

Landscapes and Livelihoods Series No.2

IUCN Forest Conservation Programme



Poverty and Conservation

Landscapes, People and Power



R.J. Fisher, Stewart Maginnis, W.J. Jackson,
Edmund Barrow and Sally Jeanrenaud

Poverty and Conservation

Landscapes, People and Power



The designation of geographical entities in this book, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of IUCN concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this publication do not necessarily reflect those of IUCN.

Published by: IUCN, Gland, Switzerland and Cambridge, UK



Copyright: © 2005 International Union for Conservation of Nature and Natural Resources

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

Reproduction of this publication for resale or other commercial purposes is prohibited without prior written permission of the copyright holder.

Citation: R.J. Fisher, Stewart Maginnis, W.J. Jackson, Edmund Barrow and Sally Jeanrenaud (2005). *Poverty and Conservation: Landscapes, People and Power*. IUCN, Gland, Switzerland and Cambridge, UK. xvi + 148 pp.

ISBN: 2-8317-0880-X

Photography: front cover: Anthea Stephens/IUCN; back cover: Emilie Mottier/IUCN WWRP page 1, 17, 77, 99 and 120: Anthea Stephens/IUCN; page 49: E.G. Barrow/IUCN

Layout by: Patricia Halladay Graphic Design

Printed by: ROPRESS Druckerei, Zurich, Switzerland

Available from: IUCN Publications Services Unit
219c Huntingdon Road, Cambridge CB3 0DL, United Kingdom
Tel: +44 1223 277894
Fax: +44 1223 277175
E-mail: info@books.iucn.org
<http://www.iucn.org>

A catalogue of IUCN publications is also available

Composition of the Paper: The cover is printed on Aconda 300 gsm which contains 40% recycled fibre and 60% virgin wood fibre of which at least 50% is FSC certified. The content is printed on Normaset Puro 90 mgs which is 100% virgin wood fibre of which at least 30% is FSC certified.

Printed with vegetable oil-based inks.



SGS-CoC-0474
FSC Trademark © 1996
© Forest Stewardship Council A.C.

Poverty and Conservation

Landscapes, People and Power

R.J. Fisher, Stewart Maginnis, W.J. Jackson,
Edmund Barrow and Sally Jeanrenaud

With the assistance of

Andrew Ingles, Richard Friend,
Rati Mehrotra, Taghi Farvar and Michelle Laurie

IUCN's Forest Conservation Programme

IUCN's Forest Conservation Programme coordinates and supports the activities of the IUCN Secretariat and members working with forest ecosystems. The goal of forest conservation is achieved through promoting protection, restoration and sustainable use of forest resources, so that forests provide the full potential range of goods and services.

The programme makes contributions to policy at various levels and uses field projects to derive lessons to feed into the policy debate. The principles of *Caring for the Earth*, published jointly by IUCN, WWF and UNEP in 1991, are applied to these projects, which combine the needs of conservation with those of local communities. One major activity is to develop coherent and informed policies on forest conservation in order to advocate the translation of policies into effective actions. IUCN frequently advises major development institutions on forest issues, to ensure that conservation priorities are adequately addressed in their projects and programmes.

Contents

Acknowledgements	x
Foreword	xi
Summary	xii
Chapter 1. Introduction	1
The challenge of sustainable development	1
Livelihoods, poverty and conservation	5
Threats to livelihoods from development	8
Threats to livelihoods from conservation	9
Causal linkages and their implications	11
Addressing poverty and conservation	13
Conclusions	15
Chapter 2. Past Experiences	17
Introduction	17
Reviewing past experiences	18
1960s and 1970s: Nature as wilderness – people as threat	18
Nature as biodiversity – people as a resource	21
Integrated Conservation and Development Projects (ICDPs)	23
Biodiversity conservation	24
Social development	25
Economic opportunities	25
Managing ICDPs	26
ICDPs: Flawed in theory?	27
New-generation ICDPs	29
Collaborative management	29
Community-based conservation	29
Sustainable use in CBNRM	35
Has CBNRM contributed to poverty reduction?	37
Lessons from CBNRM	38
Implications of these changes	38
Some key concepts	39
The multiple dimensions of poverty	39

Disaggregating social categories	41
The DFID livelihoods framework	45
Institutions	46
Political ecology	47
Conclusions	48
Chapter 3. Case Studies	49
Case Study 1. Pred Nai Community Forest, Trad Province, Thailand	51
Introduction	51
Poverty reduction	52
Effect on biodiversity	54
Additional impacts	54
Partnerships	55
Sustainability	56
Political and legislative context	56
Conclusion	58
Acknowledgements	58
Reference	59
Lessons for this book	59
Case Study 2. Forest Restoration in Shinyanga, Tanzania	61
Introduction	61
Legislative and policy framework	63
Poverty reduction	63
Biodiversity impacts	64
Other impacts	65
Sustainability	66
Conclusion	67
References	69
Lessons for this book	70
Case Study 3. The NAFRI-IUCN NTFP Project in Lao PDR	72
Nam Pheng village in Oudomxay province	73
Project activities	74
References	76
Lessons for this book	76

Chapter 4. Scale, Boundaries and Negotiation	77
Introduction	77
Linkages and trade-offs	78
Seeking the best possible outcomes	79
Conceptual tools for addressing conservation and poverty	81
Multiple scales and multiple levels	81
The ecosystem approach	82
The landscape concept	84
Application to poverty reduction and conservation	86
Implications of negotiated landscapes for protected areas	90
Progressive Contextualisation	90
Negotiated landscapes	91
Negotiation and level playing fields	94
Conclusions	98
Chapter 5. Structures, institutions and constraints	99
Introduction	99
Community institutions	101
Institutional arrangements for tenure and access	103
Institutions at the landscape level	106
Devolution and decentralisation	106
The wider institutional landscape	108
Non-timber forest products in India	108
Institutional change and power	109
Economic institutions and instruments	112
National poverty reduction planning processes	113
Multiple levels and multiple points of entry	114
Implications of linking poverty reduction and conservation	117
In general	117
Protected areas	118
Conclusions	119

Chapter 6. Linking Conservation and Poverty Reduction	120
The challenge	120
The scope for linking conservation and poverty reduction	122
A learning approach	122
Conclusion	126
Appendix: Economic instruments	127
Non-market based mechanisms	128
Global Environment Facility	128
Debt-for-nature swaps	128
Conservation Trust Funds or Environmental Funds	129
Tobin-type and other taxes	129
Compensation to communities for opportunity cost and damages	130
Market-based mechanisms	131
Markets for carbon sequestration	131
Markets for watershed services	132
Biodiversity offsets and mitigation and conservation banking	133
Markets for recreation	134
Pro-poor financing for conservation	135
Endnotes	136
References	139

Boxes

Box 1.	The Millennium Development Goals	2
Box 2.	What is poverty?	5
Box 3.	The value of wild resources	6
Box 4.	Food security and diversity from Laotian forests	7
Box 5.	Effects of irrigation in Cameroon	9
Box 6.	Human actions and biodiversity	32
Box 7.	CAMPFIRE, Zimbabwe	35
Box 8.	Gender, poverty, environment and conservation	43
Box 9.	The concept of "institution"	47
Box 10.	Economic and biodiversity values from ngitili	68
Box 11.	Principles of the ecosystem approach	82
Box 12.	The Yali Falls Dam and transboundary effects	87
Box 13.	Understanding poverty in rural Lao PDR	88
Box 14.	Tenure, natural resources and poverty	104
Box 15.	A regional network in Central America	111
Box 16.	Conservation in the Tanga Coastal Zone	115

Figures

Figure 1.	The Sustainable Livelihoods Framework	46
Figure 2.	Scope for conservation to address poverty reduction	123

Tables

Table 1.	Components of community conservation	34
Table 2.	Dimensions of poverty	40
Table 3.	Some dimensions of poverty reduction	41
Table 4.	Entry points for implementation	124

Acknowledgements

This book is an output of an IUCN project on poverty and conservation, led by the IUCN Forest Conservation Programme in close collaboration with IUCN's Asia Regional Office, Eastern Africa Regional Office and the Commission on Environmental, Economic and Social Policy (CEESP). It was supported by IUCN's 3I-C Fund, which promotes innovation, integration, information and communication. IUCN established the 3I-C Fund to provide an incentive system to help it adapt to a changing world and guide the course of its future programme work. The aim of the project on poverty and conservation was to explore the link between poverty reduction, sustainable livelihoods and ecosystem management and to build effective partnership with social development organisations.

We are extremely grateful to the many people who have contributed to the development of the ideas in this book. This includes participants who attended workshops in Kao Yai, Thailand and Abederes, Kenya, as well as reviewers and others: Lorena Aguilar, Ruth Barreto, Joshua Bishop, Guido Broekhoven, Florence Chege, Nigel Dudley, Piyathip Eawpanich, Joanna Elliott, Phil Franks, Samuel Gichere, Don Gilmour, Peter Hazlewood, Frits Hesselink, David Kaimowitz, Margaret Kakande, LY Oumou Koulsoum, Yam Malla, Mira Lee Manickam, Susan Matindi, Carmel Mbizvo, Jeff McNeely, Tom McShane, Simon Milledge, Alex Muhweezi, Teresa Mulliken, Paul Noupa, Gonzalo Oviedo, Jean-Yves Piro, Corli Pretorius, Ralph Roberts, Carole Saint-Laurent, Melita Samoily, Jeffrey A. Sayer, Sandeep Sengupta, Gill Sheppard, Paul Steele, William Sunderlin, Eldad Tukahirwa and Asif Ali Zaidi.

We would also like to express our thanks to Patricia Halladay for her thoroughness as editor and for patiently accepting many delays, as well as the many others who have helped in the development of IUCN's thinking on poverty and conservation.

Foreword

Reducing extreme poverty and hunger is an internationally agreed goal. Achieving this goal is within our reach given sufficient political will, adequate resources and an integrated response from governments and civil society. This response should seek to work across sectors and disciplines. Conservation can never be the solution to extreme poverty, but it can play a role. Particularly in rural areas where poor communities are dependent on natural resources, conservation can help find equitable and ecologically sustainable solutions.

Over the past 20 years both conservation and development thinking have advanced enormously, but improvements in the ability of conservation agencies and development agencies to collaborate have not been as impressive. This book challenges both conservation and development thinking by examining various dimensions of why conservation must address poverty reduction, and why developmentalists cannot afford to ignore the natural resource base on which many poor people depend.

The authors argue that local communities should not inequitably bear the costs of either conservation or development. In cases where conservation activities risk making poor people worse off, there are ethical and practical reasons for addressing the social justice dimensions of these actions.

There is a pressing need to find economically and socially viable mechanisms to ensure that conservation and development work in harmony to achieve a more sustainable future. IUCN does not pretend to have all of the solutions, but we hope that this book will enliven the debate in both conservation and development circles with regard to how conservation can contribute to poverty reduction.



Achim Steiner

Director General, IUCN – The World Conservation Union

Summary

Despite endorsements of the concept of sustainable development and the linking of sustainable development with the Millennium Development Goals, progress towards the eradication of poverty has been disappointing, particularly in sub-Saharan Africa. Economic growth and development have not done as much to reduce poverty as was hoped and the extent to which growth has benefitted the poor differs hugely between countries. The condition of natural resources and ecosystems continues to decline. There are reasons for doubting that many of the improvements to human well-being can be maintained. The underlying principles of sustainable development need to be more critically and actively reapplied to both poverty reduction and biodiversity conservation. Both conservation and poverty reduction are falling short of their intended goals. More can be done and more needs to be done.

The benefits of macro-economic growth seldom reach all of the poor, especially the rural poor. In fact, large-scale sectoral development projects have sometimes contributed to the general public good only at the expense of vulnerable peoples' livelihoods, thus inadvertently increasing localised poverty. In such cases, a more thorough application of sustainable development principles – including a review of links with conservation and local livelihoods – would not only avoid unsustainable outcomes but also increase local-level opportunities to reduce poverty and improve human well-being.

Conservation has contributed to human well-being by safeguarding global public goods and by maintaining ecosystems services at a regional and national level. At times, however, it has also contributed to local poverty by denying poor people control over and access to the natural resources that underpin their livelihoods. This has occurred both in protected areas and with nationalised resources, such as forest concessions, which often exclude use for local benefits in the name of conservation or natural resource management.

In both development and conservation activities, the tendency to focus on broader global or national public benefits – at the expense of local benefits – can adversely affect livelihoods. While recognising the need for development and conservation agencies to better integrate poverty reduction and

conservation objectives, this book pays particular attention to conservation's potential to contribute actively to long-term sustainable development and, more immediately, to poverty reduction – and the reasons why it should.

This is not a book about protected areas, although they are important to conservation. An overemphasis on protected areas (especially strictly protected areas) as the only credible conservation tool has not always been a good strategy. Under certain conditions it has even increased poverty. Although the percentage of the earth's surface devoted to protected areas has steadily increased, conservation agencies readily admit that many protected areas are protected in name only and that many suffer from widespread illegal use, which in some cases is leading to loss of biodiversity (Carey, Dudley and Stolton 2000). Recent work has shown that communities' own conservation efforts probably equate to forested areas currently within formal protected area networks and that many communities spend more per hectare on conservation than national governments (Molnar, Scherr and Khare 2004).

The fifth IUCN World Parks Congress in 2003 affirmed that biological diversity should be conserved for its local values as much as its national and global values. This is an important shift in thinking. It reinforces the fact that successful conservation can no longer be confined to protected areas and that conservationists need to turn their attention to the wider landscapes in which protected areas are found. Protected areas themselves will benefit if they can be managed as part of an integrated approach to both human well-being and biodiversity conservation within the broader landscape.

None of this is particularly new. Integrated approaches to conservation and development have been discussed since the 1970s and have emerged as significant conservation strategies. Reviews of ICDPs (Integrated Conservation and Development Projects) have shown mixed results, however, and been critical of their limited achievements, both in biodiversity conservation and poverty reduction. This book argues that attempts to reconcile development and conservation needs have failed in the past not because they are irreconcilable but because integration has been limited both institutionally and in terms of geographic scale. Poverty reduction and conservation have to go hand in hand because there really is no other choice, either ethically

or practically. Other alternatives tend to involve much stricter and coercive exclusion. This has enormous financial, social and ethical costs.

The hypothesis underlying this book is that conservation can do more to address poverty reduction and that poor ecosystem health will often undermine social and economic stability and the livelihoods of the poor. Although addressing poverty can often lead to improved conservation outcomes, this is not the main focus of the book. The livelihoods of the rural poor and the conservation and sustainable use of global biological diversity are so intimately entwined that they are better addressed through an integrated approach, whether the primary motivation is development or conservation.

It is important to recognise that specific groups of people – and even specific groups of poor people – can be disadvantaged while others gain or are not particularly affected. In order to understand the effects of development and conservation activities, it is necessary to disaggregate affected populations. Different groups are affected differently. Similarly, it is important to disaggregate the poor; people are poor for different reasons and their poverty may need to be addressed differently.

There are three reasons to link poverty reduction with conservation:

1. A focus on the needs of the poor is ethically unavoidable, especially when conservation activities risk negatively affecting poor people by transferring the real costs of conserving global and national public goods to the local level.
2. Conservation, as in the case of ecosystem restoration, ought to contribute actively to poverty reduction more broadly where it can, simply because it can.
3. While it is unrealistic to assume that linking conservation and development will always (or even usually) maximise both social and conservation outcomes, it will often lead to better conservation outcomes than could have been achieved otherwise.

There are many theories about the links between conservation and development, or between poverty and environmental degradation. These are

often contradictory. Some theories claim that poverty causes degradation; others claim that degradation causes poverty. There are theories – backed by good evidence – which argue that conservation can benefit poor people by improving their access to resources. It is rarely possible to make generalisations about the wider relevance of such cases. Results are usually context specific and are affected by factors such as institutional constraints and opportunities.

This book does not assess all the contradictory evidence, except to acknowledge that it is there and to identify some broad patterns. It is instead concerned with interventions that may provide opportunities to change the context within which processes operate: to alter what happens between cause and effect.

Realistically, integrated approaches to conservation and development cannot promise perfect win-win solutions. Pure conservation-focused interventions seldom deliver perfect conservation outcomes either. It is time to look for the best possible outcomes, bearing in mind principles of equity. This implies genuine shared decision-making and participation by local communities in land-use decisions. Participatory decision-making involves the willingness of outsiders to negotiate land-use objectives and ways to meet those objectives.

The book discusses some strategies for linking conservation and poverty reduction:

- focus on removing constraints (particularly institutional limitations) and building opportunities;
- identify causes of environmental degradation and poverty beyond the site level and address problems at the appropriate geographical and institutional level; and
- use landscape-level solutions as well as – in many cases instead of – site-based solutions. Seek ways to meet objectives in different parts of the wider landscape rather than trying to address them all in a single site, such as a protected area.

The book draws on a number of case studies, including several longer cases (Chapter 3) and numerous shorter examples. These case studies are not necessarily intended to be examples of successful interventions (there are not

all that many examples of interventions that have been highly successful). The case studies do illustrate three important points:

- In many cases community action, motivated by well-being concerns or livelihood needs, has led to improved conservation outcomes (because people clearly see the benefit of having high-quality natural resources);
- Local action may not lead to perfect conservation outcomes, but the results are often better than any realistic alternatives (and it is often the failure of government policies and actions that leads to local action); and
- Improved conservation and poverty reduction outcomes often result from institutional changes at different levels (policy, development of appropriate local organisations and networks, etc.).

The structure of this book

Chapter 1 outlines the rationale for addressing the links between conservation and poverty reduction. Such a focus is both ethically essential and a source of opportunities. Chapter 2 has a review of past experiences in dealing with people and conservation and identifies some key lessons and concepts. Chapter 3 presents three case studies that illustrate some key points.

Chapter 4 comprises a discussion of some important issues in implementing combined conservation and poverty reduction. It places particular emphasis on the importance of multiple spatial scales and seeking negotiated trade-offs between scales. Chapter 5 shifts the emphasis to a discussion of institutional landscapes and the way in which changes at various institutional levels can lead to different and more positive outcomes.

Chapter 6 summarises some of the main features of the approach the book supports and identifies some of the challenges involved in efforts to combine conservation and poverty reduction.

The Appendix contains a discussion of some economic instruments that can be used to address conservation and poverty.



Chapter 1

Introduction

The challenge of sustainable development

In 1992 the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro captured the world's attention with promises to achieve sustainable development¹ through combined efforts in economics, social development and the environment (commonly referred to as the three "pillars" of sustainable development). Ten years later, during the World Summit on Sustainable Development (WSSD) in Johannesburg, the international community reaffirmed that sustainable development was an international priority. It stressed the eradication of extreme poverty as the primary goal, as indicated in the Millennium Development Goals (see Box 1).²

The WSSD also highlighted the fact that success in achieving sustainable development has been mixed at best. World Bank figures show scant progress on some poverty indicators. Although there is some improvement in the percentage of people living on less than one dollar per day (29.6 percent in 1990; 23.2 percent in 1999) there are wide regional disparities.³ Other indicators, such as the HIV/AIDS pandemic, are alarming.⁴ Although nearly 12 percent of the earth's land area are now Protected Areas (IUCN 2003), net

forest loss continues at ten million hectares per year; wetlands continue to decline; the number of countries with water shortages continues to increase; and fisheries continue to be depleted. The picture is not all negative, however. There have been improvements in some areas, such as global food security, but these improvements do not amount to sustainable development.

Thus, in spite of more than ten years of concern with sustainable development, achievements have been relatively limited, attempts to link environmental, economic and social issues in practice have been unimpressive and tangible outcomes of sustainable development programs and projects have been scarce. Why is this so? Why, in spite of high-level political commitment and considerable amounts of money and effort, has sustainable development proved so elusive?

Box 1. The Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental stability
8. Develop a global partnership for development

Source: UNDP website: www.undp.org/mdg/

The relative lack of progress towards sustainable development is not the result of any fundamental problem with the concept. It is due more to the fact that the real emphasis has been on developing the economy first and hoping that the positive social and environmental changes would follow. Although the three pillars of sustainable development (economy, environment and society) were not seen at UNCED as separable, in practice the emphasis has been the economic pillar. Part of the reason for this has been the increasing dominance

of the political agenda by free-market and economic growth models of development in recent years.

While development cannot be achieved without economic growth, the overemphasis on economic development has in many instances undermined the environment in ways that affect the long-term benefits of development. In addition, development activities have often made many people worse off, whatever the benefits at larger scales. At the same time, conservation activities have sometimes undermined poverty reduction efforts and even worsened poverty.

Along similar lines to the "economic development first" approach, it has sometimes been argued that the eradication of poverty should come first and that the environment can be addressed

later, but the long-term consequences of such an approach are likely to be very serious (Cole and Neumayer 2005). An alternative view is that even if the eradication of poverty and hunger is regarded as the high-priority goal, this cannot be achieved in isolation from

*More equitable approaches
to conservation and
development require that
attention be paid to the poor*

achieving environmental stability and meeting social development goals. In this book we argue that the eradication of extreme poverty, and, more broadly, achieving sustainable development is only possible if the interdependency of social development, economics and the environment is recognised and accounted for. More equitable approaches to conservation and development require that attention be paid to the poor, particularly the impacts of poverty reduction strategies, economic development and biodiversity conservation.

We wish to reinvigorate sustainable development rather than to suggest an entirely new approach. We believe this can be done by improving the linkages and balancing the impact of actions in each pillar of sustainable development, particularly on the poor.

The call to reinvigorate sustainable development presents major challenges to the development and conservation communities alike. The challenge to the

development community is that, despite many years and large investments, rural poverty remains a major problem: 75 percent of the poor are rural dwellers (IFAD 2002). Many development activities have made many people worse off. Whatever the benefits at larger scales, development has often occurred at a cost to the poorest people and the environment. Indeed, the environment has been ignored as an opportunity for poverty reduction.

For conservationists, despite many years of effort and some important successes, a biodiversity crisis still exists. Conservationists have largely failed to convince economists and developmental practitioners of conservation's long-term importance to development. Further, in the process of promoting conservation, conservationists have, to a considerable extent, ignored its costs to poor peoples' livelihoods, and the inequitable distribution of these costs. Conservationists face three challenges:

- 1) making a better case for the long-term economic and social benefits of conservation;
- 2) accounting for the real costs of some conservation activities to the poor; and
- 3) recognising biodiversity as a livelihood resource as well as a global public good.

While we have called for the reinvigoration of sustainable development, this book does not focus on that. Rather, it is concerned with a narrow subset of sustainable development issues: the links between poverty reduction, economic development and biodiversity conservation. The connections between poverty, the economy and the environment are complex and the extent to which conservation activities can and should address poverty issues is still being argued. This, however, does not negate the need for conservationists to do a better job at figuring out how to address poverty, for both ethical and practical reasons.

This book highlights the importance of improving institutional arrangements in ways that build opportunities to reduce poverty and improve conservation. It also argues that thinking of conservation and natural-resource management on a landscape scale provides better opportunities to achieve diverse

objectives than striving to meet multiple objectives in specific sites. This has particular relevance to protected areas. While protected areas are important to conservation, a more comprehensive package of tools and strategies must be applied, both inside and outside protected areas.

Livelihoods, poverty and conservation

Livelihoods can be thought of as the ways in which people make a living. This is not just a matter for the poor, although sometimes livelihoods are equated with subsistence. Livelihoods contribute to human well-being, which includes spiritual and aesthetic values. Poverty can be thought of as a state of reduced or limited livelihood opportunities. This obviously includes tangibles like assets and goods for consumption, but also involves vulnerability and powerlessness to make meaningful choices about livelihoods (see Box 2). The concept of poverty is discussed more fully in Chapter 2.

Box 2. What is poverty?

Although poverty is often defined in absolute terms (people falling below a specified level of income, commonly a USD 2 per day), it can also be seen as having multiple dimensions. The World Bank (2001) refers to three dimensions of poverty: lack of assets, powerlessness and vulnerability. This book adopts the World Bank definition.

This book uses the term "conservation" in its broadest sense, including management of natural resources sustainably as well as their protection and restoration, rather than in the narrow sense of maintaining an original state, or preservation. This is an important distinction. The term is often used by different people to mean quite different things, which creates considerable confusion.

Conserving natural resources can have important direct positive benefits on livelihoods, particularly those of rural people. Natural resources are used for direct consumption and for income generation. (See the cases of Shinyanga and of Pred Nai in Chapter 3.) The economic value of wild resources is often ignored in quantifying rural economy and livelihoods, but it can have considerable importance (see Box 3).

Box 3. The value of wild resources

The economic value of wild resources in Senegal

An analysis of the value of wild foods and other wild resources in Senegal focused on non-timber forest products, game and freshwater fisheries. It found that, in the surveyed areas, these products were mostly used to generate income. Small amounts were used for home consumption.

Although the value of these products is not included in national accounts, the study concluded that the annual value is between USD 19 and 35 million. This does not include the value of plant resources such as "fuelwood, charcoal and building materials, which are equally significant but largely accounted for in national economic statistics." The study also noted that "natural resources appear to be more important as a share of total cash income for poorer households."

The study also presented some important findings on the impacts of gender and education:

"...female-headed households report less cash income from hunting but more from other wild products and artisanal mining, although the latter differences are not statistically significant. Women also report less cash income in total.. Finally, household heads with little or no formal education reported more cash income from gathering wild resources (not hunting) on average, than those who had attended primary school or received [Quranic] instruction."

Source: UDRSS/VALEURS (2002)

The economic value of wildlife

The Department for International Development's study of wildlife and poverty linkages found that poor people are significantly dependent "on wildlife for livelihood and food security, particularly through bushmeat and tourism."

According to the study "[o]f the estimated 1.2 billion people who live on less than the equivalent of a dollar a day... as many as 150 million people (one-eighth of the world's poorest) perceive wildlife to be an important livelihood asset."

Source: DFID (2002)

Conservation is essential for livelihoods in a variety of ways. In developing countries, maintenance of diverse natural resources can be particularly important in providing livelihood security in times of seasonal shortage (by providing alternative foods and other resources) and in times of crisis, such as drought, crop failure or even market failure (See Box 4). Maintaining diverse livelihood options is essential for many of the rural poor. Conservation of natural resources is important in providing secure environmental services (such as water and clean air) to all humans, rural and urban, wealthy or poor. It also provides important insurance against risks, including crop failure, market failure and natural disasters.

Box 4. Food security and diversity from Laotian forests

In Salavan province, in Lao PDR, the rural diet is dominated by glutinous rice, which contributes 73 percent of total dietary intake during the rainy seasons. Forest foods are essential components of the diet, accounting for an average of 19 percent of total dietary intake in the rainy season. Excluding rice, forest foods amount to 70 percent of dietary intake. As forest foods provide year-round diversity to otherwise bland and poorly balanced diets, they also ensure a regular source of nutrients. Approximately 44 percent of the total calcium and vitamin A and C intake, 25 percent of total iron intake and 27 percent of daily protein requirements come from the forest.

Source: Dechaineux (2001)

While it is clear that species gathered from the wild can be important to poor people, especially in times of crisis, some economists point out that poorer households generally have no other livelihood options open to them, and that many would not choose to depend on wild resources for their survival if given a choice. It is precisely because they are so poor that they depend on such safety nets. Instead it is claimed that tying livelihoods and poverty reduction objectives to natural resource conservation creates a "poverty-trap." Wunder (2001), for example, argues that the potential of tropical forests to lift people out of poverty is very limited.⁵ Dove (1993) argues that forest conservation is unlikely to lead to poverty reduction because the poor tend only to have the

rights to low value forest products. Whenever products become valuable, the poor lose access.

We agree that such safety nets must never become poverty traps. However, especially in the absence of functioning social security systems and reliable market networks in rural areas, we maintain that the sustainable use of biological resources will remain crucial to the secure livelihoods of the poor in the foreseeable future. Further, we would stress poverty reduction involves empowerment in the form of altered access to valuable natural resources in order to allow benefits to flow to the poor. Poverty traps are not so much a result of dependence on natural resources as they are a result of lack of access to valuable natural resources.

Threats to livelihoods from development

Clearly natural resources can be very important to livelihood security of rural people. Ineffective economic development policies and practices pursued by governments, sectoral development and large-scale infrastructure projects, and macro-economic reform have all too often jeopardised poor peoples' livelihoods by destroying the resource base.

One example from the Northern Province of Cameroon shows how sectoral development planning can dramatically affect livelihoods and undermine the functions – and the economic value – of natural ecosystems (Box 5).

Large-scale infrastructure development often has negative impacts on the livelihoods of the poor, even though it may provide benefits at a wider scale or for a nation as a whole. The construction of large dams is one example of short-term regional or national economic benefits taking precedence over the rights and long-term livelihood security of the rural poor. As the World Commission on Dams (WCD 2000) concluded, large dams have often made an "important and significant contribution to human development" (p. 7), but the costs of securing benefits have been very high and unevenly distributed, with poor and vulnerable groups "likely to bear a disproportionate share of the social and environmental costs of large dam projects without gaining a commensurate share of the economic benefits" (p. 17). The WCD argues that a "balance-sheet" approach to assessing costs and benefits (that is, adding up

costs and benefits without looking at the way in which they are distributed) "is increasingly seen as unacceptable on equity grounds and as a poor means of assessing the 'best' projects" (p. 17).

Box 5. Effects of irrigation in Cameroon

The Waza Logone floodplain (8,000 sq. km) is a critical area of biodiversity and high productivity in a dry area, where rainfall is uncertain and livelihoods are extremely insecure. The floodplain's natural goods and services provide income and subsistence for more than 85 percent of the region's rural population, or 125,000 people. The biodiversity and high productivity of the floodplain depend to a large extent on the annual inundation of the Logone River. In 1979 the construction of a small irrigated rice scheme (40 sq. km) reduced flooding by almost 1,000 sq. km. The socio-economic effects of this loss have been devastating, incurring livelihood costs of almost USD 50 million over approximately 20 years. Up to 8,000 households have suffered direct economic losses of more than USD 2 million a year through reduction in dry-season grazing, fishing, natural resource harvesting and surface water supplies. The losses incurred are far in excess of the anticipated return from irrigation.

After 1994, pilot flood releases were made in the Waza Logone floodplain, unblocking watercourses that had been sealed off as a result of the irrigation scheme. Without altering the operations of the rice scheme, these led to demonstrable recoveries in floodplain flora and fauna over 1,000 sq. km, and have been welcomed by local people. The economic value of the floodplain restoration is immense. Improved planning at the regional scale will rehabilitate vital pasture, fisheries and farmland areas used by nearly a third of the population, with a value of almost USD 250 per capita.

Source: Loth 2004⁶

Threats to livelihoods from conservation

While it is clear that development activities may have unintended negative impacts on the poor, or may fail to include the poor as beneficiaries, conservation has sometimes had similar outcomes. Conservation practices can have serious negative effects on livelihoods by limiting access to the resources

necessary for subsistence, livelihood security or income generation. One major way in which conservation has been detrimental to the poor is by excluding people from protected areas or limiting their access to resources within protected areas. Such exclusionary practices have serious and well-documented negative outcomes (McLean and Straede 2003; Brockington 2003), especially when resident people are resettled to other locations. There are very few documented cases where forced resettlement⁷ provides adequate alternative livelihoods, and resettled people frequently place additional pressure on those already living in resettlement areas. This applies to forced resettlement resulting from both large-scale development projects (such as dams) and the creation of protected areas. In recent years many conservation projects and programs have attempted to address some of the negative effects of exclusory practices on people with integrated conservation and development programs. These initiatives essentially aim to provide alternatives to livelihood-related resources from protected areas. Chapter 2 shows that these projects have had limited success, but they are an important step forward.

It is not conservation itself that is the problem for people whose livelihoods depend on natural resources. Rather, conservation approaches often do not adequately take into account the adverse impacts of conservation activities on the rural poor. Conservation has often been narrowly interpreted as requiring

*It is not conservation itself
that is the problem for people
whose livelihoods depend on
natural resources.*

exclusion of people from resource use. Protected areas provide an important alternative to destructive land uses such as large-scale forest plantations, mining projects and commercial agriculture, which not only have negative environmental impacts, but can

undermine poor people's livelihood security. Protected areas are not the only, and certainly not the worst, large-scale land-use that affects the livelihoods of the rural poor. Nevertheless, it is not good enough to justify processes of exclusion and expropriation of resources on the grounds that others do it.⁸

Causal linkages and their implications

This chapter does not provide a comprehensive review of the linkages between conservation, environmental degradation, poverty and wealth. Clearly these linkages are very complex, although people have a strong tendency to try and demonstrate one-way causal links between various factors. For example, the following often contradictory assertions are all made frequently and often backed up with good evidence (at least for a particular case):

- Poverty leads to increased environmental degradation, either because rural people don't know better or because they have no choice but to overexploit natural resources.
- Wealthy people have a severe impact on natural resources because they consume more. This often leads to environmental degradation.
- People who are dependent on resources for their livelihoods are likely to protect them more carefully.
- Conservation worsens poverty by excluding people from resources.
- Conservation contributes to better quality of livelihoods because it guarantees availability of resources.

All these assertions can be valid interpretations of specific cases, but none of them is true universally.⁹ Attempts to understand linkages must be related to the contexts of specific situations. The specific factors that govern causes and effects need to be carefully identified and properly understood, a process that will often be quite complex. Further, in the absence of widely applicable causal patterns, addressing poverty and conservation linkages will inevitably be more of an art – requiring creativity and flexibility – than an exact science.

To some extent this view runs contrary to calls for an “evidence-based approach” to conservation. In a recent paper, Sutherland et al. (2004) argue that conservation practice is often “based upon anecdote and myth rather than upon the systemic appraisal of the evidence.” They argue that conservation practitioners can learn from the results of applying the “evidence-based approach” in medical practice. They make particular reference to work which attempts to link development with conservation:

A major thrust of recent conservation work has been to incorporate socio-economic development, but many of the practices seem based upon faith and a political agenda rather than on the benefits to biodiversity. As examples, does clarifying who owns the property rights to each area result in long-term sustainable development or overexploitation? Does providing alternative sources of income...reduce the need to exploit natural resources, act as an additional activity with neutral effects, or provide the extra income that enables investment, such as purchasing a chainsaw or vehicle, that further accelerates resource loss? (p. 306).

Obviously any approach to conservation or development needs to be informed by evidence and, in that sense, the call for an evidence-based approach makes good sense. But there are difficulties inherent in assuming that there is a single clear and consistent answer to the question of whether "clarifying who owns the property rights to each area result in long-term sustainable development or overexploitation." The answer will almost certainly be "yes" in some cases, "no" in other cases and in most cases will depend on a whole range of additional situational and contextual factors. Causality can be highly complex and uncertain. Further, it is not predestined; a change in contextual factors (such as institutional arrangements at various levels) can lead to very different outcomes.¹⁰

It is also important to address the point that socio-economic approaches "seem based upon faith and a political agenda rather than on the benefits to biodiversity." This is not surprising. The rationale for addressing socio-economic factors is, at least to some extent, explicitly based on political (social justice) objectives. It is not based solely on assertions of benefits to biodiversity.

This book is based on the hypothesis that conservation can do more to address poverty reduction and that poor ecosystem health will often undermine social and economic stability and the livelihoods of the poor. It should be clearly understood from the outset that this book is not advocating that poverty reduction is essential to biodiversity conservation.

Efforts at integrating conservation and development have sometimes been based on unrealistic assumptions about achieving win-win solutions. Obviously

these are not always possible, and it may be more realistic to look for trade-offs that may provide the best realistically possible outcomes. But, while assumptions about perfect solutions may be overly optimistic, it should not be thought that poverty reduction and conservation will always be in conflict. As the cases of Pred Nai and Shinyanga show (Chapter 3), rural people, and especially the poor, may have very good reasons for supporting the restoration of biodiversity in areas where severe degradation has occurred, providing appropriate institutional arrangements can be established. Restoring degraded lands provides considerable opportunities for improving conservation and poverty reduction.

Addressing poverty and conservation

The discussion about the links between livelihoods, poverty and conservation is not particularly new. Many conservationists

have expressed concern about the need to take livelihoods and poverty into account in conservation activities. Since the 1970s, the movements advocating Integrated Conservation and Development Projects (ICDPs) and community-based conservation and resource management have reflected these concerns. Despite innovative and exciting work, however, ICDPs have been criticised for a lack of a clear framework and for weak or piecemeal implementation (McShane and Wells 2004). In recent years, with the development of the livelihoods framework by DFID and other agencies,¹¹ terms such as "pro-poor wildlife conservation" and "pro-poor conservation" have appeared in conservation literature (DFID 2002).¹² This book is not an attempt to replace these earlier approaches. Instead we stress the importance of commitment to poverty reduction within conservation activities.

As part of the concern with poverty reduction in conservation, human rights and social justice have emerged as fundamental issues. The rights of indigenous peoples to natural resources, especially in protected areas, have been recognised for many years and are encapsulated in a number of publications and policy statements (WWF 1996, Beltrán 2000, MacKay 2002). Others have advocated a stronger "rights-based approach" to conservation, arguing that all conservation

Restoring degraded lands provides considerable opportunities for improving conservation and poverty reduction.

should start with a concern for human rights and, by implication, that this should be the primary concern of conservation. This book does not assert that human rights should necessarily be the primary concern of conservation. It does assert that, while conservation may be justifiable on its own account, conservation approaches should also be socially just in the sense that they avoid or mitigate the "actual and opportunity costs" of conservation to the poor (Phil Franks, CARE, pers. comm.). Social justice can be used as an operating principle, a measure to assess a minimum standard for conservation in areas where high levels of poverty persist. The minimum standard should be combined with a strong ethical commitment to support poverty reduction as a fundamental human right and development goal.

The conservation approach advocated in this book does not attempt to limit conservation activities to cases where poverty can be directly addressed. We are not proposing that conservation agencies stop worrying about conservation, or that they become development-focused agencies. Rather, this book provides a broad approach for exploring negotiated outcomes in different types of circumstances, so that both conservation and land-use related development efforts are guided by social justice principles. Further, conservation should proactively look for opportunities to address poverty and livelihoods while development activities should actively support improved environmental management wherever possible. This is not about diluting the impact of conservation activities or shifting focus by stealth. Rather, it is about finding more appropriate, more equitable and more realistic ways of achieving conservation. We aim to augment the conservation tool kit by suggesting ways in which conservation can better address its associated social responsibilities.

Taking poverty reduction more seriously in conservation has a number of implications:

- All conservation initiatives should strive to ensure that they do not make the poor worse off. The costs of conservation should not be imposed on those least able to absorb them; they should be met by those groups – usually national governments and the international community – who regard conservation as a priority. This must go beyond narrow quid pro quo compensation. Best-practice measures designed to offset the impact of conservation activities should

maintain, if not expand, development options, rather than leaving people in a poverty trap or a condition of "sustainable poverty."

- Conservation ought to contribute actively to poverty reduction more broadly where it can – as in the restoration of ecosystems – simply because it can.
- There is a pressing need to be more realistic. Integrated conservation and development may not result in perfect solutions, but an equitably balanced trade-off will still lead to better conservation outcomes than could have been achieved otherwise.
- Strengthening or guaranteeing access to natural resources will contribute to secure livelihoods for the people who depend on them. This implies that rural people will have more decentralized control over the resources which they have traditionally used and managed.

If we are serious about linking poverty reduction and conservation, then we must be able to show this in our performance. In other words, we must be accountable. This means that monitoring and evaluation of all conservation activities needs to take account of social impact assessment, particularly the impacts of activities on poor people. In cases where programs or projects aim to maintain or improve livelihoods, or to increase income directly, methodologies must directly assess impacts in terms of costs and benefits to the poor.

Conclusions

There is an ethical imperative for conservation to take account of poverty issues. There are often good practical reasons for doing so. The issue is not promoting poverty reduction over conservation, but acknowledging that both poverty reduction and conservation are important objectives. It is often necessary to address both in order to achieve either. We want to avoid the stale argument about whether conservation is the means to achieve poverty reduction, or poverty reduction is the means to achieve conservation. Both are desirable objectives.

Both poverty reduction and conservation are important objectives. It is often necessary to address both in order to achieve either.

In practice, different actors will have different points of entry. Development practitioners may focus on reducing poverty, although conservation will often be necessary in order to achieve their objective. For conservationists, reducing threats to biodiversity may be paramount. Poverty reduction will be important, as both an ethical prerequisite and as a practical requirement, to achieve that objective.

This book is not offering a magic formula for conservation and development; on the contrary. Trade-offs will sometimes define the best possible (however imperfect) outcome. At the same time, attempts to balance economic development and conservation will often lead to better outcomes than would otherwise occur.

This book discusses several strategies for dealing jointly with poverty and conservation:

- focus on removing limitations (particularly institutional constraints) and building opportunities;
- identify causes of environmental degradation and poverty beyond the site level and address problems at appropriate levels, both geographically and institutionally.
- use landscape-based initiatives as well as – in many cases instead of – site-based solutions. This involves seeking ways to meet objectives in different parts of the wider landscape rather than trying to address all goals in a single site (such as a protected area).

Sustainable development needs negotiated outcomes that are equitable, economically viable and socially sustainable. It is easier to achieve this type of outcome at broader geographical scales rather than at the site level.



Chapter 2

Past Experiences

Introduction

This chapter provides essential background for the rest of the book. It begins with a brief review of previous experiences in dealing with people and conservation and outlines some of the key lessons learned from these experiences. It then turns to a discussion of poverty and livelihoods, followed by a look at some of the other ideas that have influenced the thinking. We want to emphasise that we are talking about "people and conservation" in this chapter, not "poverty and conservation", because many of the relevant experiences were not dealing explicitly with poverty.

This review of previous experiences aims to provide an overview of the important shifts in understanding of natural resource management practices during the last 50 years within the international conservation movement. In particular it explores the ways in which conservation thinking has developed and been influenced by sustainable development thinking. This not only helps to acknowledge the past social inadequacies of conservation, but also distinguishes a focus on poverty reduction from that of earlier traditions within conservation.

One of the difficulties in summarising the major shift in conservation thinking, particularly as it pertains to local peoples, is that such shifts are never absolute. There are many contradictory movements and trends. We have attempted to nuance the discussion, while still highlighting key trends.

Reviewing past experiences

1960s and 1970s: Nature as wilderness – people as threat

How was nature perceived in the early conservation literature in the 1960s and 1970s? And what were the perceived threats to this nature?

In the 1960s and 70s, nature was often prized as a spiritually charged wilderness and for its capacity to uplift the human spirit. Such values, particularly when championed by social elite from both developed and developing countries, helped to shape the preservationist approach to nature, and led to the establishment of parks to protect nature from the "ravages of ordinary use" or the "meddling hand of man." It is important to recognise that assumptions about the "natural" state of an ecosystem can be biased by prejudices about the destructiveness and ignorance of human populations and by spiritual beliefs about the value of wilderness.

The "meddling hand of man" often referred to indigenous and other rural peoples living in and around wilderness. Ironically, much of the early concern with conservation in Africa came from non-native hunters who were members of the colonial elite and who saw no contradiction between their hunting activities and conservation. At the same time they perceived long-resident "natives" as somehow separate from nature and intrinsically destructive (Adams and McShane 1992). The landscape for safari hunting was seen as natural, but a landscape with resident populations was not. Adams and McShane (1992) show how some of these assumptions underlay the colonial origins of conservationist beliefs about "wild Africa."

Early conservation documents were not entirely anti-people, nor anti-use. Many documents saw conservation in the context of human use, and described nature in use-value terms. *The Launching of a New Arc* stated: "The Fund's campaign is not a case of animals versus man. Conservation is *for* man, and for the long-term benefit of humanity" (WWF 1965:23, original emphasis).

This conservation literature is replete with phrases justifying conservation "in the name of all people", for "common human interests" and "for the benefit and enjoyment of all." Arguably, such concepts help provide the basis for today's people-oriented approaches to conservation and sustainable use of resources. These documents were often more interesting for what they did not say. The universal moral arguments they put forward obscured the plurality of competing interests over nature, and avoided the difficult politics of who benefited and who decided. While conservation agencies liked to portray themselves as "trustees for all generations", there was little self-reflection on their moral authority, if any, to establish and manage protected areas. Appeals for conservation were rarely made on behalf of poor resource users, and access to national parks demanded social privileges. In short, the approach was undoubtedly elitist and very much favoured the value of nature to humans in general (as defined by an elite view). There was little interest in the value of nature to poor rural people.

Combined with the prevailing theories of environmental degradation, such elitist perspectives seriously undermined the interests of many rural resource users. As McCormick (1995) has pointed out, the perception of the relationships between local people and nature was influenced by the environmentalism of the so-called "Prophets of Doom." Threats to nature in developing countries were usually framed in terms of the "ignorant behaviour" and "reckless management" of rural peoples and in the context of "uncontrolled population growth," referred to in one case as "senseless multiplication" (Nicholson 1981). The problems identified with these threats included over-grazing and exceeding land's carrying capacity, slash-and-burn agriculture, the impoverishment of vegetation leading to the disappearance of climax vegetation, as well as the poaching of wildlife.

The universal moral arguments they put forward obscured the plurality of competing interests over nature.

Solutions for protecting nature inevitably followed. In the early years conservation funds financed preservationist approaches to conservation, such as establishing protected areas and reserves, removing local populations,

supplying anti-poaching equipment, and conducting animal and plant surveys. The perception of rural people as threats to the environment supported efforts to remove them from protected areas and underpinned many early education programmes, which sought to improve attitudes and "primitive" practices. Early preservationist approaches adopted militaristic tactics and infrastructure, described by later critics as "fortress" conservation along with its "fines and fences" approach.

In many cases, the establishment of protected areas failed to consider the social costs, including gross violations of human rights, and the economic and political marginalisation of thousands of rural people (Turnbull 1974, Colchester 1994, Ghimire and Pimbert 1997). Several analysts have recognised that the very language of these early conservation efforts affects the way we think about people living in or around protected areas. Local people were – and still are – labelled as "poachers" or "squatters" rather than "hunters" or "settlers" (Brown 1991; Colchester 1994).

Exclusionary approaches had several effects on rural resource users:

- forced (sometimes violent) resettlement of local populations;
- prohibited or restricted access to livelihood resources;
- break-up of communal lands;
- collapse of indigenous management systems and social structures;
- fines and imprisonment; and
- increased rural conflict and famine.

Although the fortress perspective dominated this period, it was not the only interpretation of conservation. The early conservation movement was not exclusively anti-local people, nor totally unconcerned about livelihoods. A 1961 conference¹³ discussed the needs of local people and their attitudes to nature. It was noted that wildlife management outside and adjacent to national parks depended on the needs, way of life and cooperation of local communities. The point was made that preservation alone was not the answer, and that emphasis should be given to "using" wildlife (Hillaby 1961).

By the mid 1970s, Raymond Dasmann, a senior IUCN ecologist, was writing extensively about the injustices of protected areas. He developed a set of

principles that he considered mandatory for agencies responsible for creating new national parks. These principles anticipated many of the developments addressed in the conservation literature of the 1990s, including rights of ownership, tenure and resource use, use of local knowledge, local involvement in planning and management, protection of native cultures, sharing economic benefits with local peoples, recognition of different social interests and development of surrounding areas (Dasmann 1976: 166-167; 1984: 670-671).

The principles did not, however, include allowing local people to share the land with the animals in and around protected areas (Adams and McShane 1992). That concept was eclipsed by preservationist values and supported by prevailing ecological theories.

Early conservation practices have been critiqued on many grounds:

- they were ethnocentric, favouring Western ideas of nature;
- they were elitist, failing to consider the land rights and sophisticated resource management of indigenous inhabitants;
- they were based on outmoded ecological models that “freeze” the ecological status quo and ignore the dynamics of the wider and human influenced landscapes of which ecosystems are ultimately a part;
- they were self-defeating –removing people from parks caused ecological simplification, and outside pressures eventually impinged on protected areas.

Nature as biodiversity – people as a resource

By the end of the 1970s, international conservation adopted various “conservation with development” approaches, promoting the idea that conservation and development were interdependent. Such views are articulated by both the *World Conservation Strategy* (IUCN, UNEP, WWF 1980) and *Caring for the Earth* (IUCN, UNEP, WWF 1991). These reflected important changes in the understanding of the relationship between people and nature.

By the 1980s, many conservationists had begun to move away from earlier preoccupations with flagship species and special areas, and to question the underlying causes of environmental degradation. They adopted more strategic

programmes that emphasised ecological processes and life-support systems. In this context, "nature" came to be represented more as "biodiversity," "biospheres" and "ecosystems." The loss of biodiversity developed into a central theme of conservation science.

The conservation and development literature of the 1980s recast people/nature relationships in two important ways. First, it was now increasingly accepted that it was neither ethically justifiable nor politically feasible to exclude poor people from parks without providing alternative livelihoods (Brandon and Wells 1992), although this ethical and political imperative was often ignored in practice. Rural people were no longer blamed as the principal agents of environmental destruction, or if they were, more attention was paid to the poverty that was believed to force them into unsustainable practices. There was a shift from seeing rural people as ignorant instruments of environmental degradation to seeing them as unwilling instruments. As Carwardine (1990:54) put it:

...many of the people destroying rainforests can hardly be called villains. The landless peasants, desperate for a patch on which to grow their food, are really victims of other underlying problems, such as overpopulation and widespread poverty.

At the same time, other narratives began to extol the virtues of "traditional people" who had lived for generations in "harmony with nature." New research began to reveal how indigenous and traditional peoples made important contributions to a global understanding of sustainable use and conservation (Posey 1985; McNeely and Pitt 1985; Kemf 1993). Solutions to newly perceived problems focused on buffer zones around protected areas, sustainable utilisation, integrated conservation and development projects (ICDPs) and forms of community-based natural resource management (CBNRM). Some of these are discussed in more detail below.

While the shift to integrated conservation and development was widely supported by international conservation organisations in the 1980s, it was not always accepted. To some organisations, tackling social concerns was only a means to an end: nature conservation. This was a standard view within conservation organisations during that time:

Conservation projects should be more people-oriented – but not people projects. Conservation organisations should always be looking for ways to ensure the long term success of their protected area projects by linking them with integrated conservation and development projects (ICDPs), but conservation organisations must remember that they are not development agencies (response in a WWF field staff survey, 1992).

According to Adams (1990), the conservation-with-development discourse constitutes a repackaging, not a radical redefinition. While local needs are acknowledged, and resource users are no longer represented as a direct threat to nature, local people tend to be recast as a "resource" for achieving global conservation objectives as defined by scientific experts.

Integrated Conservation and Development Projects (ICDPs)

Integrated Conservation and Development Projects (ICDPs) attempt to combine biodiversity conservation with improvements in human well-being. They evolved as early as the 1960s in response to the failures of earlier conservation approaches and have been increasingly common since the 1980s. The first generation of ICDPs had three major approaches to reducing pressure on protected areas:

- 1) strengthening park management and creating buffer zones around protected areas;
- 2) providing compensation or substitution to local people for loss of access to resources; and
- 3) encouraging local socio-economic development among communities adjacent to protected area boundaries.

Earlier ICDPs were usually concerned with providing alternatives to natural resource use in protected areas, not about sustainable use of resources in these areas.

ICDPs have been enormously attractive to national and international agencies, NGOs and donors involved in biodiversity conservation and sustainable development, although this is unlikely to continue indefinitely without concrete demonstrations of progress. Very few projects have been able to demonstrate significant improvements in either conservation or human well-

being, and even fewer have contributed to both. Sceptics argue that the idea of integrated conservation and development is conceptually flawed, and that most of the practical difficulties of ICDPs are generated by the unrealistic assumptions about this integration. There is some merit to this point. It is unrealistic to expect win-win solutions to all attempts to combine conservation and development. Trade-offs often do need to be made, but synergies are also possible. The important thing is to aim for the best of all realistic outcomes, through negotiation.

Critiques of ICDPs have been framed in the context of the three pillars of sustainable development: biodiversity conservation, social development and economic opportunities.

Biodiversity conservation

Most ICDPs have no systematic programmes to monitor their effects on biodiversity, making it difficult to judge whether they are achieving their conservation goals. In fact, many ICDPs have had difficulty in establishing specific conservation targets, such as the extent of an ecosystem, or the number of species to be conserved. This has made project interventions hard

Most ICDPs have no systematic programmes to monitor their effects on biodiversity.

to evaluate. Ecologists have warned that some integrated conservation and development initiatives, based on the extraction and marketing of non-timber forest products (NTFPs), are unsound and that we simply do not know the ecological effects of harvesting particular species on

the sustainability of the forest ecosystem as a whole. Other analysts point out that ICDPs may actually exacerbate ecological destruction by acting as growth magnets and encouraging people to migrate into project areas (Oates 1999). In short, there is concern that ICDPs do not provide an effective strategy for conserving nature.

Some authors have gone further than this, arguing not only that ICDPs have not been able to provide an effective conservation strategy, but that they cannot do so.

Social development

Many ICDPs have been unsuccessful in achieving their social development goals, and have demonstrated a serious lack of understanding of the social dimensions of conservation. Problems have arisen in understanding the dynamics of local communities and in facilitating public participation in ICDP project design, implementation and evaluation. Indigenous technical knowledge has not always been incorporated into programme activities, and it has proved difficult to build on indigenous management institutions under rapidly changing conditions. Challenges include institution building and strengthening the internal capacity of rural organisations to make transparent, informed and consensual decisions. There have also been difficulties in working with multiple stakeholders with different interests and status, particularly given the intense pressure on landscapes from land clearing for agriculture, logging (sometimes illegal), and commercial enterprises, which are frequently supported by powerful economic and political interests. Poverty and social inequities within the vicinity of many ICDPs remain acute.

Economic opportunities

The economic benefits generated by ICDPs have not usually been enough – either as an incentive or an alternative – to prevent the activities that put pressure on protected areas. Few projects have been able to provide the range of income-generating, labour intensive activities that satisfy the livelihood needs of local inhabitants. Benefits from project activities have not been distributed fairly; most benefits have been received by wealthier people, rather than the poorest groups. Some new activities have come into conflict with peoples' livelihood strategies, such as hunting and gathering.

Until recently, most economic activities associated with ICDPs have occurred in areas adjacent to, but outside, protected areas, with the intent of allowing local people to essentially substitute for consumption or income from protected areas. More recent emphasis has been placed on sustainable use, both for consumption and income generation. The harvesting and marketing of non-timber forest products (NTFPs), and developing marketing strategies and systems for them, is especially relevant here.

Marketing NTFPs presents many problems. Some products have low market values or volatile prices. Unless the size of a market can be increased, assisting some people to gain income from NTFPs may do no more than change the way the cake is shared, without increasing the size of the cake. Difficulties arise from fragmented markets, from market saturation with particular products (thus decreasing prices) and from inadequate processing equipment and physical infrastructure. Lack of access to credit can limit the development of new enterprises; substantial subsidies have often been required to develop viable enterprises.

Although ecotourism provides another potential economic opportunity, ecotourism ventures have often been overrated as a way of reducing poverty around protected areas, especially in areas with social instability and national insecurity. Providing compensation for conservation has proved impractical in some cases due to the support required for local communities and the costs of protected area management over the long term.

Managing ICDPs

Project-based approaches to conservation and development have inherent limitations. Many ICDPs have been implemented on a very small scale, with little financial support, inadequate technical skills, and insufficient political backing. Project staff have been few in number, spread thinly over large geographical areas, and have lacked the technical skills, capacities and knowledge to work on social issues or with a wide variety of interest groups. Many ICDPs have been set up as development projects and government responsibilities for law enforcement have been neglected. Few park agencies have had jurisdiction outside park boundaries; most have lacked the authority to regulate buffer zone activities in the absence of legislative changes.

The project approach to ICDPs has serious limitations. It is widely recognised that the broader policy environment has an enormous influence on projects' effectiveness and that external (non-local) forces often drive conservation and development issues. Unless national political frameworks support project initiatives, particularly devolution of power to the local level, locally based management is unlikely to succeed.

In addition, ICDPs need long-term commitment and reliable funding. They are not suitable for the typical three- to five-year project cycle approach where continuity cannot be assured. While projects may be useful as policy experiments (see Chapter 5), they can only be successful in the long term with appropriate supporting policy and legislative frameworks and if their approach becomes part of a more comprehensive programme.

ICDPs: Flawed in theory?

Some conservationists have argued that the basic idea of integrated conservation and development is flawed. Oates (1999), in a strong attack on ICDPs, argues that integrated conservation and development has not worked for conservation (especially biodiversity conservation) and that there are fundamental flaws in the theory that wildlife can best be conserved through human economic development. He describes this theory as a myth. (This can be interpreted in the anthropological sense of a myth of charter, or a myth which justifies a certain course of behaviour or action, not just the more popular sense of a widely believed untruth. Oates seems to intend both meanings.)

Oates argues that there is another myth: that traditional peoples are natural conservationists. Yet another, opposing, myth suggests that traditional people are natural opponents of nature and biodiversity.¹⁴ This illustrates a serious problem with much of the discussion about people and conservation – the tendency for the sort of argument that says that people are essentially one thing or another and always behave in a certain way. The problem with such an argument is that it fails to account for context. Behaviour, whether conservationist or exploitative, always occurs in the context of complex social, economic and environmental circumstances.

In arguing that integrated conservation and development can be counter-productive, Oates suggests that people may move into areas of high-priority conservation in order to obtain economic benefits, thus increasing the pressure on the remaining natural resources. Although this sounds plausible and similar arguments are often made, there is remarkably little evidence that this actually does occur, apart from cases where a national park attracts people to work in the tourism industry.¹⁵ In such cases it is not the integrated project that attracts

outside pressure, but the economic opportunities associated with nature tourism.¹⁶ In any case, given that Oates himself says that integrated projects produce few benefits for local communities, it is hard to see why the absence of benefits would attract additional population and pressure on resources.

Oates points out that the concept of sustainable development ignores the intrinsic value of nature by focusing entirely on its use value. This is a legitimate point but, given that some peoples' livelihoods are severely damaged by conservation activities, it seems necessary to ask who should decide whether use values or intrinsic values are more important.

Oates argues strongly against the common view that conservation can only work with peoples' cooperation. He claims that there are cases where it can work, despite views to the contrary, and presents evidence of successful "traditional" conservation (in terms of conservation outcomes). Indeed, Brockington (2003) makes the same point about successful "traditional" conservation with reference to the Mkomazi Game Reserve in northeast Tanzania. However, Brockington's conclusion is dramatically different. His point is that it was possible to achieve conservation objectives without local support, but only at the cost of local peoples' livelihoods and well-being. He argues that such conservation is unethical, even if traditional exclusionary approaches were feasible.

There are many cases

where conflict between objectives is not an issue.

In addition to the ethical issues involved, there are practical reasons, from a conservation point of view, for questioning

conservation approaches that use coercion, often supported by police or military power, to exclude local people who depend on natural resources. It is doubtful that a "conservation in a vacuum" approach could be economically sustainable in the long term, given the financial costs of policing and coercion. The political costs are also likely to be increasingly difficult to sustain.

Just as it is a mistake to overemphasise the potential for win-win solutions to conservation and development, it is also possible to exaggerate the extent to which conservation and development are in conflict. There are many cases where conflict between objectives is not an issue.

The question of combining conservation and development is not just whether it works. For ethical reasons it must be made to work. The question is how.

New-generation ICDPs

Despite the failures reported above, some analysts argue that ICDPs can still be successful with learning and modification. Wells et al. (2004) argue that future ICDPs need to be designed on the basis of clearly defined objectives, and that they must have explicit targets and testable assumptions. They need to be implemented through decentralised and adaptive management that is based on specific local conditions and local community dynamics, and they must be more proactive in addressing diverse stakeholder interests. ICDPs must also be part of a vertically integrated mix of site-based programmes and policy initiatives in order to address multiple-scale problems beyond the range of local solutions.

Collaborative management

Over the last ten years collaborative management of protected areas has been a trend in ICDPs (Borrini-Feyerabend 1997). It has also been applied to conservation outside protected areas, especially in forestry (see Fisher 1995 for an overview). Collaborative management involves a partnership between stakeholders, especially protected area authorities and local communities. Collaborative management is not discussed in detail here, but much of the discussion of community-based conservation in the next section applies to it.

Community-based conservation

ICDPs have mainly been applied to protected areas and to buffer zones associated with them. As noted in Chapter 1, meaningful conservation cannot be achieved by focusing on protected areas alone, and opportunities for partnerships between conservation and poverty reduction are considerable outside PAs. There are many cases outside protected areas – and, less frequently, within protected areas – where communities have attempted to integrate conservation and development.

Community-based conservation, sometimes known as community-based natural resource management (CBNRM), consists of a wide variety of initiatives. The term loosely encompasses a number of other concepts, including

community forestry, collaborative forest management and community fisheries. Western and Wright (1994:9) argue that its central precept is "the co-existence of people and nature, as distinct from protectionism and the segregation of people and nature" and that it is essentially about "the locus of action."

This last point is important. Critics of community-based conservation often complain that supporters naively assume that communities are homogeneous and that this assumption leads to unrealistic expectations of cooperation. This is an inaccurate claim. In fact, many advocates of CBNRM stress the heterogeneity of communities and the potential for conflicts over resource use,¹⁷ but they also argue that heterogeneity is not an excuse for ignoring the potential of CBNRM, that conflicts can be and must be managed (just as they must be at any level of society) and that developing institutional mechanisms to deal with conflict should be a major focus of intervention. Advocating CBNRM does not assume that communities are homogeneous, it merely states that natural resource management needs to be associated with a locally resident population¹⁸ rather than remote authorities.

In the conservation literature, CBNRM is often distinguished from top-down conservation approaches:

Community-based conservation reverses the top down, center driven conservation by focussing on the people who bear the costs of conservation. In the broadest sense then, community-based conservation includes natural resources or biodiversity protection by, for and with the local community (Western and Wright 1994:7).

The move towards community-based approaches to conservation and resource management has been influenced by a number of factors:

- There has been an increasing recognition that, rather than destroying nature, local people have actually enriched biodiversity and landscapes in many areas (Posey 1985; Gilmour and Fisher 1991; Gomez-Pompa and Kaus 1992; Fairhead and Leach 1995 and 1998; Pimbert and Pretty 1995; Poffenberger and McGean 1996). Although conservation theory in past years declared that nature could be protected only by removing people, more recent research has demonstrated that the absence of local management may actually cause

biological simplification in some areas (Western and Giochio 1993; Adams and McShane 1992; Chase 1987; Pimbert and Gujja 1997).

- This has been associated with an increased understanding of how indigenous institutions and indigenous knowledge help maintain relatively stable environmental conditions over long periods of time (see, for example, Kunstadter, Chapman and Sabhasri 1978; Fisher 1989).

It is obvious that the discourse on local and indigenous knowledge and local and indigenous organisations and institutions can be romanticised. Certainly, local and indigenous resource management systems are not perfect. They are often flawed or ineffective, even absent. (The same can be said, of course, for science-based management by state authorities.) The problem is to maintain a balance between demonising the practices of local people in relation to the environment and romanticising them. The reality is that sustainable management and degradation both occur as a result of the activities of local people, as do all sorts of outcomes along the continuum.

This has implications for conservation practice. The emphasis shifts from asking whether local management systems work (as if there was a single universal answer to that question), to

asking why they work in some cases and not in others. Arrangements can be strengthened where they are present, and developed where they are not. The extensive literature on the management of common property resources provides useful insights into why some local institutional arrangements work and some do not (see, for example, Ostrom 1990, and the literature arising from conferences sponsored by the International Association for the Study of Common Property).

- The assumption that population growth leads inevitably to land degradation and deforestation has increasingly been questioned by research. (Blaikie and Brookfield 1987; Colchester and Lohmann 1993). Forest cover and diversity can actually increase in some areas as population density increases, because there are greater incentives to use resources more efficiently (Sayer 1995; Tiffen, Mortimore and Gichuki 1994; see also Box 6). Shinyanga

*Sustainable management
and degradation both occur
as a result of the activities
of local people*

(Chapter 3) is one clear example of environmental conditions improving despite a population increase. While many of these examples do not necessarily imply new conservation approaches, they do provide a new context within which rural peoples' activities can be better appreciated, thus lending support to community-based conservation approaches.

- Community-based conservation has also been influenced by the human rights and indigenous peoples' movement. These view human rights, social justice and livelihoods, rather than nature, as the top priority. Such perspectives are often rooted in histories of popular resistance to government appropriation of land, where the motivation for conservation stems from alarm at the devastating effects of globalisation on the lives of poor and politically marginalised rural communities, including indigenous peoples (Guha 1989; Guha and Martinez-Alier 1997; Peet and Watts 1996; Lohmann 1991; Colchester 1992 and 1994; IWGIA 1996).

Box 6. Human actions and biodiversity

It has often been assumed that any human use of resources upsets the equilibrium and that human activities must inevitably lead to environmental degradation. Research shows, however, that under some conditions, human action can actually lead to increased biodiversity. For example, Fairhead and Leach (1996) examine what they call the savanna-forest mosaic south of the West African Sahel. This environment consists of large areas of savanna with scattered forest patches. The normally accepted view, from the early colonial period until the recent past, was that the agricultural practices of the human population had, through burning and other practices, led to the degradation of what was originally forest into the current savanna. However, Fairhead and Leach demonstrated, through comparison of aerial photographs from the 1950s and recent satellite imagery, that the number of forest patches was increasing and that this was occurring around settlements. Complementing this comparison with ethnographic research (including oral history), they concluded that the savanna was natural and that human activities, far from destroying forest, had actually contributed to an increase in tree cover and the development of a mosaic of forest niches. In other words, disturbances resulting from human activities increased biodiversity rather than reducing it.

An enormous variety of community-based conservation and resource management systems exist throughout the world. It is often difficult to assess them, partly due to inconsistent terminology. A plethora of terms like community-based conservation, community-based natural resource management, community forestry, community-based forestry and ICDPs are used in different and often contradictory ways.

Fisher (1989) distinguished between indigenous forest management systems and sponsored systems, defined by whether the initiative for establishing local forest management systems arose from local people or from outsiders, such as government agencies. This distinction can also be applied to any local (community-based) conservation or natural resource management systems. These, of course, are broad types. In practice, specific community-based arrangements may have been initiated through a combination of local and external initiatives.

Community-based arrangements can also be classified in terms of tenure (the arrangements governing access to resources) and the related power to make decisions about resources. Tenure and decision-making power are important factors in successful CBNRM. (This will be discussed more in Chapter 5.)

Finally, community-based arrangements can be classified in terms of the nature of the relationship between the community institution and government agencies and other external actors. This may range from virtual independence through some sort of joint management or power sharing through to dominance by an outside agency.

Barrow, Gichohi and Infield (2000) have compared a number of different types of "community conservation" according to a variety of factors, including tenure (Table 1). They distinguish between three broad types of arrangements involving communities and reflecting relationships with government agencies, especially conservation agencies: Protected area outreach, collaborative management and community-based conservation. Although their analysis is based on experiences from Africa, and the terminology may differ, the broad types are recognisable more widely.

Table 1. Components of community conservation

Component	Protected area (PA) outreach	Collaborative management	Community-based conservation
Whose agenda	Dominantly PA in having neighbours as partners	Dominantly protected area, going to joint	Community, local level
Who owns process	Protected Area	Legally the state, but towards joint management	Community
Who plans	For outreach activities can be joint	Joint	Community, often with assistance of others
Who controls	Protected Area	Joint	Community
Ownership of resources, area	Protected Area	Protected Area	De facto community, or individual, but will depend on how tenure is vested
Dominant objective	Enhanced conservation	Conservation with increased access and use	Rural livelihoods: needs met but conservation values integrated
Fate of conservation resource	Maintained, as part of states' conservation heritage	Maintained, as part of states' conservation heritage; however may be overuse, or use may affect other species	Where insignificant to rural economics or culture, resource will be lost; resource likely to be maintained the more culturally and economically valuable it is
Value of local rules and regulations	Slight related to how positive the relationship is	Can be great depending on how local rules of access join with park rules and who enforces	Local rules will govern access and use of resources, by whom and under what conditions
Influence of increased population	Reduced value of outreach, as benefits shared more thinly. Increased need to park integrity maintenance	Pressures on how many different stakeholders can have access to a relatively static resource; how community handles inclusion and exclusion is key	Since conservation resource base not likely to increase, benefits more thinly spread and value per person may decrease; how community handles inclusion and exclusion key
	Conservation for or with the people	Conservation with or by the people	Conservation by the people

Slightly modified from Barrow, Gichohi and Infield 2000

Sustainable use in CBNRM

CBNRM, especially where it is externally sponsored, has not always focused on sustainable use. In Nepal, with its established and well-supported community forestry programme, community forestry still tends to be very conservative in terms of use, focusing mostly on products such as fuelwood for domestic use and NTFPs for domestic use and sale. Although there have been some experiments in commercial harvesting of forests and timber processing by community forestry user groups (see, for example, Jackson and Ingles 1994), these have been relatively scarce and have received limited official recognition and support.

Some significant experiments with sustainable use of wildlife have taken place in Africa, especially the innovative, well-documented and increasingly imitated CAMPFIRE programme in Zimbabwe (Box 7). There has been a great deal of discussion of sustainable wildlife management, especially in Africa (for an overview see Hulme and Murphree 2001).

Box 7. CAMPFIRE, Zimbabwe

Economic incentives are central to CAMPFIRE (Communal Areas Management Programme for Indigenous Resources). In Zimbabwe, six of the 16 primary wildlife districts are among the country's least developed. Most of them are located at the margins of the country, next to protected areas, and in agriculturally marginal areas. CAMPFIRE depends mostly on the sport-hunting industry, and is based on the rights to use wildlife which are leased to a private sector entrepreneur by the Rural District Council. The devolution of appropriate authority from the central government to the district level has resulted in the greater use of market-based mechanisms for the allocation of leases and greater efficiency of resource use. A significant amount of revenue is devolved to the ward (village or community) level and provides the financial incentives for individual and households to participate in the common management of wildlife. In addition, some rural people are employed by the sports hunting companies, or provide goods. The wards then use the income for various activities, such as school buildings, clinics and cereal-grinding mills. In some cases there are cash dividend to individual farmers.

Between 1989–1996, the revenue earned and retained by Rural District Councils with appropriate authority exceeded USD 9.3 million, more than 90 percent of which came from sport hunting. Of this income, 53 percent was disbursed to the ward level and 22 percent was used for wildlife and programme management, while the council levied 13 percent and the remaining 12 percent were allocated for other uses. The returns per household declined from USD 19.40 in 1989 to USD 4.49 in 1996, primarily due to the decreasing wildlife production potential in the growing number of wards participating in CAMPFIRE. The income from the CAMPFIRE programme averaged 17 percent of gross agricultural income, although after the severe drought of 1991 it rose to 21 percent. Income from sport hunting is influenced by the numbers and variety of wildlife, which decreases as population density increases. In cases where wildlife is plentiful and human population densities are low, returns from sport hunting to rural people are much higher. It is clear that returns from sport hunting can contribute significantly to livelihood security, particularly in times of drought. But not all areas with wildlife have enough variety or numbers to sustain viable returns from wildlife to rural people, and other options need to be considered, such as photographic tourism and walking safaris. In addition the weakened macro-economic performance poses a significant challenge to the future success of programmes like CAMPFIRE.

Source: Slightly modified from Bond (2001)

Not all of the literature related to CBNRM has been positive. In an argument that is somewhat similar to that presented by Oates (page 27), Barrett and Arcese (1995) argue that attempts to link rural development and species conservation are flawed because they may increase dependence on game meat and therefore increase demand. They also argue that successful projects will probably lead to an increase in population growth, partly by attracting poor immigrants. In a strong response to this argument, Murphree (1996) points out that the argument is somewhat condescending, a point which is "implied in the warnings about giving rural peoples a taste for meat or encouraging them to enter markets where they will be diddled." But he also points out that Barrett and Arcese assume that projects of this type are essentially concerned

with people living around protected areas and that wildlife are essentially a product of protected areas. He points out that, in fact, "wildlife and sustainable development is not primarily about parks/people relationships, although it may have some implications for these relationships."

This is a very important point. It is a reminder that a great deal of "community-based conservation" occurs outside protected areas and that many of the most successful projects, in both conservation and rural development terms, occur in non-protected landscapes.

Has CBNRM contributed to poverty reduction?

While it is clear that community-based conservation activities can contribute to poverty reduction and sustainable livelihoods (see, for example, the cases of Shinyanga and Pred Nai in Chapter 3 and Box 7), ICDPs have not been particularly successful in this respect. The benefits of externally sponsored forestry projects and programs have been limited, or, at least poorly documented (Fisher 2000). Claims of extensive benefits are often dubious, particularly in the case of project-based activities, or government programs.

In the case of community forestry in Nepal, there is no doubt that the government programme has contributed to improvements in forest conditions, or that it has involved many households. Malla (2000) has argued, however, that income generation for the poor has been limited. In fact, he argues that the poor are sometimes worse off than before. Joint Forest Management in India has also raised serious questions about equity and poverty reduction (see Sarin 1998, discussed further in Chapter 5).

There are more positive accounts. Gilmour, Malla and Nurse (2004) report on the linkages between community forestry and poverty in Asia. (They are referring to official community forestry programs rather than community-initiated activities.) They found that there was:

...some clear empirical evidence through case studies, that community forestry has provided some tangible benefits to poor people. The evidence is, however, limited to a few cases and there is no clear evidence of scaling-up.

While positive examples do exist, it is important to ask why potentially promising programs have had relatively limited success and why benefits have not been more widely distributed. Failures often relate to questions of power and poor institutional arrangements, issues which are pursued in Chapter 5.

Lessons from CBNRM

There are some important lessons from the many examples of community-based initiatives:

- Secure access to natural resources is important both for food and for livelihood security (with important implications for conservation to address poverty reduction). Opinions differ as to whether secure access involves full legal ownership (see Chapter 5).
- Devolved decision-making authority is also important (again, see Chapter 5 for further discussion).
- Without secure access and devolved decision-making authority, CBNRM is unlikely to allow significant use of resources and will tend to ignore the interests of the poor.
- Community institutions in CBNRM can often be controlled by local elites and the interests of the poor are often ignored. This is especially likely when CBNRM is externally sponsored or controlled, since outside agencies tend to work with and support elites. Institutional development for CBNRM needs to be carefully crafted to meet the needs of the poor.

Implications of these changes

This chapter has explored how the views of people/nature relationships within international conservation agencies have transformed over the last 50 years. While people were seen as a principal "threat to nature" during the 1960s, literature of the 1980s and 1990s tended to portray them as a "resource for conservation." Conservation has been criticised for using poverty reduction and sustainable livelihoods as a means of achieving conservation rather than as serious objectives in their own right. On the other hand, many development programs have viewed conservation as a minor add-on and have failed to see sustainable use of resources as a necessary part of sustainable development.

There is increasing recognition of the need to recognise "rights to resources" as the basis of addressing poverty reduction. A great deal has been learned from ICDPs and other community-based approaches to conservation and development. The challenge for the future is to achieve better sustainable development, with a more serious commitment to the rights of the poor to development and with more substantive attempts to effectively link the three pillars of sustainable development.

Chapter 3 presents a number of case studies which better illustrate some of the linkages between conservation and society and which point to lessons from constructive interventions that can better support the linkages.

Some key concepts

The multiple dimensions of poverty

According to the World Bank, in 2000 about 1.1 billion people (nearly one fifth of the world's population) lived in absolute poverty – subsisting on less than USD 1 a day (World Bank 2004).

There are many definitions of poverty, and many strategies to solve it. Economists often use notions of "absolute poverty" and "the poverty line." The poverty line is the level of per capita consumption that permits the individual to satisfy basic nutritional requirements. The notional poverty line of USD 1 per day is a figure currently used to reflect a person's ability to afford a diet sufficient to meet minimal nutritional needs. Absolute poverty is defined as existing where income falls below this poverty line (World Bank 2001). There are various technical difficulties in measuring poverty in these terms, and questions arise about what such measurements do not and cannot tell us. For example, while the measurement of absolute poverty may be able to reveal something about physical well-being, it cannot throw light on the underlying causes of poverty, or the significance of power structures and processes in reproducing it (Hanmer, Pyatt and White 1999). Nevertheless, in gross terms, the poverty line is a useful indicator.

Since the 1980s a great deal of qualitative research has been done with rural people in low-income countries to help develop a much broader conceptual

view of poverty and deprivation (Narayan et al. 2000; Chambers 1988). Many such studies reveal the political, historical and psychological aspects of poverty, such as social exclusion and powerlessness, as well as material deprivation. Amartya Sen (1999:87) has identified poverty as "the deprivation of basic capabilities" which are "the substantive freedoms he or she enjoys to lead the kind of life he or she has reason to value." He focuses on deprivations that intrinsically limit peoples' freedoms, rather than low income, which he sees as significant only in the sense that it can be "a principal reason for a person's capability deprivation."

The emergence of a multi-dimensional view of poverty shifts the focus to issues like power to make decisions and access to information. A multi-dimensional concept of poverty, incorporating both income and non-income elements, has recently been widely accepted. Many of the non-income dimensions of poverty are less amenable to measurement and tend to raise difficult questions about social inequalities and power, and how to address them (Craig and Porter 2003).

This book applies the World Bank's concept of poverty (World Bank 2001). This avoids the narrow definition of a lack of income, and according to Maxwell (2003), is the closest yet to an international consensus on how to understand poverty and how to reduce it. According to the World Bank view there are three dimensions of poverty: lack of assets, powerlessness and vulnerability. These are outlined in Table 2.

Table 2. Dimensions of poverty

Lack of assets	Powerlessness	Vulnerability
Assets include: <ul style="list-style-type: none"> • natural capital • human capital • financial capital • physical capital • social capital 	Powerlessness caused by: <ul style="list-style-type: none"> • Social differences (including gender) • Inequitable access to resources • Unresponsive public administrations • Corruption • Inequitable legal systems 	Multiple risks resulting from: <ul style="list-style-type: none"> • economic crises • natural disasters • social crises

Adapted from the World Bank 2001

Based on this analysis, the World Bank promotes a three-pronged strategy for poverty reduction: building assets by providing opportunities for growth, empowerment and increasing security. Some examples of these strategies are outlined in Table 3.

Table 3. Some dimensions of poverty reduction

Opportunities and growth	Empowerment	Security
<ul style="list-style-type: none"> • expanding assets of poor • encouraging private investments • expanding international markets • pro-poor market reform • restructuring aid • debt relief 	<ul style="list-style-type: none"> • addressing social inequalities • enhanced public participation in decision-making • pro-poor decentralisation • public administration reform • legal reform • providing forums for debate 	<ul style="list-style-type: none"> • risk management • safety nets • coping with natural disasters

Disaggregating social categories

Understand the impacts of policies and developmental activities on the poor requires efforts to disaggregate social categories. Simply adding up net benefits misses the impact that particular actions can have on different categories of people. For this reason, taking poverty seriously in conservation requires recognition of the different effects of actions, both positive and negative, on different group of people.

Since the 1970s much of the focus of social science research on people and the environment has shifted to concepts of "social difference" (Leach, Mearns and Scoones 1997). Such concepts have served to undermine simplistic notions of "the local community" as a homogenous and static whole. Rather than studying functional adaptation, studies now tend to highlight the ways in which differences of gender, caste, class, age, ethnicity and so on shape humans' interactions with nature. Diverse groups, even within the same locality, have different values and interests, and conflicting values are struggled over and negotiated in resource use contexts. This tradition highlights the need to

develop a disaggregated understanding of human-environment relationships, and sensitivity to the micro-politics of resource-use.

Heterogeneity within communities is particularly evident in terms of gender. Women and men have different roles in activities involving natural resources (including collection and processing). They also have different levels of control over resources. All of this translates into different interests and needs and means that women and men are affected differently by environmental change and conservation or natural resource management activities and policies. Not only do women have different resource needs from men, and different levels of control over resources, but different categories (not necessarily coherent groups) of women differ from each other in these respects. For example, women headed households are often the poorest and most vulnerable in rural areas. This is obviously relevant to addressing poverty through conservation. Gender perspectives have been a significant development in social science thinking about both the environment and poverty and it is clear that efforts

Efforts to address poverty and conservation must take account of women's needs and seek new opportunities.

to address poverty and conservation must take account of women's needs and seek new opportunities.

Box 8 presents some examples of the interconnections between gender, poverty and conservation. Environmental conditions, natural resource availability

and environmental degradation often have specific impacts on women because of their cultural and social activities. Conservation and sustainable development activities may also have specific effects on women, both negative and positive. A clear understanding of the interests of women in relation to natural resource conditions and changes can help to minimise negative impacts and maximise positive impacts.

In an examination of gender policies in Joint Forest Management in India, Locke (1999) argues for the application of a gender and development perspective (GAD) which requires gender analysis as a prerequisite to intervention. Gender

analysis is necessary because the power and interests of different groups (including different groups of women) are context specific.

Gender analysis cannot distil any general relationship between women and the environment which could inform prescriptive policy but rather suggests that environmental interventions will be a new arena in which gendered bargaining processes will be enacted and contested (p. 269).

In an example which illustrates how apparently reasonable interventions might limit options for women, Locke refers to a team which "identified poor women's collection of leaves for sale as a 'gender need.'" They were criticised by a high caste woman (who was not one of the leaf collectors), who "pointed out that this work was a sign of women's desperation, drawing their attention to its arduous, low paid and stigmatized nature" (p. 278). This is an important theme in poverty reduction: concentration on immediate needs may not address the dimension of powerlessness that is a key element of poverty.

Box 8. Gender, poverty, environment and conservation

Environmental conditions, access to natural resources and environmental degradation have specific impacts on women

"[Two] billion people around the world have no access to regular energy sources. More than one billion in developing countries have no access to potable water. 2.4 billion people...cannot count on an improved sanitary structure. The lack of potable water, of adequate sanitary conditions and of a regular energy source represent a heavy burden on women who must work to prepare, cook and conserve foods, clean their homes and wash, while at the same time being responsible for the nutrition and health of their families" (Lara n.d. a).

"For many women the daily task of obtaining safe water for the family is their most pressing problem. As water sources dry up, become choked with silt or contaminated by pollution, the provision of this essential basic resource becomes increasingly difficult. Not only do women have to walk further, and wait longer at the water points, but the return journey, carrying the heavy load, can damage their health" (Rodda 1991: 84).

“A study in Uttaranchal, India, found miscarriages to be five times the national average at 30% and links this to carrying heavy loads of water and fuel during pregnancy. In Nepal, women suffer a high level of uterine prolapse, which is associated with carrying heavy loads of wood soon after childbirth. In contrast, men of the developing world spend about one-tenth of their time that women do on this daily task” (Lara n.d. b).

Conservation and sustainable development activities have specific impacts on women (both negative and positive)

Women in the hill areas of Nepal are usually responsible for collecting fuelwood. Closure or protection of degraded forests for regeneration or plantation often adds significantly to workloads as women have to travel further to collect it.

In the northern areas of Pakistan, a project promoted on-farm fodder species as an alternative to grazing in high pastures. Because women were responsible for work in the fields, this added to their workload. Women apparently regarded this as acceptable, however, because they saw an overall benefit to their families.

In Shinyanga (Tanzania) the development of *ngitili* (forest enclosures) through community action – supported by a government project and policy – has led to a significant increase in forest tree cover and quality (see Case 2, Chapter 3). This has made it easier for women to collect fuelwood. One woman reported that it used to take five hours to collect fuelwood and that it now takes half an hour. She said that this was especially good because it gave her time to prepare food for her children before they went to school.

Source: Except where otherwise indicated these examples come from the field experience of one of the authors.

Emphasising diversity in social science thinking is very important when linking poverty reduction and conservation. If different groups of stakeholders have different access to resources, and use resources in different ways, then they will be rich or poor in different ways and changes in access to resources will affect them differently. This means that actions and policies need to recognise these different needs, and that actions that are beneficial to one group may

be detrimental to another. The impacts of policies need to be examined both within and between groups, not just for broad categories (such as "all women").

The DFID livelihoods framework

The UK Department for International Development (DFID) has developed a livelihoods framework.¹⁹ This framework is a means of assessing the assets which people have to support their livelihoods and provides a way of thinking about developing and supporting sustainable livelihoods. Although the framework uses the term "livelihoods", the notion of livelihoods is very broad; it is close in concept, but not specific language, to the World Bank's "dimensions of poverty" approach. The framework begins with the following definition:

A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Carney et al. 1999).

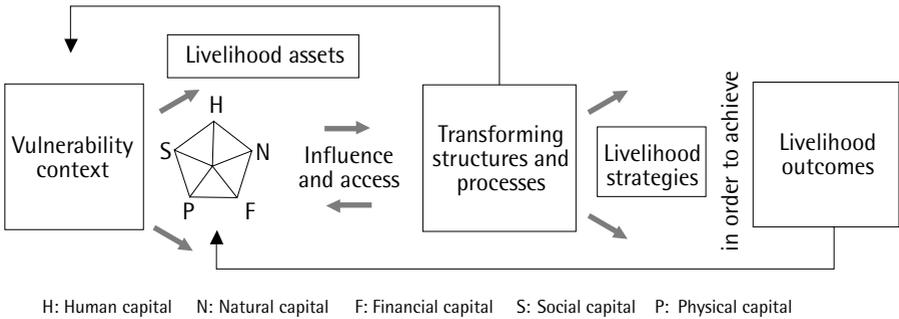
According to the livelihoods framework, five kinds of livelihood capital support livelihoods:

1. natural capital, such as forests and fisheries;
2. financial capital, such as income opportunities;
3. physical capital (such as infrastructure);
4. human capital (knowledge and skills); and
5. social capital (such as social networks).

These types of capital operate in the context of vulnerability, which is the context outside people's control. They interact, are transformed into livelihood strategies and finally into livelihood outcomes (see Figure 1).

The important contribution of the livelihoods framework is the way it breaks down capital (or productive assets) into a number of distinct types. In this way of thinking natural resources and the environment can be an asset, as can other capitals. But it is the way they interact, and the transforming processes that are put in place, that turns them into useful elements of a livelihood strategy.

Figure 1. The Sustainable Livelihoods Framework



Adapted from Chambers and Conway 1992

A simple example of a transforming structure or process might be a policy change in a case where forest dwelling people were not permitted to harvest and sell timber. A change in laws governing tenure would enable them to turn a potential asset (or capital) into something useful for livelihoods (and poverty reduction). Another example is the development of a marketing structure to enable people to sell shrimp to international markets. Institutional arrangements are often transforming structures or processes.

The crucial advance is the recognition that assets do not simply transform into livelihoods. Enabling mechanisms are needed to help them make this transition. This has implications for interventions that attempt to integrate conservation and poverty-focused development. Causal relationships are not simple or unchanging. There are often mechanisms that mediate between causes and effects, and interventions may need to focus on them rather than on apparently direct causes.

Institutions

Institutions can be important mediating mechanisms. The idea of institutions is a useful conceptual tool for understanding how peoples' interactions with each other and the environment are mediated by rules and agreements. This book places great importance on the concept of institutions and how, at various levels (global, national, local), and in various forms (economic or social), they can be modified or crafted to support conservation and poverty reduction (Box 9). Aspects of economic institutions are also discussed in Chapter 5 and the Appendix.

Box 9. The concept of “institution”

Institutions can be defined as norms, rules of behaviour and accepted ways of doing things. They can be formal rules (such as laws) or informal (norms). Uphoff (1986) uses the term “institution” to refer to a set of shared norms and behaviours. (Institutions are not the same as organisations, which Uphoff describes as structures of recognised and accepted roles. Some institutions, such as universities, are also organisations.) The *ngitili* described in Chapter 3 are examples of institutions. The term refers to a particular type of unit of land and implies a shared understanding of rights and behaviour and a set of agreed arrangements for land use.

Institutions relevant to natural resource use and management include rules governing access to resources (tenure), government laws and policies that are intended to determine the way resources are managed, arrangements for decision-making about resource use and arrangements for distributing benefits for resource use.

Political ecology

Political ecology, which has developed since the 1980s, has generally been interested in how communities, resource management and the environment are being transformed by the global economy through market integration and commercialisation (Blaikie and Brookfield 1987). Political ecology has drawn attention to the importance of historical contexts of environmental and social change, and how links between international, regional and national processes interact with local ones. It notes how the political and economic power of different actors and institutions, at various scales, influence social and environmental interactions, and it recognises the plurality of perceptions of ecological change. Political ecology helps provide a much-needed historical depth to understanding processes of environmental degradation, and an appreciation of how power relationships and processes work in within particular resource contexts. Political ecology asks who gets what and who controls nature. Conflict over environmental resources is a central concern of a political ecological approach.

Power can be defined in many ways. The key element is the capacity to influence the outcome of events; somebody has power to the extent that she or he can influence outcomes. In the context of natural resource use and conservation:

Power can be thought of as the capacity to have a meaningful (effective) input into making and implementing decisions about how forests [and other natural resources] are used and managed. Having a meaningful role does not mean that an actor makes all decisions, but that his/her interests are given serious attention in negotiations.

Meaningful decision-making also involves implementation. If a decision cannot be implemented or enforced, then the role in decision-making does not involve effective power (Fisher 2003: 20).

This definition of power fits with the notion of poverty as the deficiency of capabilities. Empowerment is an important aspect of enhancing capabilities and, thus, of contributing to poverty reduction.

An increased interest in how power affects poverty has contributed to a recognition of the need to look at different stakeholders and actors at all levels, from the state to the community. The heterogeneous nature of communities, both in terms of power and wealth, is now recognised as crucial to understanding how resource decisions are made. This has implications for the ways in which greater equity in decision-making can be achieved.

Conclusions

This chapter provides some background to attempts to deal with poverty and conservation issues. Some concepts and theories have been identified which can help in understanding possible linkages between poverty reduction and conservation.

Chapter 3 looks at some case studies that provide insights on connections between conservation and poverty and on some of the issues that can inform initiatives for integrating conservation and poverty reduction.



Chapter 3

Case Studies

It is important to ground this discussion in real-world examples. Many of these examples are included in the text itself, or in the boxes. Three more detailed cases are included in this chapter. Each of these cases raises a number of points that will be relevant in later chapters. Each case study is intended to be self-contained. Although the case studies are not in a standard format, because they were originally prepared for separate purposes, the lessons learned are provided in each case.

Although the three cases were successful in many respects, they are not presented as models of how to combine conservation with poverty reduction. One of the premises of this book is that such successes have been limited. The cases are presented because they illustrate points relevant to our argument. These are some of the most important points:

- There are many cases where community action, motivated primarily by well-being concerns or livelihood needs rather than by conservation as such, has led to improved conservation outcomes. People clearly benefit from the availability of good natural resources.

- Local action may not lead to perfect conservation outcomes, but the results are often better than any realistic alternatives. It is often the failure of government policies and actions that leads to local action in the first place.
- Improved conservation and poverty reduction outcomes often result from institutional changes (policy, development of appropriate local organisations and networks, etc.) at different levels.

Case Study 1. Pred Nai Community Forest, Trad Province, Thailand

Jaruwan Kaewmahanin, Somsak Sukwong and R.J. Fisher¹

Introduction

Forest management activities were undertaken in a mangrove forest in Thailand by the Pred Nai Community Forestry Group. The village of Pred Nai is located in Trad Province near the Cambodia border. Although the mangrove forest is technically under the authority of the Royal Forest Department (now part of the Ministry of the Environment), this has not prevented community action.²

The community in Pred Nai is trying to ensure that the local forest (one of the last remaining mangrove forests on Thailand's eastern seaboard) is managed sustainably. Villagers in Pred Nai have been concerned with the degradation of marine resources, which they consider is mainly due to the destruction of mangrove forests.

In 1985, villagers became concerned when nearby logging concessions over-harvested the mangrove and prohibited villagers from harvesting crabs, shellfish, fish and other resources in the concession areas. Other local interests converted degraded mangrove areas into shrimp farms and built a gate to block seawater, which further damaged the mangrove ecology. In 1986 the villagers formed a group to stop the logging and shrimp farming. Their efforts were successful and the gate was destroyed. Commercial logging was also halted.

Even after the concessions stopped, it was difficult to prevent outsiders, from both nearby villages and farther away, from harvesting or destroying resources within the mangrove area. Local leaders were fearful of any harvesting and did not allow anyone to fish in the mangrove conservation area. This affected the poorest villagers and fishers, whose livelihoods depended on the mangroves.

In response to these events, the villagers began to develop a management plan for the mangrove forest. This involved resource mapping and forest patrols. Pred Nai villagers drew upon the strengths of local traditions and village elders and, with the support of a respected monk, urged people to contribute to a village savings fund that provided a base for their efforts.

As the first management activity, the villagers planted trees in the denuded mangrove area; some stands began to regenerate naturally under strict village protection. Harvesting regulations for the grapoid crab (*Metopograpus sp.*) were developed in 1997. These involved closing the harvest during the breeding period in October. These small crabs are collected mainly for sale. For the other economically important species, mud crab (*Scylla serra*), villagers set out to increase production by starting a "crab bank." People who caught egg-bearing crabs were asked to put them in one of the cages established by the management group in the canals.

The villagers also took action to prevent destructive fishing practices. They are also experimenting with thinning the dense natural stands of *Ceriops*. The villagers exchange ideas with fishery researchers to help with monitoring methods and collecting relevant data. The process and results are analysed and reflected in the subsequent planning cycle. This conscious learning process is

an important aspect of the group's success.

Through exchanging information and experiences, the villagers have learned from their successes and failures.

The villagers realized that the people of a single community could not implement successful and sustainable forest management, especially since boundaries were not demarcated

and there were no regulations on forest use. A mangrove network developed among a number of other local villages. The idea of networking was initiated and facilitated in those villages that shared boundaries with Pred Nai; it later expanded to many other villages. The communities all became members of the Community Coastal Resource Management Network, Trad Province. Through exchanging information and experiences, the villagers have learned from their successes and failures. Their collaboration has allowed them to initiate new ideas and practices that respond to community needs.³

Poverty reduction

For some of the villagers the mangrove ecosystem is a valuable source of income; for the village as a whole it is the basis of a way of life. The village

is not particularly poor, but crab collecting is mainly carried out by relatively poor members of the community. (Not all poor villagers are involved and those involved are not necessarily the poorest.⁴) For the people involved, crab collecting is very important for income and livelihood security. The management initiative has helped to ensure that the environmentally and economically important mangrove area is managed sustainably. Local management efforts have also spurred other community development activities.

According to information provided by villagers, the income level of some villagers involved in crab collecting has almost doubled as a result of improved catches of grapsoid crab. Other statements suggest that the level of income has remained about the same. While exact figures on income are not available, data suggest that the poorer villagers engaged in crab collection could earn 600-700 baht (USD 15-18) per day. It is clear that collectors can now collect the crabs much more quickly as a result of greater availability, particularly in the low season; this provides opportunities for additional economic activity. In this way the increased availability of crabs has enhanced livelihood security.

According to information obtained in 2004, the average daily harvest of grapsoid crab has increased since 1998 from 8 to 15 kg per collector per day. The Pred Nai community is now developing a marketing system, processing crackers made from mangrove plants and producing local wine.

Increased mud crab harvests, resulting from the innovative introduction of crab banks, have also been reported. Artificial fish "houses" (made from blocks of used car tires) are now being installed in canals. According to villagers and outsiders, this means that less time is needed for fish harvesting. Pred Nai villagers are now trying to restore the seacoast within a 3000-metre conservation zone and protect it from destructive fishing practices such as the use of push nets and trawlers.

The community forestry project has also encouraged the villagers to initiate other economic activities. A savings management group, formed in 1995, had more than 600 members and a fund totalling nearly six million Baht (about USD 72,000) in 2004. Other community organisations were established, such as

a women's group, a youth group and a network of people from various villages who use the mangrove area. The management initiative has also encouraged other villages to set up community forests.

Effect on biodiversity

The project began with restoration of the mangrove forest through plantation and protection, which led to the regeneration of mangrove trees. After 16 years of community action faunal biodiversity has increased; villagers report that stocks of crab, shellfish and fish have also grown. Many water birds like the Painted stork (*Mycteria leucocephala*), *Parphyris poliocephalus*, Purple heron (*Ardea purpurea*), Grey heron (*A. cineria*), *Dendrocygna javanica* and Brahminy kite (*Haliastur indus*) are returning and macaques (*Macaca fascicularis*) have been reported as coming back after moving away during the logging period. "Hoy lod" or Razor clams (*Solen strictus Gould.*), absent for 20 years, have reappeared.

After a couple of years of protection and some conflicts over the use of forest resources, villagers are now trying more proactive methods of management; they are emphasising sustained use rather than more passive conservation. One of the most valuable local species is the mud crab. It is especially prized because of its rarity, due to the fact that so few mangroves remain. Some villagers who were interested in cultivating the mud crab formed a group in order to increase production. They exchange ideas among themselves and are in contact with fishery researchers who specialize in crab aquarium breeding.

There is a debate in conservation literature about whether sustained use and conservation of biodiversity are compatible (see, for example, Robinson 1999). In the case of Pred Nai, and no doubt in many other cases of community-based conservation, previous use had severely affected biodiversity. This community-based initiative has led to both increased income and improved biodiversity. The community activity did not so much "conserve" biodiversity as reintroduce it.

Additional impacts

Education is another important factor. Villagers have collaborated with the schools and village elders to teach school children about mangrove ecology

and coastal resources, using the mangrove community forest as a learning laboratory. Boys and girls join adult villagers in the planting programme and the forest thinning experiment. The villagers have also constructed a walkway in the mangrove for educational purposes.

The Asia-Pacific Economic Community (APEC) sponsored a group of school children from various countries to attend an environmental camp and carry out fieldwork at Pred Nai in July 2003. The students learned about mangrove and coastal resources, leading to a real sense of pride in the community.

The self-taught approach is a major factor in the success of Pred Nai. Villagers started with reflection, and then developed their abilities to solve problems, learning new ways to manage the resources, their village and their own lives.

Partnerships

The success of the initiative depended not just on managing the mangrove area, but on managing the people who use the mangrove. Management activities incorporated innovative partnerships and a wide range of participants.

After the mangrove concessions ended and a management group was set-up, local users who depended on the area were not allowed to harvest any products. This caused resentment and conflicts. After discussions with community members, however, the villagers slowly began experimenting with less restrictive management and the committee became more inclusive.

Partnerships needed to be established with people from other villages who wished to use the resources. Villagers set up a People's Mangrove Forest Network, which meets in different villages on a rotating basis.

Villagers have gained experience in working collaboratively with outsiders such as fishery experts, foresters and other institutions. Since some problems are beyond the scope of village action, these relationships with other institutions are important. They include networks with other villages, collaboration with other institutions, such as government forestry and fishery departments, police patrols and politicians. Religious institutions, such as temples in the Eastern Gulf region, have also been important partners.

The other main participants are the local officials. Although local management efforts are not legally recognized by the national government, local officials have provided technical and moral support. The provincial governor became an active supporter of the community forest and the mangrove network after he saw what local efforts had achieved. An important lesson is that legal recognition is not always essential if there is a collective interest and vision in managing resources.

Sustainability

The initiative operated at the local level and increased the learning capacity of community members. They also learned to communicate and collaborate

The initiative operated at the local level and increased the learning capacity of community members.

with outsiders. In the early days of community action, villagers contacted the ministerial level of government for help; when problems arose within the community or in the vicinity, they initiated local solutions. The villagers' success has become so well known that

many study tours from abroad have come to visit them. Ecotourism is also being discussed. Both of these outcomes have potential benefits and risks.

Pred Nai is a good example of innovation in natural resource management and in using income savings for village development. Not just the forest but the broader landscape (including orchards, canals and the sea) is being managed, conserved and sustained.

Local efforts will be sustained as long as there are economic, environmental and cultural interests in managing the mangrove area. A potential threat to the initiative is restrictive and intrusive national legislation, which usurps the rights and efforts of the local villagers in the name of the national interest.

Political and legislative context

In 2002, Pred Nai Community Forest was awarded a prize by the Royal Forest Department. This is ironic given the fact that legislative support for local management efforts has been debated for more than a decade in Thailand.

On the surface, the ingredients for cooperative management are all there: communities throughout Thailand are managing and protecting forests, and a flourishing democracy is governed by a Constitution that stipulates that local communities have the right to participate in natural resource management. On closer inspection, however, many obstacles still exist.

The policy reform process has stagnated and conflicts are becoming more acute. Local networks of community forestry groups are pitted against a powerful coalition of bureaucrats, academics and environmentalists who perceive rural people as destructive and their participation as a threat to national interests.

In recent years, people's organisations and their supporters drafted a Community Forestry Bill. They submitted it to the Thai Parliament in early March 2000 after collecting 52,698 signatures. A parliamentary commission was set up to examine the bill and previous community forestry bills, but was cancelled after only three months, when Parliament was dissolved.

In response, a mass media campaign was initiated to lobby for changes to parliamentary regulations and more inclusive parliamentary commissions. After the new government was elected, a new commission was set up; one third of its members were peoples' representatives. The commission finalized the drafted bill, which was then approved by the lower house of Parliament.

Unfortunately, the Bill's intent and focus was drastically changed by the Senate upper house. The crucial part of the Bill, Article 18, states that those people settled in national parks, wildlife sanctuaries and watersheds prior to the date the forests were declared protected could continue to manage and make sustainable use of forest products. The Senate deleted this provision.⁵

There were various reasons for this. Some senators said they were afraid that if the villagers received rights to manage the forest, they would convert the fertile forest to grow cash crops; others felt that "outsiders" might abuse the bill by encroaching on protected forest and then claiming the right to manage it.

Conclusion

Community-based initiatives in general, and Pred Nai in particular, should not be romanticized. There have been differences of opinion and conflict within Pred Nai about mangrove management, including debate about preservation versus sustainable use. What is important is that the community members have managed this conflict themselves, through negotiation and dialogue.

Confidence can be gained through small successes and it can help improve livelihoods and alleviate poverty

Pred Nai shows that communities can work cooperatively and that community initiatives can lead to improved biodiversity. Although biodiversity had been compromised,

largely as the result of outside commercial interests and government policies, it has improved immensely since villagers regained control. Pred Nai is an example of people empowering themselves through local initiative and organisation, demonstrating that confidence can be gained through small successes and that it can help improve livelihoods and alleviate poverty.

Acknowledgements

This paper is based on experiences gained in an action research project carried out in Pred Nai by the Regional Community Forestry Training Centre (RECOFTC) in collaboration with the community and funded by the Toyota Foundation. We wish to thank the people of Pred Nai for their cooperation and enthusiasm and Supaporn Worrapornphan for her continuing contribution to supporting the efforts of the Pred Nai community and for providing additional data in 2004. Somjai Srimongkontip and Michael Nurse also provided additional information based on field work carried out in November 2004. We also wish to thank Jim Enright for help in providing the scientific names of marine species and for advice on mangrove ecology.

Notes, Case Study 1

1. This is a modified and condensed version of a paper prepared for distribution at the workshop a session on Community Conserved Areas (CCAs) at the World Parks Congress, 8-17 August 2003, Durban.
2. The Fisheries Department has no legal authority but assists with the management of mangrove aquatic animals.
3. A video in Thai and English, "A Community Coastal Resource Management Network in Trad Province" (RECOFTC 2002) has been produced about this networking activity. Pred Nai also appears in the film "Forests, Local Knowledge and Livelihoods", IFAD/RECOFTC 2000.
4. Some students and other, more wealthy, members of the community collect crabs on a fairly casual basis for consumption.
5. By January 2005, a revised bill had been prepared (restoring the community-friendly provisions) and was to be resubmitted.

Reference

Robinson, John G. 1999. "The Limits to Caring: Sustainable living and the loss of biodiversity." *Conservation Biology* 7 (1): 20-28.

Lessons for this book

- Community-initiated conservation at Pred Nai helped improve livelihoods and increase incomes of the people involved in crab collection – generally the poorer members of the community.
- In terms of the World Bank's three dimensions of poverty and the DFID livelihoods framework, the community action addressed poverty through building assets for the poor (improving natural capital) and empowering people to take greater control over their own resources. This was achieved through building and applying social capital (the capacity to work cooperatively) and increasing skills and confidence (human capital).
- Community action can sometimes protect resources where government agencies cannot. It may be able to alleviate problems caused by government agencies and policies (as with the charcoal logging concessions and shrimp farm promotion).

- The biodiversity outcome of community action, though not perfect, was far better than what it would have been if previous state policies and practices had continued.
- Adaptive community learning is important.
- Legal recognition is not essential if there is community interest and vision.
- The lack of supporting legislation and policy is potentially a major constraint to the sustainability of the community actions.

Case Study 2. Forest Restoration in Shinyanga, Tanzania

E. Barrow and W. Mlengi¹

Introduction

Shinyanga region, in northwest Tanzania, is divided into six districts and 833 villages. The predominantly semi-arid region has nearly two million people. The high population density of 42 people per square km, combined with an expansive agro-pastoral land-use system, and subsistence and cash cropping, has exacerbated an already serious problem of land clearing for cultivation. Clearing started in the colonial era to eradicate the tsetse fly, and has been perpetuated to increase the area under cultivation, especially for cotton and rice. The Sukuma people are agro-pastoralists; their major crops include maize, sorghum, millet, cassava, cotton and rice. Over 80 percent of the population owns and manages livestock on communal rangelands (Hendy 1980). Higher livestock densities and the expansion of cash crop cultivation have resulted in acute fodder shortages, especially during the long dry seasons (Otsyina et al. 1993).

Detailed local knowledge exists about the values and uses of different tree species. Of particular importance is the Sukuma practice of *ngitili*

grazing and fodder reserves. This practice is known throughout the region, and is culturally well established (Barrow, Fry and Lugeye 1992). In Shinyanga the practice of *ngitili* or "enclosure" conserves rangelands for use in the dry seasons by maintaining an area of standing hay until the next rains (Barrow, Fry and Lugeye 1992). *Ngitili* are divided into sections; each section is completely grazed before the next is opened.

The practice developed in response to acute fodder shortages due to drought, diminishing grazing land due to increased cropping, rapidly declining land productivity, and shortages of herding labour (Kilahama 1994; Maro 1997; Otsyina et al. 1993). There are two types of *ngitili*: family or individual reserves, and communal reserves. Family reserves are established on an individual's land in fallow; communal reserves can be made on any land suitable for dry-season grazing. Communal *ngitili* are found along riverbeds and hill areas.

Detailed local knowledge exists about the values and uses of different tree species.

Previously the Shinyanga region was extensively forested (Malcolm 1953), varying from *Miombo* woodland to Acacia bushland in the drier areas, but several factors have contributed to forest and woodland degradation (Barrow et al. 1988):

- **Cash crop expansion:** In the early 1900s, agricultural production in Shinyanga region was subsistence based; sorghum and millet were the main crops. By the early 1940s, large-scale cultivation of cotton and tobacco was introduced, accompanied by extensive clearing of forests (Kaale and Gillusson 1985; Kikula 1986; Maro 1997).
- **Declining soil fertility:** Over 90 percent of the people depend on agriculture, but the extent of arable land is decreasing due to soil erosion and loss of soil fertility, combined with poor agriculture and livestock practices. This exacerbates the existing degradation of land and natural resources (Kerario and Nanai 1995).
- **Livestock:** Livestock are a vital part of Sukuma economy, and provide insurance against periods of hardship. The remaining grazing land is generally overstocked, since much of it has been converted to land for cultivation (Barrow, Fry and Lugeye 1992). This results in reduced grass and herb cover, an increased dominance of unpalatable species, a further loss of important browse species (which can no longer regenerate easily), and an overall loss of soil quality (Kerario and Nanai 1995; Vice President's Office 1997).
- **Villagisation:** Under traditional systems, the ownership and management of land tenure rights over *ngitili* and land in Shinyanga were governed by local bylaws. After independence, the *Villages and Ujamaa Villages Act* (1975) was introduced, which relocated farmers from traditional villages to newly created settlements. Household assets – including houses, farms and *ngitili* – were often abandoned (Otsyina, Minae and Asenga 1993). This upheaval was exacerbated by increases in numbers of both people and livestock. The new village pattern, although administratively advantageous, made traditional adaptation to local ecological conditions more difficult. It has led, for example, to the breakdown of some traditional soil conservation practices (Barrow et al. 1988).
- **Wood demand:** The demand for wood fuel, which increased along with population growth, has exceeded the supply, resulting in accelerated rates of deforestation. People must travel long distances (more than ten km) to fetch

wood. Many women in Shinyanga increasingly use twigs, stalks and animal manure instead of wood (Ministry of Community Development 1996).

Legislative and policy framework

In order to address these problems, the government implemented a conservation and restoration project in Shinyanga region called *Hifadhi ardhi Shinyanga* (HASHI). The Sukuma people suggested that restoring *ngitili* was the best way to meet local needs. The restoration effort was based on the following factors:

- the local need for woodland restoration to supply goods and services;
- a desire by the people to invest in restoration;
- pre-existing management institutions; and
- the ability of HASHI to provide extension, training and technical advice.

In 1998, Tanzania approved its revised forest policy, which places a strong emphasis on participatory management and decentralisation. The principles of multiple-use forests, where biodiversity conservation and management guidelines are incorporated in management plans, have been adopted. Local communities are encouraged to participate in the management of forests through collaborative and community-based forest management. Villagers and communities select and set aside degraded and village forested areas to be conserved and managed as village forests (Barrow et al. 2002).

Village boundaries have been surveyed to help villages obtain village title deeds and individuals obtain title deeds within village land. This helps secure village and farm lands, and is an incentive for future improvement. The National Land Policy of 1997, the *Land Act* of 1999 and the *Village Act* of 1999 have actively supported the formal establishment of *ngitili*. Village governments are increasingly empowered to enact village bylaws to protect their *ngitili*, using traditional rules and village guards.

Poverty reduction

As a result of the HASHI programme, the number and size of *ngitili* increased dramatically. The use of both traditional and scientific knowledge facilitates the restoration of forests and improves community livelihoods (Barrow et al. 1988; Kaale, Mlengi and Barrow 2002).

During a detailed survey in the late 1990s, it was found that in a sample of 172 villages, there were 18,607 *ngitili* covering an area of about 78,000 ha. (Maro 1995). The average size of a group or village *ngitili* is 164 ha, while the average size of an individual *ngitili* was 2.3 ha. Ninety per cent of the people in the 833 villages of Shinyanga have their own *ngitili*. Based on this, by the year 2000, between 300,000 and 500,000 hectares of *ngitili* had been restored in the 833 villages of the region. The HASHI experience went beyond the dreams of many of the early proponents of the project. *Ngitili* are found throughout all villages and districts, and almost all respondents (90 percent) have access to them.

Ngitili are becoming a key component of Sukuma land-use management, and meet many of the needs of the local people:

- they provide a source of dry-season forage for livestock;
- they ensure that people can obtain fuel and poles without having to walk long distances;
- they allow people access to medicinal plants, which is particularly important as "formal" health services become increasingly expensive;
- they provide a place where people can harvest wild fruits and foods, even during a drought;
- they lessen the risks of dry periods and drought, thereby enhancing the resilience of the overall system; and
- they are a source of shade and quiet.

Views on *ngitili* improvement and management varied, although they were mostly supportive. About 80 percent of people admitted that there had been positive changes since the advent of villagisation (Maro 1995). Most farmers (90 percent) felt that *ngitili* provided several important goods and services: pasture for animals at the most critical time of the year, thatch control of soil erosion, restoration of soil fertility, wood products, and income (Maro 1995).

Biodiversity impacts

Although increasing biodiversity was not the objective of the project in Shinyanga, restoring the good and services provided by woodlands through the regeneration and planting of indigenous trees also helped to restore

biodiversity—in terms of tree species as well as grasses and other herbs. It is also very likely that some small fauna have returned to the area.

Other impacts

Traditional rules for protecting individual and communal *ngitili* involve guards known as “*sungusungu*” and community assemblies known as “*dagashida*.” The fact that most Sukuma people adhere to these traditional arrangements has contributed to the successful management and restoration of *ngitili* (Barrow, Fry and Lugeye 1992; Kilahama 1994; Maro 1995).

Private *ngitili* can increase a farmer's land value. They are increasing in number, which may reflect a shift from common property to private ownership. Communal *ngitili* help restore degraded areas on hills and river edges. They provide badly needed dry-season forage, reduce soil erosion and conserve catchment areas. They also help lessen the need for agro-pastoralists to move long distances to seek grazing during the dry season; this reduces livestock theft and disease.

The *ngitili* practice in Shinyanga is also seen as providing multiple natural resources, with an increasing focus on trees. In Shinyanga, decentralisation, increased tenure security and the empowering approach of HASHI – combined with the traditional knowledge base about *ngitili* management – provided the impetus for restoration.

This demonstrates how traditional institutions, rules and regulations can complement government legislation and policy. The focus of the project shifted from tree planting and soil conservation to catalysing and facilitating a people-driven process.

The institutional responsibilities for the management of *ngitili* are as important as the technical aspects. A community may have a wide range of institutions, such as *sungusungu*, that are concerned with issues such as access, control and responsibilities. To an outsider they may not be obvious; even if they are known, their importance may be underrated in natural resource management (Barrow 1996). In the case of Shinyanga, these institutions were the foundation

Traditional institutions,
rules and regulations can
complement government
legislation and policy.

of *ngitili* restoration, and HASHI made determined attempts to give control to the village itself (Shepherd, Shanks and Hobley 1991). Traditional sanction mechanisms and fines (*mchenya*) have been the basis for enforcement. In dealing with land-use matters, this use of traditional mechanisms – which often operate in near isolation from formal government – is an important feature (Shepherd, Shanks and Hobley 1991). Blending traditional and formal institutions has been an important part of the success of *ngitili* restoration. The forestry sector at the local and national level, along with HASHI, has assisted with *ngitili* improvement through boundary and enrichment planting and pasture improvement.

Devolution of control and responsibility to the village level has also been an important factor of the success of *ngitili*. There is an increasing recognition, both in policy and practice, of the importance of the official village government and traditional institutions in the management of *ngitili*.

Sustainability

The Sukuma are shrewd and intelligent managers of a fragile landscape. They have the techniques to foster and enhance tree restoration, and the social structures and institutions to implement it. The case study demonstrates a number of practical lessons for forest and woodland restoration:

- Building on existing knowledge systems is the basis for restoration. A detailed knowledge base existed about the importance of individual species, as did traditional management systems.
- Restoration efforts were integrated into existing rules, regulations and sanctions, which were well understood by the local people.
- A reasonable degree of social coherence and a strong social structure is desirable when implementing improvements and changes.
- External change agents (HASHI, in this case) should support and guide the process rather than dominate or drive it.
- The specific details of a restoration project should not be imposed on participants by outsiders.
- Keeping livestock is consistent with tree and woodland restoration; pastoralists depend on trees for browse and forage for their livestock, and to meet other household and contingency needs.

A combination of these and other factors has allowed for changes in ecological and social attitudes to the restoration of wood and grasslands over a relatively short period of time. These important factors are as follows:

- restoration processes must be based on common sense, and must be easily replicable.
- a tradition of woodland and tree conservation provided the basis for restoration.
- increasing local people's ownership of and control over resources, and their capacity to manage them, is essential.
- national and district forests, as well as the smallest areas, are candidates for restoration.
- because even the smallest areas can be conserved, the practice is more widely applicable. Both "poor" and "richer" farmers benefit.
- generating local interest in natural resource management, for example through enrichment planting, is important.
- a supportive framework of policy and legislation relating to forestry, land tenure and local government reform is essential.
- real participation and community ownership is imperative.

Conclusion

The number and area of *ngitili* restored since 1986 demonstrates the resurgence of a traditional natural resource management system. HASHI was in the right place at the right time, and with the right approach and attitude to help bring about the reality of a restored, locally owned landscape.

Forest and woodland restoration is not just the responsibility of governments. Rural people can, and will, restore very significant areas with the right incentives, and with policies that suit local conditions. In this case the need for dry-season forage for livestock, combined with the increasing need for timber and non-wood forest products, were the two main forces driving the restoration. The areas restored vary in size from individual woodlands on individual farms to large community-based forests. The restored trees and woodlands provide important livelihood benefits, including forage and browse for livestock, foods and fruits for people, medicines, and timber products. This

has helped people improve their livelihoods, and enhanced the resilience of land-use systems, especially in dry and drought times.

Note: Since the completion of this paper, an impact assessment has demonstrated some of the economic and biodiversity values of forest restoration in Shinyanga (see Box 10).

Box 10. Economic and biodiversity values from *ngitili*

A recent review of the social, economic and environmental impacts of forest landscape restoration in Shinyanga (Monela et al. 2004) indicated that *ngitili* have considerable economic and biodiversity values, which have been largely achieved through the restoration of forests.

Biodiversity values

- 152 different species of tree, shrub and climber – mainly young trees (restored as a result of closure);
- more than 60 species of tree used for various reasons, (19 product types in total), medicines, fruits and vegetables, fuelwood, timber and woodcraft, fodder, fencing, bush meat, thatch and shelter;
- 145 bird species, many new to the area as a result of *ngitili*, including 7 species with restricted ranges found in Shinyanga;
- 13 grass genus, 25 other herb genus, and a number of small mammals, reptiles, etc.

Economic value

- *Ngitili* are a significant income source, providing an average of USD 14 per month per person (approximately USD 1,000 per family per year);
- Over 64 percent of households receive significant benefits from *ngitili*;
- Some costs arise from restoration. They are related to the loss of crops (rice, maize, cassava, etc.) due to birds, porcupines, rats, antelope and monkeys. Livestock loss has also occurred; jackals and hyenas hunt goats and sheep. The average annual cost due to problem animals is about USD 63 per household per year.

Source: Monela, G.C., S.A.O. Chamshama, R. Mwaipopo and D.M. Gamassa (2004). A Study on the Social, Economic and Environmental Impacts of Forest Landscape Restoration in Shinyanga Region, Tanzania. First Draft. Ministry of Natural Resources and Tourism, Tanzania, and IUCN Eastern Africa Regional Office. 224 pp.

Note, Case Study 2

1. This has been modified and abridged from Barrow, E. and W. Mlengi (2003). Trees as Key to Pastoralist Risk Management in Semi-Arid Landscapes in Shinyanga, Tanzania, and Turkana, Kenya. International Conference on Rural Livelihoods, Forest and Biodiversity. CIFOR, Bonn, Germany.

References

- Barrow, E.G.C. 1996. *The Drylands of Africa: Local Participation in Tree Management*. Nairobi: Initiatives Publishers.
- Barrow, E.G.C., P. Brandstrom, M. Kabelele and I. Kikula. 1988. Soil Conservation and Afforestation in Shinyanga Region: Potentials and Constraints. Mission Report to NORAD. Norad, Tanzania.
- Barrow, E.G.C., J. Clarke, I. Grundy, J.R. Kamugisha and Y. Tessema 2002. *Analysis of Stakeholder Power and Responsibilities in Community Involvement in Forest Management in Eastern and Southern Africa*. Nairobi: IUCN-The World Conservation Union Eastern African Office.
- Barrow, E.G.C., P. Fry and S. Lugeye. 1992. *Hifadhi ardhi Shinyanga (HASHI)* Evaluation Report for Ministry of Tourism, Natural Resources and Environment. Dar-es-Salaam: United Republic of Tanzania and Norwegian Agency for International Development.
- Hendy, C.R.C. 1980. Livestock Production in Tabora Region. Tabora Rural Integrated Development Programme, Tanzania: Land-Use Component. London: Land Resources Development Centre.
- Kaale, B. and R. Gillusson. 1985. Plan for Planting and Conservation of Trees in Shinyanga Region, 1986-2010. Dar-es-Salaam: Ministry of Natural Resources and Tourism.
- Kaale, B., W. Mlengi and E.G.C. Barrow. 2002. The Potential of *Ngitili* for Forest Landscape Restoration in Shinyanga Region: A Tanzania Case Study. International Expert Meeting on Forest Landscape Restoration, Costa Rica.
- Kerario, E.J. and K. Nanai. 1995. Desertification Control in Tanzania. Lesotho: SADC-ELMS.

Kikula, I.S. 1986. Environmental Effects of Tanzania's Villagisation Program. Griffith University, Australia.

Kilahama, F.B. 1994. "Indigenous Technical Knowledge: A Vital Tool for Rural Extension Strategies. A Case Study from Shinyanga Region, Tanzania." *Forest Trees and People* 24: 30-35.

Malcolm, D.W. 1953. *Sukumaland, An African People and Their Country: A Study of Land Use in Tanzania*. London: Oxford University Press.

Maro, R.S. 1997. Human Development Report for Shinyanga Region: Cotton-Sector Study. Dar-es-Salaam: Economic Research Bureau.

Maro, R.S. 1995. In situ Conservation of Natural Vegetation for Sustainable Production in Agro-Pastoral Systems. A Case Study of Shinyanga, Tanzania. Centre for International Environment and Development Studies, Noragric. Agriculture University of Norway, Aas.

Ministry of Community Development. 1996. Community Development Policy. Dar-es-Salaam: The United Republic of Tanzania.

Otsyina, R., S. Minae and D. Asenga. 1993. *The Potential of Ngitili as a Traditional Agroforestry System among the Sukuma of Tanzania*. Nairobi: ICRAF.

Shepherd, G., E. Shanks and M. Hobley. 1991. *National Experiences in Managing Tropical and Sub-tropical Dry Forests: Representative Cases Studies Illustrating Successes, Shortcomings, and Promising Opportunities for National-Level Planning of Forest Management*. London: ODI.

Vice Presidents Office. 1997. National Environmental Policy. Dar-es-Salaam: Government Printers.

Lessons for this book

Case study 2 provides some important lessons about links between conservation and poverty reduction:

- Community action (as in the case of Pred Nai) can lead to significantly improved ecosystems. Even though the goal of the project was not ecosystem restoration, the area affected by forest restoration was very large.

- The success of forest restoration (the conservation outcome) was a result of local people restoring forest ecosystem function as a livelihood resource. This was not a concern with conservation as such, but the conservation results were positive.
- Government policy (the villagisation program), which advocated removal of trees, contributed significantly to the original environmental degradation. This is an example of the way in which even well-intentioned policies can have serious negative results.
- Local environmental knowledge was an important factor in the success of the restoration. The reinvigoration of traditional institutional arrangements (*ngitili*, *dagashida* and *sungusungu*) was an essential ingredient.
- There is no simple causal relationship between population growth and environmental degradation. Conservation improved in Shinyanga at the same time that the population was increasing. Institutional arrangements (at the local level to restore and empower traditional institutions and at the policy level to remove policies which encouraged forest degradation and replace them with supportive policies) transformed pressures to degrade the environment into incentives to restore it.
- One of the major contributions of the HASHI programme was allowing traditional institutions to function. This worked by removing constraints.
- Access to resources and control over them increases the willingness of individuals and groups to manage them sustainably. The development of an enabling policy framework contributed to this.
- Although it is often assumed that the main opportunities for combining conservation and livelihoods come from high-value resources, restoration of degraded environments can have major conservation and livelihood benefits.
- In terms of the DFID livelihoods framework, poverty reduction outcomes resulted from building social capital (appropriate local institutions which enhanced cooperation), restoring natural capital and developing transforming structures.

Case Study 3. The NAFRI–IUCN NTFP Project in Lao PDR

Jason Morris, with the assistance of Sounthone Ketpanh¹

The National Agriculture and Forestry Research Institute (NAFRI) and the World Conservation Union (IUCN), with funding from the Royal Netherlands Embassy, jointly executed a non-timber forest project in Lao PDR from July 1995 to September 2001. The project was designed as an Integrated Conservation and Development Project (ICDP). Its goal was to conserve forest biodiversity by promoting the sustainable economic exploitation of non-timber forest products (NTFPs) at the community and provincial level (Ingles and Karki 2001). Following a reformulation of objectives during a mid-term review in 1998, the project sought to achieve this goal by doing the following (summarized from Donovan et al. 1998):

- demonstrating sustainable systems of NTFP use that contribute to forest and biodiversity conservation;
- developing a strategy, in cooperation with government agencies and other relevant organisations, to expand the application of these systems; and
- laying the groundwork for a national management strategy for NTFPs.

As an ICDP, the project had a vested interest in supporting livelihoods and community development. One of the five components of the sustainable NTFP systems was well-being:

To reduce pressure on forests and to improve the ability and motivation of village communities to manage forests by improving their well-being (i.e., income and basic village infrastructure) (Donovan et al. 2001).

Although this approach was initially described as "conservation through economic incentives" (Ingles and Hicks 2002), it was found during project implementation that the links between livelihoods and conservation were much more extensive than had been realised. The reconceptualised approach can be called "conservation by removing constraints" (Ingles and Hicks 2002). Addressing poverty issues promoted conservation in the following ways:

- by removing some of the poverty-related factors that drive over-exploitation of NTFPs by local people;

- by empowering local people to better control the access and use of forests by outsiders; and
- by organising local people to better coordinate their own behaviour through institution building.

The NTFP Project in Oudomxay province provides some of the best examples in Lao PDR of how poverty reduction and environment conservation can be mutually reinforcing objectives.

Nam Pheng village in Oudomxay province

Oudomxay province is located in northwest Lao PDR and shares part of its border with China. Nam Pheng village is a two-hour drive north of the provincial capital and 21 km from the capital of Na Mo District. China is less than half an hour away.

Nam Pheng village was established in 1973. The people in Nam Pheng are Lao Theung from the Khamou Ou, Leua and Rok ethnic groups. They speak the Khamou language and

*Poverty reduction and
environment conservation
can be mutually reinforcing
objectives.*

are mainly upland cultivators, using shifting cultivation. The village is organised according to a Village Committee, comprising the village chief and deputy, the chief of security, and representatives from village unions for youth, women, elders, agriculture, forestry, education and health.

When the NTFP project began in 1996, the village contained 43 households with 244 people. People cultivated an average of one hectare per household per year; each ha yielded approximately 1.2 tonnes. They maintained fallow cycles of seven to nine years. Most households also raised livestock, primarily cows but also pigs and buffalo. The nearest school was in the neighbouring village of Na Hom, but attendance was reported to be low. Water for drinking and residential use came mostly from a stream passing through the village. Illnesses, especially diarrhea and malaria, were prevalent. The villagers' main source of cash income was NTFPs, which were generally collected and bartered on a small scale. Bamboo shoots were sold to traders who exported them to China and Thailand.

Project activities

The NTFP project supported a number of initiatives in Nam Pheng: a village rice bank; a water supply system; construction of a school; domestication trials for *Sa Pan* (paper mulberry), cardamom and eaglewood; forest land allocation; and the establishment of marketing groups and sustainable harvesting regimes for bitter bamboo shoots and wild cardamom (Ingles and Karki 2001).

One of the most important initiatives supported by the NTFP project was the rice bank. This addressed the villagers' most pressing need: food security. Although the rice bank related only indirectly to NTFP conservation it built trust in the conservation project, freed up villagers' time for conservation activities, and reduced the threat of over-harvesting in the forest. The project subsequently addressed forestland allocation, domestication trials and NTFP marketing.

Forests are allocated communally to each Village Committee according to traditional village boundaries and mutually agreed borders. Forests in the Nam Pheng area were allocated during 1997 and 1998 in collaboration with the District Agriculture and Forestry Office (DAFO) in Namo. Forestland allocation was an important first step to sustainable harvesting; it gave the Village Committee authority to resolve resource-use conflicts within the village and to respond to threats from outside. Village forests in Nam Pheng cover a total area of 648 ha, or 46.5 ha per household in 1998, including 515 ha of bitter bamboo forest.

The project helped organise an NTFP marketing group for bitter bamboo. This involved a series of meetings, where villagers and project staff gathered information, analysed problems, decided on a management structure, elected members for management, agreed on regulations, planned, trained, and implemented the initiative. Anyone who collected bitter bamboo shoots for sale – virtually everyone in Nam Pheng – was allowed to join the group. The management structure consisted of a Group Committee (which is the Village Committee) and one-person units for monitoring, accounting and trade. Decisions were made collectively in meetings chaired by the Group Committee.

An important innovation of the marketing group was training villagers in the use of weighing scales. Previously, villagers simply bartered their NTFPs

in bunches to passing traders for clothes, condiments, candies and other items. The use of scales allowed villagers to command higher prices and gave them more confidence when negotiating with traders. The initial results were impressive: sales of bitter bamboo rose to about 54 million kip (approx. USD 5,400) in 2000, a twofold to threefold increase. (This represents an average of 40 percent of household incomes.) Following this success, the marketing group organised a similar regime for cardamom. The marketing group was able to raise the local price for cardamom from 500 kip/kg (USD 0.05) to 35,000 /kg (USD 3.5) in 1998. Although prices have since dropped to around 12,000-14,000 kip /kg, they are much higher than before the marketing group began its work.

The marketing group sets the dates of the harvesting season each year, based on the natural characteristics and regenerative capacity of each NTFP. (The NTFP project assisted villagers with ecological information and training.) The harvesting season for bitter bamboo usually lasts about four and a half months between December and April, although collection for consumption is permitted throughout the year. The harvesting season for cardamom is much shorter, usually ten days in late August.

Because bamboo shoots command the highest prices when fresh, households sell their stock directly to the Group Committee at the end of every collection day. The Group Committee then sells on a larger scale to traders. In the case of cardamom, villagers peel and dry it and then sell to the marketing group, usually at the end of harvesting season.

Generally, the individual collector takes 85-90 percent of the final sale; the remaining 10-15 percent is put in an NTFP fund. Between 1998 and 2000, 17 million kip (approx. USD 1,700) had accumulated in the NTFP Fund from the sale of bitter bamboo and cardamom. The fund supports community projects (such as the purchase of an electric generator), community services (e.g., loans), and pays the salaries of the monitoring, accounting and trade units. In 1999, the fund was used to improve the village's water supply system; in 2000, it supported the construction of a school, with financial assistance from the NTFP project, and provided loans to 15 households. Use of the fund and salary levels are decided collectively by the marketing group.

Note, Case Study 3

1. This case is extracted (with minor modifications) from Bitter Bamboo and Sweet Living: Impacts of NTFP Conservation Activities on Poverty Alleviation and Sustainable Livelihoods. A Case Study of Lao PDR, a paper prepared for IUCN's 3I-C Project by Jason Morris, with research assistance by Sounthone Ketpanh, 2002.

References

Anonymous. 2002. Poverty alleviation and conservation: linking sustainable livelihoods and ecosystem management. Meeting history from 3I-C Core Team Meeting, 24-26 June 2002, Khao Yai, Thailand.

Donovan, Deanna, Bounphom Mounday, Sisomphet Souvanthalsith and Don Gilmour. 1998. Sustainable Utilisation of Non-Timber Forest Products in Lao PDR. Report of Mid-Term Review Mission. NTFP Project, IUCN/NAFRI, May 1998.

Ingles, A. and E. Hicks. 2002. A review of the context for poverty reduction and forest conservation in Lao PDR, and a preliminary look at IUCN's NTFP Project. Presentation given at 3I-C Project Core Team Meeting, 24-26 June 2002, Khao Yai, Thailand.

Ingles, A. and S. Karki. 2001. Project completion report. NAFRI-IUCN NTFP Project: Vientiane.

Lessons for this book

Case study 3 has two important lessons for conservation and poverty reduction:

- Conservation and poverty reduction can be achieved by removing constraints. The NTFP project supported the development of local institutional arrangements that enabled cooperation and better marketing. These new institutional arrangements transformed the potential (but previously not fully utilised) asset, bamboo shoots, into an effectively realised asset. The project increased the capability of the villagers to achieve increased assets and reduce risks. In terms of the DFID framework, the institutional arrangement became a transforming structure.
- An adaptive learning approach is important. The project design was able to respond to a change in focus and a shift in implement activities (such as the introduction of scales).



Chapter 4

Scale, Landscapes, Boundaries and Negotiation

Introduction

Chapter 2 looked at previous approaches to combining poverty issues with conservation, and their limited success in terms of benefits to people. It also noted some concepts that may be useful in understanding the linkages between poverty and conservation. The case studies in Chapter 3 explored some ways in which poverty and conservation issues have been addressed, illustrating, among other things, some of the limitations of narrow site-level and project approaches. These two chapters provide the context for a discussion of a reinvigorated approach to sustainable development, one that ensures that both conservation and poverty reduction are addressed explicitly. Sustainable development is the ideal objective, however difficult it may be to achieve in practice.

The word "reinvigorated" is used deliberately; we do not claim to promote a completely new approach. Valuable work has been done through ICDPs and community-based natural resource management programmes and projects.

Our approach builds on many of the concepts and achievements of earlier initiatives. Terminology is always a problem in development thinking. Good ideas need a label but these labels come to be associated with particular concepts and experiences, often becoming more rigid than was originally intended. (Broad descriptive labels also get reduced to acronyms.) ICDPs are a case in point. It is easier to invent a new term than it is to redefine an old one. It is for this reason that we have avoided adopting a label in the form of a catch-phrase. Whatever term is selected, it would ultimately need to be replaced with a new term representing new thinking. The important thing is not the term, but the broad range of elements it describes.

This chapter explores some of the key issues in implementing approaches that link poverty reduction and conservation. Chapter 5 continues the discussion, paying particular attention to ways of incorporating the institutional context into poverty reduction and conservation.

Linkages and trade-offs

Much of the discussion about ICDPs and similar approaches has centred on the extent to which conservation and development objectives are compatible. This involves questions about trade-offs between conservation and development and creating linkages.

It has often been argued that development is in conflict with conservation. A competing view holds that conservation and development are complementary. This is sometimes associated with the view that conservation is impossible – or at least difficult – without meeting peoples' needs. This position is the basis of integrated conservation and development approaches. It has led to the proposition that meeting peoples' needs is an important step in achieving conservation and that, in pragmatic terms, obtaining the cooperation and support of people is essential to achieving conservation.

The pragmatic argument for seeking peoples' involvement has several aspects:

1. The essentially economic argument states that people may change behaviours that damage the environment through overexploitation if they are able to meet their needs by other means, including alternatives sources, incentives and changing behaviour to implement sustainable practices.

2. People often have knowledge, skills and organisational capacities that are useful in resource management, and local knowledge is particularly useful and relevant. This notion of local capacities is evident in the current literature on indigenous or local knowledge.
3. People are more likely to follow resource management agreements and rules if they have had input into these agreements. Participation in decision-making makes it more likely that the agreements will meet their needs and will reflect what is achievable.

A wealth of evidence supports the view that rural communities have the capacity to manage natural resources sustainably. (See, for example, the cases of forest restoration in Shinyanga in Tanzania, page 61 and Pred Nai mangrove forest in Thailand, page 51.)

Indigenous conservation should not be romanticised. Communities sometimes do lack the capacity or desire to manage resources sustainably and

Integration of conservation and development must be made to work both for practical and ethical reasons.

frequently are unable to deal with external constraints that limit their capacity. Such capacities are common, if not always present, and represent an enormous opportunity if appropriately recognised and supported.

Seeking the best possible outcomes

Chapter 2 pointed out that ICDPs have not always been effective in addressing human livelihood needs and poverty concerns. Other programmes which attempt to meet livelihoods and conservation needs (such as community forestry, Joint Forest Management and so on) have also had limited success in improving livelihoods (Fisher 2003). Some conservationists argue that integrated projects have failed even to achieve conservation goals; Chapter 2 discussed critiques of ICDPs by Oates (1999) and Barrett and Arcese (1995).

Attempting to return to a concept of conservation as protection is probably impractical in terms of the financial, political and social costs. Integration of conservation and development must be made to work both for practical and ethical reasons.

This position is not based on romantic ideas about communities in harmony with nature. Nor is it based on undue optimism about win-win outcomes.

An integrated approach will not necessarily achieve perfect outcomes in terms of conservation or development. In fact, perfect biodiversity outcomes are often impossible under realistic day-to-day conditions. In the case of the Pred Nai community mangrove project (Chapter 3), for example, the result is not a

*An integrated approach
will not necessarily
achieve perfect outcomes
in terms of conservation
or development.*

mangrove with "pristine" biodiversity values. The biodiversity, however, is far greater than it was before the community became involved in protection and management.

Linking conservation and poverty reduction means trying to achieve the best possible outcome, not necessarily a perfect outcome. But, while win-win situations are not always

possible, they are not as uncommon as is sometimes asserted. Rather than thinking in terms of win-win, win-lose or lose-lose combinations, it may be more useful to think in terms of win-more-lose-less (William Sunderlin, CIFOR, pers. comm.).

It is important to remember that the outcomes of community-based activities should not be judged by higher standards than those that apply to possible and realistic alternatives. For example, although it could be argued that many community forests in Nepal are not highly biodiverse, they often exhibit much greater biodiversity than the degraded landscapes that existed when they were formally under government control. There is no reason to think that a return to management by the Forest Department would lead to any improvement. Indeed, one reason why the Forest Department took on community forestry in the first place is precisely because it recognised that it did not have the capacity to achieve effective forest management on the scale required without community support.

Although much of the debate about conservation and development focuses on areas with high conservation values – protected areas, or potential protected areas – conservation is not just about protected areas. It also relates to multi-

use landscapes, degraded landscapes and many other areas where conservation values and poverty/livelihood issues exist. And although addressing poverty issues may be particularly difficult in protected areas and areas of high biodiversity, it may be easier elsewhere. Debate should not be framed only by extreme and difficult cases. Different approaches need to be developed for different situations. Some broad principles will remain the same (including ethical principles), but specifics will vary.

Conceptual tools for addressing conservation and poverty reduction

Two elements can contribute in a major way to conservation and poverty reduction:

1. When assessing causes and opportunities it is important to look beyond the local level to multiple geographical scales and institutional levels. This includes building opportunities through an ecosystem approach and, more broadly, considering institutional contexts and opportunities. This chapter will explore these questions of scale.
2. Poverty should be seen not just in terms of the absence of assets and resources, but as a lack of capability to realise these assets. This involves focusing on what are referred to as "transforming structures and processes" in the DFID Livelihood Framework. These structures and processes turn the various forms of capital (or "assets" according to the World Bank) into livelihood outcomes (Figure 1). They include marketing systems (e.g. for income generation based on non-timber forest products), tenure reform, and policy changes, and are often institutional in nature (Chapter 5).

Multiple scales and multiple levels

Although ecologists and conservationists have long recognised that issues affecting conservation are frequently not site specific, but sometimes occur at remote locations, they often continue to focus on site-specific action. Further, the root causes of biodiversity loss are frequently not physical, but rather political, social or economic, and these underlying causes occur at a variety of scales. If biodiversity conservation is to be effective, action needs to occur at different scales and locations. A similar point applies to poverty. The underlying causes of poverty tend to be found at a variety of levels, not just

locally. Acknowledging these concepts helps us understand the limits of site-level approaches to both conservation and poverty reduction and provides an opportunity to link conservation and poverty reduction.

The ecosystem approach

During the 1990s the ecosystem approach emerged as "a strategy for the management of land, water and living resources that promotes conservation and sustainable use in an equitable way" (Smith and Maltby 2003). The ecosystem approach has become widely accepted and in May 2000 it was endorsed by the fifth Conference of the Parties to the Convention on Biological Diversity as an approach to implement the Convention.

The ecosystem approach recognises sustainable use, accepts that change is inevitable, argues that objectives are socially constructed and subject to multiple interests and includes concerns with devolved management. Thus, in many ways it is consistent with poverty reduction and conservation. The principles of the ecosystem approach are set out in Box 11.

Box 11. Principles of the ecosystem approach

Principle 1. The objectives of management of land, water and living resources are a matter of societal choice.

Principle 2. Management should be decentralised to the lowest appropriate level.

Principle 3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.

Principle 4. Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:

- a) Reduce those market distortions that adversely affect biological diversity;
- b) Align incentives to promote biodiversity conservation and sustainable use; and
- c) Internalise costs and benefits in the given ecosystem to the extent feasible.

Principle 5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.

Principle 6. Ecosystems must be managed within the limits of their functioning.

Principle 7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.

Principle 8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.

Principle 9. Management must recognise that change is inevitable.

Principle 10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.

Principle 11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.

Principle 12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Source: Smith and Maltby (2003)

Shepherd (2004) has developed a five-step approach to implementing the ecosystem approach in the field. The twelve principles are clustered "into a logical sequence which encourages discussion, planning and a step-by-step approach" (p. 1). This guide to implementation stresses the importance of adaptive management as a way to deal with "unforeseen negative impacts" and "unforeseen issues." These are the five steps (Shepherd 2004: 3):

Step A: Determining the main stakeholders, defining the ecosystem area, and developing the relationship between them

Step B: Characterising the structure and function of the ecosystem, and setting in place mechanisms to manage and monitor it

Step C: Identifying the important economic issues that will affect the ecosystem and its inhabitants

Step D: Determining the likely impact of the ecosystem on adjacent ecosystems

Step E: Deciding on long-term goals, and flexible ways of reaching them

The landscape concept

A supportive concept to the ecosystem approach, known as the landscape concept or landscape perspective, has emerged. Some people prefer the concept of landscape instead of ecosystems, feeling that the word "ecosystem" tends to imply a focus on biophysical factors. This is not the intention of proponents of ecosystem management, who make it clear "that people are an integral part of ecosystems" (Piro, Meynell and Elder 2000) and that ecosystem management is about sustainable management for human use. The word "landscape" is much more readily seen as relating to human landscapes. We see the landscape concept as being a sub-set of, and complementary to, the ecosystem approach.

Maginnis, Jackson and Dudley (2004) argue that conventional land-use planning tends to be based on the "problem isolation paradigm," which breaks down complex problems into discrete components and deals with each component separately. The problem is that land use problems do not exist in isolation. Trying to achieve conservation by maintaining species in isolated areas, however large, rarely works:

Just as biodiversity cannot be contained within the confines of a protected area, neither people (nor economic development) can easily be kept out of areas required for the conservation of biodiversity (areas that may, but usually do not, coincide with the boundaries of national parks) (p. 323).

The landscape concept has been proposed as an alternative to this type of thinking in terms of fragmented land-use zones.

Maginnis, Jackson and Dudley (2004: 331) define a landscape as "a contiguous area, intermediate in size between an 'ecoregion' and a 'site', with a specific set of ecological, cultural and socioeconomic characteristics distinct from its neighbours."²⁰ It is important to emphasise that it is the set that is distinctive, not any single characteristic.

Landscapes consist of a number of separate sites with a range of different land uses and different functions. An underlying idea is that the whole is more than the sum of its parts. Another important point is that boundaries are essentially arbitrary; they are defined by people for a particular purpose. In practice, landscapes based on different boundaries defined for different people often overlap and are often permeable. It is possible to think of a number of landscapes superimposed upon each other. These could include land use, cultural, economic or political landscapes as well as conservation landscapes.

There is a conservation landscape as well as overlapping cultural and livelihood landscapes.

An example of a landscape might be an area with a number of different land uses, such as scattered forest patches, a larger area of forest which functions as a wildlife refuge, private farming areas, grazing lands used by migratory pastoralists and wetlands used by local fishers. Recognising the physical characteristics of the terrain is one thing, although defining the boundaries between it and similar adjoining areas may be difficult. Superimposed on the physical landscape are several social categories. There are several villages with discreet but informal boundaries within the landscape. All of the area falls within a single administrative (local government) unit, but it comprises only a part of the unit and administrative headquarters are located outside. The grazing land is used seasonally by pastoralists, whose grazing area includes separate areas outside the landscape. The boundaries are permeable; both people and wild animals move beyond them.

Selection of criteria for drawing boundaries depends on the objectives of those doing the drawing. Given that boundaries are, in a sense, arbitrary, why are they where they are? Perhaps a particular area has been chosen for land-use planning. Alternatively, the area may be dominated by people from a particular ethnic group, different from those in surrounding areas. Thus there is a conservation landscape as well as overlapping cultural and livelihood landscapes. From the point of view of intervention, the important thing is not which boundaries are selected, but that we think in terms of a landscape perspective involving a number of interconnected sites with varying functions. The boundaries will always remain fuzzy.

The landscape concept is highly relevant to attempts to deal with poverty reduction and conservation objectives. One of the key concepts in providing income and livelihoods from natural resources is the idea of multiple use. Although it may be difficult to achieve multiple use while increasing biodiversity at the site level, the landscape level will often provide far more opportunities. Different parts of the landscape can be used to achieve different results. One purpose of the landscape concept is to balance net energy flows at the landscape level rather than the site level. The aim is to meet various objectives (such as food production, income generation, maintenance of forest cover) for the landscape as a whole, not for each specific site.

Application to poverty reduction and conservation

The ecosystem approach and landscape concept are useful ways to look at conservation issues spatially beyond the site level and also helpful in identifying opportunities to balance site-level trade-offs in an equitable way. Spatial issues do not stop at the landscape level, however, and sometimes the physical causes of conservation threats occur in remote locations.

Examples include cases where upstream pollution (often hundreds of kilometres away) affects river ecology and fisheries, or situations where residue from agricultural chemicals and sediments discharged by coastal streams affects offshore coral reefs, as is the case of the Great Barrier Reef in Australia and in the

Different parts of the landscape can be used to achieve different results.

Caribbean. Sometimes the threats to conservation and livelihoods arise in a different country, as in the case of the Yali Falls Dam (Box 12).

Geographically distant causes are not the only type of remote causes. Policy in one country can easily have a major impact in other countries.

For example, logging bans in Thailand and China have led to increased logging and forest loss in Lao PDR, Cambodia, Indonesia, the Russian Far East and Mongolia. The resultant commercial logging may have both positive and negative effects on local livelihoods, providing employment but reducing access to land for agriculture and rights to use forest land. This type of issue needs to be dealt with at the level of international negotiations.

Box 12. The Yali Falls Dam and transboundary effects

The Yali Falls Dam is located on the Se San River in Vietnam. Rural people living downstream in Ratanakiri Province, Northeast Cambodia, have experienced serious negative effects from the dam. A study (DOF and NTFP Project 2000) showed that the Yali Falls Dam (part of a hydro-electric scheme) caused changes in water levels and quality, which had major impacts on the downstream population. Approximately 20,000 people have been affected.

Flooding destroyed crops, flooded villages and disrupted economic activities (including fishing, food gathering and gold-panning). It also caused riverbank erosion. According to the report, a number of people were drowned and nearly a thousand people died from diseases attributed to declining water quality.

The ecological effects included a declining fish population, which in turn was blamed for reduced fish catches.

Thus, multiple scales are not just a matter of ever-widening geographical scales, but also include an institutional and political landscape which can be thought of as a vertical dimension. In other words, we need to think both of *multiple institutional levels* and *multiple geographical scales*. The case of the Mekong Wetlands Biodiversity Conservation and Sustainable Use Programme (Box 13) illustrates the ways in which poverty and conservation at site levels are affected by institutional factors such as policy. In this case, policy focuses on food security through rice production, whereas human livelihoods depend substantially on fisheries associated with wetlands. In fact, it is really a wetlands economy, not a rice economy. Policy interventions based on an inaccurate understanding of local livelihoods can be counterproductive.

We propose a conceptual framework for analysing causal connections between processes at different locations and at different institutional levels. It is a context for analysis and understanding, as well as a framework for action. This multi-scale and multi-level analysis identifies where problems arise and, by extension, where to act for improvement. There is no point in trying to solve a problem at the site level if the immediate or underlying causes of that problem are off-site or operate at another level.

Box 13. Understanding poverty in rural Lao PDR

Although there are many categories of poverty in Lao PDR, with different causes and characteristics, officially poverty is largely defined in terms of rice deficit. An important rural development strategy, therefore, is to increase rice production. This is done through cultivating new lowland areas, particularly wetlands and floodplains, promoting irrigation of a second crop and to some extent promoting intensification of production.

However, rice deficit is not always the same as nutritional deficit. Although cultivation of rice is a fundamental economic and livelihood activity in Lao PDR, most rural people depend on a wide range of natural goods, particularly wild resources available from common property wetlands, rivers and forests. These wild resources often provide important nutrition that cannot be provided by rice alone. While rice deficits are common in many parts of Lao PDR, the ability to cope with these deficits and maintain reasonable nutritional status depends on being able to harvest these wild resources.

In order to address these issues, IUCN, in partnership with FAO and the Living Aquatic Resources Research Centre (LARReC) in Lao PDR, undertook a participatory assessment of the role and nutritional value of aquatic resources in rural livelihoods (Meusch et al. 2003). The assessment focused on Attapeu, one of the poorest provinces in Lao PDR.

While there is a need to improve rice production and cultivation, the expansion of rice cultivation into wetland and floodplain areas may affect the wild fishery. This cost has not been considered. Growing evidence now indicates that the widely diverse aquatic resources available in these wetland areas – including fish, snails, molluscs, crabs, frogs, and plants harvested from floodplains, seasonal ponds and streams, as well as rice fields – provide the main source of animal protein in diets that otherwise lack protein. In Attapeu, harvesting aquatic resources is the main coping strategy for periods of rice deficit. There are no coping strategies for shortages of aquatic resources. Any loss of this wild resource will therefore have a significant impact on the nutritional status of local people, one which could not be replaced solely through increased rice production.

Meusch et al. (2003 p.19) note that, “[d]iversity is a key strategy for coping with the seasonal nature of rice production and other crops and varying

availability of water resources." Rice production and aquatic resource harvesting are necessary and inseparable components of livelihood strategies that need to be able to adapt to dramatic seasonal changes. Improved management of wild aquatic resources – rather than concentrating on rice production alone – has the potential to greatly improve nutritional status, and thus contribute to diverse, adaptable livelihood strategies. The kind of strategies that IUCN is promoting can make a significant contribution to both poverty reduction and conservation.

There are also important distributional issues to consider. Aquatic resources harvested from common property areas are particularly important to poor people, particularly those with less access to land and less capital to invest in land-based production. This includes the harvesting of non-fish aquatic resources, often by women and children, in backwater swamps, ponds and ditches. These resources are consumed within the household. Intensification of rice production requires the kind of resources and capital (land, labour and credit) that by definition are not available to poorer people. Rural development strategies that focus only on rice production, without considering the management of wild aquatic resources, are unlikely to benefit poorer people. On the other hand, building on the knowledge and capacities of local people to manage a wide range of wetland habitats has the potential to support a great diversity of aquatic animals and plants.

The importance to local livelihoods of aquatic resources and the habitats upon which they depend means that there are many opportunities for conservation to directly contribute to poverty reduction. As Meusch et al. (2003 p. iii) argue, "strategies for rural development, food security and poverty alleviation...need to pay special attention to aquatic resource management to ensure the health and well-being of rural people. Integrated management of freshwater and wetland resources is necessary to meet the objectives of increased rice production whilst maintaining the viability and productivity of the aquatic resources upon which rural livelihoods depend."

One reason that ICDPs and other attempts to integrate conservation and poverty objectives have not worked well in the past is that they tend to focus too much on action at the site level. This may be partly because of the understandable tendency to see conservation issues as occurring at physical sites. The failure

of many project-level interventions in conservation — and in development generally — is partly related to this failure to address causes at other levels.

Considering multiple geographical scales and multiple institutional levels has serious implications in terms of how interventions should be targeted.

- Since factors affecting poverty and conservation operate at multiple levels and scales, attempts to address problems must also do so. Solutions should have multiple points of entry.
- It is not necessary for any single programme or project to deal with all relevant levels, but alliances need to be made to ensure that all relevant levels are being addressed by somebody.
- Interventions at all levels need to be linked "upwards" and "downwards" (in terms of both geographical scale and institutional level) to other interventions.

Implications of negotiated landscapes for protected areas

In cases where the protection of biodiversity is a top priority, i.e. where rare and highly susceptible species are involved, governments may decide to place part of a landscape under strict protection. Negotiations on a landscape level could help to resolve where the boundary falls and how people will be compensated. Livelihood functions would need to be provided elsewhere in the landscape as part of a compensation package.

Progressive Contextualisation

Dealing with questions of scale and multiple levels presents methodological difficulties. Boundaries are not always clear. The causes of local effects are often remote geographically or rooted in institutional factors. Further, the relevant physical boundaries will shift, depending on the issue being addressed. Short of methodological anarchy, how can the relevant boundaries be recognised in such circumstances?

Progressive contextualisation is one useful approach. It has been described by the anthropologist and human ecologist Vayda (1983) and has since been used widely by political ecologists. Progressive contextualisation involves "...focusing on significant human activities or people-environment interactions and then

explaining these interactions by placing them within progressively wider or denser contexts" (Vayda 1983: 265).

In other words, it starts with a problem or situation that needs to be explained and identifies contextual factors that seem to be relevant. As it explores these factors, new factors become identified and are explored in turn. There is no clear framework at the beginning to show what will be or will not be relevant. What is relevant emerges progressively.

The approach was originally proposed partly as a way to help human ecologists to address the persistent question of deciding "the appropriate units of research" (Vayda 1983: 266). Vayda quotes di Castri:

Human uses of the environment are not confined within ecosystems. Economic systems are specifically organised around the exchange of material, of energy, and even of people between ecosystems; they cut across ecosystems in order to take advantages of the complementarities and contrasts of different ecological zones (di Castri 1976: 245).

As Vayda points out, the application of progressive contextualisation requires avoiding assumptions (explicit or implicit) about the boundaries within which an issue should be addressed. An advantage of the approach is that it can help to deal with situations involving change and instability as well as "phenomena that are, or are assumed to be, stable and persistent" (p. 277).

A further advantage of progressive contextualisation is that it tends to avoid imposing single solutions to locally distinct sets of problems.

Negotiated landscapes

The landscape concept is an entirely different way of looking at land use. Balancing land-use objectives over a wide scale is more useful than attempting to balance them at a site level.

There are risks in using the landscape concept as a justification for centralised planning, and in attempting to control the ways in which objectives are balanced. We are arguing for negotiated landscapes, not planned landscapes.²¹ Particular views about how landscapes should be conserved (or if they should be conserved) should be negotiated with other stakeholders.

Whenever attempts are made to implement decentralised planning there is a tendency to revert to expert-driven land-use planning, perhaps with a little bit of community-level consultation thrown in for good measure. A number of well-intentioned conservation landscape (or ecosystem) approaches have inadvertently ended up reinforcing inequitable tenure and use rights and power relations, and exacerbating the insecurity of vulnerable rural livelihoods. Part of the problem is that even pluralistic planning approaches have their natural limits, which conservationists and other land-use experts, who are often only passingly acquainted with the social sciences, tend to ignore. The voices of the poor and dispossessed are rarely heard even at village-level participatory planning meetings.

An approach that attempts to negotiate desirable landscape configurations will, in many occasions, fall short of both social and conservation expectations. Negotiation should not revolve around trying to determine an "ideal" land-use configuration but should focus on the institution and policy arrangements required to balance land-use trade-offs between social, environmental and economic interests. Where such trade-offs cannot be achieved, equitable compensatory mechanisms should be put in place. There is also a danger of placing too much reliance on using expert-driven mapping processes as planning tools, although they can be useful in supporting decisions.

Some conservationists may be concerned that such a "negotiated" landscape concept – driven by enabling institutional and policy interventions (or by dismantling institutional and policy constraints) that contribute to poverty reduction – will make it even more difficult to ensure that biologically important parts of the landscape are secured for conservation. More fundamentally, they may feel that it will be nearly impossible to gazette new protected areas. We argue the reverse on two counts:

- Historically, landscape configuration has been shaped much more by policy and institutional interventions than through considered and deliberate large-scale planning. There is nothing to suggest that conditions have changed, although market forces may play a more significant role. By working through proven drivers of landscape change conservationists stand a much better chance of securing outcomes that are good for conservation.

- A "negotiated" landscape concept does not preclude gazetted new protected areas or mean that local rights and values are automatically given precedence over global (or national) public values. What it does is provide a process whereby enabling institutional and policy arrangements can be put in place to ensure that poor communities are not disadvantaged and/or are adequately and fairly compensated. Properly negotiated gazettal of protected areas that pays attention to institutional and policy support systems is more likely to minimise conflict and secure long-term conservation success.

Conservation and development literature places increasing emphasis on pluralism. In forest conservation, for example, there is a clear recognition that many different stakeholders have an interest in forest management and policy and that long-term management decisions and policy need to take account of at least major stakeholders' interests (see, for example, Anderson, Clement and Crowder 1998; Wollenberg, Edmunds and Anderson 2001).²²

The rationale for including multiple stakeholders in resource management decisions has a pragmatic aspect (including people who carry out natural resource management increases the likelihood that they will modify their practices in conformity with stakeholder agreements) as well as an ethical one (including people who will be affected by forest management decisions will make it more likely that decisions will reflect their needs and interests).

It is important to remember that many different types of specific interests can exist within a community and even within

the category "poor." People are poor or subject to the risk of becoming poor for different reasons, depending on such factors as which resource they depend on for livelihoods. Even within a single rural community, some people may rely on fishing, others on horticulture. Resource management decisions may affect them differently. Women are often affected differently than men, particularly because of gender-based labour differences. Even the category "women" may need to be differentiated. For equity, stakeholder negotiations must recognise this diversity and it is fundamental to poverty reduction that different patterns of poverty be recognised and dealt with.

*People are poor or subject
to the risk of becoming poor
for different reasons.*

While the landscape concept is very important and pluralism is an essential part of the approach, there are risks involved in pluralist approaches. One is that the stakeholders most likely to negotiate effectively are those with power and influence, precisely those who probably already dominate decision-making. Those least likely to achieve their desired outcomes will tend to be the poor and

The stakeholders most likely to negotiate effectively are those with power and influence.

politically marginalised – people who are already relatively disempowered. Pluralism in forest policy may inadvertently reinforce the interests of powerful commercial interests, conservation groups, or Forest Departments at the expense of forest-dependent rural communities.

A number of authors have recognised the need to structure pluralist stakeholder negotiations in order to recognise the needs of the less powerful (Wollenberg, Anderson and Edmunds 2001). Colfer et al. (1999) explore ways to assess the extent to which different interests in forest management should be given relatively more or less attention. Forest dependency is one factor.

The assumption behind negotiated landscapes is that the power to make decisions is meaningfully devolved to participants. This does not mean that all participants will achieve their objectives, but that they will have a meaningful role in negotiating outcomes and making decisions. In this context, participation in stakeholder fora must involve more than token forms of negotiation such as consultation (see Arnstein 1969 for a typology of different types of participation ranging from tokenism to genuine citizen power).

The need for pluralist approaches to landscape negotiations is one thing, carrying out such negotiations is another. The goal is to establish and facilitate negotiation processes which create a more or less level playing field and assist parties to focus on their real objectives rather than on peripheral issues.

Negotiation and level playing fields

We argue that win-win solutions for both conservation and development are not always – or not often – likely. Nevertheless, negotiation and trade-offs do occur and necessary and there are often opportunities for “win-more-lose-

less" outcomes. There is a need to think of objectives and trade-offs in a way that minimises conflict (or at least eliminates unnecessary conflict), allows negotiation to focus on essentials and allows for innovative approaches.

Some important insights are contained in the literature on conflict management. One important idea from conflict management theory is that parties in negotiations should not "argue over positions" (Fisher and Ury 1981). Fisher and Ury feel that it is essential to focus on interests, not positions.

An example of this in conservation would be a debate about whether people should be allowed to take domestic livestock into a protected area. If parties argued from positions, the park authorities would insist that domestic animals be entirely banned from protected areas and livestock owners would insist that they be allowed to take livestock into the protected area whenever it suited them. This would lead to an impasse where no resolution was likely. If, however, interests are considered rather than positions, it might become clear that the park authorities' main concern is winter grazing of wild herbivores being affected by domestic livestock. On the other hand, the livestock owners may only want access to the grazing areas in the park at the beginning of summer when planting activities outside the park leave little time to manage the herd. Lightly supervised grazing in the park requires little labour. In such a situation there will be little direct conflict between the underlying interests of the two parties and compromise should be possible. It is only if either party takes an unyielding position that a negotiated solution would be impossible. In other words, negotiation works best if it focuses on interests and outcomes rather than preordained positions.

In cases such as this, the conflict between stakeholders can appear to be intractable, but the essential interests may be relatively easy to accommodate. This does not mean that intractable conflicts do not occur. Win-lose outcomes are sometimes inevitable.²³ As Warner (2001) argues, however, consensus solutions are better than compromise solutions if they are possible.

We argue that the potential for meeting the interests of different stakeholders is increased if negotiations operate beyond the level of specific sites.

In addition to thinking about how the content of negotiations can be better framed in order to avoid unnecessary conflict, it is also important to think about the process of negotiations and how it can be structured to give all stakeholders a fair opportunity to argue their interests.

When different stakeholders negotiate over resources and land use, some groups are probably disadvantaged (this is often true of poor people in rural communities). There are a number of reasons for this:

- Negotiations cost time and money, especially when they involve large commercial interests or government bureaucracies. Some negotiations continue for months or even years and people from rural communities (especially poor people) cannot afford to commit the large amount of time required, losing income while they do so. They frequently cannot afford to pay for professional support (such as lawyers). Some stakeholders simply have more staying power during protracted negotiations or court processes.
- Negotiations often take place in an atmosphere dominated by technical language or legal frameworks inaccessible to the poor and to non-specialists.
- Where stakeholders come from different sub-groups within a community, wealthy local people are more likely to have good working relationships with and influence on government agents and decision-makers.
- The parameters for decisions are often set in advance by non-local actors. For example, government policies may limit the room for negotiation and rule out meaningful solutions.
- Community participation is often in the form of attendance by community representatives, sometimes appointed in some way by the community and sometimes selected or appointed by outsiders. Expectations of the role of representatives, even when they are regarded as legitimate by a community, may vary. For example, outsiders may see them as having a right to reach agreement on behalf of a community, whereas community members may view them as mere intermediaries.

In this context of often highly skewed opportunities for satisfactory negotiated outcomes for many poor or disempowered groups, creating a more level playing field for landscape-level negotiations is crucial.

As Wollenberg, Anderson and Edmunds (2001) point out, this requires a strategy to ensure that the needs of the "less powerful" are met. This is obviously directly relevant for conservation that aims to meet the needs of the poor.

Wollenberg, Anderson and Edmunds propose the following:

...accommodation that genuinely reflects the interests of disadvantaged groups is most likely to occur where a combination of state and civil society governance institutions provide for 1) the discovery and transformation of values and interests through mutual leaning among interest groups, 2) iterative cycles of bounded conflict and negotiation, 3) public, transparent decision-making, 4) checks and balances in decision-making among groups, and 5) explicit support for disadvantaged interest groups (p. 218).

In addition to the strategy suggested by Wollenberg, Anderson and Edmunds, several other elements can help ensure equity in negotiations over landscapes. Perhaps more importantly, there should be a neutral facilitator for negotiations. This may not always be possible, but it is essential to ensure that all parties trust the facilitator to be fair. The facilitator and convenor (if these are two separate individuals) should not be seen as having strong vested interests in particular outcomes.

It is often worth having an outsider, with no connections to other stakeholders, to act as an advocate or supporter, especially to advise on procedures that guide stakeholders through arcane legal or administrative processes or to act as a mediator or "honest broker". This task can sometimes be carried out by umbrella groups such as federations of users' organisations. Members of such federations often have experience in similar issues.

Another practical way to assist disempowered groups in negotiations is to help them in preparing or presenting their case, perhaps by supporting participatory appraisal or providing training in negotiating skills (Warner 2001).

Scheduling the negotiation process so that it consists of a series of shorter meetings with intervals to reflect can be a useful way to spread the costs of protracted negotiations and can enable people to discuss and assimilate the significance of proposals. This is particularly important where community representatives need time to obtain a clear mandate from the community.

Where groups or communities are represented by individuals in negotiations, it is essential that these representatives either operate with a clear mandate as to what they can or cannot accept in negotiations, or that there is a mechanism for communities to accept or reject decisions. The question of representation is difficult, and mechanisms to ensure the legitimacy of representatives are essential (Wollenberg and McDougall, pers. comm.). Culturally sensitive processes of representation are extremely important; the concept of elected or appointed representatives making decisions on behalf of a group is not present in many cultures. Issues of representation are particularly important when negotiations occur at national or even global levels but also apply to landscape-level negotiations.

Conclusions

This chapter has explored some important elements of the conceptual basis for an approach to linking conservation and poverty reduction:

- The causes of both conservation and poverty problems are often distant from sites where their effects are felt. It is important to address these remote causes.
- Since causes may be geographically or institutionally remote, it is important to think of multiple geographical scales and multiple institutional levels.
- Identifying potential connections between conservation and poverty reduction/livelihoods is often unrealistic at a site level and makes more sense at a landscape level. A landscape concept encompasses a broader range of opportunities for trade-offs.
- The landscape concept is about negotiated outcomes, not centralised planning.
- In order to reduce poverty and increase livelihood benefits from negotiations it is essential to develop mechanisms that empower the poor in negotiations.
- Recognising the heterogeneity within communities is essential to deal with the variety of people and the variety of effects of poverty.

Chapter 5 looks at some ways in which an approach based on these concepts can be put into practice.



Chapter 5

Structures, institutions and constraints

Introduction

Chapter 4 discussed using the landscape concept as a way of linking conservation and poverty reduction by working at multiple physical scales. This chapter looks at the importance of addressing issues at various institutional levels and at the importance of institutions as opportunities and constraints.

The World Bank defines poverty (page 5) in terms of lack of assets, powerlessness and vulnerability. As that definition acknowledges, there are serious limitations in focusing too much on a lack of assets. Rural people frequently have ready access to potentially valuable livelihood assets. The problem is in converting them into positive outcomes in livelihoods terms. Many kinds of constraints, including those the World Bank includes under the heading of powerlessness, affect the capability of people to use their assets. In many protected areas, for example, the poverty of resident or nearby peoples is not the result of an absence of assets or resources, but the fact that these assets cannot be legally collected or sold.

Thus, poverty is not just a lack of assets, or a site-specific problem, but is subject to wider factors, such as a lack of legal access to resources, inadequate marketing systems and other limitations, including policy constraints.

Poverty is not just a lack of assets, or a site-specific problem.

Interestingly, conservation is also often seen in terms of assets (such as protected areas) and interventions are often site specific.

In Lao PDR, the IUCN Non-timber Forest Products Project (page 72) aimed to contribute to conservation by providing incentives for people to conserve forest resources. Improved production and marketing of NTFPs were seen as ways to generate income that would provide such incentives. As the project explored the linkages between conservation and income generation, however, the emphasis shifted from "conservation through incentives" to "conservation by removing constraints." While the constraints were originally seen as barriers to conservation, it became apparent that they were also constraints to poverty reduction.

Removing the constraints in the Lao case was an example of establishing "transforming processes" in terms of the DFID livelihoods framework, and in that case the processes were new institutional arrangements (agreed ways of doing things).

It is not that conservation cannot work by providing incentives, or that incentives for conservation cannot contribute to poverty reduction. Clearly they can. Initiatives such as carbon transfers and payments for environmental services may, in some cases, be useful and legitimate ways of addressing both poverty and conservation concerns. The use of incentives is only one of a number of tools, however, and one that cannot be used everywhere.

Linking poverty reduction and conservation by removing constraints, or by supporting transforming structures and processes, implies that one of the most useful interventions for outsiders is providing facilitation for communities and assisting them to assess their opportunities and plan coordinated action. In the case of Pred Nai (page 51), outside intervention supported networking activities (institution building) and provided technical support for mangrove management planning.

Chapter 1 noted the number of often contradictory assertions about the causal relationships between elements such as poverty, conservation and environmental degradation. None of these propositions is universally true; causes are complex and specific to situations. They are also affected by a variety of institutional arrangements that mediate between causes and effects. This chapter explores the ways in which institutional arrangements can be modified to link conservation and poverty reduction.

Brown (2003) argues that one of the key reasons why attempts to integrate conservation and development have so often been unsuccessful is the frequent misfit between institutions and "the ecosystems they seek to manage" (p. 479):

There is the problem of fit – both between the institutions involved in integrating conservation and development (in terms of their objectives, interests and worldviews), and their respective scales of operations (p. 480).

Brown's argument is a reminder that it is not only necessary to have institutions to regulate resource use, but that these institutions must include the relevant actors and be appropriate to the ecosystem resource.

Community institutions

In the past much of the emphasis in integrated conservation and development projects was on developing community institutions and organisations to manage natural resources. Although this is obviously important, in many cases new institutions were developed when existing institutions were capable of managing resources. In many cases they already did manage resources. An extensive body of literature exists on indigenous or local systems of natural resource management (especially forests and water resources) and on institutions for managing common property resources. (See, for example, Ostrom 1990; Uphoff 1986 and 1992; Fisher 1989 and 1994; Murphree 1993.)

Common property is an example of the way in which appropriate institutional arrangements can shape resource use. The theory of "the tragedy of the commons" (Hardin 1968) suggested that resources without clear ownership would be degraded because individuals would have no incentive to reduce their level of resource use if other people continued their use at unsustainable

levels. Everyone would attempt to maximise use in the short term even when they could see long-term availability declining. This implied that management of resources in a commons is inevitably unsustainable, an example of an overgeneralised causal proposition. Hardin mistakenly ignored the fact that people do not act solely as individuals, but that they can develop agreements that regulate resource use. In other words, they build institutions. The common-property literature shows that, in many cases, communities have developed functioning institutions that regulate resource use. It also attempts to identify the types of factors that lead to effective institutions.

This is not to say that local institutions are always effective. There are many cases of degraded resources that make this clear. Institutions may be ineffective either because the agreed rules of behaviour that they incorporate do not lead to the desired effects on ecosystems (for example, they allow removal of too many reproducing fish), or because they are not respected or enforced. Sometimes institutions do not include people with the capacity to affect resource management. For example, institutional arrangements for management of a particular fish pond may involve people from one village but exclude people living on the other side of the pond. In Brown's terms, there is a mismatch between the institutional arrangements for making decisions about resource use and the resource to be managed.

Institutions for resource management must be able to deal with heterogeneous interests, especially equity and gender. Experiences in community-based resource management consistently show that community-level institutions and organisations tend to be dominated by powerful individuals and groups. This has major implications for institutions linking poverty reduction and conservation. In a study of the impacts of community forestry in Nepal, Malla (2000) shows that the poor often end up with reduced access to forest resources after community forests are created. This is partly because user groups are dominated by relatively wealthy people, who have different needs than poor people. The rules governing access reflect their interests, not those of the poor. Ironically, rules guaranteeing equal access to forest products may disadvantage the poor. Prior to the handover of forests to communities the wealthy tended to get much of their fuelwood from private land, while the

poor obtained most of theirs from forests. Rules that specify a set amount per household have little impact on wealthy households, but may actually mean that poor households get less fuelwood than before.

In this case there have been positive conservation outcomes, but the "integrated" approach has failed to address the needs of the poor. Reducing poverty would require facilitation of institution-building processes. This would include paying careful attention to specific groups, including the poor and women (whose workloads may be significantly affected by changes in rules and regulations, but who tend to be greatly under-represented in decision-making processes).²⁴ Historically, such support has tended to come from government staff, but NGOs or users networks might be alternative facilitators.

Institutional arrangements for tenure and access

One of the main themes in community-based natural resource management is the importance of establishing rights to resources. The dominant view among resource management theorists and practitioners is that people are most likely to become involved in

sustainable management when they have clear rights to resources. Clearly defined rights provide an incentive for active participation and sustainable use, because they guarantee access

Both formal and informal institutions may be effective in different circumstances.

to resources. In fact, many advocates of community-based natural resource management see resource tenure, in the form of full legal ownership, as essential in providing benefits from natural resources to local people. However, cases such as Pred Nai, where the community has no legal tenure, certainly call into question the idea that clear tenure is a prerequisite for community-based conservation action. Fisher (1995) argues that confidence about future access, whether based on formal tenure or not, is more crucial than formal title. In fact, legal rights are not always enforced and may even be ignored by government agencies, while oral agreements may be sufficient if there is a history of their being honoured (Fisher 1995). Both formal and informal institutions may be effective in different circumstances (for a discussion of tenure, see Box 14).

In any case, presuming rights are widely distributed and enforceable, clear and reasonably secure tenure obviously has implications for the poor. Supporting community-based conservation with enforceable rights is essentially a form of empowerment.

Box 14. Tenure, natural resources and poverty

Security of tenure is a critical yet often under acknowledged component in determining how rural people can improve their livelihoods and reduce poverty. Tenure encompasses the rights of secure, long-term access to land and resources, their benefits, and the responsibilities related to these rights.

Leach, Mearns and Scoones (1999) emphasise "environmental entitlements," which are "alternative sets of utilities [benefits] derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving well-being." They link these "entitlements" to "endowments" which they define as "the rights and resources that social actors have. For example, land, labour, skills and so on" (p. 233). An understanding of endowments is important since the level of resource richness in a given community clearly affects the resource and demand ratios involved.

As Barrow and Murphree (2001) discuss, these terms have important dimensions:

- a) These rights are rarely, if ever, absolute, but the longer their sanctioned duration, the stronger their tenure will be. Their strengths are determined by their time frames and the conditions attached. The fewer the conditions attached to them, the stronger their ownership will be. As Alchian says, the strength of ownership "can be defined by the extent to which the owner's decision to use the resource actually determines its use" (Alchian 1987: 1031).
- b) These rights have a number of derivations. They can be conferred by the state, in their strong form as *de jure* rights or in weaker versions as *de facto* rights. They can arise from customary law derived from the norms and practices of long established non-state cultures and social groupings, or they can be the results of particular configurations of power in specific contexts of social interaction. The legitimacy of these derivations is

dynamic and frequently contested. In many countries, conflicts between statutory and customary law are endemic, creating a dissonance in resource claims and usage (Okoth-Owiro 1988).

- c) Rights require regimes of authority, from small social units (such as a household or partnership) to the state. The scale is influenced by the nature of the resource over which rights are exercised. Generally, resources are classified in a four-fold typology of state property, private property, common property and open-access resources. This typology, developed in Common Property Theory, is analytically useful but can be misleading when the resource and the regime are combined. "Open access" resources do not constitute a regime; their defining characteristic is in fact the absence of a regime. "Common property" resources, defined as "a class of resources for which exclusion is difficult and joint use involves subtractability" (Berkes 1989: 7), are not necessarily managed by a communal regime. They are often managed by a state regime, the management of the water of a large catchment area, being a good example. "Private property" is not necessarily individual property; it may be corporate property managed by a corporate, private regime.
- d) Rights confer authority as well as responsibility, and these need to be functionally linked. When they are de-linked and assigned to different institutional actors, both are eroded. Authority without responsibility becomes meaningless or obstructive; responsibility without authority lacks the necessary instrumental and motivational components for its efficient exercise.

It is important to note that, while the value of secure access rights has an effect at the local level, the institutional change that supports it generally comes from policies or laws enacted at a state or national level. Addressing poverty reduction and conservation needs to work both at the local level (facilitating equitable decision-making and distribution of benefits within a community) and at wider policy levels (using policy processes to provide supportive institutional mechanisms). Local action is supported by wider institutions.

Institutions at the landscape level

Chapter 4 outlined the idea that negotiated landscapes presented challenges resulting from the need to create equal opportunities in the negotiation process among stakeholders and the tension between decentralised decision-making and centralised planning and coordination. As Brown (2003) points out, it is difficult to design an institution "that can accommodate different interests and includes diverse individuals" (p. 485). This is true at the community level. It is even more important at landscape scales and in cases where actors and stakeholders come from distant locations and institutions.

The central challenge at the landscape level is to establish institutional arrangements that can enable meaningful negotiations between individual and institutional stakeholders with diverse and competing interests and different levels of power.

Devolution and decentralisation

The landscape perspective requires a decentralised approach to land-use, where decisions are made at as local a level as is practical, often the community level. Devolution of decision-making rarely occurs in practice, however. Genuinely devolved and negotiated decision-making is essential for empowering people to manage resources. This does not mean that there is no role for central

Genuinely devolved and negotiated decision-making is essential for empowering people to manage resources.

authorities in setting standards or broad objectives for natural resource and land management. The problem is how to do this without undermining local decision-making and effectively re-centralising control.

The move towards devolution and decentralisation of government and administration has been a major international

trend in governance in recent years. This has been evident in many fields, including resource management. Often the emphasis has been on devolution and management to communities and local natural resource users rather than to local and district-level governments. This section focuses on the process of devolution and decentralisation to the community level rather than to local

government. It is clear that the trend to devolution is often more rhetoric than in reality, at least in the sense that power and authority are not always devolved.

Although the terminology is not always consistent, it is useful to differentiate between devolution and decentralisation. Fisher (1999) defines decentralisation as "the relocation of administrative functions away from a central location" and devolution as "the relocation of power away from a central location."

There is much more evidence of decentralisation of administrative functions (and responsibility) away from centrally located agencies than of devolution of power to make and implement decisions. Perhaps one of the major reasons for this is that devolution and decentralisation have often been driven by crises – particularly financial crises – which have caused governments to offload financial responsibility for activities such as resource management.

Tension often exists between genuine devolved decision-making and government's and government agencies' need to feel that they are able to monitor trends and set overall objectives. If power is genuinely devolved, governments cannot predict what the outcomes of decisions will be. In some cases, governments set guidelines and regulations that severely limit local decision-making. For example, in community forestry rules and regulations may restrict the type of products allowed to be collected and distributed from a forest (and perhaps include only dry fuelwood). If this is the case, local people can make decisions only about the process of collection and distribution, not about ways to manage the forest for sustainable production of fuelwood. This is hardly empowerment. It is also unlikely to achieve the level of participation needed to promote sustainable practices or to meet the needs of the poor.

The question is whether there is an alternative approach that substantially empowers local resource users and also meets the needs of the government for safeguards against excessive or unsustainable use of resources. There is a need to make decision makers responsible for their decisions, without the constraint of too many detailed guidelines. Ribot (2002) has argued that this can be achieved by providing limited guidelines about broad outputs along with a minimum list of what cannot be done, rather than a long list prescribing what must be done. He refers to this as a minimum standards approach.

If sound local decision-making is to be possible, local institutions must be developed and strengthened. While they need to be accountable upwards (in such matters as safeguards for environmental standards), they also need to be accountable downwards, to the people they represent. Ribot (2002) argues that, to be effective in natural resource management, local institutions must be accountable downwards and genuinely representative: "Decentralisation requires both power transfers and accountable representation (p. 6)."

This has obvious importance in conservation involving poverty reduction; true representation requires that different stakeholders and groups within a local population (including the poor) have their views represented and seriously considered. Ribot points out that responsiveness to the poor is a relatively rare outcome of decentralisation. Developing institutions that represent the poor is difficult, especially because poverty is not a priority of local elites, but it is an essential step.

The wider institutional landscape

Non-timber forest products in India

In India, Joint Forest Management (JFM) aims to promote afforestation through cooperation between communities and various state forest departments. One important aspect of JFM is generating income from the collection and sale of NTFPs. An analysis by Sarin (1998) shows that institutional factors impose limitations on poor people's capacity to earn income:

- Monopoly rights for collecting and marketing certain products were vested in specific agencies or private companies. For example, rights to 29 NTFPs in Orissa were vested in one private company (as of 1998). The people who collect the products "invariably among the poorest members of their communities and predominantly women, continue[d] to receive only wages for their labour, often at abysmally low rates for the time and effort required for collection" (p. 24).
- In Gujarat, *adivasi* (tribal) processors had to obtain licences for every step of their activities (buying raw material, transporting and selling). They paid far more than commercial companies did for the same products and services.

The important point from Sarin's study is that the barrier to income generation and poverty reduction is not limited availability of resources, lack of access to resources, or a lack of markets for NTFPs, but policies and regulations. These limit the share of benefits and, in practice, disproportionately affect the ability of the poor to earn income from resources. This is an institutional problem involving policies; addressing poverty would involve a policy change to remove the institutional constraints.

What is unsettling about Sarin's study is the suggestion that the existing policy serves vested interests. Changing policies often requires challenging these powerful groups. Natural resource management is essentially about competing interests.²⁵

Institutional change and power

Institutions consist of policies, laws, markets and other rules and arrangements. They are formed and applied by people, sometimes individuals, sometimes through organisations. Changing institutions often involves transforming individual people, relationships and institutional actors. Often a change in attitude is required before institutional arrangements can become effective.

Institutions consist of policies, laws, markets and other rules and arrangements.

Efforts at institutional change to support activities such as community-based natural resource management or collaborative management of protected areas have often focused on developing staff capacity through training in knowledge and skills. They have sometimes focused more explicitly on changing elitist and anti-people attitudes. Where successes have been reported in changing attitudes, training has usually included participatory exercises. These allow government staff and other trainees to develop a greater awareness of the legitimate points of view of rural people. Courses based on traditional lecturing methods have not generally been successful in changing attitudes.²⁶

Even where efforts are made to stimulate attitudinal change through participatory and experiential training, trainees often return to work situations that do not support new attitudes, or provide opportunities to apply them in practice. Without a supporting institutional environment, old attitudes and ways of thinking tend to reassert themselves. Little if any evidence exists to show that training alone leads to long-term change in attitudes, or that new attitudes lead to changed working styles. The most promising approach seems to be a combination of short periods of field-based training and initiatives to implement new approaches.

The difficulty in changing the way conservation and natural resource management agencies relate to rural people is that the issues are not merely knowledge, skills and attitudes, but power and vested interests. Perhaps the biggest barrier in promoting attitudinal change is that negative attitudes to rural people and a reluctance to adopt more people-friendly approaches tend to be associated with personal interests. Because of professional pride and concerns over prestige, power and even direct financial interests, resource managers often feel threatened by sharing power. Attitudes and personal interests tend to be mutually reinforcing.

Poverty is an outcome of contested resources and contested objectives. Power is essentially relative: some people are poor and powerless because others are rich and powerful. Empowering people to negotiate with authorities over natural resource management is probably as important as changing attitudes. It is important to develop mechanisms or institutions that empower people. This includes supporting the development of community and user networks, alliances and partnerships.

In the case of Pred Nai (page 51), the villagers themselves found that linking with other villages to form a network of people concerned with mangrove management was an effective way to increase their influence. They also linked with some NGOs and university academics, who were able to assist them with specific tasks.

In Nepal, the Federation of Community Forest Users of Nepal (FECOFUN) formed to assist different community forest user groups in working together. FECOFUN

gradually took on more of an advocacy role. It supported community interests generally, helping them resist the tendency of the forest department to attempt to limit community rights and control user groups. FECOFUN has been accused of being politicised; this is hardly surprising given that controlling forest resources is about power and the forest department certainly feels threatened by the increasing influence of FECOFUN.

A third example of a federation that contributes to empowerment of the poor, this time on a regional level, is CICIIFO²⁷ in Central America (Box 15).

Box 15. A regional network in Central America

The *Asociacion Co-ordinadora Indigena y Campesina de Agroforesteria Comunitaria de Centroamerica* (CICIIFO), or Central American Coordination Association for Indigenous and Peasant Community Agroforestry, was established in 1994 to help coordinate farmers learn from each other and share experiences in small-scale agriculture and forestry production within Central America. It is a network of 65 indigenous and peasant farmer organisations such as community cooperatives and member farms are vetted to ensure that they are community run and owned.

CICIIFO has become one of the most effective regional coordination bodies that represent the rights and interests of small-scale, often poor, farmers. The fact that it is a self-mobilised initiative that has allowed small farmers and farmer associations to represent their own interest, in their own words, gives it an authority that other champions of community forestry do not possess. It is more difficult for governments to ignore what CICIIFO says.

Its mission recognises that addressing issues of equity and power is fundamental to improving the lot of their members and safeguarding the environment. The equity issues it deals with range from the household level – such as women's access to and rights over natural resources – to the international (the need for local communities to receive fair compensation for the delivery of global public goods).

Despite CICIIFO's impressive track record, challenges remain. A recent review of community forest networks indicated that building capacity among its

membership organisations was a primary need (Colchester et al. 2003). The CICI AFOC experience highlights a number of key lessons for poverty reduction and conservation:

- Local communities appear to have less difficulty in realising what sustainable development means in practice than do many international development and conservation organisations. They see the way to economic improvement as tied inextricably to good stewardship of the environment. What they advocate and what they do is a tacit rejection of "develop now, protect later."
- Although better technical advice on agriculture production is important, real change requires addressing issues of power and equity.
- In order to bring about change, action is needed at multiple scales and multiple institutional and policy levels. CICI AFOC has interventions at the level of farms, concessions, landscapes and region (Mesoamerican Biological Corridor). It also has political and institutional activities from the community-based organisation level up to regional development and environmental processes.

Alliances such as CICI AFOC are largely peoples' initiatives. Large groups are able to speak with a louder voice than individuals. In general, advocates of poverty reduction in conservation need to be careful not to do too much in promoting initiatives such as these. It is better to allow them to rise from the efforts of local people. A more useful role is to support them by creating space for debate and information-sharing and provide access to advice and assistance where requested.

Economic institutions and instruments

Poverty reduction and conservation can be achieved through institutional change at a number of levels; they can also be supported by changing economic institutions. Economic theorists commonly believe that conservation problems occur because of market and policy failure and that corrections to markets and policies provide solutions. This is based on an assumption that individuals make rational decisions on the basis of market information. The emerging field of institutional economics²⁸ emphasises the fact that individual

economic behaviour is constrained by shared rules, that markets are often constrained by institutions and – a point that is often ignored – that markets are themselves institutions. The implication of this is that market-based economic “instruments” can be applied in such a way as to influence outcomes in desired directions.

Economists have proposed a number of market and non-market instruments for financing conservation, many of which have the potential to contribute to poverty reduction. (Such economic instruments are, of course, institutional arrangements.) Some examples of market-based instruments are markets for carbon sequestration and for watershed services. These are designed to generate funds from users of resources (such as companies that generate carbon or downstream users of water) to be transferred as payments to people who provide environmental services, such as planting trees to trap carbon, or people who protect watersheds. In fact, there are few, if any, examples of the benefits of these mechanisms actually reaching the poor. These mechanisms have the potential to contribute to poverty reduction, but they need to be modified so that they can be focused on the poor. As with many of the institutions discussed above, they are not intrinsically aimed at benefiting the poor. They need to be modified to become tools for poverty reduction. Some of these market and non-market based instruments are discussed in more detail in the Appendix (page 127).

National poverty reduction planning processes

Poverty Reduction Strategy Papers (PRSPs) also have the potential to improve interactions between conservation and poverty reduction, although they have had limited success in this respect. There are two main reasons for this:

1. Conservationists have not systematically collected the type of data on the economic value of renewable natural resources to the poor that national economic planners find convincing or compelling.
2. Conservation and sustainable natural resource management have not been mainstreamed in poverty reduction strategies. Not only have conservation activities not generally been included in economic planning for poverty reduction but conservation agencies (including government departments

with conservation roles) have generally treated poverty reduction as being outside their essential area of responsibility.

There are some exceptions to this broad picture. For example, the Government of Tanzania has included a strong focus on conservation and environment in the second Poverty Reduction Strategy, due to begin in 2005. An earlier strategy did not pay adequate attention to the nature of conservation and environment as issues relevant to poverty (Howlett 2004).

Conservationists concerned with poverty reduction must find ways to engage in the poverty reduction planning process. The first step in this direction could be to start providing the hard economic data on the poverty-conservation connection that economic planners will find useful and convincing. The data emerging from Shinyanga (page 61; see also updated data in Box 10, page 68) may be just the type of information required. Conservationists need to engage in discussion with economic planners to develop a shared understanding of what is useful and possible.

Multiple levels and multiple points of entry

Attempting to work toward conservation and poverty reduction in an integrated way requires working at multiple levels and multiple points of entry. Little can be achieved by working only at the project level or the site level. Concentrating only on the policy level or other institutional levels is also ineffective. Where the problems are caused at different levels and scales then the solutions will be found at multiple levels and scales.

It is often argued that development works too much at a project level and that a programme approach would be more effective. We are very much against an either/or approach to the question of project versus programme. One problem with working too much at a macro-scale is that solutions tend to be informed by homogenising assumptions – every case is treated as being essentially the same. Even when the main issues are policy concerns or other macro-level issues, it is important to see what happens when policies and solutions are applied on the ground. Good learning projects at the site level are needed to act as policy “experiments”. The Lao NTFP Project (page 72) worked that way. It was a flexible, adaptive, learning-oriented project which both informed

policy developments (and was widely copied within Lao PDR) and it was able to demonstrate the effects of policy. CAMPFIRE (page 35) also focused on learning, and was widely copied. The community-based mangrove management activities at Pred Nai (page 51) also followed an action-learning approach.

Policy experiments can give feedback on the effects of policy. They can demonstrate how women, children, pastoralists or fishers can all be affected differently by policies and actions, which can allow corrections to be made in the interests of livelihoods, poverty reduction and equity.

Thus there are two reasons for including project- and site-level actions in a broad multi-level approach. One is the need for policy experiments. The other is the need to address complex problems at different levels. An example from Tanzania illustrates this (Box 16).

Box 16. Conservation in the Tanga Coastal Zone

In the mid-1990s, IUCN's Eastern Africa Regional Programme established the Tanga Coastal Zone Conservation and Development Programme (TCZCDP) in partnership with the Tanga Regional Secretariat of the United Republic of Tanzania. Through a highly consultative and participatory process, particularly at the local level, the programme helped establish Collaborative Management Areas (CMAs) for coastal fisheries and provided technical input to a national programme of mangrove forest management.

The TCZCDP's two major objectives were 1) to improve the capacity of district and regional governments to undertake integrated coastal zone management, and 2) to assist communities in using coastal resources in sustainable ways to improve their management and conservation. Coastal fisheries in the Tanga region were seriously depleted due to overfishing and the use of seine nets, which are illegal due to their small mesh and the damage they do to the seabed. Coral reef habitats were also severely degraded through the use of dynamite fishing, also illegal.

Solutions included the establishment of CMAs with associated Collaborative Management Area Plans (CMAPs), which closed off certain reefs to fishing. These refuges then export larvae and adults to neighbouring reefs and allow

fish populations to recover. In addition, comprehensive patrolling of the waters by an enforcement team comprising district officers and local villagers, in collaboration with the navy, has led to a marked decline in dynamite fishing and the use of seine nets.

The CMAs and the patrolling have led to a steady recovery of the coral reefs. While the prognosis for an increased fish catch and improved conservation of the reefs was good, the long-term sustainability of the approach required changes to national fisheries policy to allow communities to collaboratively manage and take responsibility for their fishery areas. The CMAs are formally established through village bylaws, but have yet to be formally approved at the national level. TCZCDP's approach has, however, played a vital role in the development of the recently released National Integrated Coastal Environment Management Strategy of Tanzania (January 2003), in the revision of the *Fisheries Act*, and in the National Mangrove Management Programme. In addition, fisheries officers within the district governments have provided extensive institutional support, along with an understanding of the issues and the capacity to provide extension services to local people and support local management committees to govern their own resources.

Nevertheless, the long-term financial sustainability of this approach is in question if national government does not recognise the value of the CMA approach developed in the Tanga Region. This recognition is vital if funding to districts for local fisheries management initiatives is to increase. Linking sound coastal and marine resource management to poverty alleviation in coastal people is likely to provide a strong message to the United Republic of Tanzania.

Source: Contributed by Bill Jackson and Melita Samoilys

It is easy to say that initiatives should work at multiple levels (people often say they are doing that), but it is less easy to accomplish this in practice. It is essential to continually monitor changes and issues, to apply progressive contextualisation (both up and down) and to amend what we do accordingly. This is adaptive learning, or adaptive management.

Implications of linking poverty reduction and conservation

Based on the discussion in the last two chapters, there are some implications for action. These are presented in the form of guidelines. Where conservation interventions or policies are being promoted in a country or region with high levels of poverty, responsible conservation organisations ought to observe the following guidelines, both because it is ethically desirable to do so and because failure to do so may seriously compromise long-term conservation.

In general

- Know who the poor are. Don't assume that this is already known or obvious. The poor are not a homogeneous mass; poverty manifests itself in different peoples' lives in different ways.
- Determine how different groups of poor people use biological diversity as a local livelihood resource and assess how proposed conservation interventions will affect this.
- Be versatile in the use of conservation tools. Recognise that locally accountable systems of land-use management that encourage diverse and locally adapted approaches to the management of degraded natural resources are a legitimate conservation tool.
- Take responsibility for negotiating equitable outcomes over the use and conservation of natural resources. It is not good enough to ignore this as "someone else's" problem.
- Build conservation strategies that safeguard biodiversity both for its value as a local livelihood resource and its worth as a national or global or public good.
- Build the capacity of communities not only to protect biodiversity but to use it sustainably. This will include addressing constraints (e.g. improving poor people's access to markets for natural resource products).
- Ensure that there are ways to identify the social, economic and environmental impacts of interventions. This may include participatory assessment and the establishment of baselines.
- As a general strategy start by identifying and addressing those policy and institutional constraints that prevent poor people from gaining meaningful access to, and decision-making authority over, natural resources.

- Ensure that biodiversity is built into national development strategies (such as PRSPs) as an opportunity for development and growth aimed specifically at the poor.

Protected areas

- Ensure that the real costs of protected areas – in terms of impacts on rural livelihoods – are provided for and not treated as externalities.
- Look for ways to achieve conservation goals through a landscape approach before assuming that strictly protected areas are the solution.
- Examine other options to conservation, rather than starting with the assumption that protected areas, which require management by the highest competent authority, are the best solution. Instead consider an approach that looks for conservation-focused, decentralised land management options that delegate authority to the *lowest competent authority* (consistent with principle 2 of the Ecosystem Approach).
- In cases of extremely high conservation value, where other options are not viable, state-controlled protected areas are likely to be the solution. This should not, however, be the default position; it should be limited to sites of national and global importance. In such cases provision must be made for local people, especially the poor, to receive meaningful compensation for the opportunity costs of the protected area to them *and be provided with meaningful alternative livelihood options acceptable to them*.
- Determine the benefits of natural resource use by the rural poor in and around proposed protected areas well before they are gazetted, and ascertain the extent to which protected area restrictions will impose costs on the rural poor. Compensation can then be designed *in collaboration with local stakeholders*.

The guidelines/strategies suggested for protected areas will be controversial to many conservationists. Clearly, protected areas will sometimes be necessary, but many good conservation and livelihood outcomes occur outside them. In fact, attempting to address biodiversity conservation through establishing protected areas alone is doomed to failure, partly because the potential area likely to be allocated for them is necessarily limited. In any case, as conservationists admit,

many protected areas exist only on paper anyway. A comprehensive biodiversity conservation strategy must look beyond the sole focus on protected areas.

There are some cases where total protection may be necessary. In such situations, the costs of total protection/exclusion of affected people should be regarded as an intrinsic cost of conservation (like fences and staff salaries). Of course, the same argument applies to natural resource industries (such as mining and forestry), which do not have a good record of addressing the costs of their activities on the poor.

Field projects and site-level activities can be very useful as policy experiments.

Conclusions

This chapter has identified some of the institutional factors that may help conservation contribute to poverty reduction, either by removing barriers or by providing incentives. These factors include local institutions that more effectively empower the poor in relation to natural resources.

These are some of the key lessons for implementing poverty reduction in conservation:

- It is essential to understand the complexity of different stakeholder interests in both conservation and development issues and it is essential to ensure that institutional arrangements for handling this complexity are appropriate and relevant to the resource or landscape to be managed.
- There is a need to work at multiple levels and scales.
- Field projects and site-level activities can be very useful as policy experiments and adaptive learning is a valuable way to implement such activities.



Chapter 6

Linking Conservation and Poverty Reduction

The Challenge

This chapter summarises the main features and key challenges of an approach to linking conservation with poverty reduction. Not all conservation can contribute to poverty reduction. Some conservation activities appear to have little obvious relationship to poverty and livelihoods (protecting the Antarctic or high seas environment, for example). But where conservation and poverty intersect, conservation can do much more to contribute to poverty reduction, simply because natural resources are important for livelihoods and human well-being. Conservation should take poverty and livelihoods more seriously, because it can help alleviate a serious global problem and because addressing these issues often makes for better conservation. In cases where conservation has negative effects on the livelihoods of poor people, or where it limits their opportunities for development, there is an ethical imperative to address these impacts.

The connections between poverty and conservation are many and complex. They are rarely simple cause-and-effect relationships. Sometimes there are obvious synergies. Often win-win solutions to poverty and conservation dilemmas are elusive and trade-offs are more realistic outcomes. These outcomes (whether win-win or trade-offs) are not always obvious; sometimes, creative approaches must be made to remove constraints and develop synergies. Connections must be made, not simply identified. In many ways linking conservation with poverty reduction is more of an art than a science. Ultimately, the aim is not to achieve perfect outcomes, but the best possible outcomes.

These are some of the characteristics of an approach that links conservation and poverty reduction:

- All interventions must take equity into account in terms of sharing of costs and impacts on the poor. Efforts must be made to address equity issues, including gender equity.
- Interventions should aim for the best possible outcomes, not for unachievable perfect outcomes.
- The specific characteristics of poverty and its relationship to the environment are not homogenous – they vary according to context. They need to be understood according to their specific context and their causes and interconnections need to be explored through progressive contextualisation.
- Win-win outcomes should not be assumed; instead efforts should be made to create trade-offs.
- Trade-offs at the landscape scale present great opportunities for win-more-lose-less outcomes.
- Where conservation goals are extremely important, and where human costs cannot be met within a landscape or internalised, these associated costs must be seen as part of the real cost of conservation (such as building fences or paying staff). Mechanisms need to be developed to finance these human costs, perhaps by direct payment or compensation. (It is not good enough to say this is someone else's responsibility.)
- Addressing the human costs of conservation implies more than maintaining the status quo in terms of income or subsistence. Poor people need to be empowered so that they can make real development choices.

- The causes of both poverty and biodiversity loss occur at multiple scales and multiple levels. They must be addressed where they occur.
- Most causes of poverty and biodiversity loss are multiple-level and multiple-scale. Multiple points of entry are required.
- Poverty and biodiversity loss are moving targets with complex interactions. Efforts to manage for both poverty and conservation objectives require adaptive learning.

The scope for linking conservation and poverty reduction

Clearly conservation can make only a partial contribution to poverty reduction. The problem is large and primarily a matter for which governments are ultimately responsible and for which most solutions will lie in markets and institutions outside what we normally see as the conservation field. Nevertheless, there are areas where conservation has significant potential for contributing to poverty reduction.

The potential (and ethical requirement) for addressing poverty reduction through conservation does not apply everywhere. It is not appropriate or necessary in cases where there is little poverty or vulnerability to poverty combined with high environmental values and risks. There is, however, scope for conservation to contribute to poverty reduction in a range of different situations with different levels of vulnerability and poverty, and different levels of environmental values and risks. Figure 2 attempts to illustrate the scope for intervention.

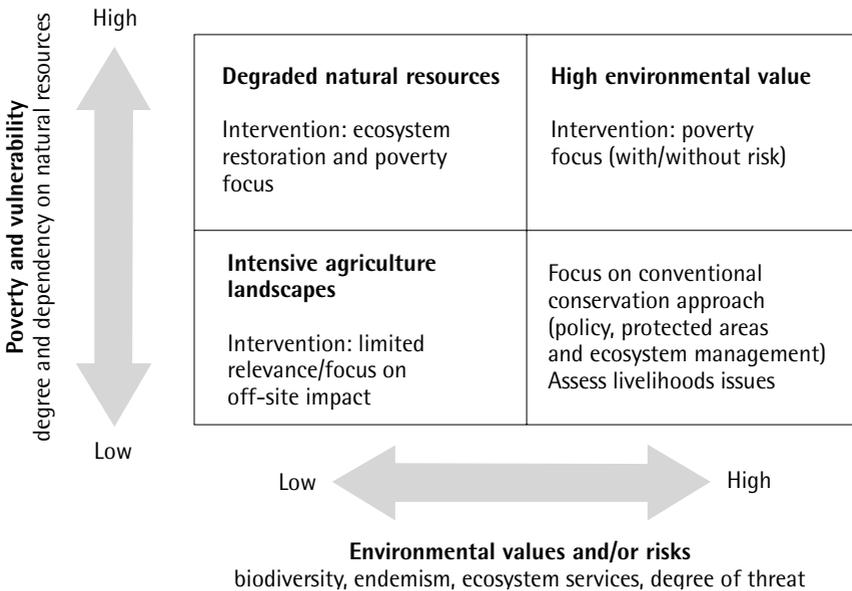
Based on the various dimensions of poverty defined by the World Bank (page 5), there are a number of different entry points for agencies wishing to address both poverty and conservation. Different things that can be done at site levels and institutional levels. Table 4 presents a list of possible activities to address the various dimensions of poverty from a conservation framework.

A learning approach

We would like to make it clear that this is not intended to be a how-to book. As far as a comprehensive approach to linking poverty reduction and conservation is concerned, nobody knows exactly "how to" based on a wide range of

successful experiences. Nevertheless, conservation must treat livelihoods and poverty more seriously for ethical reasons and there is a great deal of evidence to show that positive outcomes are often possible. Although a comprehensive and well-tested approach has not been widely applied, there is considerable understanding of fields such as institutional change, landscape management and the sociology of development which suggests ways to move ahead.

Figure 2. Scope for conservation to address poverty reduction



Despite the work that has been done in ICDPs, CBNRM and related approaches, linking conservation with poverty reduction and livelihoods has not yet been successful on a large scale.

There have been calls for evidence-based approaches to conservation and many conservationists point out (especially in informal discussion), that there is little empirical evidence to show the result of interventions, in terms of either conservation or poverty. To a considerable extent this is true, although one reason for the uncertainty may be that many people expect to be able to draw broad generalisations about causal relationships. Cause-and-effect relationships

Table 4. Entry points for implementation

Dimension of poverty	Entry points	Local/site-level interventions	Policy/political (national/international) interventions
<p>Problem: lack of assets and opportunities</p> <p>Solution: provide opportunities, build/restore assets</p>	<ul style="list-style-type: none"> • employment • value added • access to capital, technology and markets • trade policy • competition policy • resource tenure 	<ul style="list-style-type: none"> • forest restoration • watershed protection • NTFP marketing • improved access to resources and tenure • micro credit programmes • biodiversity-friendly enterprises 	<ul style="list-style-type: none"> • tenure reform • transfer mechanisms to compensate loss and reward stewardship • environment and poverty concerns built into international trade • access and benefit-sharing related to genetic resources • research to improve farm productivity
<p>Problem: lack of power</p> <p>Solution: empowerment and access</p>	<ul style="list-style-type: none"> • participation • democratic decision-making • rule of law (equality before the law) • access to information • accountability and transparency 	<ul style="list-style-type: none"> • user groups supported • gender and equity aspects of projects • citizen report cards • power relations that limit access are addressed 	<ul style="list-style-type: none"> • tenure reform • user networks supported • public administrative reform • devolved power to the grassroots • strengthened recognition of cultural identity/indigenous knowledge • enhanced connectivity of rural areas
<p>Problem: vulnerability</p> <p>Solution: security</p>	<ul style="list-style-type: none"> • diversification • insurance • prevention • early warning/prediction 	<ul style="list-style-type: none"> • infrastructure and neighbourhood improvement • diverse livelihood options and low-cost local initiatives to help communities deal with risk of natural disasters • food banks and agricultural cooperatives 	<ul style="list-style-type: none"> • plan for better disaster management with communities • provide access rights to diverse resources in protected areas
<p>Problem: lack of capability</p> <p>Solution: enhance capability</p>	<ul style="list-style-type: none"> • literacy • health • provision of basic services • access to information 	<ul style="list-style-type: none"> • environmental sanitation projects • skills development • build capacity of/revive local institutions 	<ul style="list-style-type: none"> • research on diseases that affect the poor • formal and non-formal education programmes • enhanced connectivity of rural areas

depend on contextual factors, however, and intervening factors, such as institutional arrangements (at a variety of levels), can have a strong influence on the effect of interventions.

A great deal can be learned from earlier efforts in conservation and rural development. Many sociological lessons suggest what might plausibly work. Some of these ideas are explored here. There is much that seems promising, but much that remains to be tested. We have aimed to contribute to the discussion and experimentation that has involved many of our colleagues.

For people and organisations working in poverty reduction and conservation – whether they call it community forestry, integrated conservation and development, or whatever – the challenge is to continually evaluate what is done, and to question its impacts on conservation and the poor. Practitioners must ask how they have affected specific groups (women, fishermen, farmers) and why these impacts have happened. This sort of evaluation can help to change what is not working or is counterproductive and can validate ideas, approaches and strategies for future application.

In complex and uncertain contexts and especially where there is continual change, flexible and adaptive approaches, such as adaptive management and action research, are imperative. In the case of conservation that aims to achieve both conservation and livelihood objectives, it is particularly important to continually assess the impacts of actions against expressed goals. What is really happening to the poor? What is really happening to biodiversity? What have the impacts been? Obviously there is a need for systematic collection of economic data, disaggregated to show the impacts on specific groups. There is also a need for participatory assessment and participatory evaluation. Ultimately, nobody is better qualified to tell what has happened to the rural poor than the people themselves.

Conclusion

We have not proposed a specific name for the approach we advocate in this book. The main point is the need to make an explicit commitment to both conservation and poverty reduction goals. Conservationists often argue that a healthy environment is necessary for the quality of human life. Conservation can contribute to this, not just in a global sense, but for the rural people who depend directly on the environment and often pay for the global quality of life with reduced well-being and limited opportunities.

Appendix

Economic instruments for financing conservation and poverty

Rati Mehotra

Economists have proposed a number of instruments for financing conservation and it is useful to consider these in terms of their potential to reduce poverty. They include both market and non-market-based instruments.

Maintaining the optimal value of environmental goods and services for current and future generations requires innovative financing mechanisms. Environmental goods hold different values for different people. A river may provide livelihoods for a fishing community, water to an agricultural community downstream, stabilise the microclimate of a nearby town, contain a rare species of dolphin that is not found anywhere else in the world, and provide the habitat for a freshwater plant with medicinal properties. Thus goods and services from the river provide direct and indirect use and non-use value to various groups at different times. There is no "market" for most of these goods and services. The challenge is to ensure that over-use of the river by the agricultural community does not exhaust fishing stocks and that fishing methods do not harm the dolphins.

A number of instruments for financing conservation have proposed or developed at the local, national and global levels. Many of them were developed to pay for the global or public value of biodiversity in developing countries. Conservation that addresses poverty must not just generate new funds, it must better manage existing mechanisms to meet local needs. Global mechanisms for financing conservation will perpetuate the environmental and social injustices of the past if they fail to engage with the local and indigenous communities whose lands or resources they are trying to conserve.

Non-market based mechanisms

The rationale for non-market based mechanisms is that biodiversity and ecosystem services have both public as well as private good/service characteristics, and that the market will fail to deliver on the value of public goods. Thus public investment (in the form of various taxes, funds and other measures) is required in order to finance conservation.

Global Environment Facility

The Global Environment Facility (GEF) provides grants to developing countries for projects that achieve global environmental benefits. Since it was established in 1991, GEF has provided USD 4.5 billion in grants and generated USD 4.5 billion in co-financing from other partners for projects in developing countries and those in transition. GEF funds are contributed by donor countries. In 2002, 32 donor countries pledged USD 3 billion to fund operations between 2002 and 2006. GEF finances only the incremental cost of projects, i.e. the difference between the benefits that will accrue to the country, and the benefits that will accrue to the world. Some observers claim that the incremental approach favours high-tech solutions over low-cost, indigenous ones (Horta 2002) and that these big projects do little to address poverty. The UNDP-GEF Small Grants Programme (SGP), which supports community-based activities, has been very successful. It is implemented by NGOs.

Debt-for-nature swaps

Debt conversion means the cancellation of a country's foreign debt in exchange for new obligations. A variety of debt conversion mechanisms exist, such as debt-for-equity, debt buy-backs, and debt-for-nature swaps (Moye 2001). The idea of debt-for-nature swaps arose in the 1980s. It developed from the fact that countries with the greatest biodiversity were often the same ones that face the greatest foreign debt burdens. The process usually involves purchasing commercial debt by a conservation organisation at a discount, converting that debt to local currency, and using the money to fund conservation activities. This movement was led by NGOs and has given rise to a second generation of debt swaps in which government-to-government debts are restructured in order

to reduce financial outflow from indebted countries and channel funding for conservation activities to local organisations (Resor 1997).

There is nothing intrinsic about debt-for-nature swaps that allows them to contribute to poverty reduction. It is not obvious that debt-for-nature swaps will help the poor or address poverty except at the macro-level and certainly it is unclear how they can contribute to poverty reduction among the rural poor.

They may be able to contribute to poverty reduction depending on the way they are used, such as promoting selected conservation and development efforts at the local level. Their impact will depend on what specific kinds of programmes are funded, and where. They can provide much needed long-term resources to local organisations, in which case their effect on poverty will depend on how well those organisations function and how much they take the poor into consideration. Debt swaps have funded programmes that involve communities in forest management, ecotourism, sustainable livelihoods and biodiversity-based enterprises, which have the potential to alleviate poverty. (The link is more direct in the case of debt-for-health or debt-for-education swaps.) In the past debt swaps have sometimes excluded poor/indigenous people who depend on forest resources, which has exacerbated poverty. There have also been accusations that debt-for-nature swaps pave the way for bio-prospecting and appropriation of traditional knowledge.

Conservation Trust Funds or Environmental Funds

More than 30 environmental funds were created in the 1990s, seven of which have received GEF support. They include trust funds established by legislation, foundations, common-law trusts and NGOs. Their aims can range from financing the cost of protected areas (park funds), supporting national environmental plans or strategies (strategy funds), and providing grants for biodiversity conservation (grant funds) (Bayon, Lovink and Veening 2000).

Tobin-type and other taxes

James Tobin originally proposed the Tobin tax in 1978 as a global tax on foreign exchange transactions that would be uniformly applied in all countries to discourage speculation on currency fluctuations. Although the Tobin tax

has not been implemented, despite having many proponents, and Tobin has distanced himself from various interpretations of it, interest has grown in revenue-raising mechanisms that could be used to generate funds for environmental protection and curb pressure on natural resources. For instance, taxes have been proposed on the aviation and shipping industries for use of international airspace and oceans. Setting up global tax schemes is a difficult proposition at best and would require an international consensus that does not yet exist.

National governments have imposed environmental taxes on activities such as tourism, however. Visitors to the *Fernando de Noronha* Marine National Park on the Atlantic coast of Brazil have to pay a daily environment tax that increases incrementally as the visit continues. The Caribbean island of Dominica levies USD 1.5 on all tourists on departure. Maldives, threatened by global warming, is considering imposing an environment tax on tourists.

One innovative financing mechanism is the ecological value-added tax or ICMS-E, introduced in Brazil. This levy on the circulation of goods and services rewards municipalities for the positive externalities of their conservation areas. The levy has been an incentive for municipalities to increase the area under conservation.

Tobin taxes and similar levies have no specific connection with poverty, however. They are ways of raising money for conservation, and connections with poverty reduction have not been made. The problem is how to target them effectively to contribute to poverty reduction.

Compensation to communities for opportunity cost and damages

Factors such as increasing demographic pressure, expansion of cultivation and the emergence of large-scale commercial farming lead some conservationists to believe that biodiversity conservation and animal husbandry/farming are in conflict and competing forms of land use that should be kept separate. The logic of many ICDPs is that people can be compensated for their costs or provided with alternative activities; however, effective compensation is rare and alternative activities and income have not been as effective as hoped.

Market-based mechanisms

There has been increasing interest in market-based approaches to environmental conservation, or "payments for ecosystem services." The rationale is to create incentives for resource managers/owners to behave in ways that sustain environmental functions like carbon sequestration, watershed protection, habitat for endangered species, maintenance of landscape beauty, and so on. The incentives can take the form of direct payments for ecosystem services, tradable permits or quotas, and eco-labelling or certification schemes. Below are some examples of markets for ecosystem services, and what their impact might be on biodiversity and on the poor.

Markets for carbon sequestration

There is growing evidence of global warming due to the greenhouse effect, and increasing credence to the threat of rising sea levels, loss of coral reefs, diseases, and desertification. This led to the development over the last decade of an international framework to counter the build-up of greenhouse gases like carbon dioxide and methane.

The establishment of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and the signing of the Kyoto Protocol in 1997 spurred the development of markets in carbon offsets. The Kyoto Protocol set emission reduction targets for countries, providing a foundation for a system of emission rights trading. The rationale is that some countries will find it simpler and cheaper to reduce emissions than others, for instance through carbon sequestration activities such as afforestation. Those countries that do not find it cheap or easy to reduce emissions can buy additional rights to emit from those for whom it is less costly. Potentially, developing countries can benefit by engaging in afforestation and reforestation activities and selling rights to emit to developed countries.

Although it is still unclear whether the Kyoto Protocol will be ratified, a voluntary market in carbon offsets has emerged and is likely to continue developing, both within and outside the framework of the protocol. The evidence on costs and benefits is not clear. All countries stand to potentially gain from such trade. But the impacts on poor people in developing countries

will depend on whether afforestation activities engage local communities, and whether they lead to loss of access to forest resources and fast-growing plantations that deplete groundwater supply. There are also serious reasons to question the extent to which institutional arrangements will be developed for the transfer of benefits from credits to communities and especially the poor. There is little evidence that mechanisms exist for this and little reason to be confident that they will be developed.

There are a few examples of positive social impacts from carbon markets. The Noel Kempff Mercado National Park is a partnership between the Government of Bolivia, various NGOs, American Electric Power, BP Amoco and PacifiCorp to protect four million acres of tropical forest. The primary purpose of the project is to capture carbon dioxide, but it also includes health care programmes and alternative economic development activities to assist local people who live in and around the park and who depend on local resources for their livelihood. More than half the park rangers were hired from local communities. The project has resulted in formalised land tenure for the local communities. Another example is a community silviculture carbon offset project in the Sierra Norte of Oaxaca, Mexico, which finances the development of women's groups. These examples of benefits from carbon markets are relatively few and inconclusive. There are also negative impacts. The biggest social concerns from carbon projects are exclusion and erosion of rights, eviction, and the potential negative impacts of fast-growing plantations on soil, water and biodiversity. There is real potential for carbon projects to help poor people through new sources of income, diversified income streams, institution building and formalisation of rights over resources. There are also real risks, however, of exclusion and increased vulnerability of the poor, and control of benefits by more powerful actors.

Markets for watershed services

Forests maintain water quality, prevent soil erosion, control floods, regulate water flows and maintain aquatic habitats. A growing recognition of the watershed services provided by forests and the increasing willingness of downstream populations to pay for them has led to the emergence of payment mechanisms in many corners of the globe, from New York to Quito, and from

Haryana to Costa Rica. Watershed markets often have a large number of stakeholders, and will depend on a number of factors for success:

- 1) a large downstream population who benefit from the watershed services;
- 2) a manageable number of upstream landowners and low transaction costs;
- 3) the cost of alternative options, such as filtration plants, dredging, etc.;
- 4) well defined property rights; and
- 5) the strength of local institutions and the likelihood of cooperative arrangements.

Poor upstream communities may be able to benefit from watershed markets, but this will depend on their negotiating power and their ability to move in and out of the market. If the poor lack property rights in a watershed and forest protection is imposed on common lands, then poor people living upstream may actually become worse off. The gains to poor people living downstream will depend on their access to improved water supply and how much they have to pay for watershed protection.

Biodiversity offsets and mitigation and conservation banking

Mitigation and conservation banking (which started in the U.S.) refers to protected areas that are created and managed as a means of providing compensation for habitat loss resulting from land development. Banks sell biodiversity offsets to public and private developers, who are obliged by law to mitigate habitat loss when it cannot be avoided. For each hectare of habitat that is destroyed, developers must purchase credits from approved conservation bankers to support species conservation efforts in the surrounding area, for habitat that is similar to that which they intend to convert.

Although some countries offer land developers the opportunity to compensate for habitat loss by investing in conservation, and some major multinationals undertake voluntary mitigation and compensation measures, there are no internationally accepted standards or procedures for compensatory mitigation. Moreover, in many biodiversity-rich developing countries, there is little or no obligation to mitigate the adverse impacts of land-use change. In most developing countries, conversion of natural forest land to agricultural, industrial and other uses has vastly diminished natural forest cover. One measure that

may help stem this loss is a global "biodiversity credit mechanism" for trade in biodiversity conservation obligations, similar to the Clean Development Mechanism of the Kyoto Protocol. Another option is to institute an international voluntary agreement for compensatory mitigation of biodiversity loss.

To the extent that developing countries are often rich in biodiversity, trade in biodiversity conservation obligations will involve financial transfers from richer to poorer countries and will potentially discourage conversion of natural forest land to other uses. The key relevance to addressing poverty depends on whether funds are used for the benefit of the poor living on the fringes of biodiversity-rich areas. Experiences so far have not been promising.

Markets for recreation

Alternative forms of tourism (ecotourism, green tourism, or nature tourism) are the fastest growing segments of the tourism sector, constituting about 30 percent of the global market today. The International Ecotourism Society defines ecotourism as "responsible travel to natural areas that conserves the environment and improves the well-being of local people." The theory is that culturally and environmentally sensitive tourism minimises adverse impacts. By providing jobs, income and business opportunities to local communities, it also helps both in the effective conservation of biodiversity-rich areas and in the economic betterment of poor indigenous communities. Voluntary certification schemes that grant "eco-labels" to tourism businesses based on the sustainability of their practices have proliferated in many countries. Some standards are national, such as the Costa Rican Certification in Sustainable Tourism (CST), and the South African Fair Trade Tourism South Africa program. A review conducted for WWF in 2000 pointed out, however, that certification schemes are currently limited to just one percent of tourism companies. Moreover, in most countries tourism standards do not adequately address the range of socio-economic and environmental issues deemed to be affected by tourism. Even if tourism standards can comprehensively address poverty and environment issues, and are adopted en masse by businesses, it is not clear that they are the best or most cost effective way forward.

Many other market-based mechanisms to finance biodiversity have emerged, including bio-prospecting, certification schemes for sustainable practices, eco-

labelling for organic products, and so on. Their impact on the poor is not easy to gauge. It is likely that poor people would find it difficult to participate as suppliers of ecosystem services or environmentally friendly products, since they lack the information, resources and technology to engage in such markets.

Pro-poor financing for conservation

Making financing measures work for both conservation and people is a difficult task at best. The danger is not just that market and non-market based mechanisms to finance conservation may not benefit the poor, but that they may actually make such people worse off by reducing their access to natural resources and concentrating land ownership in the hands of a few. Moreover, poor people who consume ecosystem services are likely to be negatively affected by the imposition of payment schemes that involve transfers to providers of ecosystem services. Special care needs to be taken to ensure that poverty is not exacerbated by mechanisms to finance conservation, and that the poor are helped both as suppliers and consumers of environmental products and services.

A number of lessons have been learned in this regard around the world, including the following (Landell-Mills and Porras 2002; Pagiola, Bishop and Landell-Mills 2002). These are some of the things that can be done to try to direct benefits to the poor:

- clarify the property rights of poor and vulnerable people, and consider the impacts of the proposed mechanism on the landless poor.
- invest in local infrastructure, including schools, clinics, information systems and transport.
- provide financial support through subsidies or technical assistance to enable poor people to participate in biodiversity-based enterprises.
- improve local capacity through institution building and have communities actively participate in decision-making.
- help smallholders gain access to markets through the building of cooperative institutions.

Ultimately, the process of setting priorities and devising strategies for ensuring benefits to poor people from mechanisms to finance conservation must be done at the local level, with the participation of poor and vulnerable groups.

Endnotes

1. Sustainable development was defined by the World Commission on Environment and Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). An alternative definition is: "improving the quality of human life while living within the carrying capacity of supporting ecosystems" (IUCN/UNEP/WWF 1991). These two definitions are essentially compatible.
2. For a detailed discussion of issues relating to the MDGs and conservation see Roe et al. (2004).
3. <http://www.worldbank.org/poverty/mission/up3.htm>.
4. <http://www.developmentgoals.org/>
5. For a detailed discussion of the question of whether forests are safety nets or poverty traps, see Angelsen and Wunder (2003).
6. The text for the case study on Waza Logone was provided by Jean-Yves Pirot (IUCN).
7. It is important to stress here that the problem is forced resettlement. Voluntary resettlement or migration can be options for poverty reduction and many people have voluntarily chosen relocation as a strategy for improving their livelihoods.
8. At the fifth IUCN World Parks Congress in Durban, 8–17 September, 2003, there was a strong recognition that conservation needs to take much more notice of the negative impacts of Protected Areas on the poor, as well as their potential to make a real contribution to poverty reduction through conservation activities (WPC Recommendation 29). For a discussion of ways in which protected areas can address poverty, see Scherl et al. 2004.
9. We do not intend to discuss the literature on these asserted causal relationships in detail. (We think our readers will recognise each of them.) Examples in the following pages will illustrate the complexities of causal relationships in particular cases. For those who wish to explore the issue further, Angelsen and Kaimowitz (1999) review the literature about the causes of deforestation, finding that there are "serious questions concerning the conventional wisdom, either [...] because of] contrary evidence or... the weakness of the supporting evidence" (p. 91).
10. Applying adaptive management is one way to deal with complex management issues without being paralysed by uncertainty and complexity. This approach proposes that actions be performed in situations where results are uncertain and then be modified based on careful monitoring of outcomes. (For a discussion of adaptive management applied to conservation, see Buck et al. 2001.)

11. Oxfam, CARE and UNDP have all been actively involved in developing livelihoods-based approaches.
12. Although the term "pro-poor" has frequently been applied to conservation approaches in the last few years, there are some serious difficulties with it. Perhaps the main concern is that it can sound paternalistic; it also has welfarist connotations (doing good for others). The intention in this book has been to avoid using any particular new term to describe the approach. It seems desirable to avoid developing a new term anyhow, as approaches with new names quickly become reduced to acronyms and the point gets lost.
13. The Conference on the Conservation of Nature and Natural Resources in Modern African States, held in Arusha, Tanganyika (now Tanzania).
14. The very idea of wild Africa, in many ways the iconic wild place, can also be seen as a "myth" in this sense. Adams and McShane (1992) argue that the whole approach to conservation in Africa has been moulded by the perception of early travellers, writers, hunters and administrators that Africa was essentially a wild paradise, being threatened and destroyed by its native people. Early conservationists felt it was their duty to defend nature from these humans. In fact, Adams and McShane argue, Africa was never wild in this sense and humans have been part of "nature" throughout human history.
15. One example of nature tourism leading to population increase in areas surrounding a national park is Nepal's Chitwan National Park. An extensive tourist industry, including hotels, lodges, restaurants and tour services, has developed.
16. In fact, it is often the economically well-off who are attracted to such opportunities, rather than the poor.
17. In fact, many of the criticisms of the assumptions of heterogeneity come from social scientists and advocates of more people-friendly approaches to conservation (Leach, Mearns and Scoones 1997; Agrawal 1997). Further, the idea that communities share similar goals to conservationists is frequently challenged by anthropological studies (Ellen 1986; Croll and Parkin 1992; Milton 1993). These and similar problems with the notion of community have spurred developments in differentiating "user groups" and "stakeholders" in natural resource management.
18. The idea of "locally resident" here also includes mobile peoples. Although they are not resident in a relatively small local territory, they are residents in a wider landscape. And although their presence in particular parts of the landscape is seasonal or intermittent, they nevertheless have a close connection with it.

19. We focus on the DFID livelihoods framework, although other agencies such as UNDP, Oxfam and CARE have developed and applied similar frameworks. The DFID framework has been widely accepted and is a convenient basis for discussion. For an overview and comparison of the various livelihoods approaches see Carney et al. 1999.
20. The following discussion of the landscape concept draws heavily on Maginnis, Jackson and Dudley (2004).
21. The landscape perspective implies a decentralised approach to land use decision-making, in which decisions are devolved to as local a level as is practical, including, very often, the community level. This does not mean that there is no centralised role in setting standards or broad objectives for natural resource and land management. The balance between centralised planning and negotiated landscapes is further discussed in Chapter 5.
22. Who are legitimate stakeholders? The World Commission on Dams (WCD 2000) proposed a rights-and-risks approach which is useful in defining which stakeholders interests should be considered. The approach identifies people who are at risk from an intervention or change and sees them as having rights as stakeholders.
23. One of the difficulties in negotiating objectives for land use is precisely that many people see their positions as being based on absolute values and their objectives as consequently non-negotiable. This applies to views about the absolute value of wilderness, to the primacy of scientific management or to various competing claims about rights to resources. Genuine negotiation to some extent depends on acceptance that objectives and rights are always claims subject to negotiation.
24. It has been argued (Gronow, pers. comm.) that formalising (in the sense of recognising or legalising) community institutions and organisations often reduces the de facto power of women. Where decision-making about resource use remains informal, women often make the important day-to-day decisions. Formalising decision-making often means shifting the process to the level of local politics.
25. In fact, governments often do not want to see too much power over resources devolved to local people because of broader issues of political control, rather than specifically for reasons associated with conservation (G. Shepherd, pers. comm).
26. This does not imply that traditional lecturing may not be efficient at providing information and skills. We are referring solely to training as a means to change attitudes.
27. The English acronym is ACICAFOC.
28. For a discussion of the characteristics of institutional economics applied to the environment, see Jacobs 1994.

References

- Adams, Jonathan S. and Thomas O. McShane. 1992. *The Myth of Wild Africa: Conservation Without Illusion*. Berkeley, Los Angeles and London: The University of California Press.
- Adams, W.M. 1990. *Green Development: Environment and Sustainability in the Third World*. London: Routledge.
- Agrawal, A. 1997. *Community in Conservation: Beyond Enchantment and Disenchantment*. CDF Discussion Paper. Conservation and Development Forum, University of Florida, USA.
- Alchian, A.A. 1987. Property Rights. *The New Palgrave Dictionary of Economics*. London: Macmillan.
- Anderson, J., J. Clement and L.V. Crowder. 1998. "Accommodating Conflicting Interests in Forestry: Concepts Emerging from Pluralism." *Unasylva* 49 (3): 3-10.
- Angelsen, Arild and David Kaimowitz. 1999. "Rethinking the Causes of Deforestation; Lessons from Economic Models." *The World Bank Research Observer* 14 (1): 73-98.
- Angelsen, Arild and Sven Wunder. 2003. Exploring the Forest-Poverty Link: Key Concepts, Issues and Research Implications. CIFOR Occasional Paper No. 40. Bogor, Indonesia: Center for International Forestry Research.
- Arnstein, Sherry R. 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners* 35: 216-224.
- Barrett, C.B. and P. Arcese. 1995. "Are Integrated Conservation-Development Projects (ICDPs) Sustainable? On the Conservation of Large Mammals in Sub-Saharan Africa." *World Development* 23: 1073-1084.
- Barrow, Edmund, Helen Gichohi and Mark Infield. 2000. *Rhetoric or Reality?: A Review of Community Conservation Policy and Practice in East Africa*. Evaluating Eden Series No. 5. London: International Institute for Environment and Development (IIED).
- Barrow, E. and M. Murphree. 2001. Community Conservation from Concept to Practice. In D. Hulme and M. Murphree (eds.). *African Wildlife and Livelihoods: The Promise and Practice of Community Conservation*, pp 24-37. Oxford: James Currey.
- Bayon, Ricardo, J. Steven Lovink and Wouter J. Veening. 2000. Financing Biodiversity Conservation. Washington D.C.: Inter-American Development Bank, Sustainable Development Department Technical Paper Series.
- Beltrán, Javier (ed.). 2000. *Indigenous and Traditional Peoples and Protected Areas: Principles, Guidelines and Case Studies*. World Commission on Protected Areas, Best Practice Protected Areas Guidelines Series No 4. Gland and Cambridge: IUCN – The World Conservation Union and WWF.

- Berkes, F. 1989. *Common Property Resources: Ecology and Community-Based Sustainable Development*. London: Helhaven Press.
- Blaikie, P. and H. Brookfield. 1987. *Land Degradation and Society*. London: Routledge.
- Bond, I. 2001. CAMPFIRE and the Incentives for Institutional Change. In D. Hulme and M. Murphree (eds.). *African Wildlife and Livelihoods: The Promise and Practice of Community Conservation*. Oxford: James Currey. pp 227-243.
- Borrini-Feyerabend, G. (ed.) 1997. *Beyond Fences: Seeking Social Sustainability in Conservation*. 2 vols. Gland, Switzerland: IUCN.
- Brandon, K.E. and M. Wells. 1992. "Planning for People and Parks: Design dilemmas." *World Development* 20 (4): 557-570.
- Brockington, Dan. 2003. "Injustice and Conservation: Is 'local support' necessary for sustainable protected areas?" *Policy Matters* 12: 22-30.
- Brown, Katrina. 2003. "Integrating Conservation and Development: A Case of Institutional Misfit." *Frontiers in Ecology and the Environment* 1 (9): 479-487.
- Brown, M. 1991. *Buffer Zone Management in Africa*. Washington: The PVO-NGO/NRMS Project.
- Buck, Louise B., Charles C. Geisler, John Schelhas and Eva Wollenberg (eds.). 2001. *Biological Diversity: Balancing Interests Through Adaptive Collaborative Management*. Boca Raton, Florida: CRC Press.
- Carey, C, N. Dudley and S. Stolton. 2000. *Squandering Paradise? The Importance and Vulnerability of the World's Protected Areas*. Gland: WWF-World Wide Fund for Nature.
- Carney, D. with M. Drinkwater, T. Rusinow, K. Neefjes, S. Wanmali and N. Singh. 1999. *Livelihood Approaches Compared: A Brief Comparison of the Livelihoods Approaches of the UK Department for International Development (DFID), CARE, Oxfam and the United Nations Development Programme*. Department for International Development, UK.
- Carwardine, M. 1990. *The WWF Environment Handbook*. London: Macdonald and Co.
- Chambers, R. 1988. *Poverty in India: Concepts, Research and Reality*. IDS Discussion Paper 241. Brighton: Institute of Development Studies.
- Chambers, R. and G. Conway. 1992. *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. IDS Discussion Paper 296. Brighton: The Institute of Development Studies.
- Chase, A. 1987. *Playing God in Yellowstone: The Destruction of America's First National Park*. New York: Harcourt Brace.
- Colchester, M. 1994. *Salvaging Nature: Indigenous People, Protected Areas and Biodiversity Conservation*. UNRISD Discussion Paper No. 55, Geneva, Switzerland.

- Colchester, M. 1992. *Sustaining the Forests: The Community-Based Approach in South and South-East Asia*. UNRISD Discussion Paper No. 35, Geneva, Switzerland.
- Colchester, M., T. Apte, M. Laforge, A. Mandondo and N. Pathak. 2003. *Bridging the Gap: Communities, Forests and International Networks*. CIFOR Occasional Paper No. 41. Bogor, Indonesia: Center for International Forestry Research.
- Colchester, M. and L. Lohmann (eds.). 1993. *The Struggle for Land and the Fate of the Forests*. Penang: The World Rainforest Movement, Dorset: The Ecologist and London: Zed Books.
- Cole, Matthew A. and Eric Neumayer. 2005. Economic Growth and the Environment in Developing Countries: What are the Implications of the Environmental Kuznets Curve? In Peter Dauvergne (ed.). *International Handbook of Environmental Politics*. Cheltenham and Northampton: Edward Elgar Publishing.
- Colfer, C.J.P., R. Prabhu, P.M. Gunter, C. McDougall, N.M. Porro and R. Porro. 1999. *Who Counts Most? Assessing Human Well-Being in Sustainable Forest Management*. C and I Toolbox Series No 8. Bogor, Indonesia: Center for International Forestry Research.
- Craig, D. and D. Porter. 2003. "Poverty Reduction Strategy Papers: A new convergence." *World Development* 31, No.1.
- Croll, E. and D. Parkin (eds.). 1992. *Bush Base, Forest Farm: Culture, Environment and Development*. London: Routledge.
- Dasmann, R. 1984. The Relationship Between Protected Areas and Indigenous People. In J. McNeely and K.R. Miller (eds.). *National Parks, Conservation and Development: The Role of Protected Areas in Sustaining Society*. Washington, D.C: Smithsonian International Press, pp. 667–671.
- Dasmann, R. 1976. "National Parks, Nature Conservation and Future Primitive." *The Ecologist* 6 (5):164–167.
- Dechaineux, Rachel. 2001. Role of Forest Food Resources in Village Livelihood Systems: A Study Of Three Villages In Salavan Province, Lao PDR February 2001. Unpublished project report, NTFP Project, IUCN/ NAFRI.
- di Castri, F. 1976. "International, interdisciplinary research in ecology: some problems of organization and execution: The case of the Man and Biosphere (MAB) Programme." *Human Ecology* 4: 235-246.
- DFID. 2002. Wildlife and Poverty Study. Prepared by the Livestock and Wildlife Advisory Group, Rural Livelihoods Department, Department for International Development, United Kingdom, 19 December 2002.

DOF and NTFP Project. 2000. A Study of the Downstream Impacts of the Yali Falls Dam in the Se San River Basin in Ratanakiri Province, Northeast Cambodia. Prepared by the Fisheries Office, Ratanakiri Province in Cooperation with the Non-Timber Forest Products (NTFP) Project, Ratanakiri Province, May 29 2000. Available in "Negotiating River Basin Management: Lessons from the Mekong." CD-Rom produced by the Australian Mekong Resource Centre (AMRC), University of Sydney, 2003.

Dove, M. 1993. "A Revisionist View of Tropical Deforestation and Development." *Environmental Conservation* 20 (1): 17-24.

Ellen, R. 1986. "What Black Elk left Unsaid: On the Illusory Images of Green Primitivism." *Anthropology Today* 2 (6): 8-12.

Fairhead, J. and M. Leach. 1998. *Reframing Deforestation, Global Analysis and Local Realities*. London: Routledge.

Fairhead, J. and M. Leach. 1996. *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic*. Cambridge, New York and Melbourne: Cambridge University Press.

Fairhead, J. and M. Leach. 1995. "False Forest History, Complicit Social Analysis: Rethinking some West African Environmental Narratives." *World Development* 23 (6): 1023-1035.

Fisher, R.J. 2003. Innovations, Persistence and Change: Reflections on the State of Community Forestry. In RECOFTC and FAO. *Community Forestry: Current Innovations and Experiences*. Bangkok: Regional Community Forestry Training Center and Food and Agricultural Organization of the United Nations.

Fisher, R.J. 2000. Poverty Alleviation and Forests: Experiences from Asia. Paper prepared for Forest Ecospaces, Biodiversity and Environmental Security, Workshop held at the IUCN World Conservation Congress, Amman, Jordan, 4-11 October 2000.

Fisher, R.J. 1999. "Devolution and Decentralization of Forest Management in Asia and the Pacific." *Unasylva* 50 (4): 3-5.

Fisher, R.J. 1995. *Collaborative Management of Forests for Conservation and Development*. Gland, Switzerland: WWF International and IUCN – The World Conservation Union.

Fisher, R.J. 1994. Indigenous Forest Management in Nepal: Why Common Property is Not a Problem. In Michael Allen (ed.). *Anthropology of Nepal: People, Problems and Processes*. Kathmandu: Mandala Book Point, pp. 64-81.

Fisher, R.J. 1989. Indigenous Systems of Common Property Forest Management in Nepal. Working Paper No 18. Honolulu: East-West Environment and Policy Institute, East-West Center.

Fisher, Roger and William Ury. 1981. *Getting to Yes: Negotiating Agreement Without Giving In*. Boston: Houghton Mifflin.

- Ghimire, K. and M. Pimbert (eds.). 1997. *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas*. London: Earthscan.
- Gilmour, D.A. and R.J. Fisher. 1991. *Villagers, Forests and Foresters: The Philosophy, Process and Practice of Community Forestry in Nepal*. Kathmandu: Sahayogi Press.
- Gilmour, Don, Yam Malla and Mike Nurse. 2004. *Linkages Between Community Forestry and Poverty*. Bangkok: Regional Community Forestry Center for Asia and the Pacific.
- Gomez-Pompa, A. and A. Kaus. 1992. "Taming the Wilderness Myth." *Bioscience* 42 (4): 271-279.
- Guha, R. 1989. "Radical American Environmentalism and Wilderness Preservation: A Third World Critique." *Environmental Ethics* 11: 71-83.
- Guha, R. and J. Martinez-Alier. 1997. *Varieties of Environmentalism. Essays North and South*. London: Earthscan.
- Hanmer, L., G. Pyatt and H. White. 1999. "What do the World Bank Poverty Assessments Teach us about Poverty in Sub-Saharan Africa?" *Development and Change* 30 (4).
- Hardin, G. 1968. "The Tragedy of the Commons." *Science* 162: 1243-1248.
- Hillaby, J. 1961. "Conservation in Africa: A Crucial Conference." *New Scientist* 11 (250): 536-538.
- Horta, Korinna. 2002. *The Global Environment Facility: The First Ten Years – Growing Pains or Inherent Flaws? Report prepared for The Halifax Initiative*. <http://www.halifaxinitiative.org/updir> (click on GlobalEnvironmentFacility.pdf).
- Howlett, David. 2004. *Lessons from Tanzania on Mainstreaming Environment into the New Poverty Reduction Strategy*. In Dilys Roe, et al. (eds.). *The Millenium Development Goals and Conservation: Managing Nature's Wealth for Society's Health*. London: (International Institute for Environment and Development).
- Hulme, David and Marshall Murphree (eds.). 2001. *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation*. Oxford: James Currey.
- IFAD. 2002. *Enabling the Rural Poor to Overcome their Poverty: Strategic Framework for IFAD 2002-2006*. Rome: International Fund for Agricultural Development.
- IUCN. 2003. *The Durban Accord*. Durban: World Parks Congress 2003.
- IUCN/UNEP/WWF. 1991. *Caring for the Earth: A Strategy for Sustainable Living*. Gland, Switzerland: IUCN/UNEP/WWF.
- IUCN/UNEP/WWF. 1980. *World Conservation Strategy: Living Resource Conservation for Sustainable Development*. Gland, Switzerland: IUCN/UNEP/WWF.

IWGIA. 1996. *Indigenous Peoples, Forest and Biodiversity*. London: International Alliance of Indigenous-Tribal Peoples of the Tropical Forests and the International Work Group for Indigenous Affairs (IWGIA).

Jackson, W.J. and A.W. Ingles. 1994. Developing Rural Communities and Conserving The Biodiversity Of Nepal's Forests Through Community Forestry. Proceedings of a seminar on community development and conservation of forest biodiversity through community forestry, Bangkok, Thailand, 26–28 October, 1994.

Jacobs, Michael. 1994. The Limits to Neoclassicism: Towards an Institutional Environmental Economics. In Michael Redclift and Ted Benton (eds.). *Social Theory and the Global Environment*. London and New York: Routledge, pp. 67–91.

Kemf, E. (ed.). 1993. *The Law of the Mother*. San Francisco: Sierra Club Books.

Kunstadter, Peter, E.C. Chapman and Sanga Sabhasri (eds.). 1978. *Farmers in the Forest: Economic Development and Marginal Agriculture in Northern Thailand*. Honolulu: East-West Center.

Landell-Mills, Natasha and Ina T. Porras. 2002. Silver bullet or fools' gold? A global review of markets for forest environmental services and their impact on the poor. Instruments for Sustainable Private Sector Forestry Series. London: International Institute for Environment and Development.

Lara, Silvia. n.d. (a). Millenium Development Goals: Gender Makes the Difference. IUCN Fact Sheet. Gland, Switzerland: IUCN – The World Conservation Union.

Lara, Silvia n.d. (b). Poverty and Environment: Gender Makes the Difference. IUCN Fact Sheet. Gland, Switzerland: IUCN – The World Conservation Union.

Leach, M., R. Mearns and I. Scoones. 1999. "Environmental Entitlements: Dynamics and Institutions in Community Based Natural Resource Management." *World Development* 27: 225–247.

Leach, M. R. Mearns and I. Scoones. 1997. *Environmental Entitlements: A Framework for Understanding the Institutional Dynamics of Environmental Change*. IDS Discussion Paper 359. Institute of Development Studies, University of Sussex.

Locke, Catherine. 1999. "Constructing a Gender Policy for Joint Forest Management in India." *Development and Change* 30: 265–285.

Lohmann, L. 1991. "Who Defends Biological Diversity?" *The Ecologist* 21 (1): 5–13.

Loth, P. (ed.). 2004. *The Return of the Water: Restoring the Waza Logone Floodplain in Cameroon*. Gland, Switzerland and Cambridge, UK: IUCN – The World Conservation Union.

MacKay, Fergus. 2002. Addressing Past Wrongs. Indigenous Peoples and Protected Areas: The Right to Restitution of Lands and Resources. FPP Occasional Paper. Moreton-in-Marsh (UK): Forest Peoples Programme.

- Malla, Y.B. 2000. "Impact of Community Forestry on Rural Livelihoods and Food Security." *Unasylva* 202 (52).
- Maginnis, Stewart, William Jackson and Nigel Dudley. 2004. Conservation Landscapes: Whose Landscapes? Whose Trade-Offs? In McShane, Thomas O. and Michael P. Wells (eds.). *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. New York: Columbia University Press.
- Maxwell, S. 2003. "Heaven or Hubris: Reflections on the New 'New Poverty Agenda.'" *Development Policy Review* 21 (1): 5-25.
- McCormick, J. 1995. *The Global Environmental Movement*. Second edition. Chichester: Wiley and Sons Ltd.
- McLean, Joanne and Stefen Straede. 2003. "Conservation, Relocation and the Paradigms of Park and People Management: A case study of Padampur Villages and the Royal Chitwan National Park, Nepal." *Society and Natural Resources* 16: 509-526.
- McNeely, J. and D. Pitt (eds.). 1985. *Culture and Conservation: The Human Dimension in Environmental Planning*. Kent: Croon Helm.
- McShane, T. and M. Wells (eds.). 2004. *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. New York: Columbia University Press.
- Meusch, Eric, Jintana Yhounng-Aree, Richard Friend and Simon Funge-Smith. 2003. *The Role and Nutritional Value of Aquatic Resources in the Livelihoods of Rural People: A Participatory Assessment in Attapeu Province, Lao PDR*. RAP Publication 2003/11. Bangkok: Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Pacific.
- Milton, K. (ed.). 1993. *Environmentalism: The View from Anthropology*. ASA Monographs. London: Routledge.
- Molnar, Augusta, Sara J. Scherr and Arvind Khare. 2004. *Who Conserves the World's Forests? Community-driven Strategies to Protect Forests and Preserve Rights*. Washington, DC: Forest Trends and Ecoagriculture Partners.
- Moye, Melissa. 2001. Overview of Debt Conversion. Publication No 4. London: Debt Relief International Ltd. http://www.dri.org.uk/pdfs/EngPub4_DebtConv.pdf.
- Murphree, M.W. 1996. Approaches to Community Participation. In Overseas Development Administration (ed.). *African Wildlife Policy Consultation. Final Report of the Consultation*. London: Overseas Development Administration, pp. 153-188.
- Murphree, M.W. 1993. *Communities as Resource Management Institutions*. Gatekeeper Series No. 36. London: International Institute for Environment and Development.
- Narayan, D., R. Chambers, M.K. Shah and P. Petesch. 2000. *Voices of the Poor: Crying Out for Change*. Oxford: Oxford University Press.

- Nicholson, M. 1981. The First World Conservation Lecture. Presented at the Royal Institution, 12 March 1981. Gland: IUCN – The World Conservation Union.
- Oates, John F. 1999. *Myth and Reality in the Rain Forest: How Conservation Strategies are Failing in West Africa*. Berkeley and London: University of California Press.
- Okoth-Owiro, P. 1988. Land Tenure and Land-use Legislation in Agroforestry Development. In D.D. Thomas, E.K. Biamah, A.M. Kilewe, L. Lundgren and B. Mochoge (eds.). *Soil Conservation in Kenya. Proceedings of the Third International Workshop*. Nairobi: Department of Agricultural Engineering, University of Nairobi.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.
- Pagiola, Stefano, Joshua Bishop and Natasha Landell-Mills. 2002. *Selling Forest Environment Services: Market-based Mechanisms for Conservation and Development*. London: Earthscan Publications.
- Peet, R. and M. Watts M. (eds.). 1996. *Liberation Ecologies: Environment, Development, Social Movements*. London: Routledge.
- Pimbert, M. and B. Gujja. 1997. "Village Voices Challenging Wetland Management Policies: Experiences in Participatory Rural Appraisal from India and Pakistan." *Natural Resources* 33 (1): 34-42.
- Pimbert, M. and J. Pretty. 1995. *Parks, People and Professionals: Putting Participation into Protected Area Management*. UNRISD Discussion Paper No. 57. Geneva: UNRISD, IIED, WWF.
- Pirot, J.-Y., P.J. Meynell and D. Elder. 2000. *Ecosystem Management: Lessons from Around the World. A Guide for Development and Conservation Practitioners*. Gland, Switzerland and Cambridge, UK: IUCN – The World Conservation Union.
- Poffenberger, M. and B. McGean. 1996. *Village Voices, Village Choices: Joint Forest Management in India*. New York: Oxford University Press.
- Posey, D. 1985. "Indigenous Management of Tropical Forest Ecosystems: The Case of the Kayapo Indians of the Brazilian Amazon." *Agroforestry Systems* 3 (2):139-158.
- Resor, J.P. 1997. "Debt-for-nature Swaps: A decade of experience and new directions for the future." *Unasylva* 48.
- Ribot, Jesse C. 2002. *Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation*. Washington, D.C: World Resources Institute.
- Rodda, Annabel. 1991. *Women and the Environment*. London and New Jersey: Zed Books.
- Roe, Dilys et al. (eds.). 2004. *The Millenium Development Goals and Conservation: Managing Nature's Wealth for Society's Health*. London: International Institute for Environment and Development.

- Sarin, M. 1998. *Who is Gaining? Who is Losing? Gender and Equity Concerns in Joint Forest Management*. New Delhi: Society for Promotion of Wastelands Development.
- Sayer, J.A. 1995. *Science and International Nature Conservation*. CIFOR Occasional Paper No.4. Jakarta: Centre for International Forestry Research
- Scherl, Lea M., Alison Wilson, Robert Wild, Jill Blochus, Phil Franks, Jeffrey A. McNeely and Thomas O. McShane. 2004. *Can Protected Areas Contribute to Poverty Reduction? Opportunities and Limitations*. Cambridge and Gland: IUCN – The World Conservation Union.
- Sen, Amartya. 1999. *Development as Freedom*. Oxford and New York: Oxford University Press.
- Shepherd, Gill. 2004. *The Ecosystem Approach: Five Steps to Implementation*. Gland, Switzerland and Cambridge, UK: IUCN – The World Conservation Union.
- Smith, R.D. and E. Maltby. 2003. *Using the Ecosystem Approach to Implement the Convention on Biological Diversity: Key Issues and Case Studies*. Gland and Cambridge: IUCN –The World Conservation Union.
- Sutherland, William J., Andrew S. Pullin, Paul M. Dolman and Teri M. Knight. 2004. "The need for evidence-based conservation." *Trends in Ecology and Evolution* 19 (6): 305-308.
- Tiffen, M., M. Mortimore and F. Gichuki. 1994. *More People, Less Erosion: Environmental Recovery in Kenya*. London: John Wiley.
- Turnbull, C. 1974. *The Mountain People*. London: Picador.
- UDRSS/VALEURS. 2002. The Economic Value of Wild Resources in Senegal: A Preliminary Valuation of Non-Timber Forest Products, Game and Freshwater Fisheries. Synthesis Report. *Utilisation durable des ressources sauvages au Sénégal/VALorisation des espèces pour une utilisation durables des ressources sauvages au Sénégal* (UDRSS/VALEURS).
- Uphoff, Norman. 1992. *Local Institutions and Participation for Sustainable Development*. Gatekeeper Series No. 31. London: International Institute for Environment and Development.
- Uphoff, Norman. 1986. *Local Institutional Development: An Analytical Sourcebook with Cases*. West Hartford, CT: Kumarian Press.
- Vayda, Andrew P. 1983. "Progressive Contextualization: Methods for research in human ecology." *Human Ecology* 11 (3): 265-282.
- Warner, Michael. 2001. *Complex Problems, Negotiated Solutions: Tools to Reduce Conflict in Community Development*. London: ITDG Publishing.

WCD (World Commission on Dams). 2000. Dams and Development: A New Framework for Decision-Making. An Overview of the Report of the World Commission on Dams. November 16, 2000.

WCED (World Commission on Environment and Development). 1987. *Our Common Future*. Oxford: Oxford University Press.

Wells, M.P., T.O. McShane, H.T. Dublin, S. O'Connor and K.H. Redford. 2004. The Future of Integrated Conservation and Development Projects. In T.O. McShane and M.P. Wells (eds.). *Getting Biodiversity Projects to Work: Towards More Effective Conservation and Development*. New York: Columbia University Press.

Western, D. and H. Giochio. 1993. "Segregation Effects and Impoverishment of Savanna Parks: The Case for Ecosystem Viability Analysis." *African Journal of Ecology* 31: 269-281.

Western, D. and R.W. Wright. 1994. The Background to Community-Based Conservation. In Western, D., R. Wright and S. Strum (eds.). *Natural Connections: Perspectives in Community-Based Conservation*. Washington, D.C: Island Press.

Wollenberg, E., J. Anderson and D. Edmunds. 2001. "Pluralism and the less powerful: accommodating multiple interests in local forest management." *International Journal of Agriculture, Resources, Governance and Ecology (IJARGE)* 1 (3/4): 199-222.

Wollenberg, E., D. Edmunds and J. Anderson. 2001. "Editorial." *International Journal of Agriculture, Resources, Governance and Ecology (IJARGE)* 1 (3/4): 193-198.

World Bank. 2004. *Partnerships in Development: Progress in the Fight Against Poverty*. Washington, D.C: The World Bank.

World Bank. 2001. *World Development Report 2000/2001: Attacking Poverty*. New York: Oxford University Press.

Wunder, Sven. 2001. "Poverty Alleviation and Tropical Forests: What Scope for Synergies?" *World Development* 29 (11): 1817-1833.

WWF. 1996. *WWF Statement of Principles: Indigenous Peoples and Conservation*. Gland, Switzerland: World Wide Fund for Nature International.

WWF. 1965. *The Launching of a New Ark. First Report of the President and Trustees of the World Wildlife Fund 1961-1964*. London and Glasgow: Collins.



High levels of rural poverty in many of the world's most biodiverse regions makes it an ethical and practical imperative to find more equitable and realistic ways of achieving conservation. Livelihoods of the rural poor and options for the conservation and sustainable use of biological diversity are so intimately entwined that they are better addressed through an integrated approach irrespective if the primary motivation is one of development or one of conservation.

The question is not about promoting poverty reduction over conservation, but about acknowledging that both poverty reduction and conservation are important objectives and that it is often necessary to address both in order to achieve either.

IUCN Forest Conservation Programme
Rue Mauverney 28
CH-1196 Gland, Switzerland
Tel: ++ 41 22 999 00 00
Fax: ++ 41 22 999 00 25
E-mail: forests@iucn.org
www.iucn.org/forest

IUCN Publications Services Unit
219c Huntingdon Road
Cambridge, CB3 0DL, United Kingdom
Tel: ++ 44 1223 277 894
Fax: ++ 44 1223 277 175
E-mail: books@iucn.org
www.iucn.org/bookstore

For more information contact: forests@iucn.org or visit: www.iucn.org/forest. The views and opinions expressed here within do not necessarily reflect those views or policies of IUCN – The World Conservation Union.