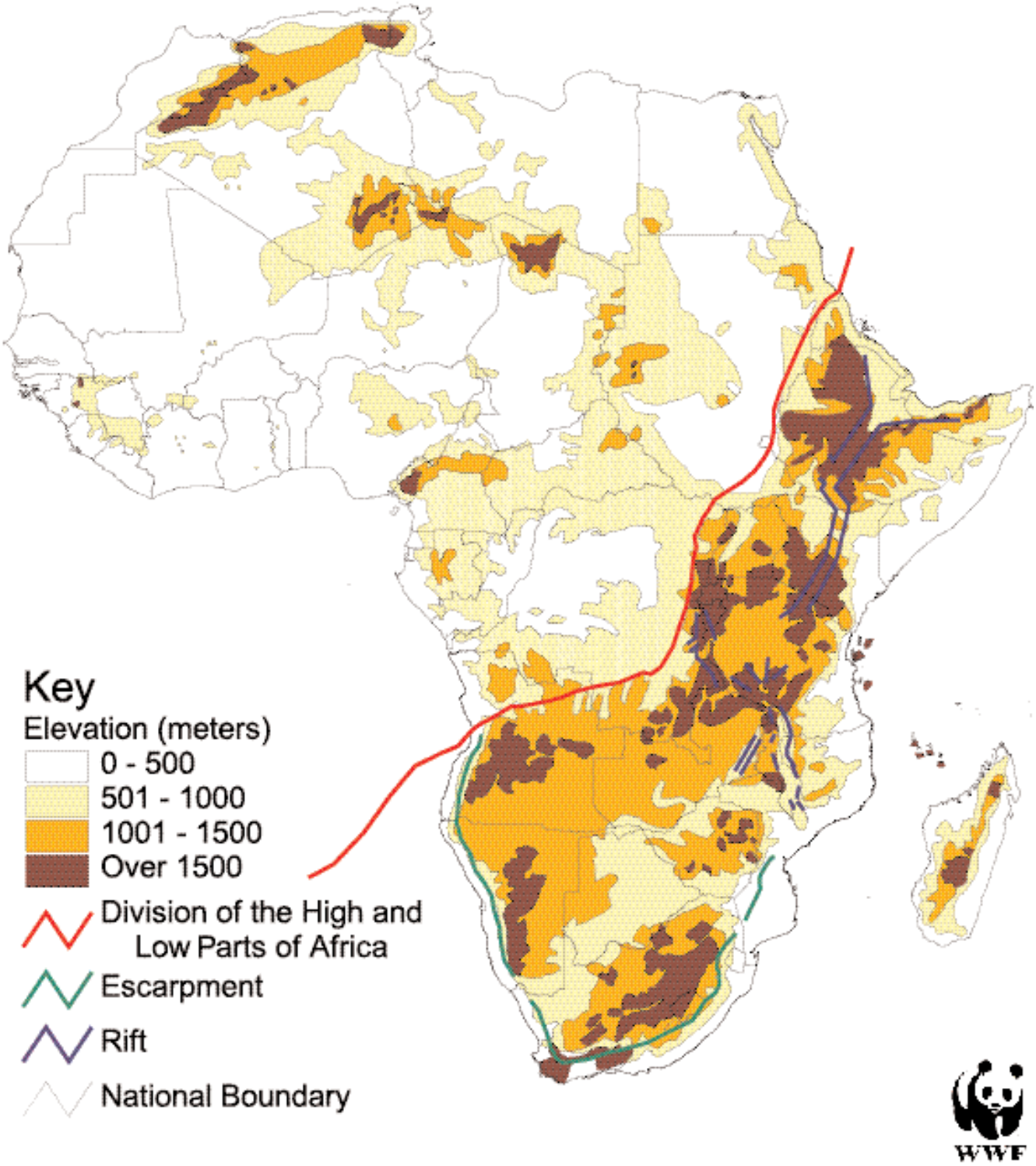
Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.

MAP 2 — BSP TBNRM PROJECT REGIONS



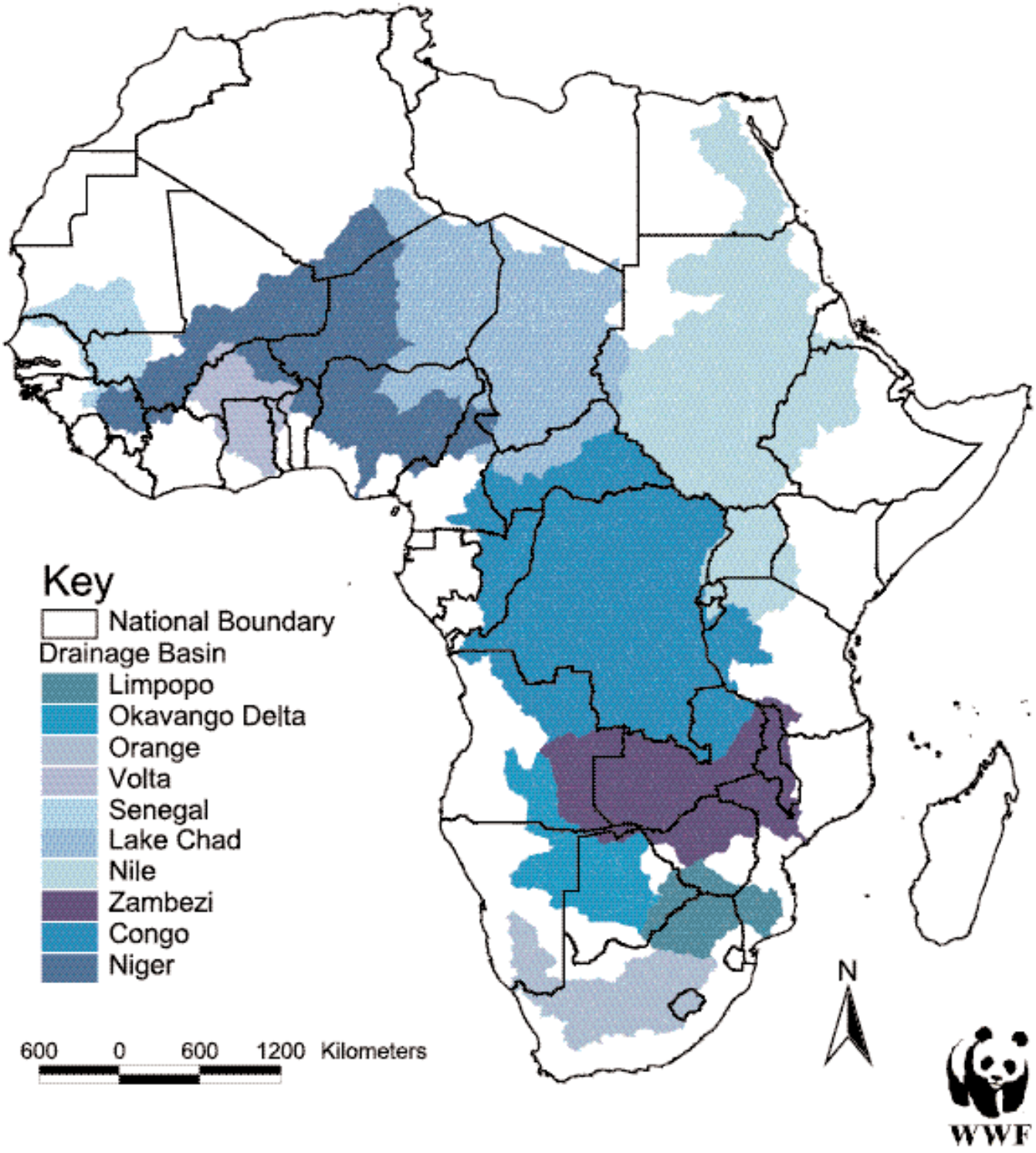
Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.

MAP 3 — GENERAL TOPOGRAPHY OF AFRICA



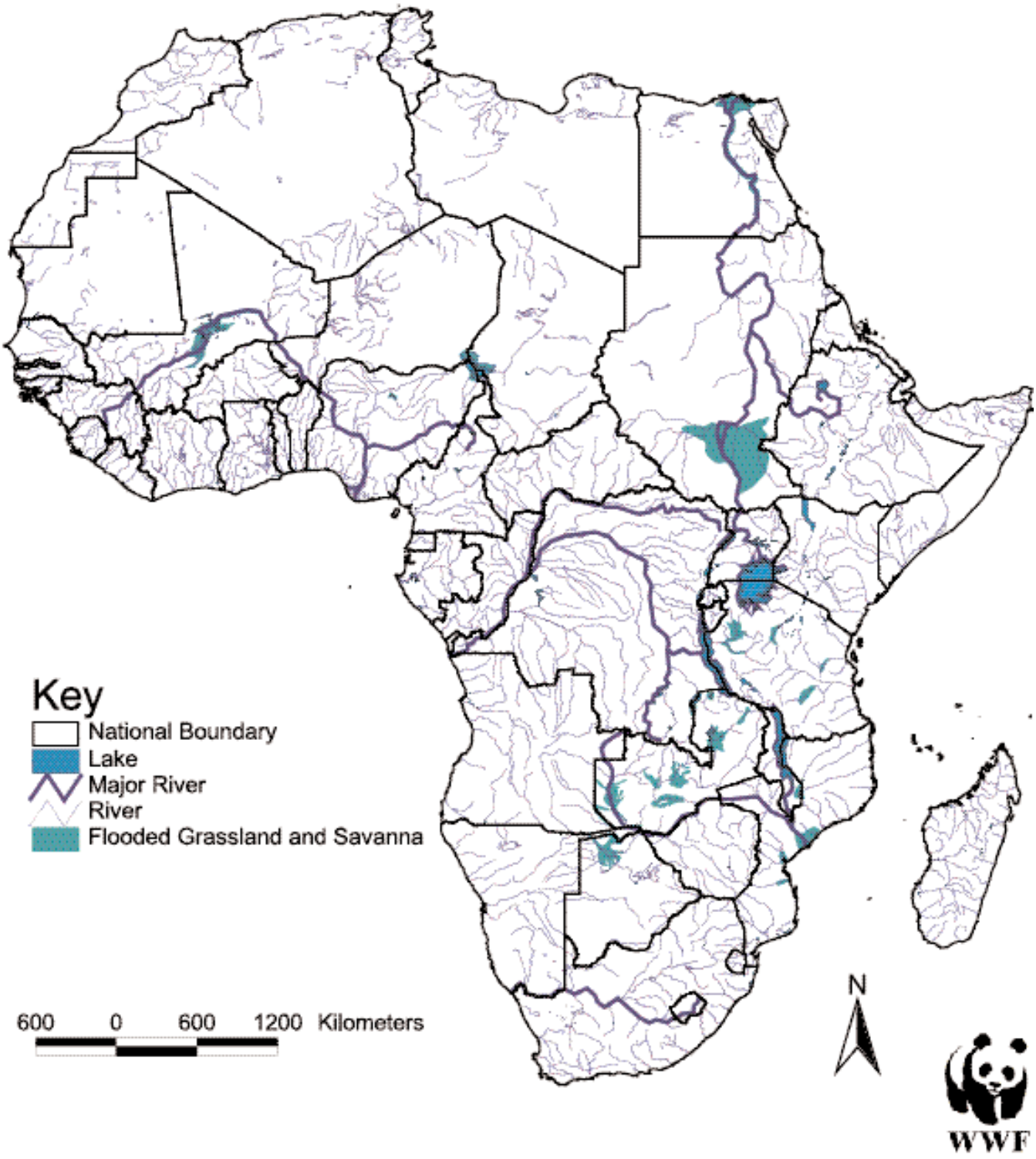
Source: WWF SARPO.

MAP 4 — MAJOR DRAINAGE BASINS OF AFRICA



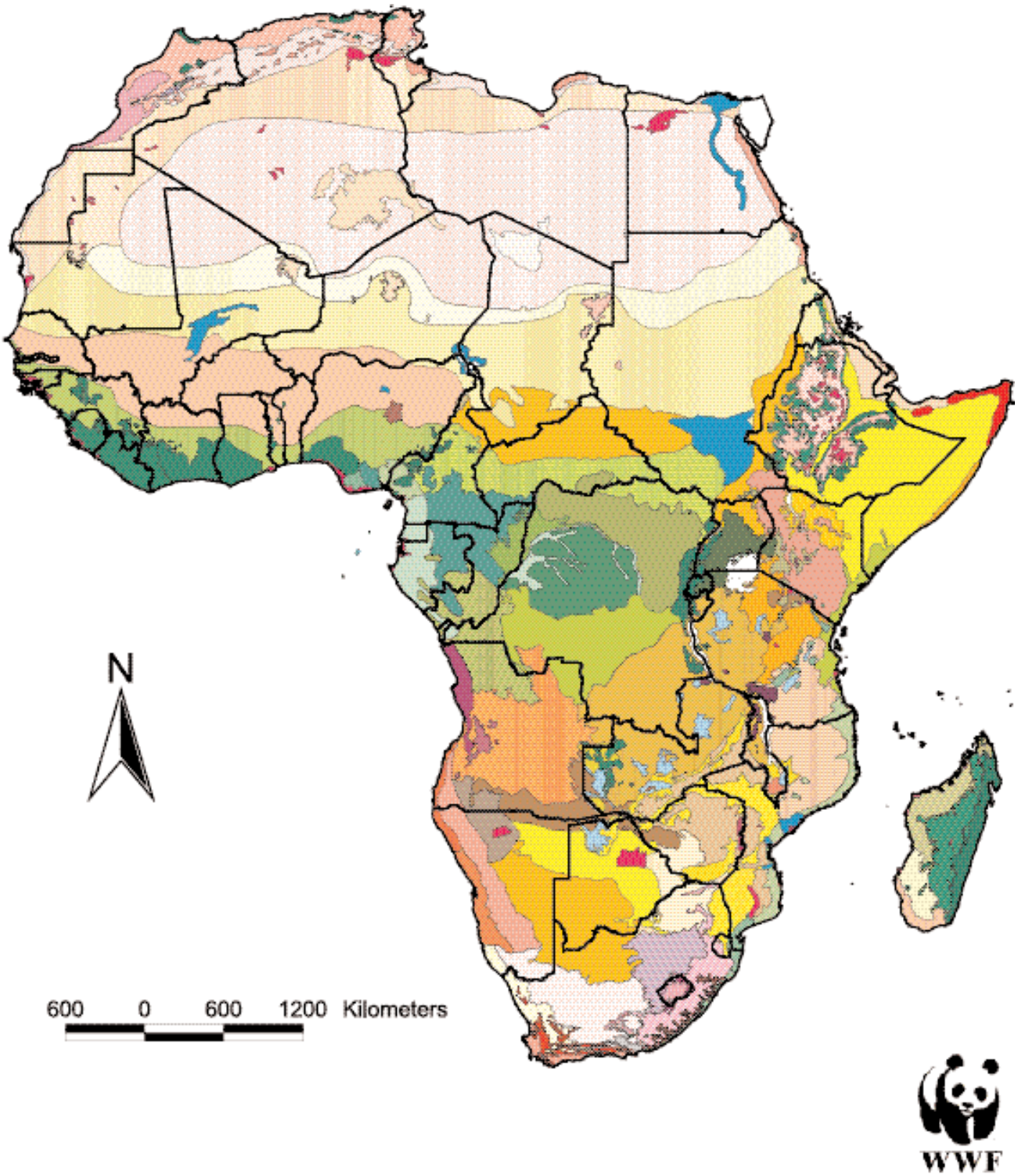
Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.
Drainage Basin Data: United States Geological Survey, Hydro1k. http://edcdaac.usgs.gov/gtopo30/hydro/readme.html.

MAP 5 — MAJOR AFRICAN SURFACE WATER FEATURES



Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.
Wetlands Data: Olson, D., *et al.* 2001, in press. Terrestrial ecoregions of the world: A new map of life on Earth. BIOSCIENCE.

MAP 6 — TERRESTRIAL ECOREGIONS OF AFRICA



Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.
Ecoregion Data: Olson, D., *et al.* 2001, in press. Terrestrial ecoregions of the world: A new map of life on Earth. BIOSCIENCE.

MAP 6 (CONTINUED)

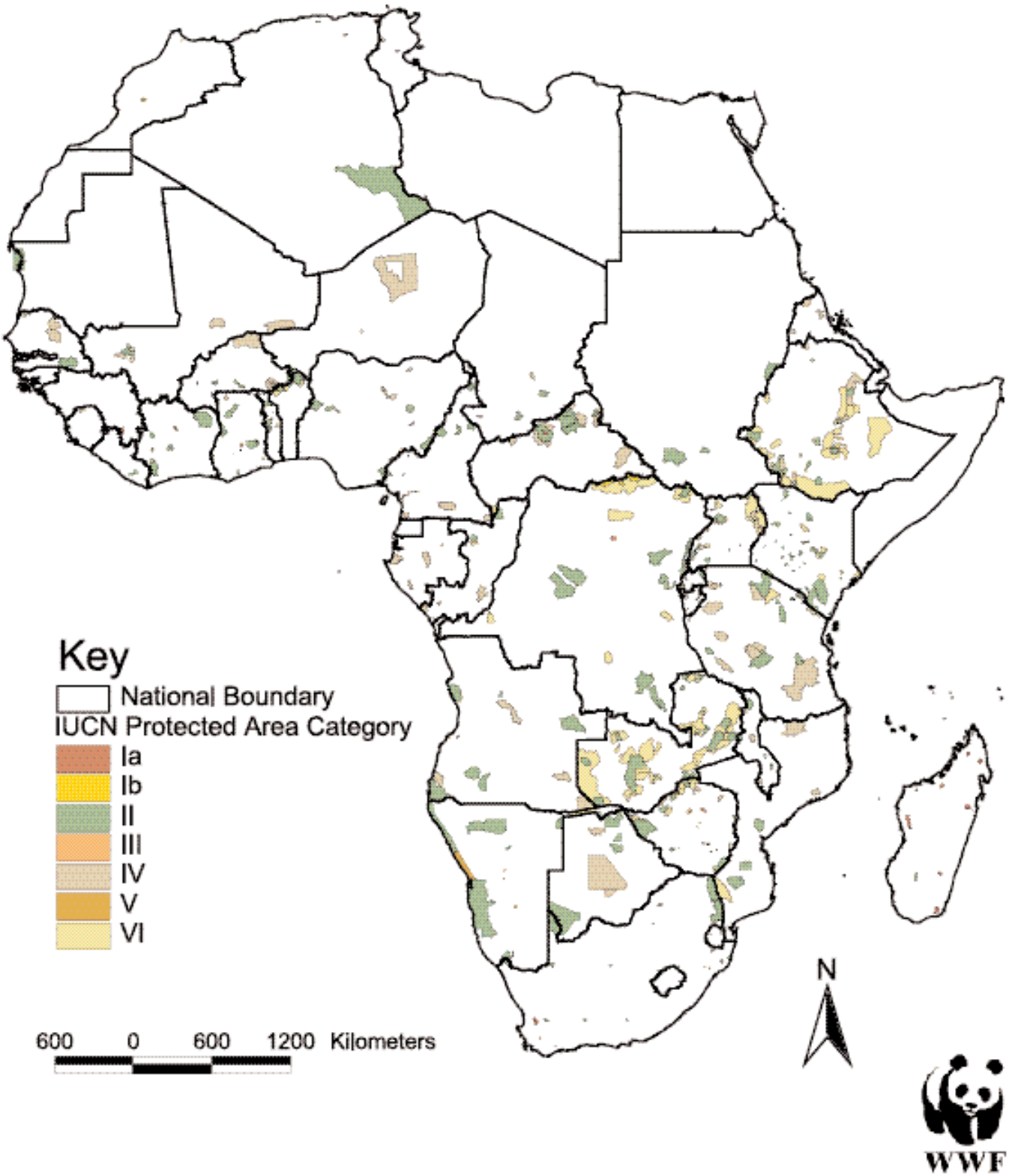
Key

National Boundary

Ecoregions

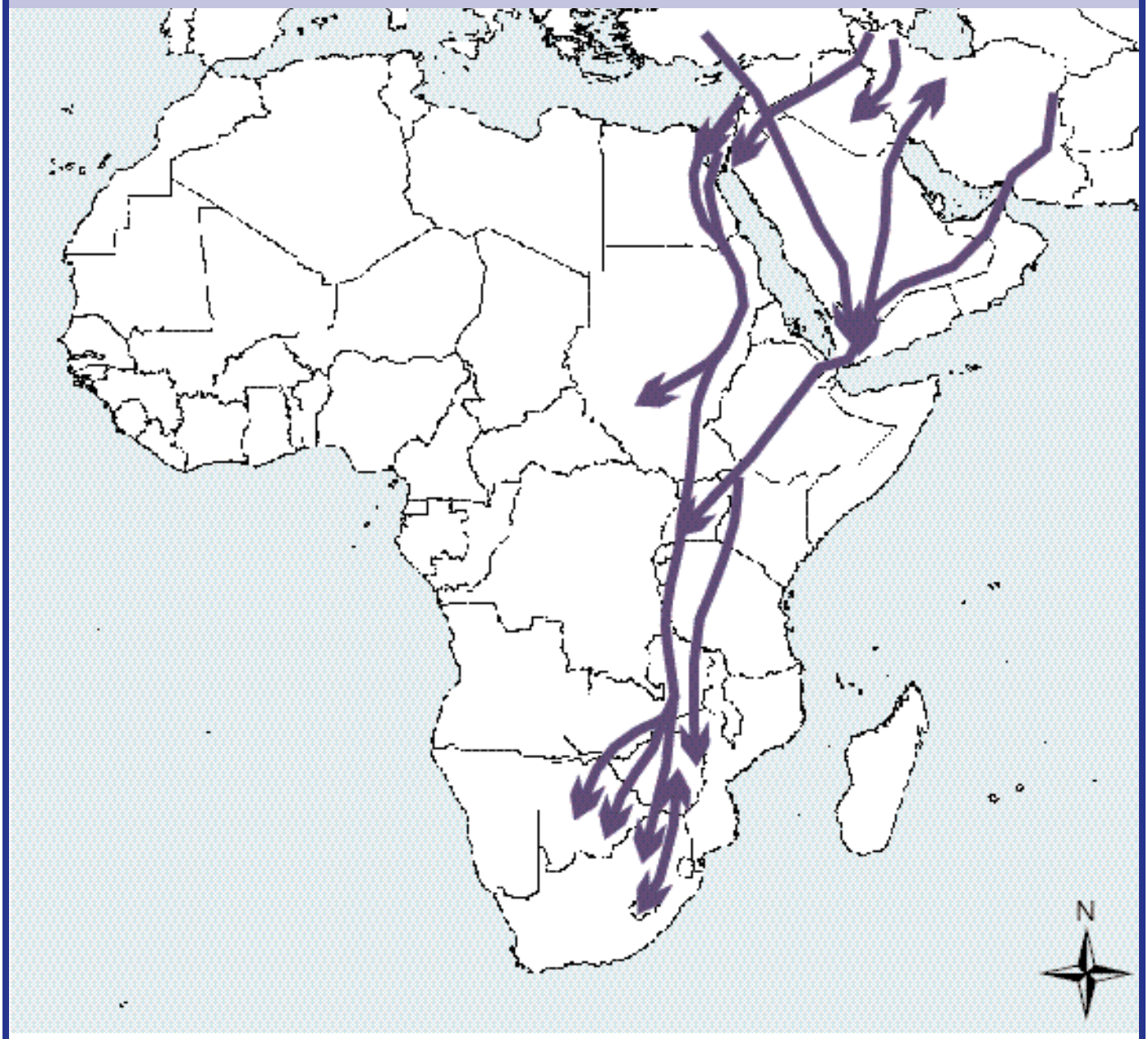
- Albertine Rift montane forests
- Atlantic Equatorial coastal forests
- Cameroonian Highlands forests
- Central Congolian lowland forests
- Comoros forests
- Cross-Niger transition forests
- Cross-Sanaga-Bioko coastal forests
- East African montane forests
- Eastern Arc forests
- Eastern Congolian swamp forests
- Eastern Guinean forests
- Ethiopian montane forests
- Granitic Seychelles forests
- Guinean montane forests
- Knysna-Amatole montane forests
- KwaZulu-Cape coastal forest mosaic
- Madagascar lowland forests
- Madagascar subhumid forests
- Maputaland coastal forest mosaic
- Mount Cameroon and Bioko montane forests
- Niger Delta swamp forests
- Nigerian Lowland Forests
- Northeastern Congolian lowland forests
- Northern Zanzibar-Inhambane coastal forest mosaic
- Northwestern Congolian lowland forests
- Sao Tome and Principe moist lowland forests
- Southern Zanzibar-Inhambane coastal forest mosaic
- Western Congolian swamp forests
- Western Guinean lowland forests
- Madagascar dry deciduous forests
- Zambezian Cryptosepalum dry forests
- Angolan Miombo woodlands
- Angolan Mopane woodlands
- Central Zambezian Miombo woodlands
- East Sudanian savanna
- Eastern Miombo woodlands
- Guinean forest-savanna mosaic
- Itigi-Sumbu thicket
- Kalahari Acacia-Baikiaea woodlands
- Mandara Plateau mosaic
- Northern Acacia-Commiphora bushlands and thickets
- Northern Congolian forest-savanna mosaic
- Sahelian Acacia savanna
- Serengeti volcanic grasslands
- Somali Acacia-Commiphora bushlands and thickets
- Southern Acacia-Commiphora bushlands and thickets
- Southern African bushveld
- Southern Congolian forest-savanna mosaic
- Southern Miombo woodlands
- Victoria Basin forest-savanna mosaic
- West Sudanian savanna
- Western Congolian forest-savanna mosaic
- Western Zambezian grasslands
- Zambezian and Mopane woodlands
- Zambezian Baikiaea woodlands
- East African halophytics
- Etosha Pan halophytics
- Inner Niger Delta flooded savanna
- Lake Chad flooded savanna
- Saharan flooded grasslands
- Zambezian coastal flooded savanna
- Zambezian flooded grasslands
- Zambezian halophytics
- Angolan montane forest-grassland mosaic
- Angolan scarp savanna and woodlands
- Drakensberg alti-montane grasslands and woodlands
- Drakensberg montane grasslands, woodlands and forests
- East African montane moorlands
- Eastern Zimbabwe montane forest-grassland mosaic
- Ethiopian montane grasslands and woodlands
- Ethiopian montane moorlands
- Highveld grasslands
- Jos Plateau forest-grassland mosaic
- Madagascar ericoid thickets
- Maputaland-Pondoland bushland and thickets
- Ruwenzori-Virunga montane moorlands
- South Malawi montane forest-grassland mosaic
- Southern Rift montane forest-grassland mosaic
- Albany thickets
- Lowland fynbos and renosterveld
- Montane fynbos and renosterveld
- Aldabra Island xeric scrub
- East Saharan montane xeric woodlands
- Eritrean coastal desert
- Ethiopian xeric grasslands and shrublands
- Hobyo grasslands and shrublands
- Kalahari xeric savanna
- Kaokoveld desert
- Madagascar spiny thickets
- Madagascar succulent woodlands
- Masai xeric grasslands and shrublands
- Nama Karoo
- Namib desert
- Namibian savanna woodlands
- Red Sea coastal desert
- Somali montane xeric woodlands
- Succulent Karoo
- Central African mangroves
- East African mangroves
- Guinean mangroves
- Madagascar mangroves
- Southern Africa mangroves
- Mediterranean conifer and mixed forests
- Nile Delta flooded savanna
- Saharan halophytics
- Mediterranean High Atlas juniper steppe
- Mediterranean acacia-argania dry woodlands and succulent thickets
- Mediterranean dry woodlands and steppe
- Mediterranean woodlands and forests
- Atlantic coastal desert
- North Saharan steppe and woodlands
- Sahara desert
- South Saharan steppe and woodlands
- Tibesti-Jebel Uweinat montane xeric woodlands
- West Saharan montane xeric woodlands

MAP 7 — PROTECTED AREAS IN AFRICA



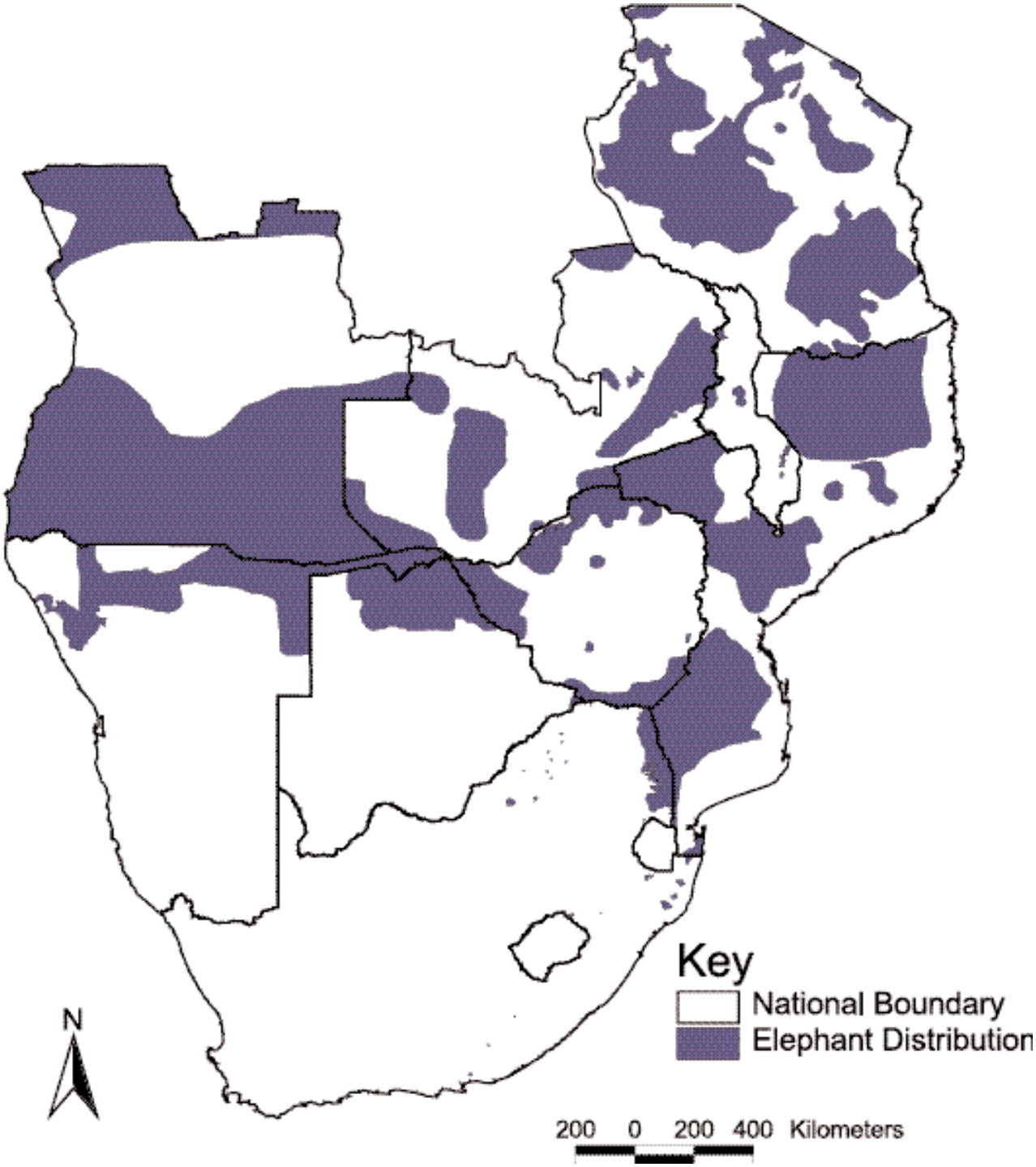
Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.
Protected Areas Data: WCMC Protected Areas Data Set v. 4.0. 2000.

MAP 8 — EASTERN FLYWAYS FOR SOARING BIRDS BETWEEN EURASIA AND AFRICA



Adapted from: Zalles, J. I., and K. L. Bildstein, eds. 2000. Raptor Watch: A global directory of raptor migration sites. Cambridge, UK: BirdLife International; and Kempton, PA, USA: Hawk Mountain Sanctuary (BirdLife Conservation Series No. 9).

MAP 9 — DISTRIBUTION OF ELEPHANT IN SOUTHERN AFRICA



Source: Cumming (1999; redrawn from Said *et al.*, 1995).
Baseline Data: ESRI. 1993. Digital chart of the world. Environmental Systems Research Institute, Redlands, CA.