Evaluating Eden Series No.3

Community-based wildlife and ecosystem management in South Asia

Ashish Kothari
Neema Pathak
Farhad Vania

WHERE COMMUNITIES CARE

Community-based wildlife and ecosystem management in South Asia

Ashish Kothari, Neema Pathak and Farhad Vania

With contributions by:

Anwarul Islam, Kent Jingfors,
G.L. Anandalal Nanayakkara and Krishna Prasad Oli

February 2000

Kalpavriksh
and
International Institute of Environment and Development

Dedication

For Devaji Topa, Kanhaiyalal Gujjar, Raghu Jardhari, Muhammad Aslam, Ghulam Hussain, and thousands of other young people in villages who have held up the hope of a bright future for nature and communities in South Asia

Preface and acknowledgments

This draft report is part of a global series of regional surveys sponsored by the International Institute of Environment and Development (IIED), London. The South Asian Review was coordinated by a team of three Indian researchers (the principal authors), in their individual capacity. One of these three (FV) had to drop out in the final stages of the project, but was involved in the major part of the project.

Several dozen people have helped in this Review, providing information and insights, helping to set up contacts, clarifying doubts, and in many other ways making it possible for us to understand the situation in countries of which we had no previous experience. Our trips to Bangladesh, Bhutan, Nepal, and Sri Lanka were made considerably more educational and lively due to our interactions with these people. All those who made time to meet us (some more than once during the Review), as also those who provided information and opinions in the questionnaire we had sent out, are listed in Annexure 3. In addition, several people helped in the individual case studies and thematic papers, and would be acknowledged in their respective reports. Many thanks to all of them, in particular to the local community members who smilingly tolerated our incursions into their lives and extended us warm hospitality at all the study sites.

We would especially like to acknowledge some individuals who were key contacts. Very special thanks to those who took on the task of updating the respective country sections, coordinating individual case studies, and preparing thematic papers (pl. see Credits page for a full list). To all of them, our heartfelt gratitude, and the hope that this kind of collaboration can continue well into the future. Apart from these, the following were particularly helpful: Mingma Norbu Sherpa (WWF-Bhutan and WWF-Nepal), Anupam Bhatia (ICIMOD, Nepal), Bharat Shrestha (MODE, Nepal), Ashiq Ahmed (WWF-Pakistan), Avanthi Jayatilake and MFM Falil (formerly with USAID, Sri Lanka), Sherine Jayawickrama (formerly with NAREP/USAID, Sri Lanka), Leslie Wijesinghe (formerly with IUCN, Sri Lanka), Don Gilmour (formerly with IUCN Gland), and H.S. Panwar (formerly FAO Consultant, Colombo). In addition, the IUCN Environment Law Centre, Germany, helped us get hold of some elusive legislation. Vasumati Sankaran tried her best to drill some methodological sense into us and the various case study coordinators (how successfully, only she will be able to tell!), many thanks to her.

Useful comments on the first phase draft were received from Krishna Oli (IUCN, Nepal), Mingma Norbu Sherpa, Prabhu Budhathoki (Department of National Parks and Wildlife Conservation, Nepal), Kent Jingfors (IUCN, Pakistan), Christo Fabricius (formerly with IIED, London), and Avanthi Jayatilake.

Christo Fabricius, Dilys Roe, James Mayers, and Ross Hughes of IIED, of course, provided crucial support for the Review, especially keeping us in good humour through moments

of intense report-writing! Their comments on the draft of this report were valuable.

Thanks also to our former, hard-working team of computer operators and documentationists in Delhi, who helped in the first phase report: Sangeeta Kaintura, Vishal Thakre, Virender Anand, and Kheema Rawat. The academic environment of the Indian Institute of Public Administration (IIPA), which one of the Coordinators (AK) was attached to, was also very helpful. AK is also thankful to IIPA, and in particular to its Director M.C. Gupta, for the study leave granted to him to carry out the second phase of this Review.

Finally, the two Coordinating Team members (AK and NP) who shifted to Pune between the first and second phases of the Review, found a conducive office environment due to the constant cheer provided by Kalpavriksh members. Yashodhara Kundaji and Anuprita Patel were very helpful in keeping the administration and documentation in some intelligent order, the latter also in making some sense of the referencing. Sujatha Padmanabhan arrived just in time to give the report an editorial once-over which has probably saved many a reader from suffering our careless goof-ups. Neeraj Wagholikar helped translate some useful Marathi material.

As we do not intend this to be a one-time effort, but rather would like it to be a base for increasing networking in the region, we would be eager to constantly update the information and analysis given within it. The Review Coordination Team would therefore be grateful for any comments on this report, especially critical ones.

Ashish Kothari / Neema Pathak
Kalpavriksh
Aptmt. 5, Shree Dutta Krupa, 908 Deccan Gymkhana, Pune 411004, Maharashtra, India
Tel. and fax: 91-20-5654239
Email: ashish@nda.vsnl.net.in

Contents

List of Case Studies

Boxes and tables

BOXES

TABLES

Acronyms and abbreviations

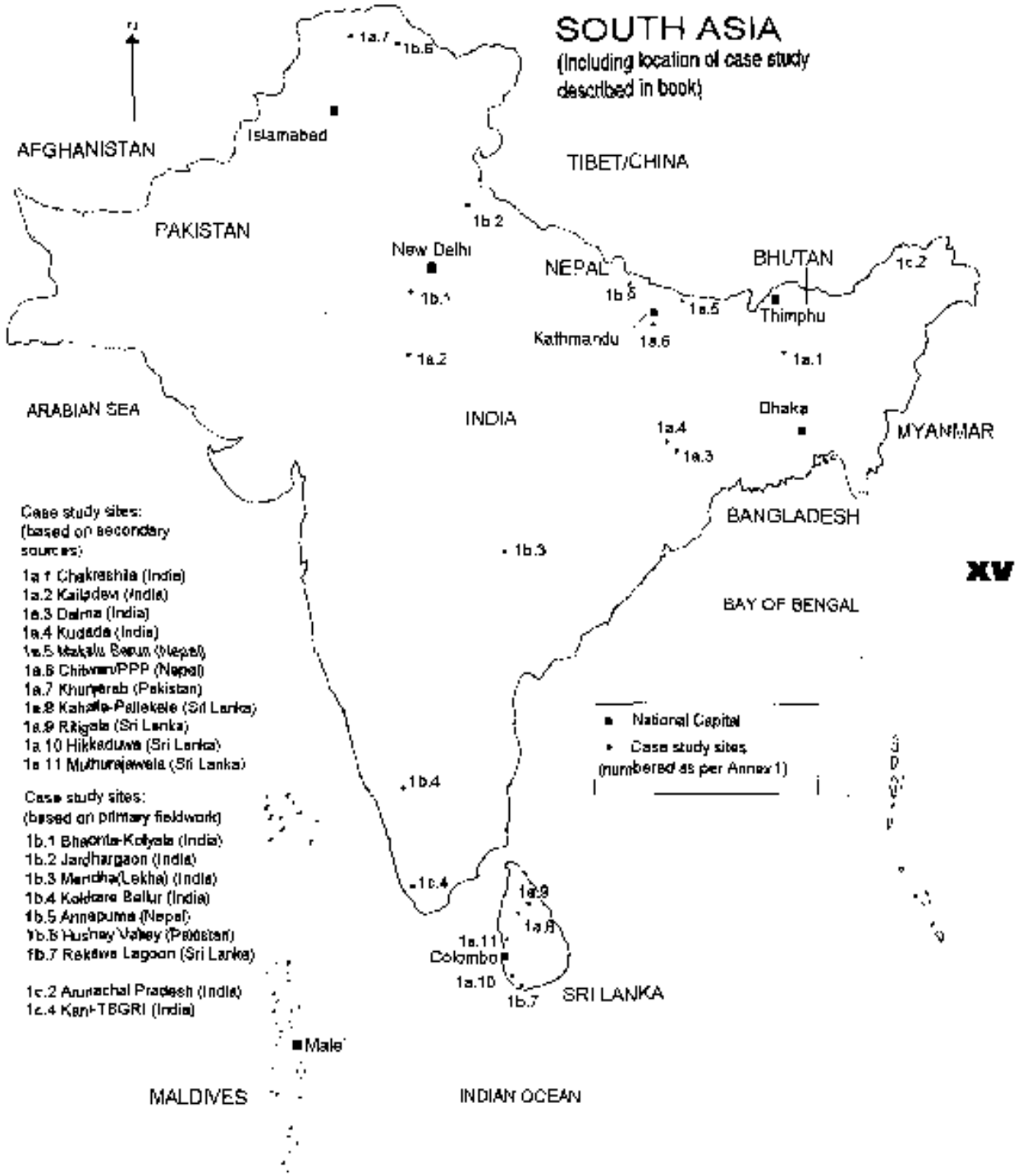
ACA/ACAP	Annapurna Conservation Area / Annapurna Conservation Area Project
ADB	Asian Development Bank
AKRSP	Aga Khan Rural Support Programme
ATBAHH	Association of Tourist Board Approved Hoteliers of Hikkaduwa
BAP	Biodiversity Action Plan
BCN	Biodiversity Conservation Network
BFI	Bhutan Forestry Institute
BR	Biosphere Reserve
BRT	Biligiri Rangaswamy Temple
BTFEC	Bhutan Trust Fund for Environmental Conservation
BZ	Buffer Zone
CAMC	Conservation Area Management Committee
CBC	Community-Based Conservation
CBO	Community-Based Organisation
CBR	Community Biodiversity Register
CBRM	Community-Based Resource Management
CCA	Community Conservation Area
CCD	Coast Conservation Department
CDC	Conservation and Development Committee
CDO	Community Development Officer
CEA	Central Environment Authority
CF	Community Forests
CFHC	Ceylon Fishery Harbours Corporation
CFP	Community Forestry Project
CHPMC	Community Health Post Management Committee
CKNP	Central Karakoram National Park
CP	Conservation Plan
CRMP	Coastal Resources Management Project
CRZ	Coastal Regulation Zone
CSC	Community Service Committee
CTB	Ceylon Tourist Board
CWM	Community Wildlife Management
CWS	Chakrashila Wildlife Sanctuary
CZMP	Coastal Zone Management Plan
DAC	District Advisory Committee
DCC	District Conservation Committee
DDC	District Development Committee
DFAR	Department of Fisheries and Aquatic Resources
DFID	Department for International Development (United Kingdom)
DFO	District Forest Officer
DM	District Magistrate
DMA	Devolved Management Area
DOF	Department of Fisheries, Sri Lanka
DOF	Department of Forests
DNPWC	Department of National Parks and Wildlife Conservation
DWLC	Department of Wildlife Conservation
ECA	Environment Conservation Act
ECR	Environment Conservation Rules

EIA	Environmental Impact Assessment
EPA	Environment Protection Act
FAO	Food and Agricultural Organisation (United Nations)
FCA	Forest Conservation Act
FD	Forest Department
FFPO	Fauna and Flora Protection Ordinance
FMP	Forestry Master Plan
FNCA	Forest and Nature Conservation Act
FO	Farmers' Organisation
FPC	Forest Protection Committee
FRMP	Forestry Resources Management Project
FSD	Forestry Services Division
FSMP	Forestry Sector Master Plan
FUG	Forest User Group
GCEC	Greater Colombo Economic Committee
GEF	Global Environmental Facility
GMC	Gompa Management Committee
GN	Grama Niladhari
GOP	Government of Pakistan
GRF	Government Reserved Forests
Ha.	Hectare(s) (= 2.5 acres)
HCCA	Hushey Community Conservation Area
HEC	Human Elephant Conflict
HGBBA	Hikkaduwa Glass Bottom Boat Owner's Association
HMG	His Majesty Government
HMS	Hikkaduwa Marine Sanctuary
HR	Hunting Reserve
HSAM	Hikkaduwa Special Area Management
HSAM/MSCC	Hikkaduwa Special Area Management/Marine Sanctuary Coordinating Committee
HSHRA	Hikkaduwa Small Hoteliers and Restaurant Association
HTL	High Tide Line
HVO	Hushey Village Organisation
HWLW	Honorary Wildlife Warden
ICDP	Integrated Conservation and Development Projects
ICLARM	International Centre for Living Aquatic Resources Management
IDRC	International Development Research Centre (Canada)
IFA	Indian Forest Act
ILO	International Labour Office
IMOF	Improved Management of Open Water Fisheries
IPR	Intellectual Property Rights
IUCN	World Conservation Union
JFM	Joint Forest Management
JPAM	Joint Protected Area Management
KMTNC	King Mahendra Trust for Nature Conservation
KNP	Khunjerab National Park
K/S/T	Knowledge/Skills/Techniques
KVO	Khunjerab Village Organisation
LCK	Local Community Knowledge
LDO	Local Development Officer
LTL	Low Tide Line

MAB	Man And Biosphere
MAF	Ministry of Agriculture and Forests
MBNP&CA	Makalu Barun National Park and Conservation Area
MBRCD	Maintaining Biodiversity in Pakistan with Rural Community Development
MDP	Mahaweli Development Programme
MEC	Muthurajawela Executive Committee
MFAR	Ministry of Fisheries and Aquatic Resource Development
MFARD	Ministry of Fisheries and Aquatic Resources Board
MMC	Muthurajawela Management Committee
MMD	Mahila Mangal Dal
MMNL	Muthurajawela Marsh and Negombo Lagoon
MOEF	Ministry of Environment and Forests
MOFL	Ministry of Fisheries and Livestock
MOH	Ministry of Health
MOL	Ministry of Land
MOT	Ministry of Transport
MP	Management Plan
MSC	Muthurajawela Steering Committee
MSCC	Marine Sanctuary Coordinating Committee
MSL	Mean Sea Level
MSTF	Muthurajawela Sanctuary Task Force
MTEWA	Ministry of Transport, Environment and Women's Affairs
MUPO	Muthurajawela United Peoples Organisation
NA	Northern Areas
NAFD	Northern Areas Forest Department
NARA	National Aquatic Resources Agency
NAREPP	Natural Resources and Environmental Policy Programme
NB	Nature's Beckon
NBSAP	National Biodiversity Strategy and Action Plan
NCCW	National Council for Conservation of Wildlife
NCS	National Conservation Strategy
NEC	National Environment Commission
NEMAP	National Environmental Management Action Plan
NEP	National Environment Policy
NFA	Nepal Forest Act
NFMP	National/New Fisheries Management Policy
NFP	National Forestry Policy
NGO	Non-Governmental Organisation
NHWAA	National Hreitage Wilderness Areas Act
NIRP	National Irrigation Rehabilitation Project
NLIFO	Negombo Lagoon Integrated Fisherman's Organisation
NORAD	Norwegian Agency for Development Cooperation
NP	National Park
NTFP	Non-Timber Forest Product
NUPO	Negombo United Peoples Organisation
NWFP	North West Frontier Province
NWSDB	National Water Supply and Drainage Board
OCF	Other Crown Forests
ORDE	Organisation for Resource Development and Environment
PA	Protected Area
PBR	People's Biodiversity Register

PEPA	Pakistan Environmental Protection Act
PESA	Panchayat (Extension to Scheduled Areas) Act
PF	Panchayat Forest (Nepal); Protected Forest (India, Pakistan)
PFNA	Private Forest Nationalisation Act
PMC	Programme/Project Management Committee
PNCS	Pakistan National Conservation Strategy
PPF	Panchayat Protected Forest
PPP	Parks and People Project
PRA	Participatory Rural Appraisal
PRF	Proposed Reserved Forests
PRIF	Pre-Investment Fund
RDF	Rekawa Development Foundation
RF	Reserved Forests
RGOB	Royal Government of Bhutan
RITICOE	Ritigala Community Based Development and Environment Management Foundation
RLFCS	Rekawa Lagoon Fishermen's Cooperative Society
RSNR	Ritigala Strict Nature Reserve
RSPN	Royal Society for Protection of Nature
SAMP	Special Area Management Plan
SAREC	Swedish Agency for Research Cooperation
SCI	Safari Club International
SEMP	Sustainable Environmental Management Programme
SFP	Social Forestry Project
SLCCA	Sri Lanka Coast Conservation Act
SNR	Strict Nature Reserve
SRLRDC	Sri Lanka Land Reclamation and Development Corporation
TBS	Tarun Bharat Sangh
TGM	Thanthirimale Gramodaya Mandalaya
TOP	Terms of Partnership
TRIPs	Trade Related Intellectual Property Rights Agreement
UC	Users Committee
UDA	Urban Development Authority
UG	User Group
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
USNPS	United States National Parks Service
VCC	Village Conservation Committee
VCF	Village Conservation Fund
VDC	Village Development Committee
VF	Village Forests
VIRP	Village Irrigation Rehabilitation Project
VMP	Village Management Plan
VO	Village Organisations
VPMC	Village Project Management Committee
VSS	Van Suraksha Samiti
VSSS	Van Suraksha Sahyog Samiti
WESE	Wayamba Environmental Science Explore
WGSP	Wayamba Govi Sanwardana Padanama
WJMS	Wana Jana Mithuro Sanvidanaya

WLPA	Wild Life (Protection) Act
WPC	Western Provicial Council
WR	Wildlife Reserve
WSB	Wildlife Society of Bangladesh
WWF	World Wide Fund for Nature


SOUTH ASIA
(Including location of case study described in book)
AFGHANISTAN
PAKISTAN
Islamabad
TIBET/CHINA
New Delhi
NEPAL
BHUTAN
Thimphu
Kathmandu
ARABIAN SEA
INDIA
Dhaka
MYANMAR
BANGLADESH
BAY OF BENGAL
Colombo
SRI LANKA
Male
MALDIVES
INDIAN OCEAN
Case study sites:
(based on secondary sources):
1a.1 Chakrashila (India)
1a.2 Kailadevi (India)
1a.3 Dalma (India)
1a.4 Kudada (India)
1a.5 Makalu Barun (Nepal)
1a.6 Chitwan/PPP (Nepal)
1a.7 Khunjerab (Pakistan)
1a.8 Kahalla-Pallekele (Sri Lanka)
1a.9 Rikigala (Sri Lanka)
1a.10 Hikkaduwa (Sri Lanka)
1a.11 Muthurajawela (Sri Lanka)
Case study sites:
(based on primary fieldwork)
1b.1 Bhaonta-Kolyala (India)
1b.2 Jardhargaon (India)
1b.3 Mandha(Lekha) (India)
1b.4 Kaldana Ballur (India)
1b.5 Annapurna (Nepal)
1b.6 Hushey Valley (Pakistan)
1b.7 Rekawa Lagoon (Sri Lanka)
1c.2 Arunachal Pradesh (India)
1c.4 Kanha TBGRI (India)
National Capital
Case study sites
(numbered as per Annex 1)

Introduction

1.1 Background to the report

This report is the outcome of the *South Asian Regional Review of Community Involvement in Wildlife Management* (hereafter referred to as the Review). This was conducted as part of a global series of regional reviews for the International Institute of Environment and Development's (IIED) project *Evaluating Eden: Assessing the Impacts of Community Wildlife Management.*

1.1.1 Objectives

Official wildlife conservation policies and programmes in the South Asian region, as in the rest of the world, have been instrumental in protecting some of what remains of its wild species and natural habitats. In particular, they have provided a barrier to the inexorable advance of the destructive developmental process and its ever-increasing demand for natural resources embarked on by all the countries of the region, and have also helped to contain growing pressure from human and livestock populations.

However, the same conservation policies have often generated considerable conflicts between the conservation agencies and local rural populations who depend on the conserved habitats and species for survival and livelihood. Until recently, these policies have ignored this dependence, as well as the traditional knowledge, practices, rights and responsibilities used by local communities to manage their environment. As a result, local communities feel alienated from conservation efforts, and express their hostility in many ways, including 'illegal' activities. In sum, top-down, elitist, and sometimes ill-conceived policies have caused widespread human suffering, and made it impossible to build up a mass support base for conservation. The final result is that, with political support for conservation programmes rapidly on the decline, wildlife habitats and species are increasingly being sacrificed for short-term political and economic gains. Added to this is a rapidly growing pressure on resources from an expanding economy and population, changing lifestyles, and break-down of traditional conservation practices.

As a counter-trend, there has been a large range of initiatives which involve communities in conservation, and which has generated a more grass-roots approach. These initiatives range from strengthening of spontaneous, traditional conservation approaches and practices, to state or donor-sponsored participatory conservation

projects. For the sake of convenience, these efforts are collectively referred to here as Community-Based Wildlife Management (CWM)[1]. This term means different things to different people, hence the Review has tried to consistently use a set of definitions which are popular and relevant to the region (see below, Definitions and Concepts).

There has been no systematic region-wide documentation of these efforts, and no attempt to analyse these initiatives from the regional and national perspective. Given this situation, the objectives of the Review were to:

1. Obtain a broad overview of the current status of CWM in the region.
2. Analyse the various issues arising out of CWM efforts, including policy implications.
3. Compile a database of CWM cases, resources (including contact persons), and bibliographic material in the region.
4. Initiate or strengthen networking amongst the key partners and others in the region, to help share experiences and information during and beyond the period of the Review.

1.1.2 Study area

The geographic scope of the project was South Asia, comprising of Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. (Maldives, though included in the initial plans, had to be left out of the Review due to unavailability of information and contact persons). This region has several common elements in terms of history, biodiversity, and culture; yet the region is also one of incredible ecological and cultural diversity. This paradox provides an exciting context in which to study CWM, making inter-country comparisons challenging and rewarding.

1.1.3 Scope

As explained below under Definitions and Concepts, the scope of the Review was quite large, since a broad definition of 'wildlife' was adopted. The study covered diverse initiatives ranging from forestry and wetland and marine fisheries management, to species protection with substantial community involvement. The common element in all of these was the conservation of wildlife and its habitat, even though this may not have been the primary objective of every initiative.

1.2 Outputs of the review

The Review has the following major tangible outputs:

1. A detailed overview report (this document), which puts together and analyses the information and experiences gathered from primary field work (no. 2 below), thematic/conceptual work (no. 3 below), and available secondary literature.
2. Eighteen case studies from four of the region's countries, which provide a detailed picture of CWM initiatives at specific sites (see below for list).
3. Four thematic reports, which take up cross-cutting issues relevant to CWM in the region (see below for list). These are summarised in Appendix 1.

---

[1] The authors prefer the more generic term "Community-Based Conservation" (CBC), as this covers the broader range of initiatives oriented towards ecosystem, plant, and animal conservation; however, CWM is used to match the terminology used in the other regional reviews of IIED's Evaluating Eden study.

4. A guide to CWM in South Asia, which provides a detailed, country-wise description of policies and laws relevant to CWM; a detailed country-wise bibliography of material relevant to CWM; key contact persons and organisations involved in CWM in each country.[2]

Apart from the above, the Review has resulted in much greater exchange of information and experiences, and has set the foundations for more systematic networking within the region (Chapter 11).

1.3 Methodology

1.3.1 Coordination and overview report

The Review of Community Involvement in Wildlife Conservation in South Asia was conducted by a Coordination Team consisting of Ashish Kothari, Neema Pathak, and Farhad Vania. These individuals have been working on local community involvement in conservation in India for several years, and affiliated to research and action groups such as the Indian Institute of Public Administration, and Kalpavriksh - Environment Action Group. This Coordination Team facilitated a series of case studies, thematic papers, and country updates that were carried out by institutional partners in each of the South Asian countries.

The Review used a variety of methods:

- A literature review
- A questionnaire sent to over 100 individuals and organisations in the region
- Visits to each of the countries in the region, with the exception of Pakistan (due to the prevailing political problems between India and this country) and Maldives (for logistical reasons)
- Detailed discussions with several dozen key individuals, including government officials, NGO and community activists, field workers, researchers and academics (the discussions were in many cases taped, and a transcript sent back to each concerned person, for confirmation and updating).
- Detailed, first hand case studies in identified CWM sites carried out by collaborating individuals or teams; these sites (again with the exception of Pakistan) were also visited by the Coordination Team.
- Commissioning of thematic papers from relevant experts to fill in analytical gaps in the understanding of CWM initiatives (summarised in Appendix 1).

As far as possible, the Review has been participatory, involving relevant stakeholders at every step. The concept of the study was made known to relevant partners in each country in the early stages. The first phase of the Review, essentially a desk-top assessment, resulted in a preliminary overview report which was sent out to several dozen key contacts for comments. In April 1998 a regional workshop was held in Rajasthan, India, to discuss the issues arising out of this overview, and to plan the detailed case studies and country-wise updates. This workshop also provided an opportunity for interaction among the Coordination Team, IIED representatives, country partners, case study investigators, and representatives from proposed case

[2] This guide is being finalised for publication as this book goes to press

study sites. The Coordination Team's existing experience from field sites in India was also availed of in full to compile this report.

1.3.2 Case studies

Seven case studies (Tables 1.1 and 1.2) were carried out as part of the Review. These were chosen on the basis of the following criteria, which emerged at the end of the first phase:

- Coverage of a range of countries in the region
- Coverage of a range of ecosystem types
- Coverage of a range of ethnic communities
- Coverage of a range of initiatives, including government, NGO and community-led
- Availability of an active partner at the site or nearby (if possible previously known to the Coordination Team), who could both conduct the study and use the results after the project ended.

Table 1.1 Case studies in India

Case study site	Characteristics
Mendha (Lekha), Maharashtra	Hilly forest area, tribal, forest dependent and farming, local community initiated forest conservation and village development along with self-governance systems
Kokkare Bellur, Karnataka	Plains predominantly cultivated area, farming mixed caste community, agriculture, NGO and local community initiated heronry protection
Jardhargaon, Uttar Pradesh	Himalayan foothills, farming mixed caste community, agriculture, local community initiated forest protection, seed revival, irrigation management
Bhaonta-Kolyala, Rajasthan	Arid hilly area, farming tribal and non-tribal mixed communities, agriculture, NGO and community initiated forest conservation, water harvesting

Table 1.2 Case studies from other South Asian countries

Case study site	Characteristics
Annapurna Conservation Area, Nepal	High altitude area, farming mixed communities, NGO and community managed, government supported, mountain ecosystem conservation and ecotourism
Rekawa Lagoon, Sri Lanka	Lagoon and coastal area, fishing and agriculture, university and NGO initiative with local community involvement for sustainable fisheries stock enhancement and coastal conservation
Hushey Valley, Pakistan[4]	High altitude area, pastoralism and agriculture, NGO and government initiatives with community involvement, for sustainable wildlife utilisation

[4] It may be noted here that the case study site taken for Pakistan, Hushey Valley, is believed by India to be within its national borders, and is shown as such in Indian maps. The fact that this report takes it to be within Pakistan is not a comment on which country's claims are legitimate, but simply an acknowledgment of the current status of territorial control over the area. This also holds true in the case of Khunjerab, Case Study 13, Chapter 7.

Eleven other case studies were put together from secondary sources. Summaries of the case studies for each country are listed at the end of each country chapter.

More case studies were chosen from India than the other countries because of resource constraints. The Coordination Team had already been involved in such efforts in India for the past few years, hence with limited resources it was possible to coordinate a larger number of studies.

Each of the above case studies has resulted in a detailed report published as a separate monograph, which describes in detail the methodology used.[4] Broadly, the studies attempted to involve local stakeholders, though the extent of this differed from case to case, depending both on the level of experience of the coordinator, and on local circumstances. In most cases, the draft reports were also translated into local languages and shared with village-level collaborators and residents for their comments. In some cases (Bhaonta-Kolyala, Jardhargaon, Mendha (Lekha)), expert ecological assessments were commissioned to assess the environmental impacts of the CWM initiatives.

1.3.3 Theme papers

During the study, a need was felt to commission some thematic papers, which could analyse cross-cutting issues amongst the various case studies and countries. The following theme papers were produced:

1. *Indigenous Knowledge, Genetic Resources, and Benefit-sharing: A Case Study from Kerala, India*, by R.V. Anuradha
2. *Benefit-sharing and Incentives for CWM: Legal Implications*, by Ashish Kothari and Neema Pathak
3. *Customary Law vis-à-vis Statutory Laws in CWM: Cases from Nepal and Arunachal Pradesh, India*, by Ruchi Pant
4. *Economic and Livelihood Implications of CWM*, by Sushil Saigal
5. *Legal Framework for CWM in Rajasthan, India*, by Sanjay Upadhyay

The theme papers have attempted to incorporate the lessons learnt from the case studies, and in turn, the case study coordinators were asked to keep in mind the above themes while doing their field work.

Each of these theme paper is summarised in Appendix 1, with the exception of the fifth one, which is briefly described in Box 5.5.

1.4 Limitations of the review

Although all efforts have been made to gather as much available information, and contact as many relevant persons as possible, it would be pretentious to claim that a comprehensive coverage of CWM in South Asia has been achieved by the Review. Undoubtedly, there are many aspects of CWM which we have not touched upon (such as, for instance, the impact of globalisation on CWM). Parts of the report are therefore likely to appear somewhat simplistic or inadequate.

[4] See the references in Appendix 3 for a full list.

Information is also not consistent across countries. Maldives could not be covered at all in the Review, due to the absence of a partner there. Bhutan was covered in the first phase, including a visit, but no partner was found who could do the updating or take part in other aspects of Phase II. Attempts to commission a case study in Bangladesh did not succeed. Due to the prevailing political situation (between India and Pakistan), the Coordination Team could not visit Pakistan at all in either phase, although active partnership with collaborators there partly made up for this.

Another weakness is that amongst the case studies selected, government-initiated CWM sites are comparatively few in number. Two had been originally earmarked for study (Keoladeo National Park, Rajasthan, India; and Muthurajawela Marsh and Lagoon, Sri Lanka), but both had to be dropped for compelling reasons. Fortunately, there is already considerable information on state-sponsored initiatives which was availed of by the Coordination Team to supplement the case studies.

1.5 Definitions and concepts

The various terms used in the conservation field have different meanings in different countries and contexts. In the South Asian context, the following definitions and concepts were adopted for the Review:

- **Community-Based Wildlife Management (CWM)** is a process of wildlife and habitat conservation where communities have a key or significant role in the decision-making process. This role could range from a consultative role for communities with management carried out by state or private agencies; to absolute control by communities over management functions, decision making, and conservation responsibilities.

- **Community-Based Conservation (CBC)** is essentially the same, except that the subject of conservation is wider, covering natural resources as a whole. Though many of the examples and case studies used in the Review belong to this wider category (see below), the term CWM has been used to maintain uniformity with other regional reviews of the *Evaluating Eden Project*.

- **Conservation** means the protection, and/or sustainable use, of species or ecosystems to ensure their long term survival and viability.
- **Wildlife** means all taxa of plants and animals residing on land, water, and air, and which are not cultivated or domesticated. This is a subset of the term biodiversity, which denotes both wild and domesticated plants and animals.

- **Community** (or **local community**) means a socially and geographically defined group of people living near, or dependent on, species/ecosystems that are sought to be conserved. This term does not imply that the group is internally homogeneous.

These definitions may differ from other regions of the world, and these differences should be examined and understood in the context of the *Evaluating Eden*[5] project as a whole.

1.6 Structure of the report

This overview report is structured as follows:

- This introductory chapter has explained the background and objectives of the Review, and the methodology and definitions used.
- Chapter 2 provides an ecological and socio-economic profile of South Asia
- Chapters 3 to 8 provide descriptions of the history and current status of wildlife/biodiversity conservation in general, and CWM in particular, in the six countries mentioned above.
- Chapter 9 draws out the major ecological, economic, social, and policy-level impacts of CWM in the region.
- Chapter 10 is a detailed regional analysis of the issues arising out of CWM experiences in these countries, and challenges facing the future of CWM.
- Chapter 11 highlights next steps at local, national, and regional levels.

Appendices provide the following:

- Appendix 1 summarises the theme papers listed in Section 1.3.3 above. .
- Appendix 2 lists the people who have contributed information and views to the Review.

1.7 A note on referencing

Sources to information are given in brackets in the text, and fully referenced at the end of the Review. **However, the case studies undertaken as a part of the Review have not been sourced every time they are mentioned.** For these, only the name of the case study site and the country it belongs to, are given (e.g. Mendha (Lekha), India, for the study on Mendha (Lekha) village listed in Table 1.1 above). A separate section in the references provides full citations to these case studies.

Viewpoints and information orally obtained from sources are given as "pers. comm." (viz. personal communication). The full name and affiliation of the person so mentioned appear in Appendix 2.

[5] South Asian partners have expressed some discomfort with the term "Evaluating Eden". The term has emerged from IIED's experience with African CWM initiatives. However, it is inappropriate in the South Asian context, both in its religious or mythological connotation (the Eden story is specific to one religion, and the major religions of South Asia, not to mention the hundreds of tribal belief systems, each have one or more different stories of origin), and in its unstated presumption of a state of 'wilderness'.

Profile of South Asia

Superlatives come easily to South Asia, the world's most populated subcontinent, and perhaps its most culturally diverse. Covering less than 3 per cent of the earth's surface, it also contains more than 8 per cent of its biological diversity.[6] The region displays the full range of social, economic, and developmental 'types': from the most so-called 'primitive' tribes to ultra-modern urbanites; from the most desperately poor to some of the world's richest families; from completely hunter-gatherer to predominantly hi-tech communities; and so on.

Though human beings probably first emerged in Africa, some of their earliest civilisational flourishes were in the South Asian region. Sophisticated tribal societies were already well-settled when invasions from the west brought in the races and ethnic communities that now dominate most parts of the region. Apart from hundreds of diverse tribal belief systems, many of the world's major organised religions originated here, including Hinduism, Buddhism, Sikhism, and Jainism. Islam and Christianity too have flourished here. By the early part of this millennium until about 200 years ago, South Asia was the global hub of sophisticated agriculture, industry, trade, and the arts. Many classical medicinal traditions now increasingly being promoted worldwide as 'alternatives' to conventional 'Western' medical practice also originated here, not to mention the myriad folk including tribal traditions that use several thousand species of plants and animals for all kinds of effective remedies to disease. The domestication of many of the most common animals in use today, including the cow, buffalo, and fowl also first took place here. Literally thousands of languages are still in use, though many 'localised' ones are getting eroded.

South Asia has three of the world's 18 biodiversity 'hot-spots', the Eastern Himalayas and Western Ghats in India, and south west Sri Lanka, containing 5,600 endemic species of higher plants (Myers 1988; Myers 1990). It has a large expanse of forest (Table 2.2), and a range of other extensive ecosystems, including a very large marine area.

A combination of factors have, however, severely threatened this biological diversity. Large-scale agricultural expansion in the last two to three centuries resulted in the clearing of forests, encroachment into grasslands, and filling in of wetlands. The colonial phase, through which most countries of the region passed, also witnessed a

[6] This is a very rough estimate. Precise figures for the region as a whole are not available, and it is not possible to simply add up national species figures, since there will be considerable overlap among the species listings of each country.

severe attack on natural ecosystems, in particular forests that were used by the colonial powers as critical sources of raw materials and revenue. The last few decades, even after the region's countries gained independence, have seen a rapid growth of industrial, developmental, and urban pressures, further destroying wildlife and natural habitats. The developmental model adopted for the region, largely borrowed from the industrial countries of the West, has proved to be singularly insensitive to both biological and cultural diversity. It has treated natural resources as mere raw materials, and rural populations as labour or a consumption class.

The move towards conservation of wildlife and biodiversity, and more specifically its community-based variant, has to be seen in the above context. Before this move is described in detail in the following chapters, however, it would be useful to present some basic data about each of the countries of the region. These are presented in Tables 2.1 to 2.3.

Despite the diversity of South Asia's seven countries, there are many areas of commonality: they have a common colonial past, they share a great deal of biodiversity amongst them, and their current natural resource management regimes are fairly similar. A comparative assessment of community-based conservation of biodiversity is therefore very fruitful, yielding both elements of diversity and uniqueness on the one hand, and of commonality on the other. Such an assessment could also reveal many areas where countries could learn from each other.

Comparing the South Asian region with the rest of the world, too, is likely to be instructive. There are critical differences: in Africa, wildlife management essentially seems to refer to the use and management of large mammals or birds. In the South Asian region, there is much greater interaction with (especially consumptive use of) wild plants than with wild animals, though in tribal, marine, and some mountain belts, both are widespread. Also throughout the region there is considerable emphasis on habitat management and conservation, by both the government and by NGOs and communities. Finally, there is considerable overlap between the management of wild and domesticated biodiversity resources, especially in traditional communities. Hence, as explained in Chapter 1, the South Asian Review has examined a large range of initiatives ranging from forest and wetland management to the conservation of wild animal populations. The common element, of course, is the conservation of wildlife or biodiversity, as defined above, either as a deliberate or as an incidental benefit.

Such a comparative study must begin by understanding the historical and contemporary models of wildlife and biodiversity conservation that each of the countries of the region have followed. These are examined in the following chapters.

Table 2.1 SOUTH ASIA OVERVIEW[7]

Total land area:	4,456,000 sq km
Total population (1995):	1,218 million
Forest area in 1980 (and % of total land area):	706,000 sq km (15.8%)
Forest area in 1990 (and % of total land area):	662,000 sq km (14.8%)
Loss of forests per annum:	0.6%

[7] FAO 1993; World Bank 1997. Note that the total figures for forest cover and population in South Asia in Table 2.1, do not match with the tally of forest cover and population from individual countries in Table 2.2, as the latter data are from different years.

Table 2.2 **COUNTRY-WISE PHYSICAL & ECOLOGICAL PROFILE**

Categories[8]	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
Total area (sq km)[9]	147,570	46,000	3,287,263[10]	147,181	8,82,000[11] or 7,96,095[12]	65,000
Topography & climate[13]						
Topography	Flood plains and deltas of the Ganges, Brahmaputra and Meghna across most of the country except few south-east (Chittagong) and northeast (Sylhet) hilly areas and adjoining pied-mont planes.	Himalaya mountain ranges throughout, except some plains/foothills to the south along border with India.	High mountains of the Himalaya in the north and north-east; Thar desert in the west; plains across most of north-central India; Deccan Plateau flanked by hills of Western and Eastern Ghats; extensive coastline and two major island chains.	High mountains of trans-Himalaya in the north, middle Himalaya in the central region and terai plains to the south.	High mountains to the north, plains in the central region, deserts to the south-east and south-west, large coastline.	An island nation, with a central moun-tain mass rising from a low, flat plain sur-rounding it on all sides and extending to the sea.
Climate	Summer (March-May), monsoon (June-October), win-ter (November-February)	Wet summer mon-soon (May-August) and dry winter (September-April)	Summer (March-June), monsoon (July-September), winter (October-February), second monsoon in parts (October-November)	Wet summer monsoon (June-September), dry winter (October-April)	Summer (March-July), monsoon (July-September), winter (October-February)	Summer (February-April), two mon-soons (May-September & November-March)
Altitudinal range (m)	Sea level-1,230	200-7,500	Sea level-8,598	100-8,848	Sea level-8,611	Sea level-2,524

[8] Sources for the data in each row are as given with the category heading, except where otherwise mentioned with the specific data.
[9] World Bank 1997
[10] Government of India 1997. (Note: this figure includes Pakistan Occupied Kashmir).
[11] Including northern areas and Azad Kashmir
[12] Excluding northern areas and Azad Kashmir
[13] World Bank 1997.

Categories[8]	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
Average annual precipitation (cm)	300	500	~30 to 450	163[14]	35[15]	250
Temperature range	9° - 40° C	Sub-0° - 30° C	Sub 0° - 48° C	Sub-0° - 230 C	Sub-0° - 50° C	160 - 35° C
Climatic/geographical zones	Coastal, humid tropical, semi arid.	Sub-tropical, mid-montane and Himalayan.	9 biogeographic[16] zones from coastal to tropical to Himalayan and trans-Himalayan.	Humid tropical plains to Himalayan.	Coastal, arid tropical, Himalayan to trans-Himalayan cold desert.	Wet, dry and intermediate tropical zones
Natural ecosystems & protected areas (PAs)						
Total area under forests (sq km) in 1990[17]	22,584	32,000	633,397	50,000	42,240	17,000
Forest land as % of total land area	7.9	70	19.27	36	5	26
Annual deforestation ('000 sqkm) in 1980-90	0.4	Not available	7.42[18]	0.5	?	0.3
Wetlands (sq km) in 1989[19]	67,700	85	54,700	356	8,580	2,740
Mangroves (sq km)	4,014[20]	0	4827[21]	0	1,300[22]	60 to 130[23]
Total area ('000 sq km) under p.a.	2.253[24]	9.978[25]	148.193[26]	24.272[27]	91.7[28]	8.193[29]

[14] Kenting Earth Science Report 1984.
[15] Khanna and Sudarshan 1997.
[16] Rodgers and Panwar 1988.
[17] All forest data from World Bank 1997, except India, from Forest Survey of India 1997; and Pakistan, from Pakistan Forest Institute 1996.
[18] Data for the period 1981-83 to 1993-95.
[19] Scott and Poole 1989. Includes total area of listed wetlands only (except where otherwise mentioned).
[20] Md. Anwarul Islam, pers. comm., 1999.
[21] Forest Survey of India 1997.
[22] Sufiullah 1997.
[23] Anandalal Nanayakkara, pers. comm. 1999.
[24] Ali and Ghulam 1998.
[25] WCPA/IUCN 1998.
[26] Ministry of Environment and Forests 1998.
[27] Sharma 1998.
[28] GoP 1998.
[29] Wijesuriya et.al. 1998.

Categories[8]	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
PAs as % of total land area[30]	1.5	21.69	4.2	16.5	10.4	12.61
Total no. of PAs	15	9	533	18	225	72
Categories of protected areas in order of protection level (and corresponding IUCN classification)[31]	National Park (V); Wildlife Sanctuary (IV), Game Reserve (VI)	Strict Nature Reserve (I); National Park (II); Wildlife Sanctuary (IV)	National Park (II); Sanctuary (IV)	National Park (II); Wildlife Reserve (IV); Conservation Area (VII); Hunting Reserve (V); Buffer Zone (VI)	Wildlife Sanctuary (I); National Park (II); Game Reserve (IV)	Strict Nature Reserve (Ia); Nature Reserve (Ib); Conservation Forest (I); National Park (II); Sanctuary (IV-V); MAB Reserve (I-V); Jungle Corridor; Refuge; Marine Reserve;Buffer Zone
Agriculture & animal husbandry[32]						
Arable land (ha per capita) in 1994	0.073	Not available	0.19	0.11	0.17	0.11
Agricultural land as % of total land area in 1994	59.5	16	57	17	28	29
Permanent pasture as % of total land area in 1994	5	Not available	4	15	6	7
Total livestock	36,288,025	435,398[33]	500,000,000[34]	Not available	122,500,000[35]	28,616,000[36]

[30] Includes all areas notified under law for the purpose of wildlife conservation
[31] WCPA/IUCN 1998. For Sri Lanka, also Anandalal Nanayakkara, pers. comm. 1999.
[32] World Bank 1997.
[33] Includes cattle, yak and sheep
[34] Ministry of Environment and Forests 1990.
[35] GoP 1998.
[36] Includes cattle, buffaloes, goats, and pigs

Categories[8]	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
Species diversity[37]						
Total no of mammal species	118	160+	390	175	174	88
No of mammal species threatened	36	Not available	75	26	20	4
Total no of bird species	661 (including migratory birds)	800+	1,232	836	668	428
No of bird species threatened	35 (resident birds)	10	55	9	25	11
Total no of reptile species	124 (66 threatened)	19	456	111	177	144
Total no of amphibian species	20 (10 threatened)	24	209	36	22	39
Total no of fresh water fish species	260 (58 threatened)		2,546 (fresh and marine)			
Total no of marine fish species	460-475		(as above)			
Total no of higher plants	5,000	5,000+	15,000	6,500	5,700	3,000
No. of higher plants threatened	30	Not available	1,256	21	Not available	8

[37] Data for various countries:
Bangladesh: Md. Anwarul Islam, pers. comm. 1999; Khan 1982
Bhutan: Sherpa ist.
India: Alfred et al. 1998 (for fauna); Ministry of Environment and Forests 1994 (for flora). (Note: the number of threatened mammal species refers to those listed in Schedule I of the Indian Wild Life (Protection) Act, though experts feel that many more species are probably threatened).
Nepal: Tiwari 1998 (for mammals and birds); World Bank 1997 (for higher plants); WCMC 1992 (for reptiles and amphibians).
Pakistan: Government of Pakistan 1998.
Sri Lanka: World Bank 1997 (for mammals, birds, and higher plants); WCMC 1992 (for reptiles and amphibians).

TABLE 2.3 COUNTRY-WISE SOCIAL, ECONOMIC AND POLITICAL PROFILE

Categories[3]	Bangladesh	Bhutan[38]	India	Nepal	Pakistan	Sri Lanka
Population[39]						
Total population (millions) in 1995	120	0.6	939[40]	21	131[41]	18
Population density (no of persons/sq km) in 1995	813	13	285[31]	157	169	280
Urban population as % of total (1970-1995-2015)[42]	8-18-31	3-6-12	20-27-36	4-10-18	25-34-47	22-22-32
Average annual population growth rate (%) 1995-2010	1.53	Not available	1.3	2.2	2.5	1.1
Major religious communities[43]	M; H; Indigenous groups	B; H	H; M; S; C; J;(7% tribal groups of population)	H; B; few C, M, S, J	M; a few H	B (70%); H (15%); M (7.5%); C (7.5%)

[38] NIC 1992. Data for Bhutan has been obtained from this source, unless stated otherwise.
[39] World Bank 1997 (except where otherwise stated).
[40] Government of India 1997. (Note: the population figure is of 1996).
[41] 1998 Census data of Pakistan.
[42] UNDP 1998.
[43] M: Muslims; H: Hindus; C: Christians; J: Jains; S: Sikhs; B: Buddhists

Categories[3]	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
ECONOMIC/SOCIAL DEVELOPMENT[44]						
GNP per capita (in US$) in 1995	240	420	340	200	460	700
Major occupations (in rural areas)	Agriculture, fisheries	Agriculture, forest-based, pastoralism	Agriculture, forest-based, pastoralism, fisheries	Agriculture, pastoralism, forest-based	Agriculture, pastoralism	Agriculture, fisheries
Human Development Index rank in world[45]	147	155	139	152	138	90
Gender Development Index rank in world[46]	140	147	128	148	131	70
POLITICAL STRUCTURE						
Form of government	Multi-party democracy	Monarchy	Multi-party democracy	Constitutional monarchy with multi-party democracy	Multi-party democracy; occasional periods of military government	Multi-party democracy

[44] World Bank 1997.
[45] Combination of life expectancy at birth, adult literacy rate, per capita GDP, and other such attributes; from UNDP 1998.
[46] UNDP 1998.

Wildlife conservation in Bangladesh

3.1 History of conservation

Bangladesh achieved independence in 1971, before which its political identity had been that of East Pakistan for nearly a quarter of a century, and prior to that it had been a part of colonial India under the British. For the pre-independence period there is little information available on wildlife conservation in Bangladesh, let alone on CWM. It can only be assumed that the approach taken in colonial India (Chapter 5) would have been similar in this region too.

On the whole the environmental picture in Bangladesh appears particularly grim, with an unprecedented rate of forest loss, rampant poaching of wildlife, destruction and pollution of waterbodies, degradation of coastal areas, periodic devastating floods, and an apathetic administrative system. The felling of trees for timber and fuel and encroachment on forest areas have reduced the total reserve forest area by 50 per cent in the last 20 years (MoEF Bangladesh, 1995). The present rate of forest destruction (2.49 per cent or 24.28 ha per year on average) is the highest in South Asia, and ninth highest in the world (CANSA *Newsletter* 1993). Presently, scientific management of wildlife is very inadequate; although to its credit, in 1998 the government declared a ban on shooting, killing, trapping of all wildlife in the country for the next five years. IUCN-Bangladesh is in the process of preparing a national list of threatened fishes, amphibians, reptiles, birds and mammals. It has revealed that more than a dozen species of wild animals have become extinct in this country. Another 58 freshwater fishes, 10 amphibians, 66 reptiles, 35 resident birds and 36 mammals are now threatened in their present habitats.

However, there are several initiatives that are attempting to take stock of the situation and look for alternative systems of management. In addition, since the 1970s several environmental/conservation NGOs have been established in the country and many others have introduced a component of conservation in their ongoing activities. A World Conservation Union (IUCN) office was established in 1991, and has been providing support and advice to both government and NGOs on all aspects of conservation. It has assisted with the development of the National Conservation Strategy (see below). NGOs in Bangladesh play a vital watchdog role and several are powerful enough to influence policy and government directly.

3.2 Towards CWM

3.2.1 Protected areas

The *Bangladesh Wildlife (Preservation) (Amendment) Act, 1974* protects wildlife both within and outside protected areas. Wild animals are classified as game and protected animals. Game animals can be killed or hunted by obtaining a permit whereas protected animals are given very stringent protection. The Act provides for three categories of protected areas, Wildlife Sanctuary, National Park, and Game Reserve, corresponding to IUCN categories IV, V, and VI, respectively (Table 2.2). They have varying degrees of restriction on human activities:

- A Wildlife Sanctuary has severe restrictions on human activities: no person can enter or reside in it. Certain specified acts like cultivation, hunting etc. are prohibited, though the government may, for scientific purposes or for aesthetic enjoyment or betterment of scenery, relax all or any of the specified prohibitions.
- A National Park is defined as a comparatively large area of outstanding scenic and natural beauty with the primary objective of protection of scenery, flora and fauna in the natural state, to which access for public recreation and education and research may be allowed. Certain specified acts like hunting, felling of trees, clearing land for cultivation, mining etc. are prohibited. However, the government may relax any or all of the specified prohibitions. Further, the construction of hotels etc. is allowed, even though it may not be very desirable in terms of protection of wildlife.
- A Game Reserve is defined as an area designated for the protection of wildlife and increase in the population of important species, where capturing of wild animals is unlawful.

All the protected areas in the country have been established within Reserved Forests, forest areas which were taken over and notified by a Forest Department (FD) set up in colonial times (see below). This department has a statutory responsibility to protect wildlife and manage these protected areas. PAs can be established in any area i.e. on both state and private land. However, the process of declaration, or of acquisition of land or settlement of rights, is not mentioned in the Act. Nor does it provide for any kind of participation of the local communities or other stakeholders in management or protection of wildlife.

Roughly 2,200 sq km (1.5 per cent) of the country comes under protected areas including four national parks, nine wildlife sanctuaries and one game reserve (Ali and Habib 1998). Under the Bangladesh Forestry Master Plan additional protected areas are proposed in the Sylhet, Tangail, Chittagong and Cox Bazar Forest Divisions.

The Act also provides for the constitution of a Wildlife Advisory Board by the government, and this was constituted at the national level in 1977. There is provision for inclusion of non-governmental individuals in this Board.

As in the rest of South Asia, conventional protected area policy and programmes have been insensitive to local people's rights and needs, and there is little flexibility in their application. Many conflict situations may arise due to this: for example, when an area with substantial human population and dependence is declared a

wildlife sanctuary, the law then requires the termination of activities and the displacement of the people. Chunati Wildlife Sanctuary in the south-east, declared in 1986, is a classic example of this conflict situation (Md. Anwarul Islam, pers. comm. 1999).

CWM approaches in and around PAs in Bangladesh are very recent, and mostly at a proposal stage (Ali and Habib 1998). For instance, an Asian Development Bank (ADB) aided Forestry Sector Project is proposing collaborative management in some of the country's PAs; in addition participatory approaches are being promoted through the World Bank Forestry Resources Management Project (FRMP) project for 13 PAs. The Global Environment Facility and ADB have been approached for such a conservation strategy for the Sundarbans. However, these experiences are much too recent to draw any conclusions.

3.2.2 Forests

Like India and Pakistan, Bangladesh too still follows the colonial *Forest Act, 1927*. Subsequent to Bangladesh acquiring independence in 1971, the first National Forest Policy was adopted in 1979. Though the policy recognised the important role played by forests in sustainable development, conserving soil, maintaining ecological equilibrium, and producing timber, firewood and other products, its major emphasis was on commercial utilisation. It stressed the need to increase timber resources by establishing large-scale plantations, and setting up forest-based industries. Some mention was made of the need for conserving forests and wildlife. The policy was revised and a new National Forest Policy was adopted in 1995, with a greater conservation focus. This policy proposes:

- To increase Bangladesh's forest cover from less than 10 per cent to 20 per cent by the year 2015;
- To include 10 per cent of state-owned land in protected areas;
- To provide protection for natural forest areas whilst encouraging investment in afforestation and agroforestry.

In 1989 a Ministry of Environment and Forests was established in Bangladesh. The Forest Department (a continuation of the department set up in colonial India, of which Bangladesh was then a part), within the Ministry, administers the country's forest areas.

Fuelwood only meets some 16 per cent of the domestic energy requirement, with 84 per cent coming from agricultural residue (Rahman 1995). Several social forestry projects have been tried in the past by the Forest Department, sometimes in collaboration with NGOs. One example is the Chittagong hill tracts where some natural forest still remains in protected areas. Another is Community Forestry Project 1 (CFP1),[47] the largest government tree planting project, covering 23 of the 64 districts in the country. The remaining districts will be covered in the second Social Forestry Project. However, it is universally acknowledged that these have mostly been failures, with only a few isolated pockets showing any measure of success.

[47] The CFP was launched in 1982 by the Forest Department (FD) of the then Ministry of Agriculture and Forest (MAF). It was executed by the FAO and jointly funded by the ADB and UNDP.

Large scale deforestation leading to siltation in rivers, estuaries, and around off-shore islands, has been reported from this part of Bangladesh (Anon. 1996). One major cause of the failure of community and social forestry projects is the gender inequity in these programmes. Male beneficiaries have reportedly tended to undermine the capabilities of their women counterparts. The mangrove forests of Bangladesh have also been seriously depleted. Once covering virtually the entire coastline of the country, they have now been reduced to a few patches with most of the mangrove areas being cleared for shrimp farming, salt production and agriculture.

The Sundarbans, part of the country's immense deltaic region, comprise 44 per cent of all the natural forest in Bangladesh (Ali 1994), and together with the Sundarbans in India, forms the largest mangrove forest in the world. It appears that during the colonial period parts of the Sundarbans forests were leased out to settlers and large areas converted to agriculture. In 1876 some parts of the Sundarbans were declared as Reserved Forest and since then several management plans have been drafted and implemented. All the management plans have focused on the economic potential of the Sundarban forests to supply timber, fuelwood, pulpwood, thatching material and a range of other non-timber forest products (Chowdhury and Ahmed 1994). It was not until 1977 that 32,386 ha of the Sundarbans were brought under three protected areas.

The Government of Bangladesh adopted a National Environment Policy (NEP) in 1992. It identified fast depletion of forest resources as a major environmental concern. Therefore, it adopted the following aims:

- Conserve, expand and develop forests to maintain ecological balance and meet socio-economic needs
- Include tree plantation programmes in all relevant development efforts
- Put a halt to the shrinkage and depletion of forest cover and forest resources
- Develop and encourage use of substitute of forest products
- Conserve wildlife and biodiversity, strengthen related research and help dissemination and exchange of knowledge in this field
- Conserve and develop wetlands and protect migratory birds

The NEP also recognises that active participation of people at all levels is essential to conserve and properly utilise natural resources.

3.2.3 Wetlands and fisheries

The major ecosystems in Bangladesh are marine and freshwater bodies and wetlands, with an estimated four million hectares of freshwater bodies and 66,400 sq km of coastline and continental shelf. A significant proportion of the population is dependent, directly or indirectly, on fishing as a source of livelihood. Some 80 per cent of the protein requirements of the population are met by fisheries, an occupation which seasonally engages 75-85 per cent of all rural households. Hence it is important that a review of CWM in Bangladesh includes the issue of water and fisheries.

In pre-colonial Bangladesh fishery resources and waterbodies were managed as common property through a complex tenure system enforced by the local

communities themselves. During the British period a new tenurial system was introduced by giving *zamindars* (landlords) exclusive ownership and rights of use over water bodies within their estates. However, communities continued fishing by paying taxes in exchange for the right to fish. The system also served to regulate harvest and fish quantities. The *East Bengal State Tenancy Act* of 1950 abolished the *zamindari* system and handed over total control of water bodies to the Ministry of Lands, as well as the Department of Fisheries under the Ministry of Fisheries and Livestock (with an additional 25 departments and 13 ministries also responsible for some aspects of water and/or fishing!) (Capistrano et al. n.d.).

Deputy Commissioners were appointed in each of the country's 64 districts to oversee the leasing of water bodies and revenue collection from fish harvest. According to government regulations, priority was to be given to traditional fisherfolk or fisher-people's cooperatives. However, this is reported to have seldom happened, with a powerful nexus of fish contractors, middlemen, politicians and moneylenders ensuring that local communities almost never got their due. Traditional fisherfolk in Bangladesh, primarily poor low caste Hindus, have lost out to more recent Muslim entrants to the trade, who have closer links to lobbies with finance and technologically advanced fishing gear (Capistrano et al. n.d.).

An estimated 4,000 beels (inland lakes) of Bangladesh have been severely disrupted due to a combination of factors, including the adoption of Green Revolution farming techniques, particularly the planting of rice in winter; reclamation, and blockage of *in/out flows. Compounding these is a faulty water sharing policy between India and* Bangladesh over the Ganges and Brahmaputra, which has led to water shortages in Bangladesh at critical times especially when required to regenerate the beels (Anon nd.). Ecologically too there appear to be serious changes taking place, though reliable information in the absence of any studies or monitoring is not available. Fish catches are steadily declining; once abundant species are increasingly hard to come by; several species of fish are feared to have gone extinct. Neglected for several years, the government has recently turned its attention to the fisheries sector with a two-fold approach: first, to stock the floodplains of Bangladesh with carp (funded mainly by the World Bank and the ADB) and second, active promotion of aquaculture (funded mainly by ODA and DANIDA). The impact of this policy on traditional fishing practices and indigenous species of fish has been questioned (Capistrano et al. nd).

In an attempt to exert some control on the rate of extraction of fish and to ensure that those heavily dependent on fisheries for their livelihood have access to them and are given priority in lease arrangements, the Ministry of Fisheries and Livestock (MoFL) initiated the New Fisheries Management Policy (NFMP) in 1986. Under this policy, the authority to manage the water bodies has been transferred from the Ministry of Land (MoL) to the MoFL/Department of Fisheries (DoF) (Capistrano et al. n.d.). However, many of these water bodies remained under *de facto* control of the MoL, which continued to lease out the water bodies despite the NFMP (Naqi 1989). Seen as an aquatic form of land reform, the NFMP has the following objectives:

- To improve and sustain open water fisheries production;
- To provide traditional and full time fisherfolk a greater share of fishing income;
- To encourage fisheries conservation (Capistrano et al nd).

Following several attempts to implement the NFMP in innovative ways, experiments are underway for promoting community-based fisheries management arrangements as part of a project between the Department of Fisheries, several Bangladesh NGOs, the International Center for Living Aquatic Resources Management (a Manila-based research organisation) and the Ford Foundation. It is hoped that this approach will contribute to poverty alleviation, social equity and fisheries conservation through partnership arrangements between the government, NGOs and communities. Capistrano et al. (n.d.) have observed that *"ultimately, management approaches framed through negotiations among the various users and stakeholders of the water bodies, including those who may not be fisherfolk but whose activities impact on the fisheries, can be the only viable long term solutions to reversing the resources continuing degradation"*.

3.2.4 Conservation policy and legislation

National Conservation Strategy (NCS): In 1986, IUCN offered to develop a National Conservation Strategy (NCS) for the proposed Ministry of Environment and Forests in Bangladesh (the MoEF was set up in 1989). A draft was accepted by the Government of Bangladesh in 1994. Eighteen different sectors of the economy have been covered in the NCS with recommendations on how to incorporate an element of conservation of resources and sustainability of use in each.

The NCS is functioning in collaboration with government ministries, academic and technical institutions and NGOs in Bangladesh. The major outputs envisaged include: incorporation of conservation concerns in development policies of the country; drafting of management plans for ecologically sensitive areas; promotion of environment education; and development of relevant conservation-related skills through training (MoEF Bangladesh 1991). The first phase of implementation, funded by the Norwegian Aid agency, ended in June 1999 and has covered specific examples of four distinct ecosystems: tropical forests, coral reefs, wetlands and the Barind (dry land) Tract. Tanguar haor (large marshland) covering an area of 1566 ha and comprising 46 beels (small marshlands) has been identified as another project area under the NCS.

On forestry, the NCS states that the 1979 Forest Policy should be revised to emphasise the conservation of vulnerable watersheds, protection of forests on steep slopes and afforestation of banks in such areas, preservation of genetic diversity, and people's participation through social forestry and community forestry.

National Environment Management Action Plan (NEMAP): One of the first tasks the newly formed MoEF took up was the drafting of a National Environment Management Action Plan (NEMAP), under sponsorship of UNDP. The objectives of NEMAP are to identify key environmental issues; conserve and improve the environment; reduce environmental degradation and promote sustainable development; and generally raise the quality of human life. The NEMAP process has attempted to incorporate the views of a wide cross-section of interests ranging from those of individuals to communities; community organisations, NGOs and donors; political parties and government agencies; industry and business houses; academic/research institutions, lawyers, media-persons and journalists. This has been possible through a series of country-wide workshops (MoEF Bangladesh, 1995).

Sustainable Environment Management Programme (SEMP): The UNDP-funded SEMP is a follow up to the NEMAP. This programme, begun in the late 1990s, is being executed by the MoEF and implemented by 22 sub implementing agencies over a period of five years. SEMP is expected to benefit grass-roots level populations, particularly women in environmentally important areas. It will support community capacities for sustainable resource management, and strengthen the capacity of the public sector to develop policies that enhance community participation and sustainable natural resource management.

The Bangladesh Environmental Conservation Act, 1995 (ECA 1995): This was enacted for environment conservation, environmental standard development and environment pollution control and abatement. ECA 1995 is currently the main legislative framework relating to environmental protection in Bangladesh. The Environment Conservation Rules, 1997 (ECR 1997), are the first set of rules which have been promulgated under the ECA 1995. The major aspects covered by ECR 1997 are the National Environmental Quality Standard; requirements and procedures to get environmental clearance; requirement of Initial Environmental Examination and Environmental Impact Assessment for any project.

Wildlife conservation in Bhutan[48]

With its low population, largely intact forest cover and closely monitored development policy, Bhutan represents a significant opportunity for innovations in CWM. The management planning process for its protected areas and its community forestry programme have actively consulted local communities and provided for certain customary uses to continue. These are an indication of the direction the country is taking for its conservation policy. However, since these are only in their initial stages of implementation, it remains to be seen how effective they will be, and whether in fact the absence of a democratic process of governance will hinder or aid the development of CWM initiatives.

4.1 History of conservation

Bhutan has always been somewhat of a mystery to the outside world, which knows very little of its internal dynamics. This also extends to the history of conservation in the country. Whilst colonial administrators, explorers, botanists and others travelled the country providing anecdotal accounts of the natural resources and lifestyle of the people, these do not provide much useful information on CWM in particular, and conservation in general.

Bhutan has never been under colonial rule. A theocratic system of government was established in the 17th century, prior to which Bhutan had been an area of several warring factions. In 1907 the Wangchuk dynasty ruled all of Bhutan with the accession of their king to the throne. His Highness Jigme Singey Wangchuk, the present king, is from the same dynasty. Several authors (see NES 1992, Tsering 1996, Dorji 1997), and even policy statements (eg the Paro Resolution, see below), mention the deep rooted conservation ethic of the Bhutanese people which stems from the Buddhist religion. Tsering (1996) has indicated that pre-Buddhist animistic beliefs (later adopted by Buddhism) whereby forests, mountains, lakes, rivers and the sky are the domain of spirits, are still very strong in Bhutan. However, recorded information on how the adherence to Buddhism manifests itself in the practice of nature conservation has been hard to come by.

References to 'traditional' natural resource use arrangements in Bhutan are few and scattered. Wangchuk and Caron studied the impact of human presence on wintering

[48] Obtaining information about Bhutan has been difficult, as the monarchy tightly controls its outflow. The Coordination Team had access to some unpublished sources with interesting information, but was specifically asked not to use them. In most cases, therefore, only published sources have been used.

Blacknecked cranes in the Phobjikha valley, where the government reportedly grants *"usufruct rights based on their (the local people's) past traditional rights systems."* (Wangchuk and Caron, n.d.). However, the authors do not elaborate much on what these traditional rights might have been. Apparently until the 1900s the country was predominantly under a feudal land tenure system in which landlords had exclusive rights to forests. The landlords in turn would grant rights of forest use to their tenants. The *Land Act* of 1966 led to a redistribution of forest resource ownership and the re-granting of usufruct rights to tenants, this time by the Royal Government of Bhutan (RGoB). In the mid-1960s the RGoB began establishing protected areas and passing laws for the conservation of forests. Forests were nationalised in 1969, with the passing of the *Forest Act*. This Act provided for the declaration of all unclaimed natural lands as Government Forest Reserves. It bans the felling and burning of trees, fishing and hunting of all large mammals including golden langurs, tigers, snow leopards, elephants and red pandas[49]. Unfortunately, there does not seem to be much documentation on the implications of either traditional practices or the new systems, on wildlife conservation.

Various state-initiated conservation processes are underway in Bhutan. In 1989 a National Environment Commission (NEC) was set up comprising senior representatives from different sectors of government including the Planning Commission, Ministries of Home Affairs, Trade and Industries, and Agriculture. A Deputy Minister heads this autonomous body. The NEC also works with the *Dzongkhag* (district) administration, and is expected to define policies and programmes that will enable Bhutan to integrate sustainability of natural resource use into all aspects of economic development. It also monitors the impact of development on the environment and puts in place necessary regulations and controls on both public and private sector enterprises (Tsering 1996). The NEC is currently drafting the national environmental strategy for Bhutan.

One of the most significant policy statements in modern day Bhutan is the 1990 Paro Resolution on Environment and Sustainable Development. The Paro Resolution provides a framework for a sustainable development strategy for the country. It recognises the aspirations for development of the people of Bhutan but cautions against following the model adopted by neighbouring countries. It stresses that the increasing demand for resources by a steadily expanding population needs to be addressed in ways which do not compromise the integrity of natural ecosystems.

NGOs have played a significant role in conservation in Bhutan. The Royal Society for Protection of Nature (RSPN), established in 1986 under the patronage of the King of Bhutan, is the only national environmental NGO in Bhutan. The RSPN has primarily concentrated on environmental education and training, and so far it has not worked on CWM related issues in the country. The National Women's Association of Bhutan, with the assistance of WWF Bhutan, has been involved with organising women in villages around the Royal Manas National Park and establishing mechanisms for providing low interest loans, vocational training, skill oriented literacy courses and informal adult education. WWF has been involved in Bhutan since 1977, primarily in imparting training to the government. Under a specific initiative on 'Parks and People', WWF has been promoting the idea of integrated conservation and development projects (ICDP) in the country.

[49] No further details are available, as a copy could not be obtained by the Coordination Team.

4.2 Towards CWM

4.2.1 Protected areas

In 1991 the Bhutan Trust Fund for Environmental Conservation (BTFEC) was established as a mechanism for making funds available for conservation. Its main tasks are:

1. Strengthening institutional capacity for biodiversity conservation
2. Developing the protected areas system
3. Creating and maintaining a national ecological database.

BTFEC is managed by a six member board (four from RGoB and one each from WWF Bhutan and UNDP), and is currently working towards achieving its target of US$20 million in total assets. The establishment of the BTFEC involved signing a covenant between the RGoB and international aid agencies, pledging the government to maintain the natural forest cover at a minimum of 60 per cent (WWF Bhutan 1995).

In 1991-92 the RGoB drafted its Forestry Master Plan. The plan comprises four five-year planning periods starting from 1992-93. Its guiding principles are the conservation of forest resources and diversity, and retaining an ability to meet Bhutan's long-term needs for wood and other forest products (NES 1992). This plan also recommends, among other things: revision and increase of the country's protected area system including protection of important watersheds; introducing the element of conservation in all aspects of land management; protecting the eastern and western-most variants of temperate ecosystems; establishing land use and natural resource use regulations; and protecting small but significant fauna habitats (WWF Bhutan 1995).

In 1993-95 BTFEC commissioned a review and evaluation of the country's protected areas system. Both ecological and socio-economic surveys have been carried out for some protected areas, on the basis of which management plans have been prepared. An attempt has been made to integrate the development needs of local communities resident in and around such areas with the need for conservation of biodiversity (Box 4.1).

The Forest and Nature Conservation Act, 1995 (FNCA), is a comprehensive legislation enacted for the protection and sustainable use of Bhutan's forests, wildlife and related natural resources. Through this act the government may declare any land in the country to be a National Park, Wildlife Sanctuary, Wildlife Reserve, Nature Reserve, Strict Nature Reserve, Protected Forest, Reserve Forest, Conservation Area, Cultural or Natural Heritage Site, Biosphere Reserve, or Critical Watershed. However, the FNCA does not define each of these categories, or distinguish between them (there may be separate rules for this, information about which is not available). If any private registered land is designated, compensation or alternative land rights shall be provided. The Act, however, does not provide for the involvement of the local community in the declaration or management of PAs, and is also silent on the rights of local communities living within PAs.

The FNCA provides that all wild animals and plants listed in Schedule I are totally protected and cannot be killed, collected etc., with certain exceptions. All wild animals not listed in Schedule I are also protected, and can only be killed to defend against an attack on human life or crops and in accordance with hunting rules issued by the Ministry.

Four national parks, four wildlife sanctuaries and one strict nature reserve have been established to cover all the country's major ecosystems. Together these protected areas cover 22 per cent of the country. Management plans for each protected area are being prepared; those for Jigme Dorji National Park and Royal Manas National Park have been completed and are being implemented.

WWF has undertaken socio-economic surveys in the Jigme Dorji and Royal Manas National Parks, for the above-mentioned management plans. The surveys explored the nature and extent of human-wildlife conflict and community attitudes towards protected areas, the findings of which have been built into the management plans for each area (Johari 1993). The study found a sympathetic attitude among administrative and forestry officials towards the local community's requirement for forest resources. While conservation awareness was reported to be low, the village elders were highly motivated to know more about conservation, the protection and management of resources, and the possible role their communities could play in the process.

Box 4.1 Community Participation in Jigme Dorji National Park

A case study of the Jigme Dorji National Park by Dorji (1997) highlighted several interesting instances of community involvement. For example in the alpine areas of the Park it has been proposed to manage pastures through a system of rotational grazing and grazing taxes by local communities and their yak herds. Pastures will have user groups, individual rights and an allocation system that will ensure controlled grazing. Currently these *tsamdo* (pastures) are owned by the government but leased out to individuals or groups for their use. A system of zoning (proposed also for the Royal Bhutan National Park) will underlie the continuation of traditional use activities (RGoB 1995 and RGoB 1996).

In the temperate areas of the park a traditional system of 'boundaries' between village forests has been recognised by the FSD in its planning process for the allocation of various forest uses.

4.2.2 Forests

The forest cover of the country is over 70 per cent, with 26 per cent of this within protected areas (Tsering 1996). 80 per cent of the population is dependent on agriculture, though the country's arable land covers only about 16 per cent of its territory. Shifting cultivation is on the rise and there is overgrazing in many areas (Dorji 1997).

The forestry sector is governed by the National Forest Policy of 1974, Draft National Forest Policy of 1985 and the Forestry Master Plan.[50] The National Forest Policy of

[50] The South Asia Review Coordinating Team has been unable to obtain copies of these policies to date.

1974 assigned the Forest Department the task of tree-felling, and auctioning of logs to private sawmills or for export. The draft National Forest Policy of 1985 clearly accorded a higher priority to forest conservation than to revenue generation. The Forestry Master Plan (FMP) was drafted by the Government of Bhutan in 1991-92 (described above).

The Forestry Services Division (FSD) is located within the Ministry of Agriculture, with a Nature Conservation Section (NCS) exclusively in charge of planning for biodiversity conservation and the administration of protected areas in the country. The FSD also runs the Bhutan Forestry Institute (BFI) which provides training in wildlife biology, park management and forestry extension. World Wide Fund for Nature (WWF Bhutan) has supported the training of instructors in wildlife conservation, community forestry practices and extension education. A field manual has been developed for foresters and guards.

The Bhutan Government is reported to be consistently promoting community forestry, ie. forest management based on an agreement (management plan) between an organised group of forest users (Community Forest Management Group or CFMG) and the RGoB. The ownership, rights and responsibilities for protection, development, and utilisation of forest resources on land owned by RGoB are transferred to the CFMG (RGoB and UNDP 1996). The FSD has an exclusive Social Forestry & Extension Section that oversees this programme. The objectives of the programme are to:

- Transfer the primary responsibility for management of forests adjacent to communities to local management groups.
- Strengthen the institutional and technical capacity of CFMGs to undertake this responsibility, and to equitably share benefits from forests handed over to them.
- Assist CFMGs in the development of appropriate forest-based cottage industries, and provide marketing assistance.

From an initial four pilot districts, the approach is now applied at a district level across the country. The Ministry of Agriculture has issued Social and Community Forestry Rules that enable district administrators to enter into agreements with communities. The community forestry largely builds on existing resource management systems in the country. Desmond (1996) has identified two types of resource tenure systems in Bhutan: the official or legal, and the indigenous or customary. Prior to nationalisation in 1969, indigenous systems of forest resource tenure were still in operation in some parts of Bhutan. The Land Act of 1979 gave recognition to customary resource use rights even in Government Reserved Forests (GRFs). For example, a part of a GRF can be registered as a *tsamdrog* (pasture) where the right of individuals/groups to graze livestock is officially recognised. Similarly in a *sokshing*, people have a right to collect leaf litter.

In all cases the FSD remains the legal owner of the forest land. Additionally, the government does not recognise customary rights for the collection of timber and fuelwood as a result of which some customary systems of control have died out. On the other hand, the FSD has also been unable to enforce its own regulations strictly due to the paucity of personnel, leading to an open access system.

Wildlife conservation in India

5.1 History of conservation

For millennia, rural communities in India have been largely dependent for their day-to-day survival on natural resources, a dependence that continues even now for several million forest-dwellers, fisherfolk, nomads, and others. In the process, they have developed intricate and diverse practices for managing natural resources. These include innumerable examples of conservation and sustainable use by self-restraint and abstinence, based on aesthetic, religious, or practical considerations and beliefs (for an overview, see Kothari and Das 1998).

Gadgil and Guha (1992) have categorised such practices as follows:

- Community-imposed restrictions on the amount harvested, subject to the density of the resource available
- Incidental conservation by according religious protection to species or patches of landscape
- Prohibiting hunting methods that were exhaustive or had a debilitating effect on the species
- Protecting certain life stages critical to 'population replenishment'
- Disallowing certain groups from resource use on the basis of age, sex and social standing (with sometimes serious equity implications)
- Regulating methods, types, and areas of harvest

A widespread practice is the protection given to patches of landscape as sacred sites, such as sacred forest groves (Ramakrishnan et. al. 1998). These sites were left untouched for religious and other reasons, or used minimally. Irrigation or drinking water reservoirs (tanks) in many parts of India were also protected from human interference, except for the occasional collection of water and bird droppings for fertiliser. There is also evidence of entire landscapes being considered sacred, as in the case of the Rathong Chu river valley in Sikkim (Ramakrishnan 1998). A recent rough country-wide estimate suggests that such sacred sites may have covered about 10 per cent of the land and freshwater in pre-British India (Gokhale et. al. 1997).

Some communities have also protected specific species; for example the nilgai (Blue bull; *Boselaphus tragocamelus*), the Sarus crane, (*Grus antigone*) and the common langur (*Presbytis entellus*). In and around the settlements of the Bishnoi, a break-away Hindu sect in the arid zone of Rajasthan, blackbucks (*Antelope cervicapra*) and

their habitat have been protected by the villagers for hundreds of years. The Bishnoi shot into the limelight in 1998 for being instrumental in catching one of India's most famous film stars, Salman Khan, who was poaching in their territory. Where hunting is permitted, many local communities have imposed restraints. In many South Indian villages people do not hunt birds like storks, herons, etc. during the breeding season (Gadgil 1987). The mass hunt (sendra) carried out by tribals in Bihar once a year, had strict rules against the killing of pregnant animals, animals with young ones, etc. (Christopher 1997). There were also practices of restraint and sustainability with regard to plants and ecosystems in general. For instance, the Onges of Little Andaman ensured that when they collected wild edible roots, they replanted the top of the root left connected to the vine (Cipriani 1966).

Though many of these community conservation practices continue today, they have been rapidly eroded in the last couple of centuries, and especially in the last few decades. In the case of sacred sites, for instance, a recent estimate is that only about one-thousandth of the original sites may still be protected (Gokhale et. al 1997). Other practices of conserving wildlife, restraints in resource use, etc., have also declined considerably in response to both external and internal pressures on communities, including penetration by outside markets and politics, massive external demands for resources, take-over of resources and institutions by centralised government agencies, population increase, and lifestyle changes. In many parts of India, increasing integration of communities into national and global economies has enticed community members to play a part in the destruction of their own resource base. The rapid decimation of forests for the timber and plywood market in the tribal-dominated parts of north-east India is an example of this. This trend is fed by a perverse policy framework which favours such economic options over those which may be able to provide more sustainable alternatives to rural populations.

5.1.1 Conservation policies and legislation

In the last few decades in response to the growing destruction of wildlife by developmental, commercial, and biotic pressures, the government has tried to conserve natural habitats by declaring them legally protected[51]. Conservation policies followed in post-independent India are rooted in the forest management legislation enacted by the British.

Wildlife

The realisation that entire habitats were threatened led to the passing of the *Indian National Parks Act* in 1934, and the creation of India's first national park, Corbett (then Hailey National Park) a year later.

The most comprehensive act on biodiversity conservation since independence was the *Wild Life (Protection) Act* of 1972 (WLPA), which consolidated existing state wildlife laws. The Act provides for three categories of protected areas: National Parks, Sanctuaries, and Closed Areas, with the last one rarely being used. National Parks are by law more strictly protected, allowing virtually no human activity except that which is in the interests of wildlife. In sanctuaries, there is scope for traditional resource collection and land-based production activities to continue. However, this is

[51] This practice is not entirely new; reserves for various purposes were set up by rulers in pre-British and British India.

left to the discretion of the wildlife and civic authorities (a power that, as later discussed, has sometimes been used in favour of local communities). By and large, the strictly protectionist interpretation of the Act has caused severe hardships to communities living in and around these protected areas. On the other hand, it has also helped to keep out destructive commercial and industrial forces that could have disrupted not only the ecosystems but also the lives of local people.

Though the WLPA did give an opportunity for governments to protect natural habitats other than forests, not much attention was given until recently to wetlands, coastal and marine areas, and other habitats. In the 1980s, the central government started a scheme to assist state governments in protecting such special habitats. In 1986, the *Environment Protection Act* was promulgated, and provided an opportunity to extend legal protection to such habitats. Specifically, coastal zone regulations were made under this Act, specifying the conditions under which development can be allowed within a certain limit of the coast. However, no other non-forest habitats are as yet covered by such a specific regulation.

The nearest to an actual policy on protection of wildlife is contained in the *National Wildlife Action Plan* (1983). The Plan's main focus is on establishment of a network of protected areas, on controlling trade in wildlife products, and on research and education/training. It did contain recommendations for fulfilling the needs of local communities through eco-development outside PAs, but was silent about those living inside PAs. It also contained nothing on involving people in the management of PAs. However, in a subsequent move, the Indian Board for Wildlife set up a committee to recommend measures to involve citizens in conservation. Its report (IBWL 1983) contains some broad recommendations towards this.[52]

The latest policy pronouncement is the *National Conservation Strategy (NCS) and Policy Statement on Environment and Development*, 1992. This provides the guidelines for integrating environmental concerns with development. It also stresses that requirements of the rural and tribal population dependent on forests should be met. Further, it recommends the development of skills and knowledge for conservation, rehabilitation of the people displaced from protected areas and the involvement of NGOs, citizen groups and village level institutions like forest panchayats and gram sabha in development activities.

Forests

All the colonial provisions relating to creation and declaration of Reserved and Protected Forests and other provisions of the *1927 Forest Act* continue to be in force in modern India. The major development after Independence was the 42nd constitutional amendment in 1976, bringing forest and wildlife conservation into the concurrent list of subjects over which both the central and state governments have power to make law, with central laws judicially superseding the state laws. There was increasing concern over the destruction of forests due to development projects like dams and industries, or their clearance for agriculture. To regulate further diversion of forest lands into other uses, the *Forest Conservation Act 1980* was

[52] In late 1998 the Ministry of Environment and Forests, Government of India, set up a committee to revise the Plan and make it relevant for the next 25 years. As of September 1999 the Committee was reviewing a final draft of the new Plan, which has substantially greater focus on people's involvement than in the previous one.

passed, making it obligatory for state governments to obtain central government clearance before conversion of any forest land. Under the Act, the state government cannot do the following without prior central governmental approval:

- Dereserve any reserved forest
- Use any forest land for non-forest purpose (including cultivation of cash crops)
- Assign or lease any forest land to any private person or to any other authority under the government
- Clear naturally-grown trees which have grown naturally from any forest land for the purpose of re-afforestation

This has been strengthened further by the *National Forest Policy* of 1988, which, in a clear departure from the approach that characterised India's colonial and post-colonial period, recognised that communities living in/adjacent to forests were entitled to share the benefits of conservation; that the rights and concessions enjoyed by them should be fully protected; and that their requirements for forest produce should be the first charge on forests. The policy also aimed at maintaining ecological balance through the conservation of biological diversity, soil and water management, increase of tree cover, efficient use of forest produce, substitution of wood and ensuring peoples' involvement in achieving these objectives.

5.2 Towards CWM

5.2.1 Conflicts

Until recently, conservation practice largely ignored the resource dependence and customary rights of local communities. This has resulted in deteriorating relationships between officials and the people, and immense suffering for local communities. Some instances of these conflicts, and what causes them, are given below (Kothari et. al. 1995):

- Declaration of PAs has often been arbitrary, with little prior thought about the possible consequences. For instance, areas have been declared national parks with human populations inside, only to be followed by the park authorities tying themselves up into legal knots when they find that they cannot evict these populations. Such dilemmas are surfacing in an increasing number of areas, since the Indian Supreme Court has ordered (in 1997, in a case filed by WWF-India) that all state governments must complete their procedures for settling people's rights in PAs within one year. Many district authorities (entrusted with this task) and forest officials are debating whether to simply carve out chunks of PAs, to avoid the legal hassles that have been created by arbitrary fixing of boundaries. This has already been done for the Great Himalayan National Park in Himachal Pradesh, and is proposed for a number of others (Kothari 1999).
- There are several examples where notified PAs encompass major human settlements, while excluding large uninhabited (and less utilised) forest tracts just adjacent. One instance is the 8900 hectare Yaval Wildlife Sanctuary, Maharashtra, where about six villages take up a major part of the sanctuary, while almost uninhabited Reserve Forests (which are also very good wildlife habitats) to the south have been excluded (Pathak et. al. in press). One reason for this is that the Forest

Department is unwilling to give up the revenue earned from working such forests.

- The assumption that all human activities are necessarily detrimental to conservation objectives has created avoidable conflicts. At the Keoladeo (Bharatpur) National Park, a 2900 hectare wetland harbouring over 350 species of birds, the sudden exclusion of traditional grazing led to a violent clash between graziers and park officials in 1981, in which seven villagers were killed. Ironically a long-term study by the Bombay Natural History Society showed that buffalo grazing was an integral part of the ecosystem, helping to counter the tendency of the wetland to turn into a grassland (Vijayan 1991). Its ban had adversely affected the wetland, and in desperation, park authorities have now had to allow grass cutting by the villagers. This is not to imply that all resource uses are beneficial for wildlife, but simply to caution against an assumption that all uses are necessarily harmful.
- A history of distrust and ill-will has marked the relationship between the Forest Department and local communities. The former often views the latter as enemies of the forest, or as hurdles in the way of their mission; the latter in turn view the former as inevitably corrupt and harsh. These views (not always baseless) have made the initiation and strengthening of participatory conservation processes rather difficult. Breaking this general level of distrust and misunderstanding is one of the most critical challenges facing CWM.

5.2.2 Governmental responses

The increasing degradation of biological resources, and the heightening conflict in and around PAs and other natural habitats, has forced the government to respond with new initiatives. The two most noteworthy efforts are (i) joint forest management; and (ii) eco-development.

Joint Forest Management (JFM)

Through JFM the management responsibilities of communities over a clearly defined degraded patch of forest are recognised. This means that any benefits derived from regenerating and conserving the forest patch will go to the community. Rights and responsibilities are enforced through the mechanism of a local institution (usually called a Forest Protection Committee). After some innovative examples of this initiated by forest officers and NGOs in West Bengal and elsewhere in the 1980s, central government urged all state governments in 1990 to promote JFM in degraded forest areas. Twenty-two state governments have so far developed rules governing people's participation in forest management. The community response has been tremendous (Khare 1998; Saigal 1997; Poffenberger and McGean 1996; see also Case Study 8). Currently, according to an expert committee set up by the Union Ministry of Environment and Forests, approximately 53,000 village forest protection communities are reported to be protecting over 12 million hectares of forest.

The programme of Joint Forest Management does not enjoy statutory protection, and yet the formal legitimisation of community control over degraded patches of forests has enthused not only the communities but a whole range of NGOs, researchers and foresters. But there are also serious deficiencies with the programme, such as being restricted only to degraded forests (leaving out good standing forest and protected areas), inability to provide clear tenurial rights, greater focus on timber than on non-timber forest produce as benefits, inequity between the Forest Department and communities, internal inequities in the community organisations, and absence of a

greater role for the communities in functions other than protection (Khare 1998). It is also important to note that a JFM-type approach has not yet been officially attempted in non-forest areas, such as freshwater and marine wetlands, or high mountain areas.

Eco-development

In 1980, the World Conservation Strategy proposed by the World Conservation Union (IUCN), United Nations Environment Programme, and the World Wide Fund for Nature, emphasised the importance of alleviating rural poverty as a component of conservation planning. From this emerged the concept of *eco-development*. In 1982, a task force was set up under the Indian Board for Wildlife (the central advisory body on conservation), to recommend measures to gain public support for conservation. It suggested that in the populated areas surrounding strictly protected core areas, eco-development should be pursued measures to help divert pressure from the PAs (IBWL 1983). In 1990, a centrally sponsored programme on eco-development was started; and in the mid 1990s India negotiated a grant-cum-loan of US $56 million with the Global Environment Facility (GEF) and the International Development Agency (IDA) for eco-development around seven selected PAs (World Bank 1996). Another 40 PAs may be targeted early next decade.

Recent eco-development proposals have been framed with a certain amount of NGO and local community consultation (a process earlier completely missing), and individual eco-development initiatives by officials are going far beyond conventional approaches to conservation. Several states have issued notifications to enable the creation of eco-development committees, which will facilitate regulated access to biomass resources from inside PAs, while helping to protect wildlife. Yet, the programme as a whole remains unwilling to tackle the root causes of conflicts in and around India's PAs. Amongst the major weaknesses are the following:

- Since the major objective remains that of reducing people's 'pressure' on natural habitats (with the mistaken assumption that all human activities in the area are necessarily negative), the dominant model is still one of 'separation' or 'exclusion' rather than 'integration' or 'inclusion'.
- The process still does not centrally involve local communities in the management of PAs, largely restricting such involvement to the actual eco-developmental activities.
- Eco-development largely limits itself to working within the existing framework of law, essentially the *Wild Life Act* and related legislation. This framework is not yet conducive to a fully participatory approach.
- There is very little attempt to build on available local community institutions, knowledge, and practices; on the contrary, official agencies come asking villagers to create institutional structures in formats pre-determined by the government. The use of traditional knowledge has been restricted to PRA mapping exercises and building up ethnobiological checklists (see, for instance in the case of Great Himalayan National Park, Baviskar 1998).
- State governments are still very reluctant to reorganise their plans and allocations in such a way that all official agencies would cooperate with wildlife officials in providing conservation-oriented developmental inputs. Indeed, it can be argued that if this were seriously done, it would eliminate the need for World Bank or any other foreign funding, since there is a lot of money available with rural development agencies!

- It is not yet clear whether the strategy of diverting people's pressure by providing alternatives does actually help wildlife conservation. Some conservationists have argued that rapid development of the peripheries of PAs could attract many more people, thereby increasing pressure.
- Finally, and perhaps most important, eco-development does not attempt to reverse the historical process of state take-over of community lands, and the common (though not universal) denial of rights and tenurial security over resources for local people (see Chapter 10).

To sum up, eco-development could be an important part of the overall strategy, but it is by no means the full answer in itself.

Some states have attempted to defuse tensions in PAs by using relevant provisions of the WLPA to allow biomass extraction by local people. For instance, in Rajaji National Park, northern India, an extremely volatile situation has been partly calmed by granting access to the park for a particular species of grass (for making ropes, one of the region's main livelihood sources) (Vania 1997).

Another potential attempt to incorporate human concerns into conservation is the creation of *Biosphere Reserves* (BRs) inspired by a global programme launched by UNESCO in the early 1970s. These reserves were set up with the basic objective of conserving and developing a knowledge base about the biodiversity of a region, with the emphasis on humans as an integral part of the ecosystem and the philosophy that local communities should be involved actively in conservation programmes (Batisse 1993). However, actual management of the seven *Biosphere Reserves* created so far (covering 2,106,700 hectares) continues to be based on the conventional PA approach, with the Forest Department being in charge. Scientists of the Indian Institute of Science, in a national survey, noted that there are very few attempts to reconcile development activities with conservation, to harness the knowledge of local communities, to involve such communities in management, or in other ways to achieve the objectives originally set for BRs by UNESCO (Gadgil and Joshi 1994). Biosphere reserves also continue to have no legal status, as they are not recognised by the WLPA or other law.

Alternative or additional approaches

There is a clear need to involve local communities centrally in conservation. If properly implemented, Biosphere Reserves could be effective in some areas, especially where extensive areas need conservation. In the Sundarbans Biosphere Reserve in eastern India, a start has been made by forming village Forest Protection Committees, under which local communities are empowered to protect areas for their own use, and promised 25 per cent of the profits realised from any exploitation that may be taken up later (Gadgil and Joshi 1994). But debate in India has increasingly focused on the fact that no one solution is likely to be relevant for the whole country, and that in any case, a predominant focus on PAs may be counterproductive. This is because considerable wildlife exists outside PAs, and also because what happens in such areas will have considerable implications for PAs (and vice versa). In many such areas local communities have shown that they can, on their own, conserve wildlife habitats (see Box 5.1).

5.2.3 Community-led conservation initiatives

Officially protected areas are only one kind of biodiversity conservation in India. Also very widespread are community or citizen's efforts at conserving wildlife and wildlife habitats. Apart from sacred spaces, there are perhaps hundreds, if not thousands, of ecosystems under protection or regulated use by local people. These can range from a tiny patch of 'keystone' trees like Ficus, to forest stretches which are a few thousand hectares in size, and wetlands of varying sizes. They can be carry-overs from traditional practices, or entirely new initiatives, some only a few years old (Box 5.1)

Box 5.1 Community-led conservation

The case studies at the end of this chapter give many examples of community-led conservation initiatives. At Mendha (Lekha), Maharashtra (Case Study 3), the community is protecting 1600 hectares of forest; at Jardhargaon, Uttar Pradesh (Case Study 2), it has regenerated and conserved a wonderfully diverse forest oak and rhododendron mixed forest with considerable wildlife value; in the Arvari catchment area of Rajasthan, and particularly in villages like Bhaonta-Kolyala (Case Study 1), previously degraded forest land has been revived and zealously protected by villagers. At Kokkare Bellur village, Karnataka (Case Study 4); Kheechan village, Rajasthan (Bajpai 1999); Seelaj pond, Gujarat (Urfi and Jethwa 1999), nesting or wintering birds are protected in tanks or trees located in the heart of the human settlement. Several high-altitude grasslands (bugiyals) of the Indian Himalaya are conserved, with grazing strictly regulated. Communities are engaging in conservation even inside officially protected areas, such as at Kailadevi Sanctuary, Rajasthan (Case Study 6), Dalma Sanctuary, Bihar (Case Study 7), and others.

In some cases, NGOs and communities have combined to protect areas: Chakrashila Sanctuary, Assam (Case Study 5), was declared after the NGO Nature's Beckon and the local Bodo tribe pressurised for its notification. In Meghalaya, also north-eastern India, the Khasi tribe has linked up with the Meghalaya Environment Society to allow 600 hectares of degraded evergreen forest to regenerate as the unofficial Kharshati 'Wildlife Sanctuary' (Abdhesh Gangwar, pers. comm. 1999). At Morjim Beach, Goa, a fishing community has been motivated by a retired army officer to protect the only recorded nesting beach of the olive ridley turtle on India's western coast. Cash awards are offered to community members who report nesting sites, and 30-40 youth volunteers of the village Tembawado help the Forest Department to patrol the beach against egg poaching (Roshni Kutty, pers. comm., 1999). Diverse examples like this abound across the country (see also, Kothari et. al. 1998).

One model therefore being proposed is Community Forest Management in Protected Areas (RLEK, 1997), in which communities have predominant powers. There are stirrings of such demands from non-forest ecosystems also, such as India's vast coastal areas, where fisherfolk are protesting against the incursion of modern commercial fisheries and trying to reassert control over their traditional fishing grounds.

A radical legal change which may support greater decentralisation and decision-making at a local level is the *73rd Constitutional Amendment Act, 1993*. This has granted substantially greater powers to local village bodies (panchayats) in most

parts of India, and the subsequent *Panchayat (Extension to Scheduled Areas) Act 1996* has extended this to predominantly tribal areas (see Box 5.2).

Box 5.2. Increasing power to local communities

In a significant step to increase the democratic space available to local communities, the Indian Parliament in 1992 amended the Indian Constitution to provide far greater powers to local rural and urban bodies (panchayats, gram sabhas, municipal councils) than were available to them earlier. Following the recommendations of a committee which went into the special issue of governance in tribal-dominated areas, the Parliament passed the Panchayat (Extension to Scheduled Areas) Act in 1996 (PESA).

Possibly independent India's most radical piece of legislation, the PESA gives to tribal communities sweeping powers over many activities that are undertaken in their jurisdiction. For instance, it gives them ownership rights over 'minor forest produce' (usually termed non-timber forest produce); the right to be consulted before any land acquisition is taken up; control over plans and resources allocated in tribal sub-plans of state governments; the right to plan and manage minor water bodies; and others.

However, the precise relationship between conservation laws and programmes and these new legal measures, remains unclear. A straightforward 'devolution' of power over local natural resources may not always be positive, as village institutions can also be highly destructive and exploitative. Inequities within and between communities can create serious problems in CWM, and external commercial forces can prove too powerful (see Chapter 10). There is therefore a need to interpret and implement the new laws carefully, in a manner that provides much greater powers over natural resources to local communities, with appropriate checks and balances to ensure that this power is not misused for social exploitation and ecologically unsustainable activities.

Large-scale landscape conservation by communities alone is, however, uncommon. Many areas, large and remote from human habitation, are probably best managed by government with some independent NGO and research support. The uninhabited islands of Andaman and Nicobar Islands, vast stretches of the upper Himalayan highlands, and other such areas are prime candidates for almost exclusive governmental management.

5.2.4 NGO-led conservation

India has a bewildering diversity of NGOs working in the fields of conservation and people's rights. They range from purely research and policy-influencing urban groups to activist organisations based at the grassroots. In the past, major conservation groups like the World Wide Fund for Nature (WWF), Bombay Natural History Society, and others, have advocated an elitist, centralised model of wildlife protection, such as was brought in with Project Tiger in several parts of India in the early 1970s. This has brought them into sharp conflict with other NGOs (and community groups) working on ensuring the human rights of people living within areas earmarked for conservation by the state.

In response to these conflicts and other factors, these conservation groups have begun to change. NGOs have shown considerable initiative in developing the

community forestry thrust. Their involvement (in association with forest officers) in JFM is one example. In the case of wildlife, this trend can be witnessed in the recent attempt by WWF-India to initiate participatory processes in Keoladeo Ghana (Bharatpur) National Park (Rajasthan), a protected area with a long history of conflict.

At the other end of the spectrum, many human rights and social work organisations have been slow in realising the importance of conservation attempts, not just for the ecological security of the area but also for the well-being of the human communities which depend on natural resources for survival. It is not often realised, for instance, that the *Wild Life (Protection) Act*, while on the one hand causing serious deprivation to communities inside protected areas, has also protected them from the destructive impacts of industrial projects. Such a realisation is coming of late, as witnessed, for instance, in a series of consultations that have taken place in 1997-99. Organised by groups like Ekta Parishad, Tarun Bharat Sangh, Kalpavriksh, Sanctuary Magazine, Indian Institute of Public Administration, and others, the meetings have brought together conservationists, human rights activists, academics, artists, and village-level workers to discuss issues of conservation and people's livelihood. Joint statements from the three consultations held between 1997 and 1999, have emphasised the need to respect the existence rights of wild animals and plants as well as the livelihood rights of local rural communities. These meetings also chalked out a strategy of dealing with the conflicts that are arising between these interests.[55]

5.2.5 The need for a combined approach

Increasingly, however, it seems clear that neither local communities, NGOs nor government agencies alone will be able to conserve natural habitats and wildlife. Communities often lack a strategic perspective, while government conservation agencies lack the necessary micro-knowledge, human-power, or even often the necessary mandate when other agencies over-rule them. With rare exceptions (see Box 5.3), neither local community nor the Forest Department alone is able to face the onslaught of commercial forces. There is therefore a need to explore partnerships in conservation which will involve local communities and government agencies as core, equal participants, with support from NGOs and independent researchers. For instance, a move is gaining ground to bring in some form of Joint Protected Area Management (JPAM). This kind of management would bring together local communities, government agencies, and other concerned agencies to plan and conserve wildlife habitats jointly, as well as ensure the livelihood security of the communities dependent on the area for survival (Kothari et. al. 1995; 1996). Though there is no formal JPAM example in place, informal collaboration between communities and government agencies in many areas may be moving towards such a system.

There are also strong calls for a more flexible system of conservation area categories under the WLPA. Bhatt and Kothari (1997), for instance, have advocated the following new categories: Strict Nature Reserves (uninhabited, no human activity allowed); Community Reserves (completely conserved and managed by local communities); Resource Reserves (sustainable use of resources for domestic and commercial use

[55] See Joint Statement on Conservation and People's Livelihood Rights, in Kothari et. al. 1997; JPAM Updates 1997-1999; and Kalpavriksh 1999.

Box 5.3 Tackling commercial pressures the people's way

India's development model is now widely accepted as being unsustainable and exploitative, yet its spread and intensity has only increased in the 1990s, especially due to the new economic policies of liberalisation. While the government's internal organs for ensuring the environmental sustainability of development have singularly failed to fulfil their mandate, it has been left to local communities and their urban supporters to take up the fight. In dozens of sites across India, people's movements have stalled or modified projects that would have destroyed both natural habitats and local livelihoods. At Chilika Lake, one of Asia's largest brackishwater lakes supporting hundreds of thousands of wintering waterfowl, traditional fisherfolk have demolished commercial aquaculture farms established by outsiders with state government collusion, and mobilised so strongly that the government has had to announce a ban on such farming. Across the coastal areas, several million fisherfolk gathered under the National Fishworkers Forum have obtained stays on destructive trawling and on fishing in the spawning season. Several major dams, which would have submerged critical forest areas, have been stalled by protesting tribal and other groups. And so on. What is significant about all these movements is that they demonstrate the close links between biodiversity conservation and traditional livelihoods, and push for radical changes in developmental policy and models.

permitted, wildlife values protected as far as possible); and Biosphere Reserves (large landscapes of natural habitats merging with traditional human-modified land/water uses). The Government of India is currently considering the draft of a new *Wild Life (Protection) Act*, formulated by a committee set up by the Ministry of Environment and Forests. This draft Act has several progressive elements, including the creation of advisory bodies for sanctuaries, consisting of local community representatives, NGOs, and officials; the addition of two new categories of PAs (including Community Reserves which can be managed by the local people themselves); a stricter regime against commercial-industrial projects; and others. However, it still does not go very far in terms of participatory or co-management of wildlife habitats, and power remains concentrated in the hands of the Forest Department. Unfortunately, attempts by NGOs to present an alternative have been sporadic.

In general, the acceptance of CWM as an alternative to conventional conservation approaches, is slowly gaining ground. For instance, a committee currently (early 1999) drafting a new National Wildlife Action Plan (for the period 2000-2025) proposes to include a new chapter on participatory conservation. In the state of Maharashtra, a meeting on the future of biodiversity conservation strongly suggested co-management as the primary conservation approach (MSFD 1998). A new category of 'Heritage Site' has been included in the proposed *Biological Diversity Bill 1998*. Though not defined in the draft, it may be possible to use this category for a wide range of conservation sites, including Biosphere Reserves and other CWM sites (Box 5.4).

Box 5.4 Proposed act on biodiversity

In 1999, the MoEF finalised the draft of a legislation on biodiversity, using the help of an expert committee of government and non-government representatives. This is actually the third draft, as each of the previous ones have been considered inadequate. The proposed Act:

1. Prohibits transfer of Indian genetic material outside the country, without specific approval of the Indian Government
2. Stipulates that anyone wanting to take a patent or other intellectual property right (IPR) over such material, or over related knowledge, will have to seek permission in advance
3. Provides for the levying of appropriate fees and royalties on such transfers and IPRs
4. Regulates access to genetic material by Indian citizens also, to ensure that there is some control over over-exploitation (e.g. of medicinal plants), and that there is some sharing of benefits to all concerned parties; however, it provides some relaxation in the case of research
5. Provides for measures to conserve and sustainably use biological resources, including habitat and species protection, conservation in gene banks, environmental impact assessments of all projects which could harm biodiversity, and so on
6. Empowers local communities to have a say in the use of resources and knowledge within their jurisdiction, and to enter into negotiations with parties who want to use these resources and knowledge
7. Provides for the development of an appropriate legislation or administrative steps, including registration, to protect indigenous and community knowledge
8. Empowers governments to declare Biodiversity Heritage Sites as areas for special measures for conservation and sustainable use of biological resources, as well as notify threatened species to control their collection and use
9. Stipulates that risks associated with biotechnology (including the use of genetically modified organisms), will be regulated or controlled through appropriate means
10. Provides for the designation of repositories of biological resources, at national and other levels
11. Envisages the creation of Biodiversity Funds at local, state, and national levels, which will be used to support conservation and benefit-sharing activities

Though not yet promulgated, the Act has significant potential for strengthening CWM initiatives.

In a sense, this increasing acceptance is an echo of what is happening in the NGO sector too, with once die-hard conservationists and social activists beginning to see each others' points of view. Indicative of this is the series of national and state-level consultations that have taken place amongst these and other groups/individuals, seeking ways in which both wildlife and livelihood security can be protected (see, for instance, *Joint Statement on Wildlife Conservation and People's Livelihood Rights*, in Kothari et. al. 1997).

India, therefore, currently provides a diverse range of CWM initiatives, from ongoing traditional ones to entirely new ones, from community-led ones to state-

initiated ones, each providing a number of important lessons for the future of conservation.

5.3 CWM Case studies from India

Case study 1

Forest conservation and water harvesting at Bhaonta-Kolyala villages, Rajasthan, India

The Arvari catchment is situated in Alwar district of Rajasthan, western India. The area is a part of the Aravalli range that extends from Rajasthan to Delhi. The region is dry, receiving less than 600 mm of rainfall annually. Over the last few decades severe droughts have characterised many of the villages in this district.

There are 70 villages in the Arvari catchment. The main livelihood strategy in this semi-arid region is a combination of intensive rainfed cultivation and animal husbandry. Water conservation in this area has traditionally involved trapping water during the short rainy months by constructing a series of small dams and tanks (*johad*). *Johads* require regular maintenance. It is also important that the slopes of the hills remain forested to avoid soil erosion silting the ponds. In the years following independence, over-dependence on the Indian state for irrigation caused the villagers to neglect *johad* maintenance. At the same time excessive tree felling in the hilly areas not only stripped the area of forest cover but also increased soil erosion and silting of *johads*.

Over the last 15 years or so, some 200 water harvesting structures have been built in the catchment by villagers and a local NGO, Tarun Bharat Sangh (TBS). These structures have replenished ground water and increased the water table, enabling the Arvari to flow perennially again. The twin villages of Bhaonta-Kolyala have a combined population of a little under 600, and are spread over about 1200 hectares. They have had a prominent role in this initiative, in particular in combining water harvesting with forest conservation and other rural reconstruction work. There are three communities in the villages and the region, the Gujjar, the Balai and the Rajput. The Gujjars are numerically dominant.

The villages are set in the flatlands at the foot of the Aravali hills, which are (or at one point were) covered by dry deciduous or scrub forests. These forests are mostly on land belonging to the State Forest Department.

Towards community-based conservation

The impetus for conservation in Bhaonta-Kolyala built up following an awareness march with the slogan "*build johads, save forests*", organised by TBS in the late 1980s. During this campaign, the links between forests, soil and water were highlighted by TBS workers. A series of discussions within the villages and with the organisation resulted in a decision by people of both the villages to protect forests and construct *johads* collectively.

According to the villagers, while there had earlier been a sense of collective solidarity in the village, there had been little collective organisation or action in the

village. In order to carry out the agenda of forest and water conservation, a co-ordinating body, the *gram sabha* (village assembly) was formed. It is an informal body that addresses the common needs and aspirations of the village community. It has an open membership with a 22-member decision-making body that represents all the hamlets in the two villages. The *gram sabha* has the right to make changes in regulations and enforce penalties. The body however is not recognised by the state and has no formal legal authority.

In the last decade, 17 water harvesting structures have been built here, with technical help and 75 per cent of the cost from TBS. The villages contributed 25 per cent of the cost, in the form of labour, materials, or money. The decision to protect forests, in parallel with the water harvesting work, involved admitting past mistakes and a commitment to regulate forest use. The *gram sabha* formulated rules which took into account the needs of the village community and the sustainable use of the forest. Since overgrazing and tree-felling for fuel and timber were perceived to be the prime reasons for forest degradation, shepherds were asked not to cut any trees while their goats were grazing. The community has also tried to lower the number of goats in the village. Extraction of dry and fallen wood is allowed for fuel.

Another interesting innovation is the creation of a *gram kosh* (village fund), built up with the contribution, by each household, of five kilos of grain. Some of the collection would be retained as a grain reserve for village needs, and the rest could be sold to build up a monetary fund for common community concerns.

After 10 years of successful forest protection, TBS suggested that the forest should be held as an example of successful community conservation. It was therefore declared a *Bhairon Dev Lok Van Abhayaranya* (Bhairon Dev Peoples' Sanctuary) in October 1998. According to TBS workers, the declaration of the sanctuary represents an ideological alternative to the state-centred wildlife conservation policy followed by the Forest Department.

Impacts

Habitat and wildlife: Several hundred hectares of forest have regenerated, and there has been a slow revival of some wild animal populations. Herbivores are reported to have increased, and villagers report the occasional presence of two leopards. Whilst these leopards have been taking goats, there does not yet seem to be any ill-feeling among the villagers towards them. Indeed, elders welcome it, claiming that the disappearance of tigers and other predators from the forest was the reason behind forest depletion. They maintain that the presence of predators will inhibit people from going into the forest unless absolutely necessary.

Resource availability and livelihood opportunities: According to the villagers the most visible change is the presence of water, indicated by the recharged wells and greenery in the village. The villagers say that since 1990 there has been a rise in agricultural productivity and two crops can be easily taken in a year. This is believed to be a result of both the water harvesting and the regenerating forests. Livestock have also become more productive due to the increased availability and security of fodder. Out migration has also decreased with an increase in agricultural and pastoral production.

Lessons, constraints and opportunities

Several major lessons emerge from the experience of Bhaonta-Kolyala:

- Highlighting the linkages between forest, water and agriculture was a major means of motivating the villagers towards conservation. Indeed, what comes out very clearly is that the perception of 'nature' here is not that of a 'wilderness', but rather of a continuum of human influenced ecosystems where non-human natural elements co-exist with, and relate intimately to, human ones. *Forest protection is therefore a part of the larger livelihood strategy in the village, but also has, at least for some of the villagers, an ethical and moral component.*
- Involvement of local communities from the beginning of the conservation initiative helped instil a sense of pride and ownership in the initiative. It also resurrected the sense of collective and individual responsibility toward natural resources, and was a process of empowerment. The people of Bhaonta-Kolyala now feel confident to assert their rights to, and *de facto* control over, natural resources, even though there is no governmental recognition of this.
- The assertion of *de facto* control is not restricted to Bhaonta-Kolyala. In January 1999, a meeting was held to facilitate the formation of a 'parliament' to regulate resource use in the entire Arvari catchment. Villagers from across the catchment share the experience of empowerment, and it seems that a new collective identity is being formed in the process. This could help to overcome, to a certain extent, the occasional disempowerment that villagers of Bhaonta-Kolyala feel when dealing with neighbouring villagers, since legal authority is not vested in them.
- Though the village still looks to TBS as a major support structure, over the years it has also evolved its own strong leadership. This comprises of individuals like Kanhaiya Gujjar, who are articulate and educated, work with TBS, and can negotiate with relevant authorities like the Forest Department; and elders like Dhanna Gujjar, who continue to play the important role of enthusing the village community to rally for a common cause.

The initiative continues to face a number of challenges. Chief amongst these is inter-village conflict: there has been an increase in the incidents of tree felling by the neighbouring villages. Since the *gram sabha* of Bhaonta-Kolyala has no legal authority over the forests, they can not enforce forest protection regulations on the other villages in the area. While TBS continues to play an important role, villagers feel that the Forest Department should also be more active. There are also some problems of intra-village inequities, with complaints from the 'lower' Balai community that their interests have been compromised due to conservation measures. They want unclaimed land to form another hamlet but the gram sabha's decision has been to use the land for water harvesting. This discontent, as yet very muted, could have a bearing on the CWM effort in the future, and needs to be squarely addressed.

Box 5.5 Legal Implications of Bhaonta-Kolyala's Initiative

Upadhyay (1999) has carried out a study of the legal implications of community-based conservation, with Bhaonta-Kolyala as a specific example. He notes that forest and wildlife related laws in the state of Rajasthan have very few statutory provisions that facilitate community participation. The central constitutional amendment on panchayats could provide direct involvement of local participation in management and preservation of natural resources, but the Rajasthan Panchayat Act which followed does not appear to give much power to village institutions regarding local natural resources.

Several other possibilities exist. Central and state circulars on joint forest management need to be incorporated into law. One way of doing this would be to use Section 28 of the Indian Forest Act, which allows for the declaration of Village Forests. It would also be interesting to study how changes in tenurial patterns vis-à-vis the state have implications for community-based conservation.

Case study source

The research for this case study was carried out in 1998-99. For more information see: Shresth, Swati. with Shridhar Devidas 1999. *Forest Revival and Traditional Water Harvesting: Community Based Conservation at Bhaonta-Kolyala, Rajasthan, India.* Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 2

Forest conservation and agro-biodiversity revival at Jardhargaon, Uttar Pradesh, India

The village of Jardhargaon is located in Tehri Garhwal District of Uttar Pradesh, northern India, at an altitude of 1500 metres. Access to this village involves a three kilometre trek from the nearest road-head on the Rishikesh-Tehri highway. Cutting across boundaries of administrative blocks, local people refer to this entire region as Henvalghati, the valley of the river Henval.

Jardhargaon's population is about 3,000. The village has about 17 settlements situated at quite a distance from each other. The predominant communities are the Rajputs and Harijans. Agriculture and cattle rearing occupies the foremost position in the local economy, while the forest is also an important source of sustenance in terms of fodder, fuelwood, fruits, leaf litter, medicinal plants and timber. The higher ridges of the village consist of dense Reserve Forest (technically belonging to the state Forest Department), consisting primarily of oak and rhododendron trees. Adjacent to and below the village is forest land, designated Civil Soyam, consisting primarily of pine trees and grassland, which is legally under the village. Cultivation is carried out on terraced fields and in the valley.

Towards community-based conservation

A couple of decades ago, the heavy dependence on fuelwood and fodder from the forest, along with other factors, led to indiscriminate felling of trees by the villagers. The resulting erosion of forest cover led to shortages of fuel and fodder, soil erosion, and deterioration of soil fertility. It was in this context that the community initiative to protect the forests was taken in 1980.

The late 1970s and early 1980s were the peak periods of activism of the Chipko movement, the famous Himalayan struggle to protect natural forests against contractors and other forces of destruction. Jardhargaon, too, came under its influence, primarily through the active involvement of one of its residents, Vijay Jardhari. On returning to Jardhargaon after working for the Chipko movement, Jardhari, along with like-minded individuals in the village, succeeded in mobilising the villagers to protect their forests. The constitution of the *van suraksha samiti* (VSS, or Forest Protection Committee) was the first step in this direction.

The VSS comprises of around 10 members, chosen by common consensus in a meeting of the *gram sabha* (village assembly), which consists of all the adult members of the village. Most hamlets are represented in the VSS, which meets about once a month. Decisions are taken by consensus, and the minutes of every meeting are recorded. The VSS has evolved a set of rules governing the use of forests and hillsides (Box 5.6). These include:

1. Total ban on cutting of green wood.
2. Regulation of the distribution of dead wood to the needy for house construction and firewood
3. Regulation of the amount of wood sold to people for house building and weddings.
4. Prohibition of commercial sale of minerals and stones mined from the village

The VSS appoints *van sewaks* (*chowkidars*, or forest guards) on payment of salary to ensure compliance with the rules. Violators are fined, though one of the problems is the lack of uniformity in collection of fines.

Box 5.6 Regulating Grass-cutting

A section of the Civil Soyam Forest (meant for village use), has been declared by the VSS as *bandh van* (closed forest), and is used for regulated grass-cutting. This area is closed from August to December to allow the grass to regenerate during the monsoons. When it opens in November or December, one member from each family is allowed to cut one head-load of grass per day during specified hours only. Most of the grass cut during this season is stored for the dry months. During the monsoons i.e. July to October, there is enough grass in the vicinity of the houses for the cattle to graze and women do not have to go deep into the forest for fodder.

Another institution involved in forest protection is the *mahila mangal dal* (MMD, or Women's Committee), which started functioning around 1987. The members are selected by consensus. The MMD was very active in its initial years, mobilising women to protest against limestone quarrying in the vicinity of the village and against sheep grazing by migratory graziers. The MMD is not so active now, though in times of crisis, as when there was again a recent threat of mining near the village, it becomes active.

Yet another related institution, one which has been in existence for much longer than the MMD and the VSS, is the *pani panchayat* (water council). Functioning under the supervision of the *gram pradhan* (village head), this council regulates the supply of water from the river to the fields, ensures equitable distribution of water for

irrigation, wards off animals from the fields, and regulates grass cutting in the common village pasture lands. The council contains eight-ten members, chosen by consensus by the *gram sabha*. One of the members is chosen as the *thekedar* to oversee the entire team. The members are paid in grain by the villagers, and this payment depends on the size of individual landholding and the nature of duties performed.

Propelled by growing unease due to some difficulties in enforcing the rules of the VSS, some villagers asked the district administration to constitute a *van panchayat* (VP, or forest council) for Jardhargaon. This is a government-sponsored body, created to protect the Civil Soyam Forest land, and is headed by a *sarpanch* (village council head) chosen by the villagers. However, the VSS continues to exercise *de facto* control over the management of the Reserved Forest; indeed, most villagers are sceptical of the VP because the government has a hand in it, and insist that its role be restricted to the Civil Soyam area.

Impacts

After almost 18 years of starting the VSS, the results are apparent. What was once a degraded and often barren slope above the village has now turned into several hundred hectares of dense mixed forest. A diversity of oak (*Quercus incana*), burans (*Rhododendron arboreum*), horse chestnut (*Aesculus indica*), pine (*Pinus roxburghii*) and other species are present. In places, especially further away from the village, the forest is amongst the best in the region. A study by botanists of the G.B. Pant Institute for Himalayan Ecology and Environment, carried out for this case study, shows that the floral diversity of the forest is extremely high, and in all other values the Jardhargaon forests match others in the region. Villagers report that wild boar, deer species, tiger, leopard, and bear have reappeared, and a recent survey of birds revealed nearly 100 species including two pheasant species (Sanjay Thakur and Prakash Gole, pers. comm.).

The initiative has had crucial socio-economic and political results also. Availability of fodder and dry fuelwood is assured, and water sources have improved. Perhaps more important, villagers have developed a sense of pride and empowerment, so much so that they are firm on not allowing any foothold for the government in the control over the forests protected by them.

Lessons, constraints and opportunities

Some key lessons that can be learnt from Jardhargaon's initiatives are as follows:

- Through sheer moral pressure, the VSS has been able to achieve considerable (though by no means complete) compliance with its rules and regulations despite no formal recognition. However, this may not be sufficient for all occasions and in current situations where community spirit may be declining, and finances are low. There appears to be a critical need for some kind of formal authorisation from the state, without taking total control. Indeed, the Forest Department continues to enjoy ownership of the Reserved Forests under law, but has no effective control over them.
- The initiative has as yet not made a significant impact on employment opportunities, especially for the youth. There is therefore still considerable out-

migration. This may result in the lack of human resources and motivation to protect their natural resources. Lack of good schools, hospitals and other basic facilities increase the rural-urban divide and bring out the inequities starkly. Farmers involved with the *Beej Bachao Andolan* (Box 5.7) are attempting to generate more earnings by marketing organic grains, wild apricot scrub and oil, and so on, but this is yet to catch on.

- There are potential threats from macro-level events, such as the proposed creation of Uttarakhand (the hill districts of Uttar Pradesh) as a separate State. This could lead to greater exploitation of natural resources for achieving quick economic development, though it could also lead to greater opportunities for local empowerment to manage natural resources.
- The role of an enlightened leader is critical, as shown by the initiatives taken by individuals like Vijay Jardhari. However, these qualities are not common; the issue of a second line of leadership is therefore looming large. The presence of young people like Raghu Jardhari is therefore encouraging.

Box 5.7 Beej Bachao Andolan: Reviving Agro-biodiversity

A major initiative in the village is to revive traditional agro-biodiversity. A number of farmers from this and other villages have come together under the Beej Bachao Andolan (Save the Seeds Movement) to restore the seeds and farming practices that traditionally served them well. Jardhari alone is experimenting with over 150 varieties each of rice and beans. As he perceptively points out, this activity has important bearings for forests also; for instance, the traditional wheat variety in the area had a long stalk, whereas the new high-yielding variety is a dwarf. So while the latter yields more grain, it produces less fodder...the overall effect of which would be to drive livestock more towards the forest!

Case study source

The fieldwork for this case study was carried out in 1998–99. For more information see: Suryanarayanan, Jaishree and Pradeep Malhotra, with RajeevSenwal, and Sunil Nautiyal. 1999. *Regenerating Forests, Traditional Irrigation and Agro-biodiversity: Community Based Conservation in Jardhargaon, Uttar Pradesh, India.* Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 3

Tribal empowerment and natural resource management: Mendha (Lekha) village, Maharashtra, India

Gadchiroli district of Maharashtra state is in a region famous for both its biologically diverse dry deciduous forests and its tribal communities. In the late 1970s the government proposed an ambitious hydroelectric project in the adjoining Madhya Pradesh State. There was strong opposition to this project by tribal groups, as it would have meant displacement and the destruction of forests on which their livelihood and culture depended. Whilst the project was eventually shelved, it gave roots to a very strong movement towards tribal self-rule in the region. Mendha (Lekha) was one of the villages where the process towards self-rule gained momentum and is today very successful.

Mendha (Lekha) is spread over two small and closely situated *tolas* (hamlets). The total human population is estimated at around 400, largely without any class and caste hierarchies. The entire population is composed of the Gond tribe, which has ruled and inhabited these forests since time immemorial. The total area of the village is about 1900 hectares, nearly 80 per cent of which is forest. The livelihood of the inhabitants is heavily dependent on subsistence farming, non-timber forest produce (NTFP) collection, and daily wages from work as labour for government and private agencies.

Prior to 1960 the forests in this area were managed by the local tribals as common property, and the overall charge rested with the tribal landlords. In the 1960s the forests were taken over by the Indian government and classified under the *Indian Forest Act* of 1927 as Protected Forests. These were also labelled Nistar Forests, an administrative category under which state-owned forests were assigned to villagers for biomass requirements. However, after the government take-over, these forests came to be seen increasingly as a source of state revenue, including from charcoal-making and stone quarrying. In most parts, timber and bamboo extraction was carried out by the Forest Department (FD) and some good bamboo patches were leased out to the paper industry. Subsequently, these forests were converted to Reserved Forests (a stricter category under the *Forest Act*), without the knowledge of the villagers, in an effort to assert greater government control. The restrictions on people to extract their day to day requirements gradually increased and a system of payment of bribes to the lower staff of the FD became a common phenomenon.

Towards community-based conservation

These developments catalysed the villagers into attempting to take back control over the forests. The community organised itself into a stronger unit and took some important decisions, including:

- All domestic requirements of the village would be met from the surrounding forests without paying any fee to the government or bribes to the local staff. This would be accompanied by rules for sustainable extraction, including strict prohibition of any commercial use of timber.
- No outsider, government or private, would be allowed to carry out any programmes in the village or the forests without the permission of the village organisation.

The village united itself into a *gram sabha* (village assembly). This is the main decision-making body in the village, and consists of at least two people (one male and a female) from each family. Decisions are taken unanimously (not on the basis of majority) and implemented through oral yet strong social rules. Social ties and sanctions are so strong that the decisions taken by the *gram sabha* prevail over any other official or unofficial orders. All outsiders (government officials, researchers, NGOs), who intend to carry out any activities in the village or the adjoining forests have to present their plan in the *sabha* and seek its permission. The *sabha* meets once a month for discussions and decision making, or for emergency meetings.

The village has various other institutional structures such as the *van suraksha samiti* (VSS) or Forest Protection Committee, the composition of which is the same as the *gram sabha*. The VSS mainly deals with forest related decisions. Such is the reputation of the VSS that the local Forest Department staff agree that forest

protection in the village is no longer their job. Women also have a separate *mahila mandal* (women's organisation)

In addition, Mendha (Lekha) has also established abhyas mandals (study circles). These unique groupings, informal and fluid, act as forums for frank and in-depth discussions on various issues ranging from immediate village problems and their solution, to wildlife conservation. There is no fixed system, rules or membership of these study circles; they gather at any time and have casual or serious discussions on various subjects. Experts on relevant subjects are invited from outside the village also. This interaction and exchange of information helps take informed decisions during the *gram sabha* and VSS meetings.

Joint meetings of representatives of all the government functionaries in the area with the villagers have been organised at the initiative of the *gram sabha*. These meetings facilitated a face to face dialogue between these agencies and resulted in a pooling of resources together for certain developmental activities in the village.
Through these institutional structures the villagers have been able to achieve greater organisation, establish good relations with sensitive government officials and non-governmental agencies, and succeed in facilitating inter-departmental co-operation among various government agencies functional in the area.

Impacts

A series of positive social impacts have resulted from the process:

- Villagers have realised that rights to natural resources or developmental processes can only be asserted if they have the capacity to take management responsibility.
- The crucial role of information, adopting transparent and open decision making processes, and assuming social and ecological responsibility, have been demonstrated.
- Empowerment has meant that the village is respected even in official circles. Today all government and non-government people come to the village, instead of calling the villagers to their offices, and discuss with them on equal grounds and often in their language.
- A democratic and transparent process of decision-making and implementation has left little space for misunderstandings and fragmentation.
- Almost equal status for women in the decision-making process has been achieved.
- A good example has been set for the surrounding villages, which have low economic status and whose forests are in the last stages of degradation. Mendha (Lekha)'s self reliance and better quality of life has sent out good signals, and many villages now wish to work in the same direction.
- Financial transactions have been managed with confidence, with bank accounts for the *gram sabha, mahila dal, van suraksha samiti*, and other institutional structures managed by the villagers themselves.
- Livelihood security has been ensured to all villagers, be it through access to forest resources or employment opportunities. This includes forest based industries like honey collection.

Positive impacts have also been felt on forests and wildlife:

- There has been a revitalisation of the importance of forests in the lives of the tribals.
- The villagers have taken up a number of soil and water conservation programmes, including an earthen water harvesting dam near the forest.
- A decision has been taken not to light fires to the forests, and to help with fire control.
- The villagers now have fixed rules about resource extraction, with penalties for those who do not abide by these rules.
- A vigil is kept against illegal activities.
- The forests have been protected from commercial activities, such as extraction of bamboo by the paper mill.
- The village has also managed to get into a Joint Forest Management (JFM) arrangement, convincing the FD to include, for the first time in the state, standing natural forests in such a scheme.
- Encroachments by the villagers in the surrounding forest area have largely been stopped.

Lessons, constraints and opportunities

While plant conservation is now well understood in Mendha (Lekha), wild animals continue to be feared and hunted by the villagers. The impact of this hunting needs to be assessed. Certain animals like the Giant Squirrel are highly threatened: a contributing factor could be hunting.

Although villagers have *de facto* control over matters in the village, this is not backed up by legal authority. This includes the JFM agreement. However, there may be potential for giving such legal recognition through existing and proposed laws and policies; these need to be seriously explored. In the absence of statutory recognition, the sustainability of the initiative very heavily depends upon the various informal support structures, such as outside individuals, sympathetic officers, and dedicated village members. Substantial changes in any of these could affect the initiative's future.

Considering that a large part of the villagers' energy goes into livelihood activities, it is sometimes difficult to sustain the fervour for forest protection activities, especially if there are no immediate threats. A proactive outside agency, especially a state agency, could play an important extension role to keep the momentum going.

Case study source

The fieldwork for this case study was carried out in 1998-99. For more information see: Pathak, Neema with Gour-Broome, Vivek 1999. *Tribal Self-Rule and Natural Resource Management: Community Based Conservation in Mendha (Lekha), Maharashtra, India*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 4

Pelicans, storks, and humans at Kokkare Bellur, Karnataka, India

Kokkare Bellur village is situated about 80 km from Bangalore, in Mandya District, Karnataka state, southern India. It is bounded on the south by the perennial river Shimsha.

For six months of the year, Kokkare Bellur is just another typical village of South Karnataka. The inhabitants follow the ancient rhythms of the agricultural calendar. But for the other half of the year, from December until June, the village undergoes a spectacular transformation. Spotbilled pelicans (*Pelecanus philippensis*) and painted storks (*Mycteria leucocephala*) migrate in their hundreds from the lakes of South Karnataka and install themselves in breeding colonies on the tall trees in the very heart of the village. The birds and the people co-exist for the next six months in extraordinary intimacy.

Nobody quite knows why the storks and pelicans, both exclusively fish-eaters, persist in breeding in Kokkare Bellur, which is several kilometres from any substantial waterbody.[54] What is certain is that both species have been coming here to breed for many generations - according to village legend, for hundreds of years. The very name of the place, *kokkare*, means stork. A British naturalist writing in *The Birds of India*, recorded the village more than a century ago (Jerdon 1864), and a commemorative stone in the village appears to refer to the settlement's existence several centuries back.

Profile of the area

Kokkare Bellur is a typical dryland village of Southern India and has cultivated fields, fallow fields, cactus hedges and trees - old and new - in the fields and the village. These include *Tamarindus indica*, *Ficus bengalensis*, *Ficus religiosa*, and others. Despite the proximity of the river Shimsha, only a few farmers can afford the luxury of irrigation pumps. The annual rainfall is about 525 mm over this slightly undulating terrain, with an average altitude of about 850 msl.

The village has about 2000 people, and a 22 per cent literacy rate. Two-thirds of the population belong to the vokkaliga community, mainly farmers. The other third is made up of *dalits*, potters (*kumbara-shetty*), fishermen (*gangamathat*), and carpenters (aachari). More than 80 per cent of the land is held by the *vokkaligas*. Apart from agriculture, the main sources of livelihood are animal husbandry (sheep and goats), sericulture, and labour in nearby cities.

Until two decades ago there was no pump irrigation and the people depended solely on rainwater harvesting. When the rains failed there was no crop. So the land was generously studded with trees which were a kind of cash resource or insurance in the event of drought. Even after the 'green revolution' the villagers did not introduce chemical inputs into agriculture, instead using the guano liberally supplied by the nesting birds. Most of these trees are on private lands and in the farmers' backyards.

[54] It is however within a 100 km radius of numerous irrigation tanks -principally Sule Kere, Malavalli Kere, Koppe Kere, Maralhalli Kere, Shetty Kere and Karanji Kere.

People scoop out deep pits under the trees, fence the area off and allow the droppings to accumulate. They bring large quantities of silt from nearby lakes and spread it in the guano pit. This is repeated several times in a nesting season, so that layers of silt and guano alternate in a sandwich effect. This provides a ready-mixed compost, and has the beneficial side-effect of preventing the ponds around the village from silting up.

Towards community-based conservation

The people of Kokkare Bellur do not attribute any 'godly' status to the birds, but have always offered them protection, believing that they bring them good fortune with the rains and the crops. They are proud of their long association with the birds, which they nickname 'daughters of the village', comparing them to the local girls, who may marry into another village but inevitably return home to deliver and nurse their babies.

At its most basic, the villagers' protection of the birds takes the form of a benevolent tolerance of these noisy, smelly annual visitors. Once the season starts there is a ceaseless cacophony from the young birds clamouring for food, and an all-pervading fishy stench of droppings right in the villagers' backyards. In the past, if the pelicans chose to nest in a tamarind tree, some villagers were even prepared to sacrifice their crop rather than scare off the nesting birds. Village elders actively discouraged the local children from teasing the birds or stealing their eggs.

Sadly, during the past two decades the growing pressure of population has led to increased demand on the trees as a resource for cooking, animal fodder, fruits for sale, etc., and the villagers inevitably have become less hospitable to the storks and pelicans. About two tons of foliage are used every day for fuel and fodder, and a new-found love for brick houses instead of the traditional mud buildings means large-scale use of wood for kilns.

Due to these and other factors (see below), there has been a decline in the number of birds nesting at Kokkare Bellur. Thirty years ago, according to the villagers' estimates, there were more than 1000 pairs of pelicans; today, the number is about 160 (Subramanya & Manu 1995). During the early 1980s the Forest Department put a protection order on the nesting trees, under the *Karnataka Tree Protection Act*. The owner of such a tree could only fell it if it was diseased or dead. However, in 1987 a banyan used for nesting was felled by its owner, a powerful local farmer. No punishment ensued, presumably due to the influential status of the offender and the loopholes in the protection order. The Forest Department then proposed to make a compulsory purchase of every tree used for nesting but the villagers refused to part with their trees. A compromise was eventually hammered out, whereby villagers are offered annual compensation for trees used for nesting, thus providing an incentive not to chop down their trees. However, the value of the compensation is meagre; in the case of the more valuable trees only a fraction of the value of the crop or lopping returns.

It is hard to know whether the compensation scheme has made things better or worse for the preservation of the trees. On the one hand, the extra income to the owners of trees such as Thespesia and Neem are undoubtedly an incentive not to cut them down; the implementation of such a scheme gives the Forest Department a tangible

role in the conservation of pelicans and means they keep proper records of the trees used for nesting. On the other hand, as soon as financial transactions are involved, the system becomes open to abuse by the more powerful members of the community who try to get compensation and benefit from their crops. The effectiveness of the scheme depends on the integrity of the local forest guard, who can be manipulated by the powerful and is not trusted by the weaker members of the community.

Since 1994, a local environmental group, Mysore Amateur Naturalists (MAN), has been actively involved in the conservation of pelicans and their habitat in Kokkare Bellur. One member of MAN has been living practically full time in the village, promoting the re-establishment of harmony between birds and humans. A grass-roots action group, *Hejjarle Balaga* (Pelican Clan), consisting largely of young people from the village and led by members of MAN, runs a conservation pen for 'orphan' chicks (i.e. those which fall from their nests and would otherwise perish on the ground). The chicks are eventually returned to the wild where they join their naturally raised siblings without any problem of re-adaptation.

Impacts

Tree planting, (including a nursery to grow saplings), educational activities and a weekly health clinic for the people of Kokkare Bellur have also been introduced. The approach of *Hejjarle Balaga* is to combine and link care for the human community with conservation and protection of the birds. In this way the villagers' traditional pride in the birds may be revived and the dwindling numbers at Kokkare Bellur reversed. In the 1998 season *Hejjarle Balaga* successfully intervened to protect the pelican colony nesting on a tamarind tree belonging to a farmer who had wanted to harvest the tamarinds during the nesting season.

Lessons, constraints and opportunities

The building of a bridge over the Shimsha, a proposed holiday resort, and other such developments are posing new threats to the birds. It is not only the breeding site at Kokkare Bellur which is fragile. The lakes and tanks where the pelicans forage are also undergoing constant if gradual changes, including by fertiliser and pesticide inflow, and conversion of traditional fisheries to commercialised ones in which exotics are being introduced. Pelicans are at the top of the aquatic food chain and are thus extremely susceptible to pesticide loading. Yet another danger is that of poaching, as some communities like to eat pelican flesh.

So far, MAN and *Hejjarle Balaga* have not been able to establish a good rapport with the Forest Department. Officials change their posts every two years, so it is difficult to build up a sustained relationship.

Other challenges that will have to be confronted in the future include:

- Changes taking place in the villagers' lifestyles and attitudes, due especially to commercialisation and modernisation.
- Integrating conservation in this micro-site with the larger landscape on which the birds depend, and where ecologically destructive activities are taking place.
- Rising unemployment in the village, economic aspirations of the younger generation which differ from their elders, and the lack of innovative income-generation schemes which can absorb these youth.

- Local inequities that allow powerful landlords to get away with tree-cutting and other violations.
- The lack of institutional structures to take up grievances or resolve disputes relating to tree-felling.

In this context a more effective approach has been felt to be conservation through 'lateral' means, e.g. winning trust through a health clinic, as has been done by MAN. There is also obviously a critical role for a catalyst, in this case a dedicated worker of an 'outside' NGO who has chosen to more or less take up residence in the village, and has through sheer hard work and patience won the trust of many of the villagers. The formation of Hejjarle Balaga has focused villagers' attention on the plight of the pelicans, and helped to employ some youths, a trend which can be encouraged by innovative means such as managing ecotourism (many ornithologists visit the village), selling local produce, acting as guides, reviving cultural occasions associated with the birds, and so on.

Case study source

The fieldwork for this case study was carried out in 1998-99. The authors' previous experience in the village was also utilised in the report. For more information, see Manu, K. and Jolly, Sara, 1999. *Pelicans and People: The Two-Tier Village of Kokkare Bellur, Karnataka, India*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 5

Chakrashila wildlife sanctuary, Assam, India

The Chakrashila Wildlife Sanctuary (CWS) is located in Dhubri District of Assam, north-east India. CWS is spread over hilly terrain covered with dense semi-evergreen and moist deciduous forests, with patches of grasslands and scattered bushes, and several water sources. The area has a temperate climate, with dry winters and hot summers followed by heavy rains. Annual rainfall is between 2000 and 4000 mm. Temperature through the year varies between 8ºC to 30ºC.

Mammals found in the diverse ecosystem of CWS include tiger (*Panthera tigris*), leopard (*Panthera pardus*), golden langur (*Presbytis geei*), leopard cat (*Felis bengalensis*), gaur (*Bos gaurus*), crab-eating mongoose (*Herpestes urva*), porcupine (*Hystrix indica*), pangolin (*Manis crassicaudata*), flying squirrel (*Petaurista petaurista*) and civet cat (*Viverra zibetha*), along with a wide variety of birds.

The fringe villages of Chakrashila are inhabited by ethnic tribes belonging mainly to the Rabha and Bodo communities, as well as a limited number of Garo and Rajbarshi families, and recently some Muslims too, who live in the adjacent areas. Most of the villagers are farmers, paddy being the main crop. Potatoes and green vegetables are also grown for home consumption, and a few livestock kept. Incomes are low, and the villagers depend on the forest for many of their daily requirements.

The major threats to wildlife are smuggling, poaching, hunting, indiscriminate exaction of firewood by outsiders as well as villagers, and the poverty of the villagers. As the thick forest along the periphery of Chakrashila got denuded, the villagers moved further into the forests, resulting in the drastic shrinkage of forest area.

Towards community involvement

An NGO called Nature's Beckon (NB) has been involved with the Chakrashila Hills Reserve since 1980. Its members had realised that the conservation of Chakrashila would not occur unless local villagers stopped allowing outsiders to exploit their forest resources. They also realised the importance of educating the villagers about the importance of conservation to their welfare. Thus NB set about winning the trust, confidence and respect of the villagers.

They set up a temporary settlement at Jornagra village on the periphery of Chakrashila. Many of the village youths took an interest in the activities of NB, which included birdwatching, trekking through the forests and identifying plants and animals. They were enrolled as members, and given a badge and identity card, which gave them a sense of involvement. Gradually, the local tribals came to trust the group. Subsequently, NB started explaining the interdependence of plants and animals, and impressing upon them that only the villagers could save Chakrashila. Though some were receptive to this, they expressed their inability to stop the powerful merchants and poachers. NB convinced these people that the smugglers and poachers were indulging in illegal acts punishable under the law and that they would have no moral right if the people united to fight them.

The local youth were prepared to take direct action against the smugglers and poachers. However, NB advised them to exercise restraint until they had gained the full support of all the villagers. Group members visited every house of Jornagra village and conducted detailed discussions with the elders. The importance of involving women in environmental management was emphasised. It took about a year to gain their full support. November was selected for direct action as the harvest would be over and sufficient food available to every household. Despite there being clashes with the smugglers in the beginning, no complaint was lodged with either the police or the Forest Department, as doing so would make the villagers dependent on these authorities. Village youth repeatedly confronted the poachers and smugglers, often risking injury and death. Eventually, the illegal activities came to a halt.

Apart from the protection of wildlife, the NB also realised that improving the well-being of the poorer villagers was essential for the sustainable protection and development of Chakrashila. The local people were encouraged to cultivate or use their traditional foods like wild flowers, roots and tapioca. People were given vegetable seeds to help them raise kitchen gardens. The sale of the products of these kitchen gardens along with that of the poultry, pigs and non-timber forest products helped the villagers to increase incomes marginally, helping them to regain their self-respect.

Impacts

These successes resulted in the regeneration of the denuded forests along the periphery of Chakrashila. Regeneration was further accelerated by round-the-clock vigilance by the villagers.

The achievement of the villagers of Jornagra encouraged the residents of adjacent villages. Subsequently, an office and training centre for the youth and women of Chakrashila, known as 'Tapovan', was set up by NB. This became an active centre of interaction among the villagers and greatly increased village cohesiveness.

Finally, on July 14, 1994, after months of consistent urging by NB, the Government of Assam declared the Chakrashila forests a wildlife sanctuary under the *Indian Wild Life (Protection)* Act 1972. However, active protection work is still done mainly by the villagers and members of NB.

Lessons, constraints and opportunities

Community-based conservation is well-suited to tribal communities, who traditionally believe in, and practise, community-based approaches to agriculture, fishing, cultural and religious festivals, and in the settlement of any disputes. Further, these communities have common wetlands for fishing as well as common grazing grounds and land for growing thatch, bamboo, etc. Moreover, given the under-resourced nature of the Forest Department, it will be impossible to conserve the biodiversity of the forests unless the communities living on the fringe areas are also involved.

The example of Chakrashila also shows the critical role of NGOs, especially in catalysing a community-based approach, and stimulating the re-awakening of community spirit.

However, some continuing constraints for community-based conservation at Chakrashila include the total absence of infrastructure for the management of biodiversity (such as specialised field equipment), uncertain tenurial rights of villagers over the forest resources, and lack of knowledge among local people of government policies and laws relating to protected areas. These constraints need to be tackled to make the Chakrashila effort a sustainable one.

Case study source

This case study is based on Datta, Soumyadeep. 1998. 'An NGO-initiated sanctuary: Chakrashila, India'. In: Kothari, A., Pathak, N., Anuradha, R.V., and Taneja, B. (eds.). 1998. *Communities and Conservation: Natural Resource Management in South and Central Asia*. Sage Publications and UNESCO, New Delhi. It has also recently been updated based on information from Soumyadeep Datta of Nature's Beckon.

Case study 6

Kailadevi wildlife sanctuary, Rajasthan, India

The Kailadevi Wildlife Sanctuary (KWS) is the northern extension of the Ranthambor National Park and falls within the buffer zone of the Ranthambor Tiger Reserve, one of India's 21 tiger reserves. KWS is spread over 674 sq.km, in the district of Sawai Madhopur, Rajasthan, western India.

Falling within the semi-arid biogeographic zone and Gujarat-Rajwara biotic province (Rodgers and Panwar 1988), the area's vegetation is dry deciduous, dominated by dhok, *Anogeissus pendula* (Champion & Seth 1968). According to the Forest Department, despite the size of the area, the wildlife population is relatively low. However, in the past this area is known to have nurtured a rich faunal life, including tiger (*Panthera tigris*), blue bull (*Boselaphus tragocamelus*), sloth bear (*Melursus ursinus*), porcupine (*Hystrix indica*), hyena (*Hyaena hyaena*) and a wide

variety of birds. The Sanctuary also has several settlements of predominantly pastoral people of the Gujjar and Meena communities. The former are classified by the government as an 'Other Backward Caste', and the latter as a 'Scheduled Tribe'.

In the past the forests of KWS were influenced by several external pressures including the hunting activities of the imperial rulers and of the Bargi community, forestry operations, illegal felling, mining, and grazing by the migratory Rabari community. Of these pressures, illegal felling, mining, and use by the Rabaris, continue to affect the Sanctuary today. Hit by the impact of these activities, and by restrictions imposed due to the declaration of the Sanctuary, the communities living in and around the sanctuary decided to respond. For over a decade now, they have organised themselves as Forest Protection Committees (FPCs). Consequently sustainable harvest of the existing, though limited, forest resources, has been possible. With changing forest policies (e.g. the greater stress on community participation in the 1988 National Forest Policy), the Forest Department (FD) has been attempting to involve themselves in the people's institutions, but its effectiveness remains somewhat debatable.

Towards community involvement

The immediate stimulus for the formation of the FPCs was the surmounting problems of the Rabari's entry into in their area and the consequent fodder resource conflict. At present, in the Sanctuary and adjoining areas, FPCs operate at two levels:

1. At the level of individual villages. This body is constituted of members of the village, and may have a smaller decision-making body.
2. The apex level, or at the level of joint sessions of a number of villages included under a single *panchayat*. This comprises members of the decision-making bodies of each village. The apex body, subject to circumstances, may also include villages outside of this *panchayat*.

The first apex body, known as the *Baragaon ki Panchayat* (Council of 12 Villages), was constituted in 1990. Initially formed to take stock of the Rabari problem, this body gradually started taking responsibility for protecting the forest. The *panch patels,* the elders in each village, are primarily responsible for enforcing the various rules and regulations of the committee. If an offence is committed, matters are first taken up at the village level, and only if they cannot settle it is it taken up at the higher (apex) level.

Within the *panchayat*, each villager has an equal right to decision-making. Almost all families are represented. This is to ensure that the responsibilities of the FPC are equally shared by everyone in the village. Indeed, the representative nature of the committees is remarkable. Most villages in this area are multi-caste, with mild to severe inequities in social and economic standing. But the FPCs and *panchayats*, both at the village and apex levels, comprise of members from almost all caste/community within the village. The number of representatives is in proportion to their strength in the village. Even the panch patels are representative of the various communities in a particular village.

However, gender discrimination, an integral part of the culture, inhibits women's active participation in the FPCs. This area is a reserved constituency for women (as per legal stipulations), so most of the members of the formal *panchayat* are women.

But their voice is still weak compared to the men's. Women's participation in the village FPCs would enable them to participate more effectively in the formal *panchayat*.

The FPCs have laid down certain rules guiding the use of forest resources. No one is allowed to carry an axe into the forests. Villagers are allowed to collect only dead and dry wood for fuel, and only for personal use. Timber for household purposes can only be collected with the FPC's consent, and in accordance with the amount fixed by the FPC. Members of the FPC are meant to keep a constant vigil, and dutifully report any untoward happening. On violation of these rules, the violator is tried by the FPC, and fined anywhere between Rs.11 and Rs.11,000, depending on the offence. This money is used for community purposes. No action is taken by the committee against anyone unless witnesses and evidence are produced in the *panchayat* meetings. These rules have apparently been reached by common consensus. It is interesting to note that most of these rules, other than that of timber extraction, are similar to those set by the Forest Department.

Conflicts over resources between villages are generally settled by the exchange of letters between the panch patels of the concerned village. These letters have a great social bearing. Inter-village relationships are largely governed by the manner in which these letters are written and responded to. The role of the patels as decision-makers is pre-eminent in effecting conflict resolutions. They command a lot of respect and their decisions are all prevailing. Thus there is a considerable overlap between the village *panchayats* and the FPCs , since the patels are active in both.

Impacts

The extent of illegal felling by local people has gone down drastically since the setting up of the FPCs. This fact is substantiated by the extensive regeneration of the forest cover that one witnesses in the area. FPCs have not only been effective in checking their own villagers and some outsiders, but also have accosted and tried some FD officials. In at least one case, a forest official was fined for illegal felling. In most cases where an outsider is involved in a violation, the FPC prefers to report it to the FD. In cases involving local people they prefer to settle it in the village or at the level of inter-village FPCs.

Lessons, constraints and opportunities

FPCs are not, however, without their problems. These include:

- *Caste conflicts:* Although the constituent body is representative of the various communities, caste-based politics and differences are a principle cause of dissension and thus also undermine some FPCs.
- *Favouritism:* Some villagers complain that nepotism and favouritism by the decision-makers has weakened their FPCs. This was especially the case with the relatives of the *patels* and other influential villagers.
- *Outside influence:* People settling outside the village are no longer threatened by social sanctions against them and thus are not bound by the regulations observed in the village. Besides, on becoming 'educated' they seem to realise that the decision at the *panch patel* level has no legal bearing!
- *Lack of official recognition:* Most FPCs remain unacknowledged by the FD, which confines their scope and powers to small areas and to local violators.

Of late, under the Global Environment Facility's eco-development project for Ranthambhor Tiger Reserve, the FD has started its own FPCs, or piggy-backed on the people's efforts. By 1998 the FD had only successfully set up one functional FPC. However, it seems a collaborative approach between villages and the FD may be the best option in Kailadevi's situation. To this end, institutions and NGOs such as the Society for Sustainable Development, Karauli, the Indian Institute of Public Administration, New Delhi, and Kalpavriksh, Delhi, have been attempting to strengthen a process of dialogue and mutual understanding between villagers and forest staff. Some research has also been done on the possibilities of joint management of the KWS (Das 1997), and documentation of the biodiversity uses and knowledge of villages is to be taken up by NGOs (Arun Jindal, pers. comm. 1999).

Case study source

Except where otherwise mentioned, information for this case study is from: Das, P. 1997. 'Kailadevi Wildlife Sanctuary: Prospects for Joint Management'. In: Kothari, A., Vania, F., Das, P., Christopher, K., and Jha, S (eds.). 1997. *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India.* Indian Institute of Public Administration, New Delhi. Some recent updating is based on information from Arun Jindal, Society for Sustainable Development, Karauli.

Case study 7

Dalma wildlife sanctuary, Bihar, India

The Dalma Wildlife Sanctuary (DWS) is situated in the Chhotanagpur Division of South Bihar, a few kilometres north of the city of Jamshedpur, eastern India. The Sanctuary covers an area of 19,300 ha of the Dalma hill range, and is divided into a core area of 5, 500 ha and a buffer area of 13, 800 ha.

Lying in the Chhotanagpur biotic province of the Deccan peninsula biogeographic zone (Rodgers and Panwar 1988), the area's vegetation consists of Northern Tropical Dry Deciduous Forest and Peninsular Sal Forest (Champion and Seth 1968). Mammals include the Asian elephant (*Elephas maximus*), sloth bear (*Melursus ursinus*), wild boar (*Sus scrofa*), Indian giant squirrel (*Ratufa indica*), barking deer (*Muntiacus muntjak*), mouse deer (*Tragulus meminna*), hare (*Lepus nigricollis*), jackal (*Canis aureus*), and porcupine (*Hystrix indica*).

There are 132 villages in and around the DWS. Of these, 43 are completely outside the Sanctuary, while 88 have their settlements and fields located outside the Sanctuary boundary and their common lands and village forests inside. Only one village is totally within the Sanctuary. According to Forest Department data of 1995, these villages are inhabited by around 32,000 people with a cattle population of around 41,000. The numerically dominant communities are the Mahato, Bhumij and Santhal, the last two being Scheduled Tribes. Agriculture is the main occupation and is often supplemented by the manufacture and sale of forest based products such as wood and non-timber forest produce (NTFP).

Dalma's forests provide food, drink, timber, fuelwood and various other products to people of the surrounding areas. Many of the forest products are sold in markets,

especially in Jamshedpur. There is a great demand for fuelwood and timber, a significant proportion of which is extracted, illegally, from Dalma. A number of illegal *mahua* (*Madhuca indica*) liquor distilleries operate inside the Sanctuary, using a large quantity of fuelwood. Quarrying, stone crushing, and brick-making activities at the edge of the Sanctuary are additional pressures. The construction of an irrigation canal through a part of the DWS, which began in the late 1980s, also resulted in a lot of forest being cleared.

A tribal ritual known as the *Akhand Shikar* (The Great Hunt) or the *Sendra*, takes place in the DWS in May each year. This one-day event is of great religious, social and cultural significance to the local indigenous population. Around 20,000 people participate in it, even though it violates the *Wild Life (Protection) Act, 1972*.

Towards community involvement

Villagers have initiated several Forest Protection Committees (FPCs) in villages inside and around DWS, mainly to protect their livelihood resources, especially timber species and fruit trees. The villagers explain that due to large-scale felling, first by the Forest Department and later by the timber mafia, many areas had become devoid of trees. Most protection efforts began in the early 1990s. Around that time, the passing of the Bihar Joint Forest Management (JFM) Resolution, information on which was spread by NGOs (such as *Shramjivi Unnayan*) and the Forest Department, greatly encouraged the creation of a number of village FPCs or *van samitis* by the villagers themselves. Some of features of these FPCs are given below:

- *Constitution:* The FPCs are informally constituted bodies and enjoy no legal or official recognition. A Committee usually consists of two bodies: a general body consisting of all the residents of the village, and a smaller core group. The core group consists of those who are taking a special interest in protection work in the area. In most cases, these people are the educated youth of the village and invariably belong to the more privileged sectors. The office bearers, including President and Secretary, are elected. Maintaining of registers and minutes of meetings is followed in a few cases.
- *Women and Underprivileged Communities:* Women also attend the general body meetings, but do not play any role in the proceedings, conveying their views through their husbands. The underprivileged communities of the area include the Sabar/Kharia and Paharia, which have been notified as 'primitive tribes' by the Government of India. In Koira village it was found that they did not attend Committee meetings. In most villages, it is these communities and other 'poor people' who are usually accused of cutting wood from the forest and selling it in the market. In Gobarghusi and Kherua villages however, it is these very communities who are playing a vital role in forest protection. As their homes adjoin the forest area, they are very well placed to assist in protection.
- *Functions:* The function of the Committee is to ensure the protection of a demarcated forest patch. The areas chosen for protection usually fall within the territorial boundary or *mauza* of the village, usually bounded by physical features such as ridges of hills or streams. The Committee's work therefore includes formulating policy and rules, holding meetings to deal with various issues such as illegal felling, coordinating the protection activities of the various tolas (hamlets) of the village, trying and punishing offenders, exhorting villagers to aid in forest

protection, and representing the villagers during interactions with the Forest Department and NGOs.

- *Rules:* Most rules about forest protection are decided at the preliminary meetings by popular consent. There is a variety of approaches followed with regard to forest protection. In Mirzadih, Nutandih and Sari villages, cutting of trees from the protected area is completely banned, while another part of the forest (*chhada*) is earmarked for resource use. In other villages the approach is less strict. In Gobarghusi village only certain species of economic or food value are protected and there is no restriction on the collection of dry wood. However, the term 'dry wood' has varying definitions, and includes poles. In both these villages the FPC may, in certain cases, even grant permission for the cutting of protected species for self-consumption. In such cases, the emphasis is on curbing large scale commercial exploitation of the forests, rather than stifling genuine survival needs.

Systems for rule enforcement and punishments vary from village to village. In most cases, first time offenders are let off with a warning. The threat of fines is another method used by FPCs, however there is generally a lot of flexibility with regard to the level of the fines. The severity of the offence, and the economic status of the offender, are taken into account. Offenders are first tried by the FPC, but if it is unable to arrive at a decision or if the offender wishes to appeal against its decision, the matter is taken to the *panchayat sarpanch* (village council head). In the case of severe offences, the offenders may be handed over to the Forest Department.

Impacts

Over the last few years, the FPCs have had a significant impact in regenerating or protecting forests. This is true both within and around Dalma WS. In addition, the functioning of the FPCs has given the villagers a certain degree of empowerment, the confidence to make their voice heard in official circles, and the *locus standi* to ask for further steps towards joint management.

Lessons, constraints and opportunities

NGOs are increasingly lobbying for some form of joint management of the DWS, given that villagers are already actively conserving the forests. A dialogue on this was organised by the Indian Institute of Public Administration, and the Rural and Community Services Division, Tata Steel, in 1996. At this workshop, a joint resolution to move towards joint management was signed by villagers, NGOs, and the Forest Department (reproduced in Kothari et. al. 1997). However, a number of constraints need to be tackled before this can be effectively followed up:

- *Lack of Recognition:* One of the most critical issues facing FPCs is the lack of official and statutory sanction for community forest protection activity. So far, the Forest Department has not granted this. However, there has been a recent proposal to register the FPCs as Eco-development and Forest Protection Committees, under a Government of India scheme for eco-development.
- *Absence of Benefit-Sharing Mechanisms:* Under the existing wildlife legislation, sharing of benefits such as timber and NTFP, as envisaged by the Bihar Joint Forest Management (JFM) resolution, cannot be practised inside a Sanctuary. This may have been misunderstood by some of the local NGOs and even the Forest Department. In the past, NGOs promised villagers a one-third share in the profits

earned from harvesting the forest area protected by their village, as an incentive. However, when FPCs started permitting controlled harvest of wood from their protected patches, for local use, the Forest Department pointed out that this was a violation of the *Wild Life (Protection) Act*, and registered cases against FPC members. With benefit-sharing in terms of harvesting of timber not being permitted inside the Sanctuary, many villagers became disinterested in the ongoing protection work. A number of FPCs either disbanded or ceased to meet regularly. It is hoped that the eco-development process will help to revive these, if villagers again see some benefits accruing to them.

- *Local Disputes:* It seems to be a common pattern here that while villagers protect their own patches of forest, they often encroach upon areas claimed by other villages in order to meet their continuing resource demands. Village level disputes often occur, with villages becoming factionalised along caste/tribal lines. An apex body, consisting of a number of FPCs, both at the *Panchayat* and Block levels could serve as an effective dispute resolution mechanism, as it does in some other areas (eg. at Kailadevi Sanctuary, see Case Study 6).
- *Resource Rights:* Villagers increasingly fear that they will be asked either to relocate or cease their resource use activities inside DWS (Arvind Anjum, pers. comm. 1999). This enhanced perception of a lack of tenurial security is undermining the effective working of FPCs. Organisations like the Dalma Mukti Vahini have opposed displacement of people, and have organised the villagers to declare that they will continue protecting forests and wildlife while living in their current settlements.

Case study source

Except where otherwise mentioned, information for this case study is from Christopher, K. 1997. 'Dalma Wildlife Sanctuary: Prospects for Joint Management'. In: Kothari, A., Vania, F., Das, P., Christopher, K., and Jha, S (eds.). 1997. *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India*. Indian Institute of Public Administration. New Delhi.

Case study 8

Community forestry at Kudada, Bihar, India

A unique example of a tribal forest protection initiative is provided by the small village of Kudada in South Bihar, eastern India.

Nearly 70 per cent of the area's forests are confined to the hills, mostly in the catchment of the Subarnarekha river. The area experiences warm humid tropical weather. By the early 1970s most of the hills had become barren through deforestation. The local villagers were facing an acute shortage of forest products such as fuelwood, agricultural implements and house-building materials.

The present forest crop is mostly of coppice origin, and often dominated by *Parasi (Clestenthus collinus)*. Natural regeneration of *Parasi* is fairly extensive in some of the forests, especially since the community initiative began.

Towards community involvement

In 1975, without any inspiration or support from outside, the Santhal tribals of Kudada took steps to protect 25 sq. km of forest land that had become virtually

barren because of indiscriminate felling of trees over the years, by both the villagers as well as outsiders. These efforts gave birth to the *Van Suraksha Sahyog Samiti (VSSS)* which has resulted in the regeneration of the forest. The man behind this initiative was a village medical practitioner named Nuna Ram Mardi, who through his Santhali street dramas, galvanised the forest-dwelling villagers into action. The focal theme of all these dramas was 'saving our forest'. Every evening they would sit and discuss the forest protection problems and processes, how to solve their own problems, and how people in other villages were protecting their own forests. Patrolling by all villagers became compulsory. They appointed a forest guard from their own village. The villagers gave him a *khaki* dress to give him a formal appearance so that the people from other villages would think twice before entering the forest.

In 1978, a central committee was formed at Kudada with 13 sub-committees. Before this, there was no written rule about the village forest protection, although a few oral rules were observed. The current rules are as follows:

- Cutting trees is an offence. If anybody is considered to be an offender, all villagers of the particular village would break social ties with the offender's family. No fine is imposed.
- Birds and other wild animals should be protected. This rule was practised by the villagers in their own village. On a few occasions they hunted in other places, but not within their own village.
- Local meetings are to take place frequently (several times a month), while big meetings with other villages were arranged twice in a month. Even with the formation of the Forest Protection Committee (FPC), the Forest Department staff were not called for the meetings, but this is now changing.
- No one should give the FPC any political colour. This committee is taken as a general village committee.

Until 1991, the Forest Department did not pay much attention. Then it introduced a new scheme whereby one third of the proceedings from the timber sale will go to the villagers, another third into developing the area, and the rest to the state exchequer.

Impacts

Almost 25 years after the initiative started, the forest has got back its lush green lustre. At present about 60 VSSSs are functioning in East Singhbhum district. Out of these, only half work as per the JFM resolution issued by the government of Bihar in November, 1990. Although there has been no effort to register these FPCs in spite of demand by local people, most of them have developed their own rules and regulations framed according to their own customs. In Kudada, all the 16 VSSSs are working under the umbrella of a central committee with headquarters at Kudada, in which members from those individual VSSSs have been compulsorily nominated. They meet regularly and keep the central committee informed and seek advice whenever required. Involvement with the Forest Department is not highly developed.

These VSSSs work on democratic norms, follow improved forest management skills, and are guided by the spirit of sustainable development.

Lessons, constraints and opportunities

The VSSSs could be strengthened by registering them, and providing some guidelines for functioning. Also critical is an improvement in the relationship between VSSSs and government agencies, and meeting the growing livelihood needs of local people. The Forest Department could play an extension role, and help to provide much-needed community infrastructure and appropriate developmental inputs.

Case study source

This case study is based on Singh, R.P., Bhattacharya, P., Roy, S.B., Yadav, G., and Mahapatra, S. 1995. 'Community forestry: a case study from Kudada, Bihar'. In Roy, S.B. (ed.). 1995. *Experiences from Participatory Forest Management*. Inter-India Publications, New Delhi.

Wildlife conservation in Nepal

6.1 History of conservation

Until the mid-eighteenth century, when present day Nepal was fragmented into many small principalities, all the land was under state ownership. The state policy encouraged the conversion of forests to agricultural land to increase the tax base. This approach, whereby getting maximum revenue from land was the only priority, seems to have done little to promote forest protection and management.[55]

However, there were a number of indigenous traditional systems of resource management. The Sherpa society of the mountains, for instance, elected *shingi nawa* (forest caretakers), to protect adjacent forests and regulate the use of pasture (Gilmour and Fisher 1992; Sherpa 1993). In certain rural areas of eastern and midwestern Nepal there were forest areas which were specifically protected by the communities for the lion or the tiger, as these animals were considered *Ban Devi* (forest goddesses), a perennial source of power. In the eastern hills land was commonly administered under the *kipat* system whereby a tribe exercised exclusive and inalienable communal rights over a large area. Only members of the designated clans could hold land or reclaim the uncultivated land within the *kipat* jurisdiction, which included streams and forests. Another instance of an indigenous system, also in the hills during the nineteenth century, is the *chitandari* system. Under this, *chitandars* ie. local non-official functionaries, were responsible for administering and controlling the use of village forests (HMG/IUCN 1988).

Until the passing of the *Private Forest Nationalisation Act* (PFNA) in 1956, the management of the forests in the middle hills was vested with the Talukdars, who were *de facto* rulers at the local level during the Rana period (1846–1950). The aim of this new legislation was to place all forest land under the control of the fledgling Forest Department (FD) which had been established in 1942. Since the FD was inadequately staffed, with only five or six trained professional foresters in the country at that time, it was not possible to make more than a token effort to protect the bulk of the forests (Gilmour and Fisher 1992).

[55] There is no available documentation on either historical state-sponsored or community-initiated attempts at wildlife conservation. This historical account, and a substantial part of the description of the current situation, therefore focuses largely on forestry. Though community forestry as currently practised is primarily oriented towards meeting the needs of hill communities, the related regeneration and protection of forests has important implications for wildlife conservation.

Between 1958 and 1970 there was a major reduction in the forest areas of Nepal. But this forest clearance was not due to the PFNA. In the mid-hills the pressure on the forest was due to the desperate need to accommodate the growing population which brought more land under cultivation. In the Terai, the destruction was due to the government's policy to resettle displaced people from other countries (Myanmar and India), and to resettle the mid-hill population in the Terai, with a view to reducing pressure in the hills. The negative impact of these ecologically perverse policies was compounded by the low numbers of government staff involved in forest protection (Oli 1998).

A series of policy and project initiatives since the late 1980s have considerably enhanced the role of communities in both forest and protected areas, especially in receiving benefits from conservation. Today, with very low investment by the government, the mid-hills forests are becoming rich, and wildlife has significantly increased. In addition, the community forest management capacity of the people has also been enhanced. As a result a significant amount of green 'capital' has been formed. The management of this resource on a sustained basis is a major challenge today.

6.2 Towards CWM

6.2.1 Forests

The National Forestry Plan was published in 1976. This recognised that "*the Forest Department had been ignoring the forests in the hill regions and this has led to the deterioration of the watersheds which are now in very poor condition.*"

As a solution, it was suggested that community or government land could be converted to Panchayat Forest to create new plantations. Through some progressive legislation[56] a village *panchayat* was able to apply for severely degraded (often totally deforested) government forest land on which to plant seedlings, which was then protected and managed under the general supervision of the District Forest Officer (DFO). This forest land was then designated as *Panchayat* Forest (PF) or Panchayat Protected Forest (PPF). With the end of the *Panchayat* system in April 1990 both titles were abandoned and replaced by the term Community Forest (Gilmour and Fisher 1992).

These rules gave formal recognition to the rights of the villagers to manage forest resources with technical assistance from the Forest Department. However, despite the efforts of the government and the aid agencies since 1978 to create these PFs and PPFs, very little land has actually been transferred to the Panchayats. According to Karmacharya (1987), of the total 1,835,000 ha of land available for handing over in 29 hill districts, only 36,376 ha was handed over up to 1987 (Gilmour and Fisher 1992).

The provisions of the *Decentralisation Act, 1982* further strengthened the moves for vesting control of forests in the hands of the local people. The preamble to this Act states that it is expedient to decentralise authority in order to enable the people to

[56] The *Panchayat Forests Rules 1978* and the *Panchayat Protected Forests Rules 1978*.

take decisions about their day-to-day needs. This Act empowered village *panchayats* to form people's users committees, to use any specific forest area and conduct such tasks as afforestation, conservation and management on a sustained basis (Gilmour and Fisher 1992).

In 1987 and 1988 the government developed a Master Plan for the Forestry Sector; a major planning exercise designed to take forestry into the 21st century. It indicated quite clearly the strong emphasis that the government wished to give community forestry. It estimated that investment in community forestry would be 47 per cent of total forestry sector investment during the next two decades. The Plan envisaged entrusting all willing and able communities with the protection and management of all the accessible hill forests through a phased hand over. The policy also envisaged retraining the entire staff of the Ministry of Forests and Soil Conservation for their new role as advisers and extension agents.

In response to this policy, the community forestry programme was undertaken. The *Nepal Forest Act 1993* also marked a significant step towards participatory forest management (Box 6.1). This programme envisaged transferring control and management responsibilities for existing forests through the mechanism of village institutions. In 1995, operational guidelines for community forestry development were developed to govern the process (HMG 1995).

The essence of the community forestry philosophy in Nepal is the development of a partnership between the local communities and the Department of Forests (DoF) for the management of small patches of local forests in which some form of user right already exists. Initially, these partnerships were established with the local government administrative unit, the *panchayat*, later renamed the Village Development Committee (VDC). Each *panchayat* or VDC was divided into wards and the ward chairman, who was elected by the people, formed user groups (UGs). But these UGs did not correspond to the geographical clusters of users of a particular forest. Therefore, the social unit has now been changed to a Forest Users' Group (FUG) and the members of self-initiated FUGs select a person (who is not a political functionary) to head the FUG.

The procedure for handing over a forest to a community consists of the following :
- Formation of a FUG.
- Demarcation of a forest as a community forest.
- Preparation and approval of an operational plan.
- Handing over the forest to the user group and implementation of the operational plan.

A formal handover of each forest is required before the users can officially begin their management. An operational plan, acceptable both to the users and to the Forest Department, has to be prepared before handover can take place. In 1990, the government produced operational guidelines for these processes.

At present the focus of the community forestry programme is on natural forests, because the villagers prefer to take them over and reap quick benefits, rather than establish new plantations. Non-governmental organisations are also currently active

Box 6.1 Legislating for Community Forests

The Nepal Forest Act, 1993 provides for the following types of forest:

- Protected forest, a National Forest declared by HMG to be of special environmental, scientific or cultural significance.
- Community forest, a National Forest handed over to a users' group for its development, conservation and utilisation for collective benefit. Though ownership remains with the government, considerable power is conferred on the users' group including the power to sell and distribute the forest products by independently fixing their prices. The users' group has to formulate an Operational Plan with technical and other assistance from the Forest Department. However, the Forest Department has the power to cancel the registration of a users' group in case of any deviation from the operational plan. If any user does anything contrary to the operational plan in any community forest, the concerned users' group can punish the said person and recover any loss or damage caused.
- Leasehold forest, a National Forest handed over to any forest produce-based institution, industry, or a community for certain specified commercial purposes, for which the leaseholder has to pay a prescribed fee. One significant provision is that no part of any National Forest which is suitable for being handed over to a users' group as a community forest, shall be given as a leasehold forest.
- Religious forest, a National Forest handed over to any religious body, group or community for its development, conservation and utilisation, primarily for any non-commercial religious activity.
- Private forest means a forest planted or conserved on any privately-owned land. The owner of the private forest may develop, conserve and manage the forest or sell its products by fixing their prices.

The NFA provides for a procedure to be followed for acquisition of land that may be included within the boundaries of any National Forest. It provides that no person shall be entitled to any right/facility of any type in the National Forest unless such a right/facility has been given by the government. This means that local people do not have any forest produce rights in National Forests.

in convincing local people to take over forests. In cases where no natural forests exist, FUGs are encouraged to regenerate or reforest the area. They are provided opportunities to discuss ways and means of managing community forests through networking in districts and at the national level. The district-level forestry staff are encouraged to plan community forestry work. Recent estimates suggest that there are more than 7000 community FUGs in the hills and mountain areas, managing several hundred thousand hectares of forests.

Recently a federation of FUGs has also been formed at the national level to promote their interests. This group is increasingly recognising its role as a pressure group to the concerned line agency on behalf of users' groups.

Initially the user groups received a cash subsidy as an incentive for plantation development and protection. This subsidy is being reduced and gradually withdrawn to make the programme sustainable. The user groups themselves are managing nurseries, as a result of training they have received. So not only forests, but also

technology, is being smoothly transferred to user groups. It must, however, be noted that actual ownership of forest land is not transferred to user groups but remains with the government and only user rights are transferred.

While considerable attention has gone to state-initiated CF efforts, there are quieter but equally important community or NGO initiatives that are not as well known. For instance, the Jara Juri Trust has successfully highlighted several examples of community and individual grassroots efforts at regenerating and managing forests (Panday 1997). It gives awards to such initiatives in a bid to encourage their continuation and spread.

6.2.2 Protected areas

Nepal has also developed an impressive network of protected areas as a means of conserving its genetic resources and natural habitats. This was effectively initiated during 1970 when the late King Mahendra approved in principal the establishment of Royal Chitwan National Park and Langtang National Park. Consequently, a conservation section was established within the Department of Forests. In 1973, with the passing of the *National Parks and Wildlife Conservation Act*, these parks were embodied in legislation, and in 1979, the Department of National Parks and Wildlife Conservation (DNPWC) was established.

The National Parks and Wildlife Conservation Act of 1973 provides for the establishment of two types of protected areas (PA) namely, national parks (NP) and reserves. A NP is defined as an area set aside for conservation, management and utilisation of animals and vegetation on lands together with the natural environment. The exact meaning of the word 'utilisation' is not clear from the definition. The category of reserves is further split into:

- Strict Nature Reserve (SNR): an area of ecological or other significance, set aside for purposes of scientific study.
- Wildlife Reserve (WR): an area set aside for the conservation and management of animals and other resources and their habitats.
- Hunting Reserve (HR): an area set aside for the management of animal resources for purposes of sport hunting.

Today there are eight national parks, four wildlife reserves, three conservation areas, one hunting reserve and two designated buffer zones. The total area covered by these designations is 2,427,200 hectares (Sharma 1998), about 16.5 per cent of the total landmass.

Hunting, killing or capturing of any wild animal is only permitted in the hunting reserves, not in the parks or protected areas . Equally important, the cutting of trees, cattle grazing, mining, quarrying, and clearing or occupying of any land are all prohibited within the boundaries of the parks or reserves. There are exceptions to these rules to accommodate specific local traditional needs. For example, in the protected areas of the lowlands, local villagers are permitted to harvest thatch grass at specified times and under specific conditions. In the Himalayan region, local people are permitted to graze cattle and cut trees for fuelwood and building timber (HMG/IUCN 1988).

There are several issues related to conflicts, peoples' attitudes and conservation efforts, which need to be understood:

- In some areas, conflicts have developed between the park authorities and local residents regarding the latter's right to extract products such as fuelwood and fodder. The restriction of access to parks and reserves has in some cases resulted in economic and social hardship for local people. This aspect is not, however, very well documented in Nepal.
- Successful protection has allowed wild animal populations to expand in protected areas. As a result, some species are having a serious impact on local communities, causing injuries (and occasional fatalities) to humans, livestock losses and the destruction of crops, and so adding to the conflict between people and parks.
- To enforce protected area regulations in areas like Royal Chitwan National Park, park authorities rely on the assistance of the Royal Nepal Army. Although the army has helped reduce poaching within protected areas, it has created other problems. Soldiers are not given any special training and consequently lack an adequate appreciation of their new, non-military role. Parks guarded by such armed forces and people driven by necessity often confront each other causing great controversies over conservation.
- In the past, communities have not been involved in management decisions and have not been entitled to a share of locally generated revenues from park activities. Local people have therefore tended to regard parks with suspicion: not only has their access to areas, where once they were free to go, been restricted, they have also not received adequate compensation for this loss of access.

In recent years, there has been a growing realisation that the ultimate success of protected areas depends upon the cooperation and support of local people. In order to ease the conflicts (mentioned above), the concept of 'impact zone' was developed to focus on the special needs of people living in the immediate vicinity of a PA. Since the impact zone alone was not sufficient to meet the growing needs and aspirations of the people living in the vicinity of PAs, the *1973 National Parks and Wildlife Conservation Act* was amended in 1989 to provide a legal basis for establishing multiple use conservation areas and to permit NGOs to manage them.
The same amendment also empowered government to declare a buffer zone within any forest, farm or settlement area surrounding the PA (Box 6.2).

Among the first areas reviewed with this new approach was the Annapurna region in western Nepal, which has since then become a much cited example of community-based conservation (see Box 6.3). The success of this approach has spurred other similar attempts. *The Conservation Area Management Regulation (2053), 1996*, under the 1993 amendment of *National Parks & Wildlife Conservation Act*, details the steps to seek community participation in the management of Conservation Areas (CAs). Among many positive aspects of the regulation, the most important is that the Nepal Government can entrust the management of a CA to any legally formed institution committed to nature conservation.

Another step was taken by the government in Makalu-Barun NP. The buffer zone of this existing NP was declared as a conservation area in 1990. Since the DNPWC was already involved with the management, the Makalu-Barun National Park and Conservation Area (MBNP&CA) was gazetted as a collaborative effort between the

Box 6.2 The Concept of Buffer Zones

As park and people conflicts emerged and the government realised that conservation of wildlife inside protected areas cannot be achieved without local people's participation, HMG introduced a buffer zone concept in 1993 through an amendment to the National Park and Wildlife Conservation Act, 1973. The Act defines a 'Buffer Zone' as a peripheral zone of a national park or reserve which can provide the local inhabitants with the privilege of regular consumption of the forest products.

The Act also introduced a concept of revenue sharing, generated from the parks and the reserves. Thirty to fifty per cent of the total revenue collected may be used for local community development in coordination with local bodies, in order to encourage local people's participation in the park management. The government is empowered to fix the percentage of the revenue earned from the respective protected area to be allocated for local community development.

The Buffer Zone Management Regulation, 1996 contains detailed provisions for the management of BZs, including the establishment of user committees for management, and allocation of a share of the revenue as mentioned above. Powers for this are given to the PA warden, in coordination with local authorities. Users committees are to themselves select office-bearers and sub-committees, and prepare plans for community development, conservation of natural resources and utilisation of forest resources within the buffer zone in its own area. The PA warden can hand over areas as Buffer Zone Community Committee Forests. The users committee will be responsible for the management of this forest, including earning revenue from it.

Box 6.3 Annapurna: Conservation by Communities and an NGO

In 1985, when initial surveys were carried out in the Annapurna region of Nepal, the conventional model of PAs was found not to be appropriate. Annapurna Conservation Area (ACA) was established in 1986, and its management was entrusted to an NGO, King Mahendra Trust for Nature Conservation (KMTNC) as there were widespread fears that the government would overturn traditional resource-use rights and management (Wells 1994).

A team from this NGO developed a provisional project design and management plan based on long-term discussions with leaders and villagers throughout the region. The plan allowed for regulated collection of forest products, allocation of visitor fees for local development, and delegation of management authority to the village level. ACA was finally gazetted in July 1992, but KMTNC had even prior to this embarked on a series of participatory conservation and livelihood generation measures. Through such measures, the project is managing an area of 7629 sq.km., one of South Asia's largest protected areas (Case Study 9).

DNPWC and Woodlands Mountain Institute, an international NGO, in November 1991, after four years of planning and research by a task force. The collaboration among these organisations is on the basis of a 12-year agreement (DNPWC and WMI 1993; for a detailed description of this initiative see Case Study 10). More recently, Kanchanjungha, in the Eastern Himalaya, has also been declared a Conservation Area. Initially the total area is 2,011 ha.

Despite the legal arrangements described above, communities in buffer zones are not yet clear about their roles and the benefit sharing opportunities arising from PAs. The practical models for institutional arrangements of buffer zone user groups have yet to emerge, and the validity of buffer zone management in PAs where the revenue generation is very low, needs to be assessed.

Another intended move is to provide some form of compensation for loss of resource usage to the people living outside the boundaries of Royal Chitwan National Park. The revenue generated by the park is to be spent through user committees, which can allocate a portion of it for compensation. The committee can also be entrusted with the management of fallen trees, grass, logs and fuelwood inside the PA. However, it is not very clear how this will be implemented (Krishna Oli, pers comm. 1997). The compensation could also be in the form of community development works including agriculture, supported by funds raised from tourism and government allocation as well as from international sources (Shrestha 1998).

In its latest move, a Parks and People Project (PPP) was initiated by the government in 1995, with UNDP funding. The objectives of the project are to build capacity at community as well as department level, evolve an effective and efficient institutional arrangement to conserve biodiversity in the protected areas, as well as to improve the socio-economic well being of the local people living around these PAs (see Case Study 11).

There is a clear indication that community participation in wildlife management has had a positive impact on conservation of biodiversity in a few areas in Nepal, such as Annapurna Conservation Area, and some pockets adjacent to Royal Chitwan National Park. However, for most CWM areas, monitoring and evaluation from this point of view is weak, thereby making an unambiguous advocacy of CWM rather difficult. In addition, there are very few assessments of the distributional aspects of the benefits being derived from CWM initiatives. These and other shortcomings in the participatory conservation effort in Nepal are increasingly being discussed in the country, and means sought to plug them.

6.3 CWM Case studies: Nepal

Case study 9

Ecotourism and livelihoods at Annapurna conservation area project, Nepal

The Annapurna Conservation Area Project (ACAP), Nepal's largest protected area, is located in the Annapurna mountainous region in west central Nepal. This region contains some of the world's highest snow peaks (over 8,000m), and the world's deepest valley: the Kali Gandaki River between the Dhaulagiri and Annapurna range. The region also has a precipitation range from 250 mm to 3000 mm, and an altitudinal range of 1,000m to over 8,000m. Such diversity of climatic and other conditions has supported a wide range of ecosystems and species. The Biodiversity Conservation Data project of KMTNC (1994) enumerated that Annapurna Conservation Area (ACA) supports 22 different forest types with 1140 plant species, 21 species of amphibians, 32 of reptiles, 478 of birds and 101 of mammals. It is the only area in Nepal where all six species of Himalayan pheasant are found. Rare and

threatened animals include snow leopard (*Panthera uncia*), musk deer (*Moschus moschiferus*), Tibetan argali (*Ovis ammon*), Tibetan fox (*Vulpes vulpes*), and Tibetan wolf (*Canis lupus*).

ACA is dominated on the southern slopes by the Gurung and Magar people, both famed internationally as Gurkha soldiers, scattered in small villages. Other include the Managis, who have settled along the Marsyangdi River to the east, and Tibetans and Thakalis who reside in the Kali Gandaki Valley. The total population is about 40,000. Most people follow Hinduism or Buddhism, often blended with local variations of indigenous shamanistic beliefs.

People are heavily dependent on forest resources to meet their daily needs. The most common occupation is farming, although a small number of people (many former Gurkha soldiers) more recently have become lodge-owners. Heating and cooking energy, wood for construction and fencing, fodder for domestic animals, wild fruits and vegetables, medicines, fibres for ropes and cloth, bamboo for weaving, and many other products and services come from the forests.

Towards community involvement

In 1985, King Birendra made an unofficial visit to the Annapurna region and issued a directive to strike a balance between tourism, economic development and nature conservation. The King Mahendra Trust for Nature Conservation (KMTNC), Nepal's largest conservation organisation, took on the role of implementing the King's directive (Wells 1994). A six month in-depth feasibility study, funded by WWF, helped develop a provisional project design and management plan based on discussions with leaders and villagers throughout the region. The report suggested that it would be critical for planners, the KMTNC, regional conservation officers and staff to consider the interests of the people in this region first, as true, long-term conservation only arises from mutual trust (Sherpa et. al. 1986).

The project began with a grant from WWF in 1985, and has continued with funding from the Netherlands Development Corporation, and several other donors have contributed to specific project activities. The project began collecting entry fees of 200 Nepali Rupee ($8) in the conservation area in 1989. The revenues collected pass directly to the project and are deposited in an endowment fund, which is expected to lead to financial self-sufficiency of the project.

Empowerment of local people to enjoy rights and responsibility for managing forest resources was considered fundamental by the project. To achieve this, ACAP has adopted three guiding principles:

1. *People's participation:* The project involves local people in the planning, decision-making and implementing processes, and delegates responsibilities to manage the conservation area through various local institutions.
2. *Catalysts or match-makers:* ACAP acts as a *lami* (matchmaker) to meet the needs of the inhabitants and to manage over 100,000 annual visitors (foreign trekkers with their Nepalese support staff). Therefore, the project acts as a bridge between various international and national agencies and local needs to avail of appropriate expertise and resources.

3. *Sustainability:* Only those projects and programs which people can manage after the external support is withdrawn are supposed to be implemented. In every initiative, communities are motivated to contribute in kind to programs to ensure continuation of optimal management of the schemes.

ACAP's primary long-term objectives are:

- To conserve the natural resources of the ACA for the benefit of present and future generations
- To bring sustainable social and economic development to the local people
- To ensure that tourism has minimal negative environmental impact and delivers maximum local benefits

ACAP's programmes have been executed in phases, enabling it to expand its working area gradually. In 1986, ACAP was implemented in Ghandruk, as a pilot project covering only one Village Development Committee (VDC) with an area of 200 km². By 1990, its coverage had expanded to 16 VDCs in an area of 1,500 km². ACAP was officially gazetted in 1992 and given the authority to manage the designated Conservation Area for the next 10 years. The Conservation Area Regulations enacted by the Nepalese government in 1996 gave further legal authority to ACAP.

Formation and strengthening of local or grassroots institutions has been considered as the basis of the project because it helps in the continuity or sustainability of the programs. Traditional community organisation structures have been identified and strengthened. For example, Forest Management and Lodge Management Committees have been formed along the lines of the *rithi thiti sumitis*, traditional institutions which lay down and implement customary rules.

ACAP has initiated the formation of a host of institutional structures: Conservation and Development Committees (CDC) at the VDC level, primarily responsible for the formulation of policies and programs relating to resource management and community development; and under this the Forest Management Committee, Women's Group, Lodge Management Committees, Kerosene Depot Management Committee, Electrification Management Committee, Community Health Post Management Committee, and Gompa Management Committee, each with specific tasks. Special focus has been given to empowering women for various responsibilities, partly using the traditional institution of *amu tali* (women's group). The Forest Management Committee has responsibility for enforcing hunting regulations, fining poachers etc. The Committee also has the power to authorise the cutting of timber for specified purposes (Wells 1994).

A major feature of the management planning process for ACAP is the integration of management zones and development of an understanding of the local community structure and needs (Bunting et. al. 1991). ACA has been divided into a series of zones, each with specific regulations and management policies:

- *Special management zones:* areas of conservation importance that have been degraded or are threatened by imminent degradation.
- *Wilderness zones:* areas above the upper-elevation limits for seasonal grazing

(about 4,500 m). These areas are fully protected, with no development permitted.

- *Protected forest/seasonal grazing zones:* areas that lie above the special management zones and below the wilderness zones. This category only includes areas that are more than one day's travel from villages on a forest-resource collection trip. Restricted collection of firewood and medicinal plants, and hunting, is permitted.
- *Intensive-use zones:* areas of human settlement on the southern slopes characterised by intensive agricultural use, and including areas that are less than one day's travel from villages. Management, administration, and conservation education activities are concentrated within these zones. Hunting is strictly controlled.
- *Biotic/anthropological zones:* natural areas where communities are living in their traditional ways, not significantly affected by modern technology. Foreigners (except certain researchers) are not allowed to enter these areas (Wells 1994).

Impacts

The project's most immediate and visible results have been in reducing the environmental impact of foreign visitors, increasing the local economic benefits from tourism, provision of some alternative livelihood opportunities, creation of strong village institutions, and general social empowerment (Box 6.4). Due to reduction in fuel use and other measures, there has been significant regeneration of forests. Several community development works (for drinking water, education, and communication) have been completed.

Lessons, constraints and opportunities

The overall ecological, economic, and social benefits of ACAP are without doubt substantial. So visible are these that ACAP is now being used as a model for other such initiatives, such as at Makalu-Barun in Nepal (see Case Study 10), and is cited internationally as a successful example of co-management of a protected area.

Experience of over a decade in ACAP is restricted to a few villages, and as it expands into other villages within the Conservation Area, a number of challenges will have to be confronted (Box 6.4). ACAP (i.e. the NGO KMTNC) has limited humanpower, and it will not be possible to give every part of the vast ACA its full attention. Issues of local inequities influencing the decision-making process and the distribution of benefits; lack of coordination with some of the government departments active in the area; etc., will crop up, as they already have in the villages covered so far. Most important will be the problem of lack of employment opportunities, forcing large-scale out-migration of young people. Linking up conservation and development activities will therefore be a major focus. An attitude of learning by doing, however, seems to be prevalent in ACAP, which should allow it to be flexible and adaptive, and to face these challenges.

Case study source

Field work for this case study (in particular for Marpha and Sampan VDCs) was carried out in 1998-99. Secondary sources have been used for the rest of the text. For more information, see: Krishna, K.C., Basnet, Kedar, and Poudel, K.P. 1999. *People's Empowerment Amidst the Peaks: Community Based Conservation at Annapurna Conservation Area, Nepal*. Kalpavriksh, New Delhi/Pune and IIED, London.

Box 6.4 ACAP in Marpha and Simpani VDCs

Detailed field studies carried out in two of ACA's VDCs, Marpha and Simpani, show interesting results. Simpani VDC is in the south-eastern corner of ACA, on the southern flank of the Annapurna range. It has a population of 3760 (1995). Marpha, on the other hand, is in the Mustang area, part of the trans-Himalayan valley of the river Kali Gandaki. It has a population of 1562. In both cases, ACAP has extended its activities since 1993.

Villagers in both VDCs report that the project has helped to conserve forests and wildlife, and improve the overall socio-economic status of the area. Fuel and fodder supplies have increased, while alternative sources of energy have reduced the pressure on forests. Earlier underprivileged sections of the communities have been given special attention, which may have narrowed traditional inequities relating to natural resources. Other benefits include greater educational and health inputs, more skill development, livelihood opportunities and decision-making powers for women, greater infrastructure development, and so on.

However, there remain some critical issues to be dealt with. With improvement in forests and control over hunting, wild animal populations have increased leading to crop damage and livestock depredation. There is therefore increasing talk of allowing controlled hunting.

Concentration of tourism benefits in the hands of a section of the population is another area of concern. Many of the region's people are not benefiting from the project, as there are as yet weakly developed linkages between conservation and livelihoods other than ecotourism. There is a critical need for inputs into more productive (but ecologically sustainable) agriculture, jobs based on the area's natural resources, and so on. This relates also to the widespread problem of youth out-migration, still very heavy in the region, and unlikely to be substantially reduced unless attractive local livelihood options are available. Such migration could threaten the village conservation initiatives too as the upcoming generation may be cut off from local issues and resources.

Another problem is the lack of coordination between traditional forest use boundaries between villages, and the more conventional administrative (ward and VDC) boundaries. ACAP uses the latter, and has therefore unwittingly created a conflict situation in some areas (e.g. between the Syang and Marpha villages).

Finally, there is the issue of potential contradictions between ACAP regulations and conflict-resolution mechanisms, and the traditional mechanisms such as the mukhiya (village head) system of customary rules and conflict-resolution. The recent imposition of a government functionary to resolve disputes (which appears to have been done despite ACAP's reluctance) has further intensified this problem.

Case study 10

Makalu Barun National Park and Conservation Area, Nepal

The Makalu-Baron Conservation Area covers over 2,330 sq. km within the Solukhumbu and Sankhuwasabha districts. It is bounded by the Keshar Himal Ridge to the west, the Sangarmatha National Park to the northwest, the Arun River to the east/southeast, the Saune Danda (ridge) to the south, and China-Nepal border to the north (DNPWC and WMI 1990a).

Elevations range from 435 metres at the Arun-Sankhuwa confluence to the 8,463 metre summit of Makalu. Variations in precipitation follow this altitudinal transect, with lower elevations receiving more than 4,000 mm annually, diminishing to less than 1,000 mm in the sub-alpine and alpine zones of the higher mountains.

Unusually diverse and distinct bioclimatic zones are found within a very short distance and give rise to a series of distinct vegetation zones: tropical Sal (*Shorea robusta*) forest at elevations below 1,000 metres; subtropical *Schima-Castanopsis* forest between 1,000 to 2,000 metres; temperate zone oak/maple/magnolia forest between 2,000 to 3,000 metres; fir/birch/rhododendron forest in the sub-alpine (3,000 to 4,000 metres); and the herbs, grasses, and rhododendron/juniper shrub of the alpine pastures (4,000 to 5,000 metres) (DNPWC and WMI 1990a).

Amongst the species recorded are included an oak species previously unrecorded in Nepal (*Lithocarpus fenestratus*), two bird species never before seen in Nepal (the spotted wren babbler and olive ground warbler), and 14 other extremely rare bird species. Mammals include the endangered red panda (*Ailurus fulgens*), musk deer (*Moschus moschiferus*), ghoral (*Nemorhaedus goral*), tahr (*Hemitragus jemlahicus*), black bear (*Selenarctos thibetanus*), wild boar (*Sus scrofa*), barking deer (*Muntiacus muntjak*), and serow (*Capricornis sumatraensis*).

The MBNPCA is populated by approximately 32,000 people comprising three major ethnic/caste groups, the largest of which have Rai as their first language. The Rai religion is quite distinct from Buddhism and Hinduism, although Hinduism is exerting a growing influence. The Rai religion is entirely oral and is based principally on myths and ritual recitations aimed at the periodic appeasement of ancestor-divinities and spirits associated with nature. The kinship between humans and nature represented in the myth finds a parallel not only in ceremonies, but also in the traditional Rai economy, which is heavily dependent on forest resources. Usufructory rights to both cultivated and uncultivated land are organised around a system of clan-based land tenure system known as *kipat*. Although the legal status of *kipat* has been abolished, it continues to be the most effective system of resource management in many Rai communities.

Household dependency on land resources is critical in the area. Nearly all households (98 per cent) own some type of land for cultivating crops, growing trees, and pasture. For almost half of the households, shifting agroforestry makes up approximately 55 per cent of landholdings. Livestock and tourism, which is concentrated in the eastern and western parts of the project area, are the other important sources of income.

Women, in many ways, form the area's economic backbone. However, despite their crucial role in the economy, their economic and social position still lags behind the men.

Towards community involvement

A 12-year project for the Makalu-Barun Conservation Area was initiated in 1988 by the Department of National Parks and Wildlife Conservation (DNPWC) of the Ministry of Forests and Soil Conservation, and the Woodlands Mountain Institute (WMI), an international NGO.[57]

A task force under the leadership of Dr. Tirtha Shrestha has been preparing the management plan for the project, resulting in over 20 working papers and four detailed plans, based on careful scientific surveys. The task force recommended the immediate establishment of a Makalu-Barun National Park and Conservation Area (MBNPCA), with an integrated set of programmes to address the protection of the National Park and the sustainable management of resources in the surrounding Conservation Area.

The major concern of the project is to protect the environment by tapping the strong element of self-help and responsibility amongst the local people. It attempts to involve these people in each stage of the development process. As far as possible, traditional institutions are integrated into development procedures so that the project can benefit from the use of long-established and familiar structures.

The project aims to establish different local resource users' groups to manage the available resources in a sustainable manner. Interactive planning meetings are held to encourage local people to identify their needs, problems, implementation approach, etc. Education/training programs, meetings and home visits are conducted to assist in this process (DNPWC and WMI 1990b). Each user group operates under self-determined rules and regulations, functioning independently of external agencies, utilising the project expertise in order to regulate and manage available resources. Each user group elects its own chairman and member-secretary. A user group may register itself with the District Development Committee or the Chief District Officer (DNPWC and WMI 1992a).

The user groups are formed according to the specific needs of the local communities and in accordance with local traditions, while maintaining ethnic, geographic and functional homogeneity. For example, lamas (priests) may be given an active role in conservation, and jhankris (faith healers) in health-related activities. Local institutions such as kiduk (a Tibetan system of social welfare based on kinship which can be used by anyone requiring economic help), gomba (monastery), and samaj (social welfare trust whose main function is to lend out utensils for private and public ceremonies) may assist in effective implementation of the projects (DNPWC and WMI 1992a).

[57] The funding has been provided by various private and international donors, including the Government of Netherlands, the Canadian International Development Research Centre (IDRC), the U.S. Agency for International Development (USAID), and the Swedish Agency for Research Cooperation (SAREC).

The project envisages three types of user groups :

1. Natural resource groups, to protect the existing resources through a scientific management system. Existing clan-based groups which are working efficiently may be considered for this category.
2. Self-help groups to promote the traditional on-going practices of local communities and to construct and maintain the physical infrastructure at the local level.
3. Production credit groups to support and enhance local economic activities (DNPWC and WMI 1992a).

The MBNPCA is divided into four conservation sectors to facilitate the administrative supervision of activities and manpower. Each conservation sector has two to four Village Development Committees (VDCs) under its jurisdiction. In each sector there is a community conservation field office which administers the projects. A Community Development Officer (CDO/Warden) is in charge of each sector, with an Assistant Community Development Office/Ranger working under him. Motivators work at the grassroots level (DNPWC and WMI 1992b).

A Community Service Committee (CSC) is established in each of the four Conservation Sectors. The Committee includes one member elected by the residents of each Village Development Committee, where several user's groups may be working simultaneously. In the absence of any infrastructure at the ward level, CSCs may be formed from among the participating user's groups. In addition, a committee chairman is elected by consensus from the combined adult population of the Village Development Committees. Women have equal rights to vote and be elected.

The CSC functions freely within broad guidelines provided by the project. The first task of each CSC is to establish rules for the recognition of user groups and the areas from which the user groups are to be selected. The residents of each area should determine the projects they want to execute and notify their CSC. When the projects are approved, the beneficiaries are to choose the members of their user groups. When the user groups have been selected, a meeting is held at each centre to explain the guidelines and financial procedures, and also to address potential problems. The user groups are then free to sign the contracts for their projects, to draw funds, and to begin work. The user groups function as implementors, whereas the CSC's work as informal policy-making bodies at the Conservation Sector Level (DNPWC and WMI 1992a).

The Local Development Officer (LDO) remains the person in the district responsible for all development activities. Line agencies always act more or less independently of the LDO on the plea that they are obliged to follow the guidelines of their parent ministries. Nevertheless, the major line agency chiefs in the district, under the chairmanship of the LDO, form the local development committee.

Impacts

Though still early to judge the results, the project has managed to initiate greater cooperation amongst local people, officials and others. Linkages with district line agencies and District Development Committees, a problem in the past, have now greatly improved. A variety of village initiated projects are underway.

Lessons, constraints and opportunities

The project has set up the institutional framework (infrastructure, trained and motivated staff, operating systems, trust with local communities, etc) to provide the basis for both strong community support and biodiversity conservation. More emphasis needs to be placed on the national park and the issues facing natural resources in both park and conservation area. Some of the systems e.g. ecotourism, user group formation and community motivation, are functioning well.

However, performance could be greatly enhanced by less of an ad hoc approach to issues, and through carefully conceived and integrated strategies. The project has not yet developed success indicators. Whilst there are complicated work plan processes, there are often delays in implementation. The reporting of work performance is less detailed than the original plans. Work plan activities need to be streamlined to allow follow-up. As women members of user groups are less able to participate and express their views, separate women's groups and training for women at community level are needed (Rodgers and Uprety, 1997).

Case study source

Secondary sources have been used for the text, as mentioned therein.

Case study 11

Parks and people project, Nepal

The Parks and People Project (PPP) was started by His Majesty's Government of Nepal (HMG) with the support of the United Nations Development Programme (UNDP), to promote the development of people living around the parks and reserves in parallel with the conservation of biodiversity. This is to be done by developing buffer zones and enhancing local community participation in the management of the parks and their buffer zones.

The initial duration of the project was three years (1994–1997), but has received a subsequent extension. The PPP started its operations in 1995 around the following five terai (marsh/grassland plains area of Southern Nepal) parks and reserves: Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve, Royal Chitwan National Park, Royal Bardia National Park, and Royal Suklaphanta Wildlife Reserve (DNPWC 1996). In December, 1996, buffer zones were gazetted for Chitwan and Bardia NPs (Rodgers and Uprety 1997). Recent legal changes have facilitated this process (see Box 6.2).

The Parks and People Project (PPP) has the following objectives :

- To develop the capacity of staff and local people to ensure effective management of parks, national reserves and buffer zone on a sustainable basis.
- To facilitate local people's initiatives which could support socio-economic well-being (DNPWC 1997).

To make the approach more participatory, the project document was revised in August 1996 as a result of a workshop held in Kathmandu in December 1995, with the focus on the following principles:

- A shift in focus of social participation from the larger VDC to the smaller ward and

settlement levels. Hence, User Groups (UGs) were to be formed at these decentralised levels. Targeting these smaller groups for social empowerment, saving schemes etc. works well as a strategy of empowerment (Rodgers and Uprety 1997)

- Introduction of savings and credit programmes to have a capital base at the local level and also to provide people with easy access to credit
- Investing in human capital through skill enhancement to create a productive working force to undertake income generating activities (DNPWC 1997).

Towards community involvement

The Parks and People Project started its operations in the field in 1995. The villages around the five parks and reserves, within the so-called Buffer Zone, cover 91 VDCs with a total population of 683,000 (DNPWC 1997).

The formation of UGs through community mobilisation involves a series of formal and informal interactions with the community. By 1997, 155 UGs had been formed, including separate female, male and mixed groups. The size of the UG varies from settlement to settlement; for example, membership in Koshi Tappu Wildlife reserve varies from 19 members to 84 members. UG membership is open to everybody in the settlement, with the important conditions that a member is to participate in meetings regularly and deposit his or her savings with the UG. In some cases cumulative savings are deposited in the bank, but in many communities the savings are invested in various activities by the UG members. The project can also provide credit through a Village Credit Fund.

Enhancing people's skills is one of the most important components of the project. People can decide their training needs themselves, but the project staff facilitate the process by encouraging people to identify training that could help create employment and increase income. Priority is given to the most interested disadvantaged people, but the community has the right to nominate people for training. Such issues are discussed and debated in the weekly meeting of the UG.

In 1995, UGs were formed at the VDC level. At the VDC level, a Buffer Zone Development Council was established. The members included the Chairperson of the UGs, the warden and DDC representatives. For the implementation of activities, the Council could form sub-UG committees at the ward level. Priorities are fixed by the UGs at the VDC level. Some seed money was allocated by the project for implementation of schemes at the VDC level. The warden and the Buffer Zone Development Council are responsible for allocating funds for various schemes. However, delay in the completion of schemes, social/political problems and inadequate participation of people at the local level in the assessment priorities, have resulted in recent changes to the system. Community needs are now identified by the UG at settlement level, at open meetings where project staff facilitate participation of women and the most disadvantaged people. The project cheques are given in the UG meeting, in front of all members, ensuring transparency in the use of funds. Park revenue will be routed through the BZ Development Council, which will meet annually to decide which UG gets how much. Some old and well-functioning UGs see the Council as another barrier between themselves and the government. They feel that the money should come directly to the UG. In the Council, the representatives of the weaker sections (eg. Tharus) might not be heard.

The criteria for disbursing funds are the size of the UG, impact of UG on the protected area, geographic location, willingness to participate in the process, and support from other agencies. There are two kinds of support systems: to the community as grants, and to individuals as credit through the Village Credit Facility. There is participatory monitoring of the funds used by the UGs and the park staff and technical experts; contracts are made between them, and the field staff keep a check.

Impacts

As yet young, this initiative will perhaps take time to show substantial concrete results. However, preliminary indications are that there is increased cooperation from the villagers for tackling problems like grazing and wood-theft. For instance, stall-feeding/fodder pools have been set up; individuals who take cattle into the Park are fined; and poaching is reported to the authorities concerned, although as yet UGs are not involved in anti-poaching work. Buffer zone work through the Biodiversity Conservation Network (BCN) has been successful in increasing forest cover and populations of wildlife such as rhino and tiger, and in earning revenue for the villagers.

Lessons, constraints and opportunities

The buffer zone is demarcated in consultation with the villagers, and the criteria used include dependence, crop damage incidence and natural boundaries. One indicator of the success of the project is that in some PAs, villagers want their settlements to be included in the BZ. However, revenue-sharing and other related problems are still serious. Local institutional structures are weak, and influx of large new funds can be misused. Also, the new 'openness' can be misused; eg. in Chitwan, the grass cutting provision has been used to provide raw material to a paper mill. Creative methods of regenerating the land have not yet been thought out, and there is no long-term operational plan. The possibility of the BZ becoming a magnet for people from further outside the PAs (especially in the *terai*), needs to be anticipated and addressed. Further, the limited period of the UNDP project is not enough to generate a self-sustaining process: for example, even after 10 years in the Annapurna Conservation Area (see Case Study 9), full handing over and sustainability has not been achieved (Mingma Norbu Sherpa, pers. comm. 1997).

A lot of money goes into the BZ through line agencies and other sources. The UNDP money is minor compared to this. Yet, there is no coordination between the park staff and the other government agencies, and not all rural development work is oriented towards conservation and sustainable use. Coordination with other line agencies is legally supposed to exist, but does not take place: eg. the Irrigation Department is planning a project on Rapti River (Chitwan) without consulting the park management. There exits a proposal to include these line agencies in the BZ Council. Also, as per BZ regulations, no industry can come up without an environmental impact assessment (EIA), except cottage industries (not defined). EIA guidelines are the same as used for forestry sector (not legally mandatory, but administratively so) (Mingma Norbu Sherpa, pers. comm. 1997). Another issue is that only degraded areas outside the park are being considered for User Group Management, not those within the park (Krishna Oli, pers. comm. 1997).

Some baseline research and systematic monitoring, is being built into the Chitwan and Bardia PAs, eg. a BCN funded project is monitoring a sample plot. But this is an

isolated example (Mingma Norbu Sherpa, pers. comm. 1997). A mid-term evaluation of the PPP suggests that the success indicators are vague, non-quantitative and non-objective. The level of monitoring and evaluation is low. Absence of enough baseline data makes it difficult to evaluate the impact of the PPP on development and conservation - the twin objectives of the project (Rodgers and Uprety 1997).

However, the PPP represents the first major capacity-building initiative to develop community interaction in the wildlife sector and addresses an extremely important issue in the development of sustainable protected areas in Nepal, ie, the reduction of park-people conflicts. The project has helped in changing the attitude of the park staff and has sensitised them to people's issues. The level of interaction between the Community Officers and the Wardens/Chief Wardens is high and the project staff are very much a part of the process.

Case study source

Secondary sources have been used for the text, as mentioned therein. The Coordination Team's visit to the site was also used for personal observations and to collect information from local people and staff.

Wildlife conservation in Pakistan

7.1 History of conservation

Pakistan as a nation-state was carved out of colonial India at the time of its independence in 1947. Thus the pre-colonial and colonial history of natural resource management in the country is assumed to be similar to that of India (see above). Various documents, however, indicate specific community level systems of management of resources. Some examples are the *Warabandi* (a traditional system of water sharing by turn) and *Jirga* (council of elders), a system of taking community decisions and resolving conflicts (GOP/IUCN-Pakistan 1992).

7.1.1 Forests

Pakistan, like Bangladesh and India, follows the *Forest Act, 1927* and the categorisation of forests as reserved and protected forests. In protected forests, certain rights and concessions can be given to the dependent communities. *The North-West Frontier Province Act, 1937*, apart from directing the management of reserved forests also provides for rights in wastelands (*Guzara*). It specifies that all wastelands are the property of the land owners, who are entitled to use their trees (except *Cedrus deodar*) and forest produce for their own domestic and agricultural requirements free of charge. Guzara forests, though owned by individuals or communities, are managed by the state. There are several other relevant provincial laws relevant to conservation and use of forests, for Sindh, the Punjab, Balochistan, and Northern Areas.[58]

While earlier forest-related policies were largely oriented towards commercial forestry, significant changes came in 1991, when the National Forest Policy made a number of recommendations for the conservation, awareness and collaborative management of wildlife. This was subsequent to considerable national and international attention to wildlife conservation, as expressed in the national and provincial conservation strategies (eg. that of the North-West Frontier Province).

7.1.2 Protected areas

It was recognised in 1968 that the colonial laws and regulations were not able to arrest the decline in the population of 'game' species and destruction of their habitat.

[58] Unlike all other countries of the region, every province in Pakistan has its own legislation for the establishment of protected areas and conservation of wildlife. However, all these legislations have similar provisions, hence only one is described here in each case.

The Government of Pakistan (GoP) appointed a Wildlife Enquiry Committee which drafted conservation legislation which was later adopted through various provincial acts and ordinances.

The *Islamabad Wildlife (Protection, Preservation, Conservation And Management) Ordinance, 1979* provides for two categories of PAs: national parks and wildlife sanctuaries. A national park is defined as an area meant to protect and preserve the scenery, flora and fauna in its natural state, to which access for public recreation and education and research may be allowed. Certain specified acts like hunting, felling of trees, clearing land for cultivation, mining etc. are prohibited. A wildlife sanctuary is defined as an area of undisturbed breeding ground for wildlife which is closed to hunting, shooting or trapping of wild animals. Entry, cultivation, exploitation of forests etc. are prohibited without specific permit. However, no criteria are laid down for determining what category is to be applied to a given area. As in the case of India and Nepal, conflict situations may arise due to this. Further, there is no provision for involving local people in the planning and management of a protected area. The Ordinance is also silent on the rights of the people residing in areas that are included in a protected area.

The Ordinance specifically allows for hunting in a third category of PA called the game reserve. This is set aside for hunting of game animals listed in the First Schedule. The Ordinance also provides for a category of protected animals listed in the Third Schedule and which cannot be hunted. However, killing or capturing of animals in self-defence and for protection of livestock and standing crops is permitted. Similar legislation exists for Balochistan, Northern Areas, Sindh, North-West Frontier Province, and the Punjab.

The *Pakistan Environmental Protection Act (PEPA), 1997*, provides a general framework for conservation of natural resources, regulation of polluting activities, and other measures for environmental protection, and specific provinces in Pakistan have laws relevant to the regulation of fisheries. The *Territorial Waters and Maritime Zones Act, 1976* also has some general provisions for this.

7.1.3 Conflicts over conservation

Pakistan now has a network of 225 PAs in the country, covering nine million hectares (GoP 1998). This network was expanded particularly during the 1970s. The creation of these PAs and subsequent management was highly non-participatory and exclusionary, resulting in serious resistance from local people in most areas. The Khunjerab National Park was established in 1975 and was followed by a series of conflicts. Initial NGO suggestions of using a Biosphere Reserve/Multi-purpose Management Areas category, instead of a national park, were rejected by the government. But of late a participatory approach has had to be adopted (see the two case studies at the end of this chapter).

The government policy of not considering the problems which were created for local people by suddenly restricting their use of natural resources, or the disinclination to fulfil the compensation promises made to people, further intensified the human-wildlife and people-government conflicts (Box 7.1). Even in reserved forests and Gujara forests, where the people have a right to 60-80 per cent of the share in the

sale proceeds of timber, there are serious conflicts with the local communities because of numerous restrictions on timber harvesting and long delays in payments (Khattak 1998).

Box 7.1 Ignoring Local Livelihoods

Khabbaki lake in the province of Punjab, was designated a Ramsar Site in 1976, and has gained international fame for harbouring a large diversity of waterfowl. However, conservation policies are being imposed on this area without consulting the local people or understanding the actual character of the lake. Local farmers claim that the lake is a part of their low lying cultivated fields, which often turn into a shallow lake because of waterlogging during the years of heavy rains. But people's interests have been absolutely overlooked by the authorities, by imposing undue restrictions on the use of the wetland (Pimbert and Gujja 1997).

Despite official efforts like PAs, wildlife populations in Pakistan have continued to decline. Lack of resources has made implementation of conservation policies in these PAs a very difficult task. Combined with this is the non-cooperation of the communities residing in and around these areas for the reasons mentioned above. In addition, while restrictions have been imposed on local people's hunting and livestock grazing in and around the PAs, hundreds of foreigners and the Pakistani elite get hunting permits for many 'game species' as well as species as threatened as the houbara bustard (*Chamydotis undulata macqueenii*). Many other threatened species are on the verge of extinction because of illegal hunting, including the Marco Polo sheep (*Ovis ammon polii*), urial (*Ovis vignei*), and markhor (*Capra falconeri*) (GoP 1998).

The actual forest cover in the country has been reduced to less than 5 per cent of the total land area, and most of the pastures and grazing lands (comprising 32 per cent of the total area), including the ecologically sensitive high altitude pastures, are highly degraded (GoP 1998).

In the absence of a broad policy framework, the country's economic policies have undermined environmental sustainability (GoP/IUCN-Pakistan 1992, GoP 1998). For example, until the 1960s fishing rights mostly rested with traditional fisherfolk, such as Mohanas (believed to be the descendants of the Mohanjodaro civilisation of approximately third century BC). After the 1960s, however, in most areas these are being auctioned off to the highest bidder, mostly influential outsiders using mechanised methods of fishing. Such policies are endangering traditional people's livelihoods as well as depleting natural resources (IUCN-Pakistan 1996).

7.2 Towards CWM

Like most other countries in the region there now appears to be an increasing shift away from the government's top-down attitude . A review of the available documents, however, indicates that this is mostly under the influence of international NGOs and donor agencies, although in recent years some provincial governments (especially North West Frontier Province - NWFP) have proactively tried to involve local communities in collaborative management of natural resources.

The first major attempt to involve people in Pakistan was the watershed management programme of the 1970s, assisted by the World Food Programme, which essentially involves forest species and fruit tree plantations on private mountain lands. Similar projects include a Dutch funded social forestry project, started in Malakand in the NWFP in 1987 (Khattak 1998); a Swiss-assisted forestry project started in Kalam in 1991 in the mountains of northern Pakistan by the Forest Department (Khattak 1998); and several others.

The Pakistan National Conservation Strategy (PNCS), was prepared by the central government in 1992 in collaboration with IUCN. Its three objectives are the conservation of natural resources, sustainable development, and improved efficiency in the use and management of resources. Fourteen programme areas have been identified for priority implementation, including the protection of watersheds, rangelands and water bodies; forestry and plantations; and conservation of biodiversity. The PNCS recognises the importance of community participation for achieving targeted goals, which is reflected in the fact that nine of the 14 programme areas rely on community organisations for their implementation, while a tenth (supporting institutions for common resources) can only be implemented by community organisations. Self-management by the community is also recommended for restoration and protection of communal rangelands.

To facilitate implementation of the PNCS on the ground, provincial conservation strategies have been completed in NWFP (GoNWFP 1997) and initiated in Balochistan and Northern Areas. These strategies provide a broad-based consultative forum to address conservation issues at the regional and district levels.

One of the recommendations of the PNCS is the preparation of a national policy on wildlife conservation and use. Towards this, a draft discussion paper on a national wildlife policy has recently been prepared by IUCN-Pakistan, pursuant to a consultative workshop organised in collaboration with the National Council for Conservation of Wildlife (NCCW), which was attended by both government officials and NGOs. The draft policy has been sent out for provincial review. It seeks to forge a close partnership between the people and the government in managing wildlife resources. While recognising the state's right to ownership of wildlife for the common interest, the draft advocates the empowerment of local communities to manage wildlife for their own direct benefit. Further, economic benefits from the legal use and enjoyment of wildlife should be equitably allocated among the communities where the use occurs and wherever possible, used towards the cost of conservation. The draft also envisages involvement of communities at all levels in protected area management.

The preparation of a National Biodiversity Action Plan (BAP) was initiated in 1996 in collaboration with IUCN as a first attempt to meet the planning requirements of the Convention on Biological Diversity. While it necessarily covers much of the same ground as the National and Provincial Conservation Strategies, it is more focused on biodiversity. Several of the key recommendations of the draft wildlife policy have also been included as objectives and strategies in the BAP, particularly collaborative management of wildlife and other natural resources. The final draft version of BAP has been submitted to Government of Pakistan for review and endorsement (GoP 1998).

7.2.1 Externally-driven CWM initiatives

Several NGOs, such as the World Conservation Union (IUCN), World Wide Fund for Nature (WWF), and the Aga Khan Rural Support Programme (AKRSP), have played an important role in the conservation of natural resources with community involvement in Pakistan, particularly in the ecologically and culturally diverse (and sensitive) Northern Areas (NA) and the North West Frontier Province (NWFP) (see Box 7.2 and the case studies at the end of this chapter).[59]

Palas Valley, in the Western Himalayas, is a *"global hot-spot for avian diversity"* (Khattak 1998). A number of international/national NGOs and government agencies had an interest in the conservation of the area, and the five-year Palas Conservation and Development Project was initiated in 1998 with assistance from the European Community. The main objective of the project is to *"catalyse and facilitate the establishment and/or strengthening of community organisations, for participation in conservation and development"*. This will be achieved by encouraging formation of a Jirga (council of elders) on traditional lines.

Other areas where community based conservation programmes have been initiated by NGOs include the Bar Valley in the Northern Areas, and the Suleman Range in Balochistan of Pakistan (Khattak 1998). The Bar Valley is a remote pocket in Northern Areas whose 1100 inhabitants hunted ibex for self food. The hunt was a community effort and the meat was shared by all the households involved. When approached by WWF for conserving the ibex, the community demanded compensation for the free meat they got from ibex hunting. The conservation plan for the area envisaged licensed trophy hunting and sharing the fee thus received (US$ 3000 per hunt) with the community. The community was given some advance, through the local administration. In 1995 the government allowed three ibex for trophy hunting for US $9000. The people's share was put at 75 per cent (Rs. 2,70,000) out of which the community paid back the amount advanced by WWF (Ashiq Ahmed, pers.comm. 1997; see also Knudsen 1996).

The Suleman Range supports the largest area of pure Chilghoza (Pinus gerardiana) forests in Pakistan and also provides habitat for the endemic wild goat, the Suleman markhor (Capra falconeri jerdoni). Even though the trees yield edible nuts which are marketable, the local tribesmen were earlier felling the forests through contractors for quicker returns and over-hunting the wild goat for meat. In 1991 a survey revealed that the dependence of the tribesmen on felling the forest could be reduced if suitable land could be developed for agriculture and disputes resolved among individuals in the tribe. Irrigated agriculture with the financial assistance of WWF, and apple cultivation with Forest Department help, have considerably improved the economic conditions of the local tribals. About 200 forest owners have signed conservation agreements for protecting about 50 km2 of chilghoza forest. Also, the killing of markhor is now a rare occurrence (Ahmed 1997).

In the NWFP, recognising the importance of collaborative management, the Wildlife

[59] The above description largely focuses on various programmes and efforts being carried out in the NWFP and the NAs. This is primarily because information about other areas in the country was not available with the Review Coordination Team. There is indication of participatory resource management efforts being catalysed by smaller NGOs such as Sungi, but material on these was not available to the Review Team.

Box 7.2 Maintaining Biodiversity with Community Development

A four-year pilot project was initiated in 1995 in the Northern Areas (NAs) and the North West Frontier Province (NWFP) of Pakistan, to create village development programmes for the sustainable use of natural resources. The project is funded by UNDP and implemented by IUCN in NAs and by the Wildlife Department in NWFP. Collaborating partners include the Aga Khan Rural Support Programme (AKRSP), the NA Administration, and the government of NWFP.

A total of 15 project sites, covering 65 villages, over 670,000 people and an area of about 490,000 ha, has been selected. The project facilitates the formation of village organisations (VOs), which prepare village management plans (VMPs) and conservation plans (CPs) for their areas. District Conservation Committees (DCCs), consisting of government staff, local people's representatives, NGOs and the project staff, enable all stakeholders to sit at the same table to regularly discuss issues. The project has also made considerable efforts towards strengthening the policy and legal framework necessary to facilitate community-based conservation.

The project has helped government staff and villagers to build their capacities for effective joint management. About 40 villagers from 20 villages have been trained as Wildlife Guides to participate in wildlife surveys of their area along with the Forest Department. The CPs provide for the establishment of Village Conservation Funds (VCF) to help pay the cost of conservation and management of natural resources. The project also managed to get sanctioned five Ibex hunting permits per year for NA with 75 per cent of the licence fee coming to the communities and 25 per cent to the government. Surveys are also being done to develop ecotourism and medicinal plant programmes, to increase the livelihood generation options for the local people. Recently attempts are being made to increase the role of women in the effort by appointing special women staff to facilitate their organisation and participation (People and Biodiversity 1997; IUCN et. al. 1997a)

Department has assigned the category of Community Game Reserves, where communities manage wildlife for appropriate benefits, to the areas where such efforts are being carried out. This has been done through notifications, thus providing official backing and support for greater community involvement in natural resource management.

At present it appears from the review of available literature that most of these efforts are heavily dependent on international donor agencies, although there is scattered evidence of efforts to generate funds at the local level, such as Village Conservation Funds (see Box 7.2). In addition, research in other countries in the region has indicated that substantial funds can be generated for such efforts through integrated efforts of various line agencies functional in the area; as well as by making conservation planning an integral part of the larger regional planning. The review of available documents does not make very clear the extent to which such possibilities are being explored in Pakistan.

7.3 CWM Case studies: Pakistan

Case study 12

From alienation to ownership: Hushey Valley Conservation Area, Pakistan

Hushey Community Conservation Area (HCCA) is in Ghanche District of Baltistan, Northern Pakistan. Internationally famous for its mountaineering and trekking opportunities, and a candidate for World Heritage Site listing, it covers an area of 800 sq. km. in the Karakoram range of mountains (Jingfors, pers. comm. 1997). It falls under the cold desert mountain ecosystem, where average rainfall rarely exceeds 200 mm, most of the precipitation being in the form of snow between November and March. Average minimum temperature drops to -10°C in winters and mean maximum remains around +20°C.

The total human population here is 976 (in 1995) and livestock number 3360. Total cultivated land is 240 ha. Islam is the dominant religion, and the rate of literacy is very low, especially among women (Ahmed et. al. 1995). The main sources of livelihood are single crop agriculture and livestock. In recent times ecotourism has also become a major source of income. Most men work as porters and guides for the tourists, while the women look after livestock rearing and agriculture (HVO 1997).

Hushey is one of three villages inside the Central Karakoram National Park (CKNP). The NP was declared by the government in 1993 to protect its unique ecosystem (Fuller 1995). Hushey valley has also been declared a Community Conservation Area (CCA) by the local government. This category, however, does not have any legal standing.

Hushey Valley contains prime habitat for snow leopard (Panthera uncia) and wolf (Canis lupus), and supports a good population of Asiatic ibex (Capra ibex). The villagers claim that their numbers have gradually been declining over the last few years, primarily because of hunting by outsiders. Such incidents have increased in recent times because of a four-wheel drive road to the valley and easy availability of firearms. In addition ibex habitat is threatened by overgrazing and low productivity of the pastures. The villagers have livestock grazing and property rights, and declaration of a NP has thus created a conflict situation (Ahmed et. al. 1995). The firewood demands of trekkers is reported to have added to the existing pressure on the resources of the park. Tourism also causes solid waste problems, and social problems such as women not being able to take livestock to their traditional grazing pastures if they fall on the trekking routes.

Towards community-based conservation

At the time of declaring the CKNP, the Government of Pakistan entrusted IUCN-Pakistan with the responsibility of preparing the management plan. Considering the ill-effects of the top-down approach of the management plans prepared by the department earlier for other NPs like Khunjerab (see next case study), IUCN started with a consultative workshop. The workshop was attended by community representatives of the area, local authorities, NGO representatives, and other stakeholders. The resultant management plan was largely based on the discussions during this workshop, strongly recommended local people's participation and benefit

sharing, and stressed that such participation should be from the stage of micro planning at the village level.

Hushey village was selected as one of the pilots for this experiment (Fuller 1995), under IUCN's *Maintaining Biodiversity with Rural Community Development Project*. The project was designed to address two main causes of degradation: over-exploitation of natural resources for subsistence needs, and lack of clear tenure over natural resources. It also aimed to demonstrate that conservation of biodiversity can be achieved/enhanced by providing rural communities with the technical skills to manage wild species and habitats for sustainable use.

The project led to the formation of a Village Conservation Committee (VCC), a subgroup of the Hushey Village Organisation (Box 7.3) responsible for decisions regarding natural resources, control of poaching, etc. The VCC also selects a few individuals who are trained by the IUCN staff as Village Wildlife Guides (VWG). These individuals are responsible for monitoring, protecting, and guiding all wildlife activities in cooperation with the staff of the Forest Department.

Box 7.3 Village-level Institutions

Hushey has a traditional decision-making system whereby the village is divided into four equal units (*strangsos*), each headed by one leader (*sarma*). The *strangso* performs communal duties such as maintenance, repair, and construction of irrigation channels; livestock management in summer pastures; protection of forests and trees planted on communal lands; religious rituals; and communal labour. In addition, during the time of the Rajas, well before the creation of Pakistan as a nation state, a village trangpa or numberdar was appointed to collect revenue for the Raja as well as to resolve local conflicts. These institutional arrangements continue even now. Since about 1982, the Aga Khan Rural Support Programme has been working in the Northern Areas, organising local communities into Village Organisations (VOs) for sustainable development, afforestation, and other activities. The VO in Hushey village (HVO) was formed in 1990, building on the *strangso* system. Credit and savings programmes were then begun.

The project has also catalysed the formation of a District Conservation Committee (DCC), with the Deputy Commissioner of Gangche, various government officials, members of AKRSP and IUCN, and the president of the VCC as members. The DCC aims to act as a local forum where conservation issues can be discussed with the local administration.

The ibex conservation plan

The ibex conservation plan was prepared by the HVO with technical help from IUCN. As a result Hushey residents have stopped taking their cattle to certain summer pastures, and ceased raising villagers' cattle from downstream areas, thereby reducing the competition with the ibex. There is also a provision for 'sustainable' trophy hunting of ibex. It has been agreed that 75 per cent of the proceeds from such hunts will come to the community and 25 per cent will go to the government. However, it will also be ensured that the number of animals hunted never exceeds sustainable limits (as determined following guidelines provided by the IUCN Species Survival Group on Caprinae; Jingfors, pers. comm. 1997). IUCN staff, along

with the Northern Areas Forest Department (NAFD), are helping the HVO establish a monitoring system which will keep track of the ibex population. It will also be ensured that the time of hunting does not clash with that of ibex viewing, so as to maximise ecotourism revenue potential.

In order to facilitate this, in December 1995, 'sponsorships' of Hushey Village, and two other villages were auctioned at the annual convention of Safari Club International (SCI) in the United States. Under this sponsorship programme, the successful bidders agreed to support conservation plans for ibex, with the understanding that they would have 'first rights' to trophy-sized animals once the plans have been approved by the District Conservation Committees and government permits have been obtained. The sponsorship documents presented at the auction were signed by representatives of the selected valleys and the agreement is, therefore, between the sportsmen and the villagers.

In October 1998, this and other sites in the Northern Areas were notified as Controlled Hunting Areas for a period of three years by the Government of Pakistan. The VCC president was appointed the Honorary Wildlife Officer, with considerable powers. Even before this, however, a trophy hunt was authorised in December 1997.[60] Two American hunters came for this, and the community received a total of US$10500. The VCC decided to divide this money between buying electricity poles, the VCF, and an equal amount of Rs. 1700 to each of the 120 households of the village. This decision sent a very clear message to the community that Ibex conservation can bring economic benefits to all.

Under the project a Village Conservation Fund (VCF) has been established, managed by the HVO, to cover the costs of the local efforts for conservation. The initial payment for the fund was made jointly by the IUCN and the HVO (each paying equal amounts). Subsequent funds are to come from trophy hunt fees, fines, and ecotourism revenues. In 1996 the Hushey community was also granted permission to collect a conservation fee from tourists, though this has not yet been implemented pending the preparation of an overall plan for the CKNP.

Other activities of the IUCN-AKRSP project include increasing the productivity of fields and pastures by building a water channel. This will not only improve the wildlife habitat in the area but will help improve the livelihood of the people. To reduce the damage caused by livestock grazing, a system of rotational grazing along with zonation of the valley is to be adopted. The project is also helping women to produce and market local handicrafts, and has initiated a youth organisation to manage tourist waste along major trekking routes. Ibex viewing opportunities for tourists will be enhanced and promoted. In addition the tourists and the trekkers will be discouraged from using firewood. Fuel efficient cooking/eating systems will be tried in local villages, and 30,000 trees have been planted on communal and private lands.

Lessons, opportunities and constraints

The Hushey initiative has begun to have many positive impacts, most notably the enhanced community participation in conservation and developmental work. Of

[60] Another hunt was organised by the HVO in January 1999, but details are not available.

particular importance is the fact that the process has built on existing sensitivities regarding depleting resources, and on existing institutional structures. The training of VWGs, the decision-making skills and powers to the various local institutions, the Village Conservation Fund, legal authorisation through the Controlled Hunting Area notification, and other measures are attempts to ensure the sustainability of the programme.

Yet there remain several issues to be sorted out:

- The equitable distribution of monetary benefits of the programme.
- The involvement of the Northern Areas Forest and Wildlife Department, which has so far been on the sidelines, and whose capacity to work with local communities is still weak.
- The dominance of government officials on the District Conservation Committee, and the need to put villages other than Hushey onto its membership.
- Increasing human and livestock populations, leading to the need to enhance livelihood opportunities and natural resource availability.

What happens at Hushey is especially critical, as it will be used as a model for the whole of CKNP and its adjacent communities.

Case study sources

The research for this case study was carried out in 1998-99. Several secondary sources have also been used. For more information see: Raja, Naeem Ashraf, with Ibrahim, M., Ali, Roze, and Aslam, M. 1999. *From Alienation to Ownership: Conservation and Development in the Hushey Valley, Pakistan.* Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 13

Khunjerab National Park, Pakistan

Located on the northern-most frontier of Pakistan, between the Karakoram and Hindukush ranges, the Khunjerab National Park extends over an area of 2,270 sq. km. in the valleys of Khunjerab, Ghuerab and Shimshal (Rashid 1996). The altitude ranges from 2439 to 4878 metres above sea level. The temperature has high seasonal and spatial variations, with generally hot summers and cold winters. There are two rainfall peaks with 18-40 mm in April-May and 10-26 mm in August; the rest of the months are dry (Ahmed 1996).

This area is famous for a diversity of high altitude flora and fauna. Twenty-four species of mammals, 69 birds, and 86 plants have been recorded. Mammals such as the marco polo sheep (*Ovis ammon polii*), himalayan ibex (*Capra ibex*), blue sheep (*Pseudois nayaur*), tibetan wild ass (*Equus hemionus kiang*), wolf (*Canis lupus*), golden marmots (*Marmota caudata*), snow leopard (*Uncia uncia*), and brown bear (*Ursus arctos*), are reported to be locally highly threatened (WWF-Pakistan 1996). The park encompasses four vegetation zones, which include Dry zone alpine scrub, Moist alpine pastures, Dry alpine plateau pastures, and Sub-alpine scrub and birch forests (Ahmed 1996).

History of land-use practices

All three valleys have been under the pastoral mountain tribals' occupation for centuries. Animal husbandry (goats, sheep, yaks, and cattle) is the predominant occupation, although cultivation is carried out only at the subsistence level, and only in certain parts of Shimsali valley. Livestock numbers are reportedly very high, leading to the degradation of many pastures. Livestock face a high level of predation, mainly by Snow leopards and Wolves. Hunting and trapping of the predators, especially if they are killing livestock, has always been done, but in recent times chemical poisoning is becoming popular, leading to a decrease in their numbers (Ahmed 1996).

Legal status of land and resources

All three valleys were formerly part of the independent Hunza state. The villagers owned their land, while the wasteland was owned by the state but could be occupied or improved upon with permission from the *Mirs* (rulers). Pastoral concessions could also be received on this land after the payment of taxes. This system continued until 1974 when the Hunza state was amalgamated into Pakistan. After this the local people took over the entire area, although legal ownership was with the government (Ahmed 1996). After the concerns expressed by an American scientist, George Schaller, about the status of the Marco Polo sheep, the area was notified as Khunjerab NP in 1975. The management of the NP was handed over to the Wildlife Department (*The News* 1996). This resulted in many sudden restrictions on local people's access to resources.

Main issues

The area, which was perceived by the people to be theirs for all practical purposes, was declared a NP by the government without consulting the local people. The villagers were promised compensation for the restrictions on their access to resources, but this promise was never carried out. Secondly, while on one hand the NP was cordoned off under the claims that Marco Polo sheep were being killed by the local villagers, hunting of this species and others by outside elite, as well as personnel from the Khunjerab Security Force (based here because of the border), continued. These factors led to great distrust of government agencies, and a feeling of antagonism towards the park and its wildlife. Thus in the absence of any support from the local population, species like Marco Polo sheep continued to dwindle, and predators such as snow leopards continued to be poisoned by local graziers (Ahmed 1996).

Towards community involvement

To most conservationists it was clear by the late 1980s that the NP would not survive if things did not change. There was a need for a management plan which not only took into account the views and the needs of the local people, but also elicited their participation in conservation. In 1989 IUCN and the United States National Parks Services (USNPS) organised a workshop which recommended that WWF-Pakistan should develop such a plan. Mr. Ashiq Ahmed, an ex-forester and currently with WWF-Pakistan, helped to resolve some of the conflicts between the affected communities and the park management, by facilitating dialogue and suggesting mutually acceptable solutions. Finally, after seven years of community consultations and discussions, the management plan (MP) was completed in 1996 and approved by the Ministry of Environment, Urban Affairs, Forestry and Wildlife (Ahmed 1996; The News 1996).

The MP aims to conserve wildlife while meeting people's livelihood requirements, and works with the following specific objectives:

- To protect and improve the status of wildlife species in general, and of endangered, unique and rare species in particular.
- To conserve floral diversity.
- To create alternate sources of livelihood for traditional park users to improve their lifestyle and minimise their subsistence dependence on critical park resources.
- To educate the general public for a better appreciation and understanding of park environment and conservation in general.
- To stimulate research to improve the scientific management of the park.

While the MP was being formed, an agreement was reached with the people in 1992 (except the villagers from the Shimshal valley because of their distrust of the government). The MP is primarily based on the clauses of that agreement. While preparing the plan it was especially considered that no activities which were unacceptable to the local people or difficult for local management would be prescribed, to avoid any subsequent misunderstandings and ill-feelings (Ahmed 1996).

The plan is progressive and exhibits many interesting features:

- It prohibits most human activities in areas identified as special habitat for the endangered species.
- A zoning system for livestock grazing is prescribed. People who have to give up their livestock grazing rights as per this system, are to be compensated in various ways eg. development of alternative grazing sites, special reservations in local level jobs, etc.
- The grazing concession in the other areas will be on the condition that the graziers will be responsible for the security of the wild animals, and failing to do so will lead to the concession lease being cancelled.
- In the areas where grazing is not harmful or may even be useful for wildlife, no fee will be charged for grazing; however, in such areas no compensation can be claimed for predator kills.
- Eighty per cent of the jobs with the local park management will be given to local communities, and priority will be given to the families who had to give away their grazing rights.
- To compensate for reduced livestock because of reduced grazing potential, other income opportunities will be increased, such as ecotourism. Local people will be extended help in developing such opportunities.
- The Khunjerab Security Force will have to work under the authority of the wildlife department in issues related to natural resources and wildlife (Ahmed 1996; *The News* 1996).

Under the MP, a Management Committee has been formed headed by the Chief Secretary of the Northern Areas. Other members include senior government officials, representatives of KNP administration, representatives of local communities, and WWF-Pakistan (Jamal 1996). The Committee is entrusted with the formulation of a quarterly Action Plan, its implementation and subsequent evaluation.

The initial funding of US $50,000 for the preparation of the Management Plan was provided by WWF-Pakistan (Slavin 1993). The implementation of the plan, however, will additional funding of about US $57.36 million for five years, for which the government is currently seeking (Ahmed 1996).

Lessons, constraints and opportunities

The communities in the north of the NP are very enthusiastic about the plan, and in many cases have already formed Khunjerab Village Organisations (KVO). They claim to have caught the government officials coming on hunting sprees (Slavin 1993). This hunting, if not controlled, will not only lead to ill-will among the people but will also prove to be detrimental for the wildlife in the area.

People from the Shimshal Valley (covering 80 per cent of the park), who were not involved in the formulation of the plan, are sceptical. This community claims that there are no Marco Polo sheep in this area and the MP should instead concentrate on trophy hunting of Ibex and other species for greater revenue generation. Some sections of the community still see the abolition of the park as a means of achieving higher financial boost to themselves, hence they put impediments in the process.

Dependence, for the implementation of the plan, on the availability of the funds (which have not been generated so far) is a serious constraint, and not likely to be resolved in the short term.

Though the people are expected to participate in protection activities, officially not much attention seems to have been paid to their participation in the actual management of the National Park or in decisions about various zones inside the park. Nevertheless, it is encouraging that the management committee includes representatives from the local communities as active members.

Case study source

Secondary sources have been used for this case study, as mentioned therein.

Wildlife conservation in Sri Lanka

8.1 History of conservation

Having been a predominantly Buddhist country, Sri Lanka has a long history of wildlife protection and conservation. Establishment of sanctuaries for wild animals by the rulers was considered an act of great merit and was commonly done. A sanctuary established by King Devanampiyatissa, when Buddhism was first introduced in the third century BC, is considered the first 'state-initiated' sanctuary in the world. Later, in the 12th century AD, King Kirti Nissanka Malla prohibited the killing of animals within a radius of 35 kilometres of his kingdom of Anuradhapura (which even today is considered a protected area). Prior to the 16th century, Sri Lanka already had a well developed system of natural resource management, with a social organisation ensuring the smooth functioning and maintenance of this system. Tree planting as a practice probably goes back over 25 centuries, with historic texts relating to this activity from 543 BC (Nanayakkara 1987).

Veddhas constitute the only indigenous or tribal group in Sri Lanka. Mainly hunter-gatherers, they were pushed deep into the forests by the settlers from India. Some researchers claim that they had strict rules regulating hunting, such as not killing young and pregnant animals, not hunting certain animals in certain seasons, and so on (N.W. Dissanayake, pers. comm. 1997).

Most settlements in the country were restricted to the dry zone (northern parts of the country with rainfall below 2000 mm) until about the 16th century. Though the state owned the land, people enjoyed usufruct rights in return for paying taxes to the state, and had responsibility for the resources and areas they used. Thus the people were the virtual owners of the land and probably had a deep association with it (Box 8.1).

The arrival of the Portuguese in 1505 had a profound influence on the local inhabitants and their customs. Gun and powder, introduced by the Portuguese, became widely used. In 1815 the island fell to the British Empire, and towards the middle of the 19th century the commercial importance of natural resources and wildlife accelerated. Whilst previously animals were only killed for food, now they began to be killed in thousands for their horns and hides, which were exported (Uragoda 1994). The colonial regime started logging timber from the forests, some of which had been untouched until then. Settlements were encouraged to spread into the wet zone destroying large areas of rainforest. Most of these peasants carried out

Box 8.1 Traditional Approaches to Natural Resource Management

An interesting example of people's care for the land is the extensive 'cascade' system of irrigation tanks, dotted throughout the Dry Zone. The tanks were formed by bunding the natural streams at the slopes of the mountains from where they originated. The areas above (usually forested) were protected as the catchment, and the land below the embankment was used as paddy fields. The tanks themselves were left alone, apart from drawing water for irrigation, and therefore supported a high diversity of flora and fauna. The management of these tanks and associated common resources required a strong inter- and intra- community co-operation and organisation, apart from considerable technical knowledge (Mendis nd.).

Other examples include: a system of crop protection, where farmers prepared a separate seed bed for birds, called the *Kurulu Paluwa*, to avoid damage to the other fields (Baldwin 1991); and diversified systems of fishing which helped to avoid over-exploitation (Ostrom 1990). A particularly interesting form of land use, which continues even now, is the home garden, in which a large number of species (cereals, timber, fruits, fodder) are grown in a combination which resembles a natural forest. These can be modified to suit diverse soil-climatic conditions, including degraded lands. In areas where forests have disappeared, these gardens often have become the last refuge of wildlife.

shifting cultivation (*chena*), which even today supports farmers on 18 per cent of the country's total landmass (Lynch and Talbott 1995), but is now reported to be contributing to land degradation. Yet communities felling forests for agriculture and settlements are reported to have caused much less damage than the clear felling for timber by the government and illicit fellings for commercial reasons (Uragoda 1994, Baldwin 1991).

The new land laws of the British came in the first half of the 19th century. The *Crown Lands Encroachments Ordinance* of 1840 proclaimed that "*all forests, wastes, or any unclaimed land will be presumed to be the property of the crown until proved contrary.*" A large majority of peasants who owned the land through inheritance could not prove their ownership in the absence of any written documents, neither could the ownership of the chena land be established. Thus 90 per cent of the total land of the country fell under the colonial government, which also included common resources such as grazing lands, irrigation tanks, and catchment forests which had previously been managed and controlled by the people. The thick montane rainforests were then sold off cheaply by the government to private coffee and rubber planters. In less than half a century the hills became heavily degraded, resulting in at least 4000 elephants, among many other animals, perishing (Baldwin 1991). This process also led to the breakdown of excellent traditional management systems like the tank system.

8.1.1 Forests

Perceiving the expanding agriculture and population as a threat to the revenue that could be generated from the forests, free access to these forests was restricted by reserving them for the interests of the government under the Timber Ordinance No.24 of 1848. A Forest Department (FD) was created to manage these forests. This

Ordinance emphasised timber production to safeguard the interests of the colonial regime, but completely disregarded the rights and needs of the local people (FPT, 1995a).

Over time, the ill effects of clear felling became clear to the government and 'scientific forestry' was adopted under *Forest Ordinance No. 10 (1885)*. This categorised forests as Reserved Forests (RF), Proposed Reserved Forests (PRF), Village Forests (VF), and Other Crown Forests (OCF). This also had a provision for wildlife protection by creating sanctuaries. The PRFs were established to avoid the time-consuming acquisition process required to declare RFs. These, along with the RFs, were managed by the FD. The VFs were under the district government agents, and the OCFs were transferable between these two agencies. The VFs were primarily to fulfil the *bona fide* requirements of the local villagers (it is not clear if any VFs were actually declared), as their entry was restricted in the other two categories (Baldwin 1991). Yet the quality of forests continued to be affected because of selective felling and over-emphasis on monocultures of commercially important species, such as teak, mahogany, pines, acacia, and eucalyptus. Most of the forests did not remain the rich and diverse ecosystems that once provided for all the needs of the local population (Baldwin 1991). Sri Lanka's forest cover is reported to have declined from 80 per cent in 1881 to 24 per cent in 1991, though it is one of the few countries in the world which has 10 per cent of its forests under strict protection (Baldwin 1991).

8.1.2 Protected areas

By the late 19th century most animal populations had declined substantially through habitat destruction, commercial hunting, and sport hunting by the elite (planters, and some Europeans who came to the country just for sport hunting). Between 1881 and 1907, a series of Ordinances restricted hunting, and provided for the creation of sanctuaries. Yala Sanctuary was declared in 1898 (under the *Forest Ordinance* of 1885), and became the first sanctuary to be declared under any Act in modern times in Asia (Uragoda 1994). It appears, however, that these ordinances did not restrict hunting by local people for subsistence, except in the sanctuaries (Uragoda 1994).

A Department of Wildlife Conservation (DWLC) was established in 1948 after the enactment of *Fauna and Flora Protection Ordinance* in 1937. This Ordinance provides for creation of PAs and for other measures to protect wildlife. The Ordinance (through a 1993 amendment), provides for the establishment of two broad categories of PAs: national reserves, and sanctuaries. National reserves receive a higher level of protection and are established only on state land. Sanctuaries, on the other hand, may include both state and other land. A national reserve can be declared to be any of the following: a strict natural reserve, a national park, nature reserve, jungle corridor, refuge, marine reserve or a buffer zone (the difference between these types of national reserves is not clear as they have not been defined in the FFPO).

The process of declaration of these reserves is not mentioned in the FFPO. Neither does it talk about the process of acquisition of any land or settlement of rights. However, the FFPO does provide that the rights acquired by law, custom or usage in or over any state land in any protected area, acquired by such person prior to the date of its establishment, will be recognised. The Ordinance is however silent about the

status of rights acquired in other lands. Neither does it provide for any kind of participation of the local communities or other stakeholders in the management of protected areas or in the protection of wildlife.

Earlier provisions for hunting in intermediate zones, or shooting of deer or pheasants if they entered cultivated fields, have been done away with in the 1993 amendment. However if any elephant becomes a nuisance to the planters and cultivators, the director can issue a license to capture or kill it.

The Ordinance resulted in the creation of a network of PAs in Sri Lanka. Though this must have meant the curtailment of traditional access to resources for many people, unlike India there is no information on public opposition and dissatisfaction.[61] One reason for the lack of public opposition may have been the fact that abrogation of traditional access had been going on since the early 1800s.

Under UNESCO's Man and Biosphere Reserve programme (adopted by the government in 1969), the FD has established 36 Biosphere Reserves (BRs) so far, though they do not have any legal status under existing conservation legislation. Sinharaja and Hurulu BRs are recognised under the MAB programme of UNESCO (FPU 1995a).

Apart from policies and programmes relating to forests and wildlife, the colonial government was also responsible for significant changes in land-use which affected the country's ecosystems. In particular, changes in agricultural patterns were significant. Attempts to expand agricultural production in Sri Lanka began in the 1930s when the government launched programmes to repair and restore the ancient irrigation systems, most of which continued under public opposition. After independence in 1949, the emphasis shifted to a series of multipurpose river valley development schemes (Baldwin 1991). On construction of the largest reservoir in the country, Senanayake Samudra in 1951, a large portion of virgin forest was submerged and wildlife fell prey to poachers who used the opportunities provided by the opening of the area. To compensate for this loss Gal Oya National Park (NP) was created in 1953. This laid the foundation for many other NPs, declared to compensate for the forests lost during the construction of large reservoirs.

Construction of these reservoirs also meant relocation of a large number of people residing in these areas, thus causing a cultural shock as well as ecological degradation (Baldwin 1991). In the case of Udawalawe NP, created in 1972 around Udawalawe reservoir, an estimated 15,000 'squatters[62]', including loggers and chena cultivars, were evacuated. Similar displacement is reported from all other areas.

The country's largest water and land development programme, Mahaweli, announced in 1977, is spread over a prime forest and wildlife habitat of 260,000 ha. In addition to relocating thousands of families, the Mahaweli project led to submergence of the traditional migration routes of animals such as elephants,

[61] A significant amendment was made in this Ordinance in 1970 allowing activities occurring prior to the declaration of a PA to be continued (provided they had not been discontinued for more than two consecutive years). It is not clear why these amendments were made, i.e. whether they were brought about through public/international pressure. (FPU 1995)

[62] It is not clear if these were traditional residents, or recent settlers, or a combination of the two.

culminating in the serious human-elephant conflicts as they exist today (see case study 15). A series of NPs (Maduru Oya, Wasgamuna, Flood Plains, and Somawathiya), sanctuaries, and jungle corridors were created to compensate for this loss, considering the realistic needs of wildlife in the area. The new NPs cover an area of 200,000 ha. Some of these forests were also home to the traditional forest dependent Veddha families, who vehemently resisted displacement. In 1983, the government had to finally back down and declare an area of 600ha from the Madura Oya National Park as a sanctuary, to enable the Veddhas to pursue their traditional way of life. In addition, the government created the Wannietto Trust to protect and nurture Veddha culture (Uragoda 1994; Niven et. al. 1996).

8.1.3 Coastal areas

As important as the management of forest and inland waterways is the management of Sri Lanka's coastline. Coastal erosion is an ancient problem in Sri Lanka, but in recent years it has intensified primarily because of increased construction activities, mining, pollution, and mangrove destruction. Marine animals, including many threatened species of turtles, reef fish, corals, and others are under constant threat. The Coast Conservation Division (CCD) was created in 1978 to tackle serious coastal retreat, and upgraded to a department in 1995. The CCD is relatively more progressive than other government agencies, and is open to new ideas and changing scenarios. As discussed below it has played an important role in people's involvement in coastal area conservation (Baldwin 1991, H.N.R. Perera, pers. comm. 1997).

8.2 Towards CWM

As discussed above, both the FD and the DWLC were established with the intention of managing and policing natural resources. Their policies have so far reflected the exclusionary attitude prevalent since the colonial times. A highly centralised system has given rise to many conflicts between these authorities and the communities who reside in the fringes of areas controlled by them. In the case of certain PAs, strict restrictions without considering traditional resource uses by local people have made people so antagonistic that they are demanding denotification (Ranjen Fernando, pers. comm. 1997). Wider national and global developmental and economic policies have further intensified this conflict. The result is a highly dissatisfied human population and highly threatened wildlife. It is claimed by many that there are no traditional communities left in Sri Lanka, as almost all sections of society have been penetrated by invading foreign cultures. Yet the fact remains that there are several million rural people dependent on natural (terrestrial and marine) resources for survival.

Serious human-wildlife conflicts are now appearing as the habitats for the animals shrink. For example, elephant-human conflicts are common in most parts of the country. It is reported that in 1982, 7,000 acres of land near Uda Walawe National Park (a prime elephant habitat) was given to a sugar corporation, thus cutting off an important elephant corridor between this NP and Yala NP (Ranjen Fernando, pers. comm. 1997). The DWLC has tried several translocation and 'driving away' programmes for elephants (Uragoda 1994) without much success. Besides, such

steps are not long-term solutions to these problems. Local people find it unacceptable that while the maximum compensation for a human killed by an elephant is about US$800 (the payment of which is also often delayed), the punishment for killing an elephant can be as high as US$1,600 to 4,100 (Santiapillai 1997).

These conflicts are not restricted to the forests. There has also been large-scale destruction of marine resources and aquatic life. Mangroves have been destroyed to make way for large scale development (see Case Study 18), or to overcome land constraints. Corals, river beds, and beaches have been all unsustainably mined. The turtle population has been critically reduced as there is a ready market for turtle flesh and eggs (Uragoda 1994). Pollution from toxic effluents, domestic and tourist industry's sewage, oil spills, and others threaten sea life further. The increased focus on aquaculture and mechanised fishing has not only unsustainably exploited the marine resources but also threatened the livelihoods of many traditional fisherfolk. In some areas such commercialisation (often government supported) has been opposed by local fishermen, for example Muthurajawela (Case Study 18), and Rekawa Lagoon (RSAM 1996; Case Study 14).

At present there are three government departments in charge of forests and coastal/marine areas, the major ecosystems on which many local communities depend. The FD controls 60 per cent of the land, and 14 per cent of the country's total area is under PAs (2 per cent under FD and 12 per cent under DWLC). Finally, the CCD looks after the management and protection of the coastal areas in the country, controlling 300m from the high tide mark and 2 km out to sea (H.N.R. Perera, pers. comm. 1997). This contributes to a serious lack of co-ordination among the various government agencies concerned with natural resources (Baldwin 1991). A glaring example of this is the conflict between the FD and the DWLC, agencies that often work at cross-purposes with each other (Case Study 16). Very often opportunities to resolve serious human-wildlife conflicts are lost because of this lack of communication, e.g. Kahalla-Pallakele, where a simple problem of paying compensation to the people affected by crop damage caused by the elephants could have been resolved with slight co-operation of the various departments to pool their resources and efforts (see Case Study 15).

In addition, threats to effective resource management frequently arise as an outcome of policies of sectors other than forests and wildlife. Although the Ministry of Transport, Environment and Women's Affairs (MTEWA) is charged with coordinating among other ministries to mitigate adverse environmental impacts, it is typically the sectoral ministry's policy that prevails.

It is being increasingly realised that government agencies cannot effectively manage natural resources given their limited funding and staff, and without the support of the local people. The law already contains elements which would support the transition to more participatory policies, but this would need strong political will to put into practice. For example, the *Forest Ordinance* of 1885 provides for establishment of 'Village Forests' for the benefit of local people, as well as the establishment of 'Communal *Chena* Reserves' for local farmers. The *Irrigation Ordinance* of 1946 authorises community-based resource management initiatives. Yet these provisions have not been used so far (Lynch and Talbott, 1995). Despite this, the DWLC

remains unconvinced that people can be involved in the management of protected areas. Although there are some examples of participatory approaches (see the Case Studies), there remains an underlying lack of commitment to this approach.

The policies and planning of the CCD and the FD are becoming more participatory, however, perhaps partly a response to the global shift in attitude reflected through the funding agencies. In order to address rural fuelwood shortages the FD started the Social Forestry Programme in 1982, funded by the Asian Development Bank (ADB). However, whilst this was a plan for the people, their only involvement was as labourers on the plantations. The choice of species planted (mainly exotic, fast growing species) was rejected by the people along with the plan itself. Another similar effort began in 1992 (also ADB sponsored), where people could grow the species of their own choice on land leased out to them for 25 years. An unclear tenurial arrangement has made this plan also ineffective (Lynch and Talbott, 1995). An important component of this plan, however, was encouragement of the traditional home gardens in order to meet the major biomass requirements (H.M. Bandaratillake, pers. comm. 1997).

Three pilot areas, Devolved Management Areas (DMA), were selected to experiment with community-based forestry in the early 1990s (H.M. Bandaratillake, pers. comm. 1997; Lynch and Talbott, 1995). However an assessment by the NGO Environment Foundation Limited, showed that the areas selected for these experiments were already so degraded that people had no interest in their management (Lynch and Talbott 1995).

In 1990 a National Forestry Master Plan was prepared by the Ministry of Land, Irrigation and Mahaweli Development, largely funded by the World Bank. The plan was strongly criticised for its lack of transparency, non-involvement of any independent agencies, and being production-oriented and ignoring environmental aspects. Under internal and external pressure a revision of the plan was commissioned; the process involved a national workshop in which several non-governmental agencies took part (Carter et.al. 1994). The main features of the revised plan, completed in 1995, were:

- a nationwide ban on logging in natural forests (except selective logging in certain areas);
- a national conservation review to document the state of biodiversity in the country, which will help identify the traditional uses of forests, the areas of critical conservation value, the areas where slight readjustments of boundaries can help solve conflicts, and areas which can be managed with the help of the local communities.

The most important element of this master plan is that it has for the first time recognised the need for involving local communities in the management of their surrounding forests (L.C.A. de S. Wijesinghe, pers. comm. 1997).

With the help of IUCN-Sri Lanka, management plans were prepared for six Conservation Forest Areas. However, their implementation is pending because of funding shortages.

The National Forestry Policy (NFP) and the Forestry Sector Master Plan (FSMP), both adopted in 1995, constitute the first coherent, long-term framework for forest development in Sri Lanka. The NFP and the FSMP are a far cry from the production and regulation-oriented, "keep people out" approach reflected in previous forest laws and policies. They both contain very strong endorsements of the participatory resource management approach.

The FSMP recognises that there is a number of development partners in the forestry sector, including government agencies, forest-dependent people, farmers, rural communities, local forest industries, NGOs and many others. It seeks to allocate appropriate tasks to each development partner. It provides that while maintaining and strengthening the capacities of the main implementing agencies, the state should in the long run entrust its responsibility as forest manager to local people, rural communities and local industries, NGOs and other local non-state sector groups (FPU 1995a).

8.2.1 A participatory approach to coastal management

The Coast Conservation Department (CCD), as stated earlier, is more progressive in terms of furthering efforts towards people's participation in coastal resource management. The *Coast Conservation Act* was enacted in 1981, recognising the critical importance of sustainable use of coastal areas for the country as a whole. A Director of Coast Conservation was appointed under the Act, to handle both protection of the coasts against destructive activities, and to plan for proper management of coastal resources. In 1990, a Coastal Zone Management Plan was drawn up which recognised that "*community understanding and support of the management programme is essential for effective implementation*" (CCD 1990).

In 1992, *Coastal 2000: Recommendations for a Resource Management Strategy for Sri Lanka's Coastal Regions* was produced with the help of the CCD. One of the major steps it envisaged was the formulation of Special Area Management Plans (SAMP) for sites of ecological and economic significance. Two sites were taken up under this recommendation, Hikkaduwa and Rekawa. Management planning for these areas was done in collaboration with the Community Based Resource Management (CBRM) project of USAID (see Case Studies 14 and 17). The Rekawa, Hikkaduwa, and Muthurajawela examples are being used by the CCD, CEA, and other government and non-government organisations to stimulate more communities on Sri Lanka's coasts to sustainably manage their resources. A revised Coastal Zone Management Plan (CZMP), finalised in 1997, is an update of the CZMP adopted in 1990. It further emphasises the SAMP approach to coastal conservation and development (CCD 1990, revised 1996).

8.2.2 Other participatory approaches

Review of the available literature indicates very few examples of self initiated efforts by communities for conservation in the country (if they do exist, they have not been documented). Outside agencies and NGOs seem to be playing an important role in initiating and sustaining those efforts which do exist (see the case studies at the end of this chapter). For example, donor agencies are funding initiatives in forest

areas to reduce human-elephant conflicts in the Kahalla-Pallakele area (northern Sri Lanka), and developing livelihood options around the Ritigala Strict Nature Reserve (also northern part of the island) to reduce pressure on it (see Case Studies 15 and 16).

Another programme aimed at conservation with the participation of the local communities is the Medicinal Plants Conservation Project of the Ministry of Health and Indigenous Medicine. The main aim of this project is the conservation of globally and nationally significant medicinal plant species, their habitats and genomes. The initial step in the establishment of the medicinal plant conservation areas is village mobilisation, under proposed village project management committees (VPMC).

A Biodiversity Action Plan (BAP) for Sri Lanka is currently being finalised. This will advocate the involvement of communities in biodiversity management. The strategy document for the preparation of the BAP clearly states that biodiversity conservation should be *"centred at the grassroots level through community participation"* (MTEWA 1995). Networks of NGOs dealing with biodiversity issues have been established to provide input into the preparation of the BAP and ensure that local-level concerns are addressed.

8.3 CWM Case studies: Sri Lanka

Case study 14

Conservation of coastal biodiversity through enterprise: Rekawa Lagoon, Sri Lanka

Unemployment in the coastal areas of Sri Lanka have made it necessary to bring in vigorous development programmes. However, this inevitably leads to adverse impacts on coastal natural resources. Coastal habitats, such as brackish-water mangroves, lagoons and estuaries, have been over-exploited, degraded and altered to a high degree through human pressure. In north-west Sri Lanka, large-scale destruction and alteration of brackish-water coastal habitats have been catalysed through their conversion into farm ponds for the culture of the exported tiger shrimp, *Penaeus monodon*. Effluents from prawn farms pollute brackish waters, making farmed prawns susceptible to diseases such as white spot. Though the long-term unsustainability of such prawn farming techniques has been proved time and again, no long-term management measures have been adopted to stem this environmental mismanagement and biodiversity destruction. The high investment return of this export-oriented industry and the short-term profit motives of large-scale farmers (mostly businessmen from outside), have precluded the switch to more environmentally-friendly management methods.

Towards community-based conservation

Destructive prawn farming would have entered the picturesque lagoon of Rekawa, on the south coast of Sri Lanka, were it not for resistance from the local community and an innovative programme to bring them benefits which are in tune with the local natural resources.

The Rekawa lagoon has a community of traditional fishermen who engage in a seven month shrimp fishery using kraal traps (a passive trap made from thin panels of bamboo), cast nets, and gill nets with the aid of traditional non-mechanised boats. Predominantly *Penaeus indicus*, and lesser quantities of *P. monodon*, are harvested by this closely-knit, conservative fishing community. Over the last few years, the communities around Rekawa have adopted several community-based participatory measures to manage their aquatic resources sustainably. This has partly been made possible through the fishermen banding together to form the Rekawa Lagoon Fishermen's Cooperative Society (RLFCS).

In the mid-1990s, the case study authors held discussions with the villagers about the possibility of an alternative form of shrimp fishery. This was done as part of a Special Area Management Plan for the area. Subsequently, an Enhancement of Rekawa Lagoon Prawn Fishery Project was launched in 1995 by the Universities of Colombo (Sri Lanka) and Millport (Scotland). The Project was sponsored by the Department for International Development, United Kingdom. The project involved enhancement of the available stock of lagoon shrimp, rather than intensive and chemically-dependent farming. Through awareness programmes, the RLFCS membership learnt that good lagoon water quality was required for rapid shrimp growth and that conserving ecological linkages, such as the conservation of mangroves, was essential. Using experimental fishing, the community gauged the growth of the shrimps and imposed fishing restrictions on themselves so that harvesting was carried out when shrimps had reached a size that commanded a high market price.

Impacts

The stock enhancement was both economically viable and socially beneficial to the community. It yielded increased income, as well as increased social cohesion, and boosted the community's confidence to become an empowered social unit that could directly solicit government grants for developmental purposes. This empowerment has led to the establishment of other institutional structures such as the Rekawa Development Foundation (RDF) that now serves as a focal point for advancing the socio-economic interests of the community. The RDF has already attracted funds and has commenced several programmes for the improvement of the social well-being of the Rekawa community, such as through the restoration of water tanks, construction of toilets, child care units, provision of boats, housing, and facilities for schooling and women's self-employment programmes.

The RLFCS now stores the shrimp catch in a community freezer to sell it direct to consumers, whereas it was traditionally sold to itinerant middlemen at the landing sites. Periodically, the community reviews the status of their lagoon shrimp resources and adopts resource management practices through regulating fishing gear and fishing effort.

The fishing community learnt the stock enhancement process and would be able to practise it themselves as an environmentally and socially friendly alternative to polluting prawn farms and as a way of sustainably managing their own lagoon resources. In the process, mangrove conservation has been enhanced, and the community has also become interested in protecting the nesting spots of threatened

sea turtles. Brick kilns that were earlier a cause of coral reef destruction have been stopped. The community has also been able to get a design change made in a government-built causeway, which was blocking the flow of seawater into and out of the lagoon.

Lessons, constraints and opportunities

Some of the important elements that paved the way for the success of the project included:

- the socio-economic benefits of the project;
- formation of formalised institutional structures to represent the community, and to regularly discuss issues;
- retention of a flexible structure at each level of the formal institutions;
- facilitation by outsiders that helped in conflict resolution among stakeholders;
- empowerment of all stakeholders in dealing with government and others;
- existence of committed local leadership;
- openness and transparency at every stage of the project;
- a well formulated plan of action;
- excellent project management skills by the Principal Investigator and his team.

However, some major constraints and weaknesses remain. It has not yet been possible to identify and evolve mechanisms to ensure the sustainability of the initiative beyond the life of the formal project, such as through exercising prudence in the use of foreign funds and expertise, and the enhancement of a long-term planning and management capacity in local community members. The lack of sustainability was seen recently, when in late 1998, community members asked the University of Colombo team to once again assist in stock enhancement of the lagoon. The project team had hoped that the community would be able to do this by itself through savings from the earnings of previous years.

Case study source

The research for this case study was carried out in 1998-99. For more information, see: Ekaratne, S.U.K., Jinendradasa, S.S., Abeysisrigunawardana, M.D., and Davenport, J. 1997. *Coastal Conservation Through Enterprise: A Case Study of Rekawa Lagoon, Sri Lanka*. Kalpavriksh, New Delhi/Pune and IIED, London.

Case study 15

Human-elephant conflict resolution in Kahalla Pallekele, Sri Lanka

The Human-Elephant Conflict Project (HEC) spans the Galgamuwa and Giribawa Divisional Secretariats in northern Kurunegala District in the Northwestern Province of Sri Lanka. The region is a mosaic of cultivated croplands, human habitation, secondary forest, and timber plantations. Kahalla Pallekele Sanctuary to the east of the project site and Wilpattu National Park to the west are both under the authority of the Department of Wildlife Conservation (DWLC). Several Forestry Department Reserves are also interspersed through the area (Nakashima nd.). The area has amongst the worst human-elephant conflicts in the country. The villagers are poor and depend heavily on *chena* (shifting) cultivation. The damages inflicted by the elephants seriously affect their livelihoods, and in retaliation they inflict heavy casualties on the elephants.

Land use practices in the recent past are essentially responsible for this high level of conflict, as indicated by the fact that such incidents were unheard of before the 1960s. The Mahaweli Development Programme (MDP), initiated in the 1970s, displaced a large number of people as well as elephants, because of the reservoirs, parks and waterways created under it. The already fragmented elephant habitat was further encroached upon by the official rehabilitation of the displaced human settlements. In the following years this habitat further shrunk because of expansion of agriculture, especially for *chena*; monoculture plantations, such as teak, eucalyptus, coconut, etc; and cash crop plantations, such as sugarcane (usually by large private companies). Such land uses have decreased the dense forest area by 24 per cent between 1983 and 1992 (Nakashima nd.). In addition, favourable crops on the edge of the forests, and scarcity of water inside the forests, are increasingly attracting elephants to human settlements (Jayatilake, et. al. 1997).
The DWLC has made several attempts to translocate the elephants, as well as to drive them into nearby national parks. Neither effort has been very successful in mitigating the conflicts. There does not seem to be an overall elephant management plan for the country, probably because of lack of information on their behaviour and ecology (Nakashima nd.). DWLC does not seem to have the resources or the capacity to handle this conflict situation. People claim that compensation for extensive crop damage is either not paid, or the process is long and cumbersome (Jayasinghe Balasooria, pers. comm. 1997).

Towards community involvement

The HEC Project commenced in 1993 under the USAID-funded Natural Resources and Environmental Policy Programme (NAREPP), through its Community-Based Resource Management (CBRM) project. Through the Asia Foundation, NAREPP supports a coalition of local NGOs, implementing the HEC project. (Nakashima n.d.). Prior to this there were a few community-based organisations (CBOs) in the area dealing with various rural and developmental issues, but not with the HEC issue. People on their own made sporadic, individual attempts to approach the DWLC, but reportedly received a very indifferent response. The project started with the fundamental belief in local people's participation in the management of natural resources. The main objective of the project is to help people prevent damage by the elephants by strengthening the local CBOs. This, it is hoped, will ultimately lead to the protection of the elephants and their habitat. The emphasis is not as much on improving the economic status of the villagers, as on reducing the cost incurred by them (Avanthi Jayatilake, pers. comm. 1997).

The project works in 45 affected villages (DeCosse and Jayawickrama 1998), and works through existing CBOs. The approach was to identify local catalysts to establish links with the people, who were by now distrustful of anyone who tried to speak for the cause of conservation. After building some rapport with them, formal meetings were organised at the village level to hear people's opinions. The project tried to involve the local government authorities right from the beginning, but their response was lukewarm. The local communities are not directly involved with the actual planning process. People's aspirations and grievances are taken by the local catalysts to the NGOs (see Institutional Structure, below), which then prioritise the issues and decide upon the activities to be taken up in consultation with the coordinating group.

The strategies followed to resolve these conflicts are:

- *Changing attitudes:* Realising that people have certain myths about elephants born out of lack of information about their behaviour and ecology, the first strategy is to change these attitudes through education, by placing warning signs in areas which elephants frequent, and other such steps.
- *Protection methods:* such as avoiding building houses on identified elephant paths (a fact already being recognised by the people on their own).
- *Prevention methods:* Lighting kerosene lamps around areas frequented by elephants, forming crop protection vigilance groups, making conditions conducive for the elephants inside the forests by making waterholes, etc. (Avanthi Jayatilake, pers. comm. 1997).

Realising the serious economic losses that these communities face from crop damage by elephants, the local NGOs have started *Gramin Banks* (village banks) in some of the villages. A compulsory saving scheme is run by officials appointed by the NGOs. It currently has about SLR 400,000, and offers soft loans to the members (Jayasinghe Balasooria, pers. comm. 1997). One of the NGOs has established an alternative compensation scheme, where the elephant damage is informally assessed and compensated through a fund set up by people themselves (SLR 200 /family is paid, and the total target is SLR 200,000). Compensation is decided upon by a committee of affected people.

Other activities involve establishing more secure grain storage systems to prevent stealing by the elephants, and tank rehabilitation within the forests to reduce the movement of the elephants to the villages in search of water (A.H.M.R. Abeyrathne and Jayasinghe Balasooria, pers.comm. 1997).

Following the NAREPP intervention, four NGOs[63] formed a joint NGO, the Wana Jana Mithuro Sanvidanaya (WJMS) which was registered in 1993 (Avanthi Jayatilake, pers. comm. 1997). WJMS staff begin by identifying local CBOs such as farmer societies or savings groups. Project activities designed to improve socio-economic and environmental conditions are carried out through these CBOs. In each Division (Giribawa and Galgamuwa), WJMS organises a committee (known as an Apex Body), to coordinate CBO activities. WJMS assists the Apex Body to meet and work effectively with officials from government agencies such as DWLC, Forestry Department, and Mahaweli Authority, and local government bodies such as Divisional Secretariats and Pradeshiya Sabhas. The Apex Body helps these agencies to plan and monitor activities implemented in the project area (Nakashima, nd.). The Apex Body includes representatives from local NGOs and villages, as well as interested individuals from other parts of the country. Representatives from various government agencies like FD, DWLC, etc. can also be non-voting members. Women are equal partners (A.H.M.R. Abeyrathne, pers. comm. 1997).

The implementation of the project activities is, however, carried out individually by ORDE, WGSP, and WESE, in their own area of action, with help from the other

[63] The NGOs are: March for Conservation (research and education), Wayamba Govi Sanwarduna Padanama (WGSP, a farmers' association), Organisation for Resource Development and Environment (ORDE, engaged in social mobilisation) and Wayamba Environmental Science Explorers (WESE, comprising of local environmentalists who link local authorities with people)

members of the WJMS. They function by employing catalysts in the villages who are expected to act as a link, detect local village level problems, ensure that disprivileged sections benefit, and so on (Jayasinghe Balasooriya, pers. comm. 1997). The WGSP is also represented at the Pradeshya Sabha (district council) and appears to have some political power. Efforts are now being made to involve the local government authorities in these efforts, sometimes by signing formal agreements with them. The government agencies are responding mainly because the funding is available with the project authorities and the involved NGOs/CBOs (Avanthi Jayatilake, pers. comm. 1997).

Impacts

The project has helped people to be organised and feel responsible for their own problems, without having to look to the government all the time. It has also reduced human and elephant deaths, as well as property damage incidents. In one of the divisions it is claimed by the NGOs involved that the elephant-related human deaths had reduced from three in 1993 to none in 1995, crop damage declined from 921 acres to 19, and the number of houses damaged by elephants from 32 to two (A.H.M.R. Abeyratne, pers. comm. 1997). However two elephants were killed by the villagers in 1993, and three in 1995.[64]

Institutional stability seems to be the strength of the project, as it has focused on working through the CBOs and the village level institutions by organising, reorganising or strengthening such institutions. The village level organisations are based on informal and local sets of rules and regulations (Jayatilake 1997). It is therefore more likely that the institutions will manage on their own beyond the end of the project.

From inception the project has also tried to involve local official authorities. The *Gram Sevaka* (state administration official at the village level) and the Divisional Secretaries (state administrative officials at the district level) have been exceptionally cooperative (Jayatilake et. al. 1997).

Lessons, constraints and opportunities

Whilst the scale of the project and seriousness of the problem, together with the efforts taken by the communities so far, have helped change the attitude of the ground level wildlife staff, there appears to be no vertical interaction within the DWLC, therefore there is still little support from the higher officials and the policy makers (A.H.M.R. Abeyrathne, pers. comm. 1997).

Although within the project there are small scale efforts for generating funds for individual projects at the communities level, e.g. the funds for compensation, it is not clear whether through these efforts enough funds can be generated to maintain the large infrastructure of the project and continue to support staff salaries.

Case study source

Based on secondary sources of information, including relevant documents mentioned above. In some cases, people involved with the initiatives have been contacted for

[64] An attempt was made to obtain an update on these figures, but with no success. A recent report (Abeyrathne 1997) does not contain such an update

personal information, by the South Asia Review Coordination Team (these are listed in Appendix 2). In most cases, the information is as of 1997, with the exception of those for which updated information (as of early 1999) could be obtained.

Case study 16

Ritigala Strict Nature Reserve, Sri Lanka

Ritigala Strict Nature Reserve (RSNR) consists of a group of high hills (maximum 766 m) situated in the North Central province of Sri Lanka. Being a SNR, admission is allowed only for approved research purposes. Spread over 15 sq. km., Ritigala is a site of archaeological importance and is known for its high diversity of plants, especially endemic species and medicinal plants. So far 417 taxa of lower and higher plants have been recorded from Ritigala. 337 are flowering plants, 57 of which are endemic to Sri Lanka and three endemic to Ritigala. Faunal diversity of the area is also high. It is also a perennial source of water for 14 villages surrounding its base, and forms an important part of the catchment of two dry zone rivers, Malwathu Oya and Yan Oya.

There are 3000 families in 14 villages situated around RSNR who depend upon and influence these hills. The community consists of Buddhists, Christians and Muslims. Some villages have existed in the area for generations, while others have recently settled here. It has been observed by field workers that the older villages are more traditional and respectful towards wildlife and natural resources (Avanthi Jayatilake, pers.comm. 1997).

People in the area traditionally cultivated home gardens; multi-layered, intercropping systems where people grow plant species to meet most of their livelihood requirements, e.g. cereals, timber, medicinal plants, etc. Because of various internal and external dynamics, however, this and other traditional systems in the area seem to have broken down, which probably explains the increased commercial exploitation of natural resources from the SNR in recent times. Despite its protected status, people extract timber, rattan, meat, fruit, bees honey, medicinal plants and fodder from the RSNR. There has also been commercial scale extraction of timber, medicinal plants, and honey by outsiders, with the help of the community. The diversity and the resources of Ritigala are thus reported to be under great threat.

The area was declared a Strict Nature Reserve under the *Sri Lanka Flora and Fauna Ordinance*, on 7th November, 1941. The area surrounding the SNR is partly under the management of the Forest Department and partly under private holdings. While there has been no official extraction of resources from the SNR, the surrounding area under the FD has been extensively exploited for timber by the Department. Licenses are reportedly being issued to outside timber contractors even today (RITICOE staff, pers. comm. 1997). The area was declared a SNR without taking into account the existing dependence of the surrounding people on the resources. In the absence of any viable alternative, this dependence continued, especially on medicinal plants (both for subsistence and sale). This created conflict between the wildlife authorities and the local people. The lack of resources within DWLC has meant that they have not been able to police the reserve. All this has led to a serious threat to the sensitive flora and fauna of the RSNR.

Towards community involvement

With the support of USAID, the Asia Foundation initiated a Community-Based Resource Management (CBRM) project in Ritigala in 1993. The project aims to reduce the dependence of the local people on the resources of RSNR by providing alternative sources of income; and to solicit the formal cooperation of the local communities to protect the area from destruction by outsiders. This, it is hoped, will ultimately lead to improvement in the management of RSNR.

The approach taken is to provide support to Thanthirimale Gramodaya Mandalaya (TGM), a local level NGO. The technical support for the programme is given by the Ayurvedic Research Institute of the Ministry of Indigenous Medicine. TGM initiated the project by organising orientation discussions with the provincial and local level government bodies, and community awareness programmes for the local CBOs, schools, local leaders, etc. This was followed by two years of informal consultations and interactions with the local communities to build up trust. This led to people's mobilisation, especially of youth and women, in all of these communities. Women have continued to play an important role in the implementation of the plan (Avanthi Jayatilake, pers. comm. 1997).

In order to undertake the management responsibilities themselves, the local CBOs formed their own NGO in 1994, called Ritigala Community Based Development and Environmental Management Foundation (RITICOE). Emphasis is placed on showing the benefits of the available alternatives rather than forcing people to stop their activities. RITICOE has helped people to establish or revive their own home gardens. Villagers are encouraged to cultivate medicinal plants in the home gardens, which can be sold off to RITICOE. They also encourage processing and marketing of NTFP as high value products; organic agriculture along with forestry; rehabilitation of irrigation tanks; development and use of locally developed energy efficient stoves; and development of small scale businesses (RITICOE staff, pers. comm. 1997) Participatory studies and training are also conducted on irrigation tanks, animal husbandry, cultivation and processing of medicinal plants.

These efforts have resulted in people's direct/indirect participation in conservation efforts. Many villagers now refrain from illegal activities, and very often report such activities by others to RITICOE, requesting action. Apart from USAID support (through Asia Foundation), RITICOE also earns revenue from nurseries, sales (including export) of medicinal plant products, savings, thrift schemes, and membership fees. All sales proceeds go to RITICOE and are re-used for the project activities (RITICOE staff, pers. comm. 1997).

The overall management of the project is looked after by the RITICOE staff, who are selected from the local community based on their skills and ability. Current management of RITICOE is handled by two local women who were previously housewives, though both had some past vocational training. The project work is also guided by a steering committee, which includes the chief monk in the area, priests of three religions, local government officials, FD and DWLC officials, a medicinal plant expert, and the RITICOE staff. Internal village level disputes are resolved in weekly CBO meetings. CBOs are rewarded for exemplary action by RITICOE.

Local and national government departments have been consulted throughout the process. The DWLC has been sympathetic, especially after realising that the project would lead to better management of resources. The FD, however, is not very cooperative. It controls the area surrounding the RSNR, and some of its activities (e.g. issuing permits for timber extraction) often conflict with the communities' efforts at conservation and sustainable use (RITICOE staff, pers. comm. 1997).

Lessons, constraints and opportunities

The project is seen as one of the most cost-efficient in Sri Lanka. Between 1993 and 1997 the cost of the project was $200,000 of which 40-50 per cent was the overheads of The Asia Foundation. The project also generates substantial revenues from its own activities. The issue of financial sustainability was incorporated in the concept from the inception.[65]

Women have played an important role in the project from the beginning. Apart from the RITICOE staff members, many of the presidents of CBOs are also women, and there are eight female members in the middle-level decision body. Most importantly, the project has been able to bring together people from different religions and strata of society (who were earlier quite divided), to work towards a common goal of self reliance and natural resource sustainability.

Financial security and alternative sources of income have resulted in people understanding and accepting the conservation issues. This has led to a positive response from the DWLC. The success can be gauged by the fact that village level groups from outside the project area are now approaching RITICOE for advice. However, what direct positive/negative impact it has had on the biodiversity of the NR is not yet scientifically assessed. Based on their own observations, RITICOE members feel that it has had a positive impact (RITICOE staff, pers. comm. 1997).

Another strength of the programme is that it is recognised not only by the DWLC but also by other provincial and local level government agencies, and thus enjoys political and administrative support.

There is a need to set up a proper, participatory monitoring and evaluation process, to learn from mistakes and successes, and to ensure the institutional and financial sustainability of the process.

Case study sources

Information for this case study is from Jayatilake et. al. 1997, except where stated otherwise. Additional observations are also based on the visit to the area made by the South Asia Review Coordination Team.

[65] A visit to Sri Lanka by the South Asia Review Coordination Team provided an update on the situation at Ratigala. According to Avanthi Jayatilake (formerly of USAID, Sri Lanka), RITICOE has remained strong, including financially by generating its own funds. It has also attracted money from a major Medicinal Plants Conservation Project. One of the aspects of the sustainability of this initiative was good initial identification of the community as primary stakeholder, and strong NGO participation.

Case study 17

Hikkaduwa Marine Sanctuary, Sri Lanka[66]

Hikkuduwa is a small town located approximately 100 kilometres south of Colombo. It receives an annual rainfall of 2000mm. Its surrounds include beaches, coral reefs and a coastal strip. An area of 48ha has been declared Sri Lanka's first marine sanctuary. Mainly covering the reef area, which has about 60 species (of 31 genera) of corals, it is home to about 168 species of fish and several other fauna species (including the threatened Leatherback and Green sea turtles).

The human population of the largely urban area adjoining the coast is about 13,815 (1990) with a density of 3,424 people per sq km. The major sources of revenue in the area are tourism and fishing. There are about 600 fisherfolk living in this area. Those with boats (100) carry out both near-shore and deep sea fishing. The rest either fish in near-shore waters or work as labourers on commercial boats. This community has been affected by the declaration of the sanctuary, which led to sudden restrictions on fishing and non-renewal of fishing licences. There are also about 70 glass-bottom owners, some of whom are original fishermen of the area. A few of them are attached to the hotels and work on a contract basis. The high number of boats has lead to cut-throat competition, unsafe conditions, and serious damage to the corals (Wickramaratne pers. comm. 1997).

The Hikkaduwa Rocky Islets, together with Ambalangoda Rocky Islets, were granted sanctuary status in 1940 under the *Fauna and Flora Protection Ordinance*, to protect nesting seabirds. On 3 March 1961, the indiscriminate removal of fish at Hikkaduwa was prohibited under the *Fisheries Ordinance*, in the 110 acre "Fisheries Protected Area" which included the coral reefs. To consolidate, the Hikkaduwa Marine Sanctuary (HMS) was created by Gazette No. 37 of 18 May 1979, under the Fauna and Flora Protection Ordinance. The Coast Conservation Department (CCD) is responsible for the management and protection of the legal 'coastal zone' within this area, although the Department of Wildlife Conservation (DWLC) manages the Sanctuary. The sea and its resources are managed by various government agencies such as the Ministry of Fisheries and Aquatic Resources Development (MFAR), Ceylon Fishery Harbours Corporation (CFHC), and Ministry of Transport (MoT). Commercial fishing and the collection of ornamental fish and molluscs, are now banned, except for very limited hook and line fishing of non-reef fish by less than 20 permit holders. In any case, fish catches have significantly declined over the years because of previous over-exploitation using destructive methods such as dynamite.

High levels of unregulated tourism have also led to environmental degradation. The large number of hotels cause serious water pollution because of sewage disposal directly into the sea, and the glass-bottom boats cause physical damage to the corals. Tourist numbers are rapidly declining because of the degrading environment. Total tourism revenues (direct and indirect) came to Rs. 1036 million (approx. US $20 million) in 1992. Hikkaduwa stands to lose a lot if environmental degradation continues.

---

[66] Unless otherwise mentioned, information for this case study is taken from HSAM (1996).

Towards community involvement

There is growing recognition of these problems, and of the fact that any effective solution will have to involve local stakeholders, since they will play an important role in the implementation of the management plan. Hikkaduwa was thus among the areas selected for the Special Area Management Planning (SAMP), by the Coast Conservation Department (CCD) in 1992. The aim is to protect and manage the coastal resources of Hikkaduwa so that the community can continue to benefit from their biodiversity and general environmental quality, and so that the local tourism and fishing economies can remain sustainable. Initially the SAMP was restricted to the marine sanctuary area. However, after public consultation and an increase in local participation, concern was raised about issues affecting not only the sanctuary but also the community as a whole. Consequently the SAM Plan has broadened to include town infrastructure, coastal aesthetics, traffic control, unemployment and social problems.

In the early days of the project it was realised that the plan had two major faults:

1. The planning was being coordinated by a foreigner based in Colombo, and did not involve any local catalyst.
2. The fact that the plan was being sponsored by USAID led the stakeholders to believe that the entire implementation would be looked after by the sponsor (i.e. money became a major attraction).

This added to the difficulties of organising this already commercialised community (H.J.M. Wickramaratne, pers. comm. 1997). Finally with the help of a local (non-resident) specialist (Ranjit De Silva) communities were approached, and efforts were made to bring them closer.

Agreements were reached to resolve conflicts between various stakeholders; for example, the hoteliers agreed to hire local boys as lifeguards. Together the community has taken up beach and reef cleaning exercises in which 80 to 100 people participated, and as a token of goodwill the hotels provided free food to the volunteers (H.J.M. Wickramaratne, pers. comm. 1997). Hoteliers also offered to represent the local communities in matters relating to larger decision-making.

The activities of the project include efforts to organise the local youth, especially those who work as touts for the small hotels. They are being encouraged to take up independent activities, including acting as tourist guides (with fish identification training). A Shining Star Youth League has been formed, which now has a membership of 86, with 40 trained snorkelers, and eight scuba divers. They are also being encouraged to start a lifesaving and swimming society of their own (H.J.M. Wickramaratne, pers. comm. 1997).

The CCD has the primary responsibility of planning and implementation, with coordination from various other government and non-government organisations. The Hikkaduwa SAM activities are coordinated by the Hikkaduwa Special Area Management/Marine Sanctuary Coordinating Committee (HSAM/MSCC). This is composed of central and local government officials and representatives of key community groups. The committee has been entrusted with the task of coordinating

all activities that impact on the sanctuary and the larger SAM site, and with the monitoring, evaluation, and amendments of these activities.

The SAM planning process was coordinated and funded by the NAREPP of USAID. However, it will not be funding the implementation. The project is trying to encourage the local associations to set up a Hikkaduwa Development Fund (this effort has not been successful so far). The CCD is also setting up a separate head in its own budget to be able to facilitate the activities of the community organisations (H.J.M. Wickramaratne, pers. comm. 1997).

Lessons, constraints and opportunities

The SAM plan is seen by all involved as a document that is flexible and adaptable enough to meet the needs of the community, and it gets regular local level inputs. It has from the start involved participation of all government agencies functional in the area, along with representatives of the local residents. The major coordinators of the activities are the local authorities, which are closer to the communities than the central authorities. According to Jayatilake et.al. (1997), this sometimes helps to modify plans and activities that do not conform to ground realities.

However, one major constraint is that the community organisation here is not very strong, one possible reason could be that all sections of society have not accepted the elite leadership of the Hoteliers Association. Fears have been expressed that this organisation may not survive beyond the sponsored project period (Jayatilake et. al, 1997). There is no permanent local catalyst who could help bring these communities together. The institutional and financial sustainability of the process is therefore uncertain.[67]

Most of the revenue earned from tourism is largely restricted to the big hoteliers. So far there are no mechanisms for equitable sharing of benefits in the area. In addition, so far there is no available source of income for the project, since NAREPP's involvement with it ended in June 1997. The project has tried to generate funds locally, but these efforts have not been successful.

Case study sources

Unless otherwise mentioned, information for this case study is taken from HSAM (1996). Some observations are also based on a visit to the area by the South Asia Review Coordination Team.

[67] The South Asia Review Coordination Team visited Sri Lanka in late 1998, and got the following update on the situation at Hikkaduwa. Most observers said that the initiative had run into rough weather, for various reasons. Ayanthi Jayatilake (formerly of USAID, Sri Lanka) said that the effort had 'collapsed', due to problems in identifying the primary stakeholders (the 'community'), lack of involvement of local people, and predominance of government officials in relevant institutions. Also, the strong divisions between commercial operators and others in the area hampered success. H.J.M. Wickremeratne (formerly of NAREPP), added that only the waste disposal part of the original project was continuing, under AusAid funding; also a harbour for fishing boats had been nearly completed under the SAMP effort. There was a proposal to build a visitors' centre under a proposed ADB project on biodiversity.

Case study 18

Muthurajawela Marsh and Negombo Lagoon, Sri Lanka

The Muthurajawela Marsh-Negombo Lagoon coastal wetland is situated along the western coast of Sri Lanka, just north of Colombo. The wetland is some 6,232 ha in area; a lagoon is connected by a single narrow opening with the sea, and the marsh extends south from the lagoon. The Dandugam Oya (river) discharges at the junction of the lagoon and the marsh. The entire wetland is separated from the sea by a sand barrier situated on beach rock (CEA & Euroconsult 1994). The marsh part of the wetland was declared a sanctuary under the *Flora and Fauna Protection Act*, and is under the jurisdiction of the Department of Wildlife Conservation (DWLC). The Negombo Lagoon comes under the shared authority of the Western Provincial Council (WPC), the Coast Conservation Department (CCD), the Department of Fisheries and Aquatic Resources (DFAR), the Negombo Municipality, and the Divisional Secretariats of Negombo, Katana, Ja-ela and Wattla. The Buffer Zone and the other zones are under the jurisdiction of Sri Lanka Land Reclamation and Development Cooperation (SRLRDC).

Despite centuries of human interference in the wetland, significant natural values still exist. The marsh is an important habitat for numerous species of plants and animals. The seagrass beds in the lagoon constitute a critical feeding and nursery area for fish and crustacean stocks, a vital economic resource for at least 3,000 fishermen. Lagoon fishery productivity is high and exceeds 150 kg/ha/year. The annual value of the catch in 1990 was SLR 150 million (US$ 3 million) (CEA & Euroconsult 1994). The lagoon vegetation includes both patches of excellent as well as degraded mangroves, reeds, and seagrass. However it is also becoming invaded by filamentous green algae and noxious duck weed (*Salvinia molesta*) - an indication of the beginning of eutrophication. Fauna include fish of economic importance, such as the white shrimp (*Penaeus indicus*), tiger shrimp (*P. monoden*), and mud crab (*Portunus pelagicus*), as well as a variety of molluscs. Crocodiles, and several species of tortoises and birds are also found. It is a popular site among ornithologists and entomologists (CEA & Euroconsult 1994).

About 4000 families live in the area, a quarter of which are encroachers who have carried out small-scale landfills and constructed houses. In the past the Municipal Council and various other agencies have also carried out landfills to settle slum-dwellers. Another 17,000 fisherfolk families with a total population of 85,000 reside around the lagoon, where 60 per cent of them fish. The majority of the lagoon fisherfolk still use traditional fishing practices, such as stake net fishery (kattudel). This is in harmony with the ecology of the species being exploited, particularly shrimps, as proven by its resilience over centuries. Also interesting are the procedures for sharing the common property resources, evolved through conflicts and compromise over many years with minimal intervention or imposition from state authorities (CEA & Euroconsult 1994). Nevertheless, for reasons that are not clear, the fish catch in the lagoon is reported to have declined in recent years.

According to available information, communities residing here belong to the lowest income category in the country, and more than half the labour force is unemployed. Many of them work as casual labourers, some carry out coconut and paddy cultivation, some also rear cattle for subsistence purposes (CEA & Euroconsult 1994).

Continuous attempts have been made to bring development programmes to the area, such as paddy cultivation in the marsh segment, but most of them did not succeed. In the recent past inadequately planned settlements, industrial and municipal pollution, intensification of fishing pressure and general habitat destruction have caused further degradation (CEA & Euroconsult 1994).

In 1994, a Master Plan for the area was approved, which divided it into various zones:

- a Conservation Zone consisting of 91 per cent of the continuous wetland, including the marsh and the lagoon;
- a Buffer Zone between the conservation and development zones (5 per cent of the continuous wetland);
- a mixed Industrial Residential Development Zone, (including housing for low and middle income groups), constituting 28 per cent of the area outside the actual wetland, and 3 per cent of the continuous wetland.

For the people of the area scarcity of available land, and tenure insecurity are the main issues. The latter is a particular concern for the 1000 marsh families with encroacher status, who did not see themselves initially being considered under the relocation scheme being proposed under the Master Plan (they were later included). Similar feelings have now spread among the other (non-encroacher) families also, after the hand-over of the area to the DWLC.

Towards a community-based approach

The Master Plan (described above) has both a developmental and an ecological focus. The Central Environment Authority (CEA) was delegated the task of planning and managing the ecological component with the help of the Euroconsult (Holland). This component was to be implemented in the Conservation Zone and the Buffer Zone. The main objective of the conservation management plan is to incorporate multiple uses within an ecosystem framework. To achieve this it was important to:

- Study the socio-economic and political aspects of the area and focus on the requirements of the local communities, formulating a system of management in which they participate and derive equitable benefits (Box 8.2).
- Ensure that the conservation value of the area is maintained. This also involved integration of this plan with the larger plans for the region, such as the Metropolitan Environment Improvement Programme; and achieving coordination among various agencies.

Local communities were involved in the planning and plan revision process through existing community based organisations (CBOs) such as the Negombo United People's Organisation (NUPO), and Muthurajawela United People's Organisation (MUPO).

For the 'encroacher' families, a relocation scheme has recently been implemented, under which 237 families were given tenureship of partially prepared land plots in the Mixed Urban Development Zone of the Master Plan. They were also given financial support for relocation, house constructions and community development.

However, many other families (after the intervention of certain NGOs) are now demanding regularisation and upgrading of their existing sites rather than relocation. Considering that adequate funds are not available for the relocation of the rest of the encroacher families, this demand is also being seen as a low cost alternative by the implementing authorities.

In order to prevent any subsequent encroachments (as well as facilitating drainage and flood protection), a water buffer is planned to be constructed at the periphery of the marsh component of the Conservation Zone.

Box 8.2. Participatory Research as Part of the Planning Process

The issues facing Negombo Lagoon are different. Here the main community issue is not that of land, as the population density is relatively low. The community is dispersed, diverse, multi-faceted and with highly locale-specific needs. At the onset of the planning, lack of information about this community was identified as a problem. A participatory research programme is being carried out through a series of workshops with the people. Access to the communities was done through the Negombo Lagoon Integrated Fishermen's Organisation (NLIFO). An increasing number of lagoon villages have subsequently asked for such workshops to be held in their villages. These workshops have helped the communities realise that the lagoon as a system can not be managed by a single community. They have also provided them with a forum to identify and discuss common problems. It was through such a process that the fisherfolk united to oppose the development of Negombo Lagoon as a Marine Fishery Craft anchorage, a decision taken by the government without consulting the local people.

The lagoon now has a Fisheries Management Plan, supported by the Asian Development Bank (ADB), and prepared by the department of Fisheries and Aquatic Resources which is co-managed by the Fisheries Department and the local fisherfolk (J. Samarakoon and Hans van Zon, pers.comm. 1997).[68]

The plan has also tried to integrate biodiversity conservation and human needs, for which it has been decided to keep natural resource extraction to subsistence levels, using traditional harvesting practices. Exotic invasive weeds will be used to meet fuelwood requirements. Muthurajawela is famous for a high variety and density of butterflies, mostly feeding and breeding on medicinal plants. Cultivation of such plants is envisaged both within the sanctuary and in the home gardens of the people. An added benefit will be harvesting of these plants for medicinal purposes, and possibly their sale.

Recognising the tourism potential of the area, the CEA has established a visitors centre in the marsh, in consultation with the local communities. Most employees at the centre are from nearby areas. Educated youth from within these communities are chosen by their CBOs and sent for training as guides for various nature trails. Income generated from the centre is used for the benefit of the local people.

[68] Details of who takes the decisions, what is the institutional arrangement, what are the benefits, and what monitoring is taking place, are not available

The overall implementation is done by the Muthurajawela Steering Committee (MSC), represented by three nominees appointed by the Minister of Home Affairs and Provincial Councils; and the Muthurajawela Executive Committee (MEC). A Muthurajawela Management Committee (MMC), coordinates the MSC and the MEC, and gives guidance to the developmental, relocation and conservation projects. It is constituted of representatives from the Ministry of Housing, Construction and Public Utilities, Sri Lanka Land Reclamation and Development Corporation, all relevant government agencies, the Roman Catholic church, local community, and relevant non-government organisations/individuals.

Funding for the entire project (US $31,000,000) has been provided by the Netherlands government. Of this US $300,000 was used for the formulation and implementation of the Conservation Management Plan (Samarakoon 1995).

Impacts

This entire process has resulted in political empowerment of the communities. The NLIFO representatives have held discussions with the Minister of Fisheries and obtained the assurance that any development work undertaken in Negombo Lagoon should be in consultation with the local fishermen. MUPO and NUPO have played an important role in formulating the marsh Management Plan, and in negotiating the terms and conditions of the relocation package. All these organisations have also helped ensure that the community remains informed about the Management Plan and its implementation.

At the local level maximum credit for the successful implementation of the Management Plan and also the partial relocation is being attributed to the strong community organisations, such as the MUPO, the NUPO, the NLIFO, and some church and political agencies.

Based on the success of the Muthurajawela plan, two more phases were added to the larger plan:

1. Phase II: CEA was entrusted to prepare similar plans for other wetlands across the country (initial studies have been done for at least 26 of those).
2. Phase III: In this phase, the following were initiated:
   - Public awareness: Preparation of a the newsletter in Sinhala; school textbooks on wetlands; and celebrations of International Wetland Day.
   - Implementation of the Conservation Management Plans and lobbying/securing for financial donor assistance. So far Bundala (Sanctuary) CMP has been accepted for funding by NORAD; in addition National Wetlands Committee has been set up with Secretary Environment as Chair.
   - Cost recovery for conservation: Sponsors/foundations approached, but success limited; there is a proposal to privatise Muthurajawela Visitors' Centre (MMNL 1994).

Lessons, constraints and opportunities

Though the 'conservation component' of the project is widely acclaimed, there is some criticism of the 'development component' for not having reached a large part of the population. The conservation component itself is fairly new in its implementation, and has not been critically assessed yet for successes and failures.

Yet the following can be seen as the major strengths of the project:

- There has been strong community involvement in the management planning and implementation process.
- There has been a deliberate focus on community empowerment and organisation.
- It has shown that an organised, informed, and politically empowered community will opt for sustainable use of natural resources (following traditional practices), in the face of high but short-term commercial benefits. The community's decision has been able to change the political will in favour of conservation.
- The planning is based on detailed ground level research.
- The process has shown that in most situations tenurial security leads to people focusing more on upliftment of lifestyles, and environmental upgradation.
- The project has emphasised direct coordination among various governmental agencies functional in the area, and integrating their activities, as well as involvement of NGOs.

But there are also some weaknesses and concerns. For example, there are concerns that once the foreign funding is withdrawn, the process may not remain financially viable. Some attempts have been made to generate a sustainable source of funds (eg. the Visitor's Centre), but it is not clear if these are adequate. There is also as yet no formal involvement of local people in the management of the Sanctuary, and no immediate plans for this. These issues need to be tackled to make the effort more sustainable and equitable.

Case study sources

Based on secondary sources of information, including relevant documents mentioned above. In some cases, people involved with the initiative have been contacted for personal information, by the South Asia Review Coordinating Team (these are listed in Appendix 2). Observations by the Team during a visit to the area have also been used. In most cases, the information is as of 1997, with the exception of those for which updated information (as of early 1999) could be obtained).

The impacts of community-based wildlife management

As is clear from the previous chapters, community-based wildlife management (CWM) or community-based conservation (CBC), is now a growing phenomenon in South Asia. However, the form, content, and degree of success of CWM initiatives vary widely (as do the definitions of success - Box 9.1). It would be useful at this stage to pull together the evidence of the impacts of such initiatives.[69] This will help indicate whether countries of the region should be giving much more attention to CWM, and will set the stage for the next chapter analysing the various issues confronting CWM.

Impacts can be gauged at four levels:

1. Ecological (impacts on the natural resources sought to be conserved, or others related to it, including wildlife/biodiversity and habitats)
2. Economic and livelihood (impacts on the survival and livelihood security of communities involved in the initiative)
3. Social/political (impacts on the social status, political empowerment, and related aspects of the communities involved in the initiative)
4. Policy (impacts on national and international policies, legislation and programmes, relating to natural resource management and conservation).

What follows is a summary of such positive impacts noted from CWM initiatives in the South Asian region. The problems and shortcomings of these initiatives are summarised in the next chapter.

[69] The assessment in this chapter is based on secondary literature; on primary field work carried out as part of the project on which this book is based; and on detailed discussions with a range of actors in CWM. In particular, many examples given in this chapter come from the case studies undertaken by the authors and their collaborators across South Asia (Summarised in Case Studies 1, 2, 3, 4, 9, 12, and 14 in Chapters 5 to 8), or those derived from earlier work by the authors or from secondary sources (Case Studies 5, 6, 7, 8, 10, 11, 13, 15, 16, 17, and 18 in Chapters 5 to 8). References are given only where the examples and data are not already sourced in Chapters 3 to 8 and the various appendices to this report, or where they do not derive from the case studies referred to above.

Box 9.1 Differing Perspectives of Success

The definition of whether CWM is 'successful' or not has to do with visions and ideologies, and how different people/organisations look at nature, wildlife, and people. Some government departments handling natural resources still have an essentially commercial outlook. Even when their outlook is conservationist, it might focus on a limited set of elements (teak and associates; tiger and prey species), and at the forest as 'needing to be managed'. As stated earlier, forest officials in charge of Mendha (Lekha) complain that local villagers do not allow them to 'clean' up the forest by removing lianas, etc. Local people view forests somewhat more holistically, wanting greater diversity, but still heavily favouring what is useful or what impinges on their lives. This may not be to the liking of the wildlife conservationist, for whom every species and habitat element is important. Whose objective is primary may differ from time to time, and place to place, and may have different bearings on wildlife populations and diversity.

There will also be those who lose from a CWM initiative, such as government agencies and private corporations or individuals who would much rather use up the resource as fast as possible, or whose power base is eroded by the increasing empowerment of village communities. Conflicts are bound to arise from such impacts, and every CWM effort has to be ready to face up to them. The more policy changes can take such clashes of interest into account, the less they are likely to arise; for instance, a decision to stop timber felling in all natural forest areas is likely to help avoid the possible conflict between an agency or company who wants to log the forest and a community that wants to conserve it for its non-timber produce.

9.1 Ecological impacts

In analysing the efficacy or otherwise of CWM, one of the most important questions is: has it helped to conserve wildlife and biodiversity?

Overwhelming evidence suggests that indeed it has, in many different ways: reviving degraded habitats such as forests, conserving natural ecosystems from destructive influences originating both within and outside the community, protecting particular species of cultural, economic, or other importance to communities, and so on.

Firstly, traditional conservation practices are still very strong in a number of areas. Though considerably degraded in the last few decades, sacred areas (groves, tanks, grasslands, and entire landscapes) are still widespread in India, and in some cases conserve ecosystem types and species that are no longer found elsewhere. Many plant and animal species (see Table 9.1) continue to enjoy cultural and religious protection, resulting in astonishing densities of their numbers in the midst of human settlements. It is not just sacredness that motivates traditional conservation; a sense of tolerance, and a conscious desire for sustainable use and long-term survival are also important. Village tanks, managed for their contribution to agriculture and other requirements, still harbour some significant waterbird populations, including breeding heronries. Conscious rules of restraint, rotational use, etc., continue to help conserve habitats and species in many parts of India. Though less widespread and not very well documented, such traditional practices may also be found in other countries of the region.

This is now complemented by more recent efforts to involve communities in conservation, either through their own initiatives or through governmental/NGO programmes (see Chapters 3 to 8). In India, several million hectares of forest land are now believed to be under some kind of community management, having been regenerated or planted up as part of the state-sponsored Joint Forest Management programme. Considerable additional areas must be under similar management through community-initiated programmes. However, not all of this is of importance to wildlife, as a substantial amount may well be monocultural plantations made for purely commercial reasons. But as is clear from several CWM initiatives (e.g. Mendha (Lekha), Case Study 3), communities often prefer a diverse stand to a monoculture, and also would like to see longer-term benefits from non-timber forest produce rather than timber production (see also Box 9.2).. This ensures that in many JFM and community-initiated processes, a biologically diverse forest is the result.

Community-based conservation in India is not restricted to village common and degraded forest lands, but also extends to officially protected areas and other intact stands of forest and other ecosystems. Kailadevi Sanctuary (Rajasthan), Dalma Sanctuary (Bihar), Anshi National Park (Karnataka), and several other examples have come to light, where resident communities are conserving forests and wildlife, either on their own, or in collaboration with official authorities. Some community-protected areas also form important wildlife corridors between two or more officially protected areas, or act as buffer areas around such PAs. Official programmes of eco-development (India), revenue-sharing (Nepal and Sri Lanka), and others which integrate livelihood concerns with conservation, have also, in some limited cases, helped to enhance the conservation status of protected areas.

While the sheer spread of CWM initiatives in India is incomparable in the region, other countries too have shown remarkable results. Community forestry in the hills of Nepal and Bhutan, akin to India's JFM, is helping to regenerate and protect forests and mountain ecosystems, with significant benefits for wildlife. Conservation areas such as Annapurna and Makalu-Barun, display clear evidence of the recovery of forests and key wildlife species since the inception of the CWM initiatives. In Sri Lanka, this impact has been seen in coastal areas under programmes such as the Special Area Management Programme. Similar results have been seen in Pakistan's approach to conservation through 'sustainable use' (regulated hunting) of megafauna in some high-altitude PAs. Such an approach has so far not been attempted in any other country (except in a minor way in one site in Nepal).

Some of the ecological results of CWM are quite remarkable. At Jardhargaon, India,(Case Study 2) regenerated oak and rhododendron forest has been shown to have equivalent or higher floral diversity and importance than other forests in the region, and significant wild fauna presence (including leopard, bear, pheasants, and the occasional tiger). At Bhaonta-Kolyata, India, (Case Study 1) leopards and herbivores have begun to frequent the regenerated forest again. At Hushey Valley, Pakistan, (Case Study 12) the Himalayan ibex and Snow leopard enjoy much greater protection than earlier. At Rekawa Lagoon, Sri Lanka, (Case Study 14) mangroves and the lagoon ecosystem are being protected, along with turtles and other marine fauna. At Kokkare Bellur, India, (Case Study 4) people are reviving traditional protection of nesting pelicans and storks. Adjacent to the Chitwan National Park,

Nepal, rhinoceros populations have increased dramatically in a couple of villages which have adopted ecotourism as part of their CWM efforts (Case Study 11). At Chakrashila Sanctuary, Assam, India. (Case Study 5) the southernmost population of the endangered golden langur (*Presbytis geei*) is now zealously protected: this forest was notified a sanctuary after sustained efforts by an NGO and local villagers. Table 9.1 gives a selective overview of the ecological impacts of CWM.

While there is no case for a replacement of official wildlife conservation programmes (e.g. protected areas) by entirely community-based ones, the above assessment suggests that not only can CWM be a valuable complement to more conventional conservation, but that also the two have a lot to learn from each other. Trends indicate that eventually exclusively government-controlled conservation will be a rarity, perhaps only covering completely uninhabited areas. Most other areas will probably head towards CWM (taking its broadest definition, see Chapter 1), with considerable variation among them, but all displaying one essential feature: a substantial role for the community in conservation.

9.2 Economic and livelihood impacts

With the possible exception of sacred places, CWM initiatives, both traditional and more recent ones, are never only about protection of natural resources. They almost invariably also integrate, or rather are spurred by, survival and livelihood concerns facing the community. Across the region, CWM has helped to enhance the livelihood security of communities. A range of material benefits have resulted from these initiatives, strengthening the stake of local people in conserving the resources concerned (Kothari and Pathak 1999; Saigal 1999).

9.2.1 Subsistence benefits

Security of subsistence resources is a major motivation for CWM. At Jardhargaon, India, villagers report enhanced availability of water and fodder, as well as reduced problems associated with deforestation. At Bhaonta-Kolyala, India, fodder and fuel availability has increased, as has agricultural productivity due to water harvesting connected with forest conservation (Case Study 1) . At Mendha (Lekha), India, conservation has meant an assured supply of forest produce for domestic consumption and sale (Case Study 3).

There is increasing experience from South Asia suggesting that wildlife conservation programmes can actually be reoriented to give subsistence benefits to local people. Such re-orientation is possible even in wildlife protected areas, which conventionally have been viewed as non-exploitable and with little or no benefits to share. In the Annapurna Conservation Area, Nepal, conservation hinges partly on guaranteed access by local people to forests and pastures (Gurung 1995). In Hikkaduwa Sanctuary, Sri Lanka, fisherfolk have been re-issued with fishing permits as part of the overall participatory conservation plan. In Rajaji National Park, northern India, an area of severe conflict between the Forest Department and local communities, a recent agreement has allowed villagers to harvest bhabbar grass (for rope-making) from within the park. In the Royal Bhutan and Jigme Dorji National Parks of Bhutan, a system of zoning has been proposed to enable traditional resource use practices to continue in some areas of the PAs.

Table 9.1 Ecological impacts of community-based wildlife management

Type of initiative	Ecological impact	Examples[70]	Comments
Traditional protection of sacred spaces	Protection, often total, of forests, grasslands, tanks	Several thousand in India and Bangladesh, and other countries, usually small in extent	Though considerably declined, still widespread; and in some areas being revived
Traditional protection of sacred species	Protection of key species	Bluebull (nilgai), Rhesus macaque, and Ficus spp., all over India; Blackbuck and other species in Bishnoi community area, Rajasthan, India; Ficus spp., Madhuca indica, Prosopis cineraria, other trees in localised areas in many countries	Also in decline, but still very widespread
Traditional sustainable use practices for habitats	Conservation of habitats such as village tanks, pastures, and forests, and wildlife species resident in them	Kokkare Bellur, India; bugiyals (pastures) in Indian Himalaya; several marine sites with traditionally regulated fisheries, in India and elsewhere	As above; regaining ground under new initiatives
Traditional sustainable use practices for species	Conservation of wildlife species along with or independent of their habitats	Trees like Madhuca indica, harvested with great restraint in many parts of tribal India; hunting restraints for several species	As above
Recent initiatives to revive degraded habitats and sustainably use them	Regeneration of forests, grasslands, and other ecosystems, and of species dependent on them	Several million hectares of forest lands in India (JFM and community-initiated) and several hundred thousand hectares in Nepal and Bhutan (CF)	Very widespread, and rapidly increasing
Recent initiatives to conserve and sustainably use relatively intact ecosystems	Conservation of important ecosystems and their resident species, reduction in threats to them	Mendha (Lekha), India; Annapurna Conservation Area, Nepal; Muthurajawela Marsh and Lagoon, Sri Lanka; Eco-development in India	Increasing in all countries
Recent initiatives at sustainable (consumptive and non-consumptive) use of species	Revival of threatened populations of wildlife, e.g. ibex and rhinoceros; and reduction in over-exploitation, e.g. of some plant and aquatic species	Hushey, Pakistan; Chitwan, Nepal; Rekawa, Sri Lanka	Increasing in some countries
Resistance to destructive commercial forces	Reduction or elimination of factors threatening ecosystems and species	Protection of Indian coastline and marine areas by traditional fisherfolk, from destructive fishing and aquaculture; several movements against big 'development' projects in several countries; movement against mining in Sariska Tiger Reserve, India	Increasing in most countries, especially in response to enhanced ecological and cultural threats due to liberalisation and privatisation

[70] This is not an exhaustive list of examples, but only some randomly selected ones

9.2.2 Livelihood and employment benefits

But subsistence resources are not the only benefits being shared. In Muthurajawela conservation area near Colombo, Sri Lanka, local people get employment and returns from a visitors centre (J. Samarakoon, pers. comm. 1997). In Khunjerab National Park in Pakistan, 80 per cent of new employment opportunities are reserved for local people, as part of an agreement which envisages a control on grazing and other conservation measures (Slavin 1993). In Nepal's Annapurna Conservation Area, aspects of tourism management have been handed over to the local people (Gurung 1995, Wells 1994; see also case study). In a significant policy development, the *Nepal National Parks and Wildlife Conservation Act* was amended in 1996 with new Buffer Zone Regulations to allow for 30 to 50 per cent of tourism revenue generated by the protected areas of the country's terai (plains) area, to be given back to local communities. In the JFM programme of India, and the CF programme of Nepal, revenue benefits from forest produce are shared by the forest authorities and local communities. Under the ibex trophy hunting programme in the Hushey Community Conservation Area, Pakistan, 75 per cent of the monetary returns go to the village, while 25 per cent remain with the government. In 1997, following two trophy hunts, this amounted to US$ 10,500 for the Hushey Village Organisation. At Rekawa Lagoon, Sri Lanka, ecologically friendly shrimp culture has significantly increased the incomes of fisherfolk (Case Study 14). In Mendha (Lekha), India, year-long employment is now assured due to the CWM and related initiatives (Case Study 3).

Benefits can often be considerably increased through 'value enhancement' activities. In the Biligiri Rangaswamy Temple (BRT) Sanctuary, southern India, an NGO has helped local Soliga tribals enhance the value of non-timber forest products before selling them in the market. This generates more revenue per unit of NTFP, and the villagers can then be persuaded to reduce extraction while getting higher returns (Lele et.al 1998). In 1995-96, sale of honey alone brought the Soligas Rs. 140,000 lakhs (US$ 4000) in profit, and its production provided considerable employment (Lele et.al. 1998). In the Kani-TBGRI case, India, some critics have mentioned that the Kani tribe should have been transferred the know-how and equipment to make their own herbal medicine, rather than continuing to be only raw material suppliers (Anuradha 1999).

9.3.3 Developmental inputs

Increasingly, conservation programmes are providing developmental inputs to communities. In the Kalam Integrated Development Project in Pakistan, conservation was indirectly reached through developmental inputs (Khattak 1998). In Sagarmatha National Park of Nepal, funds generated from the fines imposed on offenders in the park are used for community works, such as repairing the village temple, and maintaining trails (Sherpa 1993). Many PA authorities have adopted measures to provide water and other basic amenities to local populations, such as in some eco-development programmes in India. In the Hushey Community Conservation Area in Pakistan the local community has benefited from afforestation plots for fuelwood, construction of piped water supply, irrigation channels and electrification following the initiation of trophy hunting for Ibex. At Annapurna, Nepal, several villages have developed infrastructure facilities including solid waste disposal pits, school building, community hall, installation of bio-gas or hydel plants, and health posts (Case Study 9).

Box 9.2 Biodiversity and Livelihoods

Communities often prefer a biologically diverse forest to a monoculture. Villagers spoken to in the Panos Institute's Oral Testimony Programme in the Indian Himalaya have stated this in no uncertain terms (Warrington and Bennett 1999). In the words of Jagat Singh Chaudhary, a 44-year old farmer and self-taught forester from the Chamoli district of Uttar Pradesh in India:

"There should be every kind of tree in the forest, there should be fodder trees, fuelwood trees and those which keep the soil moist. Banj, kafal, ayar, buraans, will keep our soil humid and their leaves will make humus which will have organic diversity. There should be fruit trees also and trees which will supply wood for building purposes --- and the most important trees are those which will keep the environment clean: broad-leafed ones. The rest are for industry, rambans, bans, ringal, and grass and creepers other than these. Creepers are the main resources for fodder. If you plant a grass creeper once then you get grass all the year around....now the jungle is under pressure from the population and it has lessened. Fodder trees have been replaced by pine. The jungle has become commercial and the availability of fodder has vanished. What the elders tell us is that earlier there were dense forests and there were many species in them. But now in the monoculture pine forests there is no (diversity). Now people are trying to plant trees for fodder, the people of my people are developing the forest....you should certainly plant trees because they are one of the main factors in the environment, but also focus your attention on trees which will provide earnings, for example there is bhimal, the leaves are useful as fodder, its fibres can be used to make ropes, bags etc., and shampoo can be made. The juice of the armora (a bush) can be made one of the best beauty aids. Trees can lead to economic prosperity, cottage industries can come up...if trees, grass, herbs, creepers, etc. all grow then won't there be economic development?"

In Mendha (Lekha), India, villagers have consistently refused to allow the Forest Department to carry out its 'scientific' silvicultural operations, which would have entailed clearing lianas and other 'unwanted' species. The reasons they give are much the same that Jagat Singh Chaudhary has elaborated above. *Rural livelihoods often are based on biologically diverse ecosystems, and encouraging them will provide a stake in protecting these ecosystems rather than converting them into monocultures.*

Box 9.3 Protecting Local Communities in Protected Areas

An indirect benefit of conservation, usually not perceived by its recipients, occurs in situations where people continue to live within protected areas (PAs). It is virtually only in such areas, apart from the extremely 'remote' parts of the country, that the invasion of the commercial-industrial-urban economy has not taken place. In India, for instance, there are more than 3 million people in its 540-plus PAs (Kothari et.al. 1995). Given the way in which relatively self-sufficient tribal and other communities and their natural resources have been decimated by the commercial-industrial-urban economy in other areas, with proud ecosystem-dwellers becoming landless labourers or even beggars, this indirect economic and cultural benefit of the Indian *Wildlife (Protection) Act* may be substantial (Saigal 1999). Add to this the significant ecological benefits that can be derived by communities from protected ecosystems, and PAs could well have been called 'community protection areas'.

Unfortunately, not only are these benefits not visible and well articulated, but in fact such communities only feel the serious restrictions placed on their customary practices by the same Act. As elaborated in Chapter 5, conventional conservation strategies have only alienated local people. There is no reason, however, why a drastic re-orientation cannot be achieved, by a combination of greater integration of survival and livelihood options into the conservation planning, and greater articulation of the indirect benefits mentioned above. This is in fact happening in a number of countries, with perhaps the most substantial progress being made in Nepal (see Chapter 6). The theme of communities and protected areas protecting each other, could well be one of the most powerful CWM thrusts in the region.

9.2.4 Reduction of costs

Several CWM initiatives have emphasised the reduction of costs to communities as a tangible benefit. For instance, in the Kahalla-Pallekele Human-Elephant Conflict Project (see Case Study 15), elephant related damage to crops in one division was reduced from 921 acres to 19, and property damage from 32 houses to only two, from 1993 to 1995[7].

Another example is compensation for damage by wild animals to human life, livestock, and crops. Such damage can often be debilitating for rural families, especially those already vulnerable. It is also a major irritant in the relations between local communities and wildlife officials, and indeed often between people and wildlife itself. Most countries in the region have some arrangement for compensating for human injury or death due to wild animals, particularly in and around protected areas. Not all have such a policy for injury to livestock, and very few have comprehensive crop damage compensation schemes. In India, most states do not provide crop compensation, except in the case of damage by elephants, for which specific provisions have been made under the central government-sponsored Project Elephant. Even where such compensation programmes exist, there is widespread resentment at the bureaucratic and inefficient way in which they are administered. Adequate and timely compensation has been a major demand from communities all over the region, but wildlife policies have not kept pace with this demand. Governments express helplessness in setting aside the resources necessary, or in finding viable solutions to the problems of accurately calculating the extent of damage, especially in the case of crops. In this connection, an interesting suggestion from some NGOs and communities in India is to involve recognised community-level organisations in reporting and assessing damage, and doing away with the existing tedious procedures of getting official verification (Das 1997). In addition, there are now cases where NGOs and communities have started a fund of their own to compensate the more needy villagers who are affected by wildlife damage, eg. in the Kahalla-Pallekele area of Sri Lanka or the recent cattle compensation scheme of World Wide Fund for Nature - India, Corbett Foundation, and others (*Tigerlink* Vol. 4 No. 2, September 1998). These schemes have reportedly helped to reduce conflicts in and around several PAs.

Suggestions have also been made to provide outright payment, or some other incentive, to compensate local people for loss of opportunities in conserving a resource (eg. retaining a forest instead of converting it into cultivation) (Kothari and Pathak 1999; see Appendix 1.1).

[7] An unsuccessful attempt was made by us to obtain an update of these figures. A more recent document of the project (Abeyrathne 1997) does not contain new data.

9.3 Social and political impacts

Perhaps as significant as the tangible or material benefits of CWM is the community and individual empowerment that the process has created, and the other social and political benefits it has helped to obtain.

9.3.1 Regaining control over resources

At many CWM sites in India (Mendha (Lekha), Bhaonta-Kolyala, Jardhargaon), communities have taken back virtual control over the surrounding natural resources (especially forests and water). Though legally such resources still belong to the state, *de facto* ownership now lies with the community, and with it has come a strong sense of responsibility. Tenurial security has increased, and with that the stake in conserving or sustainably using the resources concerned. Even where such complete control has not happened (it is indeed rare in countries other than India), at hundreds, perhaps thousands of sites, the enhanced role of communities in decision-making processes has been a major benefit.

A part of this empowerment process is the revival and strengthening of traditional institutional structures, or the creation of new ones, to serve community needs and interests. As described in the preceding chapters, a range of such institutions are now active in natural resource conservation and development. Significantly, many of these institutions have also become active on developmental, social, and political fronts.

9.3.2 Gaining access to governmental and NGO schemes

The community empowerment achieved through CWM initiatives has interesting indirect benefits. In many areas, it has helped the community to gain greater access to official programmes and decision-making processes, beyond the immediate CWM process. At Rekawa Lagoon, Sri Lanka, the initiative has provided the local fishing community with the skills and confidence to solicit developmental inputs from the civil administration, as well as to oppose developments (such as a causeway) which were damaging their fisheries. At Hushey Valley Conservation Area, Pakistan, community members can now lever greater inputs out of government departments which were earlier inaccessible to them. At both these and other sites, community members now have a greater say in regional planning forums.

9.3.3 Greater say in wider politics

Participation in larger political processes has also been opened up for some CWM communities. Bhaonta-Kolyala, India, is one of several dozen villages which have formed a *sansad* ('parliament'); its geographical limits defined by the catchment of the local river, Arvari. This *sansad* aims to take decisions about land and water use planning, natural resource management, developmental inputs, and so on, almost as a parallel structure to the official administration. Mendha (Lekha), India, takes part in the much wider movement towards tribal self-rule, spreading quickly through the central forested belt of India (Case Study 3).

9.3.4 Regaining pride in local knowledge and processes

Pride in local knowledge and practices, and the ability to use and access outside knowledge, have also been strengthened. At Mendha (Lekha), India, a combination of traditional/community and modern/outside knowledge has helped them to improve certain livelihood strategies (eg. more ecologically sustainable honey collection), as well as ensuring that they can easily confront government officials who try to deceive them. At many sites, confidence in local dispute-resolution mechanisms and other aspects of customary law, has been revived, reducing the debilitating dependence on the police, the judiciary, and other arms of formal 'outside' government. This has also happened because in several instances, the state or wider society has acknowledged the validity of local systems; in Bhutan, for instance, traditional administrative boundaries are recognised in the planning of the Jigme Dorji National Park (see Chapter 4).

9.3.5 Public recognition

Finally, public recognition is also coming. In Mendha (Lekha), India such empowerment has led to public recognition and the consequent eagerness of outside *agencies to implement their programmes in the village. All this has benefited* the village but has also tremendously increased the sense of responsibility among the villagers.

Recently in eastern India, one of the country's most prestigious environmental awards was given to village Forest Protection Committees involved in Joint Forest Management in West Bengal. Several village-level institutions are being recognised through the Government of India's Indira Priyadarshini Award for excellence in forest conservation. In Nepal, the Jara Juri Trust gives rewards to individual and community efforts at conserving forests (Panday 1997). There is also now much more media coverage of such initiatives, itself a major boost to villagers who are otherwise used to dwelling in obscurity.

9.4 Benefits to other stakeholders

Communities are not the only ones to benefit from CWM initiatives. The following also stand to gain.

9.4.1 Official conservation agencies

Several CWM sites have shown the potential to reduce the costs, labour and other inputs of official conservation agencies. At sites such as Mendha (Lekha), Jardhargaon, and Bhaonta in India, the Forest Department now has almost no presence at all, as all management and protection work is done by villagers. In the *mid-hills of Nepal, CF programmes have considerably reduced the costs and labour* inputs of the Department of Forests (see Chapter 6). Officials and staff of such agencies, who have shown exceptional initiative in promoting CWM arrangements, also gain from becoming recognised and rewarded, apart from winning the life-long trust and gratitude of the communities who benefit.

9.4.2 NGOs and other catalysts

NGOs and individuals who help to catalyse or strengthen CWM initiatives, gain from a demonstration of their belief in participatory natural resource management. Like innovative officials, they also benefit from increased recognition and awards. In many areas, such intervenors also gain powerful positions as intermediaries between communities and the state, or as facilitators of processes which benefit local people (though this is not necessarily an unmixed gain, as briefly discussed in Chapter 9).

9.4.3 Donors

Successful CWM initiatives provide national and international donors with value for money. Perhaps more importantly, they give them credibility within their home constituency. NGOs and others in the industrial countries, for instance, are increasingly asking for accountability from their own donor agencies, given the poor track record of such agencies in actually furthering the agenda of conservation and sustainable development. Such members of civil society are perhaps more satisfied when they learn of demonstrably successful results from CWM initiatives.

9.5 National and international policy impacts

While communities and local ecosystems benefit tremendously from CWM initiatives, there are also benefits at a much larger level. The obvious positive impacts of some of these initiatives have repercussions at national and international forums. Even though not yet fully documented and publicised, efforts such as many of those mentioned throughout this report, transmit powerful messages. In particular, they greatly enhance the official and public acceptability of concepts such as people's participation and empowerment.

9.5.1 National impacts

India's widespread JFM programme, though showing mixed results and strongly criticised for its reluctance to share more than token powers with local communities, has had a critical influence on policy discussions and developments. At the national level, it perhaps influenced the formulation of the Forest Policy of 1988, which marked a radical departure from previous forest policy (see Chapter 5). It was also used as ammunition to oppose a proposed new Forest Act in the early 1990s, as this Act would have greatly enhanced the powers of the Forest Department without any corresponding empowerment of local people. Finally, it is also being cited as evidence that people's participation is essential even in standing forest (so far the programme is extended only over degraded lands). In 1999 the Government of India set up a committee to consider extending JFM to lands with already good forest cover. Even wildlife conservation areas such as India's national parks and sanctuaries are being proposed for joint or collaborative management, though the extent to which government is willing to share decision-making powers is a subject of debate (see relevant essays in Kothari et.al. 1996; see also Rao 1999).

This is also the impact of the CF programme in Nepal, believed by many observers to have had far-reaching influence on the formulation of new forest and conservation policies (see Chapter 6). And successful examples of CWM in mountain

conservation areas such as Annapurna have prompted the Nepalese government (with some donor inputs) to introduce pro-people and participatory provisions even in the wildlife PAs of the plains. Indeed, the *demonstration effect* of successful CWM initiatives is quite remarkable: water harvesting and forest conservation have spread rapidly in the dry regions of Rajasthan, western India, once they were shown to benefit two or three villages. The more visible impacts of JFM in India and CF in Nepal and Bhutan have had similar effects country-wide. In turn, this kind of horizontal spread has vertical impacts in influencing policy and national decision-making.

9.5.2 International impacts

These programmes have most certainly influenced donor policies, as more and more of them begin to emphasise such state-community arrangements in their grant/loan conditions. And, interestingly, they have even been cited at international forums such as the Intergovernmental Panel on Forests and the Convention on Biological Diversity, as an example of what is possible if these forums facilitated the role of local communities.

The continuation (and revival) of several examples of traditional conservation practices across the region has also helped to convince both national and international decision-makers that these must be given their due place in conservation policies. In India, such practices and associated knowledge may be protected through a proposed Biological Diversity Act and other legislation, eg. through a process of registering them and giving them legal coverage against piracy. Worldwide, they will receive support and protection from forums such as the Convention on Biological Diversity, and the Draft UN Declaration on Indigenous Peoples, and in turn will be used to influence the course of negotiations at such forums (see Box 9.4)

Box 9.4 Tenure in the International Context

The International Labour Office (ILO) Convention 169 (which many South Asian countries are a party to) recognises the rights of ownership and possession of peoples over the lands that they traditionally occupy, and the rights of use and access to the lands they have traditionally had access to for subsistence (Article 14). As another important corollary, the rights of the peoples to the natural resources pertaining to their lands, and their rights to participate in the use, management and conservation of these resources, are also recognised (Article 15:1). More recently, the draft Declaration of Indigenous Peoples strongly advocates such rights and ownership. The 1992 UN Convention on Biological Diversity also commits countries to protecting the customary practices and knowledge of indigenous and local communities where relevant to the conservation and sustainable use of biological resources.

Key challenges in CWM: A regional perspective

As we have seen, community involvement in conservation has had significant positive ecological, social, economic, and policy impacts. It would, however, be a serious mistake to assume from Chapter 9 that all is well with CWM, or that all CWM initiatives are achieving these impacts. Each of the examples mentioned in the previous chapter, and others for which information is available, exhibit a range of contentious issues, hurdles, shortcomings, and problems that need to be understood and resolved. In this chapter we highlight and discuss some of these, which include:[72]

1. the difficulty of identifying key stakeholders;
2. social differences within and between communities;
3. insecure tenure and unclear rights to resources;
4. weak mechanisms for ensuring ecological sustainability;
5. erosion of local ecological knowledge;
6. a poor balance between costs and benefits;
7. inadequate or inappropriate institutions;
8. unfavourable policy and legal environment;
9. a hostile political and economic environment.

These issues are explored below, with relevant examples from the six South Asian countries surveyed. In the next, and final, chapter we outline some measures which may help to overcome these hurdles.

10.1 The difficulty of identifying key stakeholders

Virtually all examples of CWM encountered across the region indicate multiple stakeholders[73] involved with the initiative, or having an interest in it (local

[72] The identification of these issues has been a multi-step process. In the first phase of the project on which this report is based (see Chapter 1), a list of key issues was made on the basis of secondary literature (in particular from essays compiled in Kothari et al. 1998), and detailed discussions with participants and researchers of CWM initiatives. These issues were then investigated in the field through a series of case studies in the second phase of the Review (listed in Chapter 1), which also highlighted some new issues. This chapter is a synthesis of all these processes.

[73] A "stakeholder" here is defined as an individual or group with an active interest in a resource that is being conserved or used, either in terms of dependence on this resource, and/or the responsibility for conserving it. The term is not an entirely satisfactory one, but is used as a convenient shorthand.

residents/the 'community', government agencies, commercial interests, NGOs and individual researchers or activists, tourists, beneficiaries of the resources' ecological outputs, and so on). However, not all stakeholders have the same interest and involvement in the conservation of a resource, and not all are affected equally if the resource is destroyed. It is important to identify who should have the primary role in decision-making and benefit-sharing with regard to this resource, and who should have subsidiary or advisory roles.

Experience in the South Asian region suggests that the following criteria can be used to determine 'primary', 'secondary', and other stakeholders:

1. Extent of dependence on the resource for survival/basic livelihood.
2. Traditional/customary rights to the resource.
3. Permanent proximity to the resource.
4. Ability and willingness to conserve and/or sustainably use the resource.
5. Dependence on the resource for profits, secondary livelihood, aesthetic enjoyment, or long-distance ecological benefits.

10.1.1 Primary stakeholders

Local long-term residents (e.g. forest-dwelling villagers, or fisherfolk on the coast) are clearly primary stakeholders, fulfilling the first four of these criteria. Added to these would be more recent settlers, or return migrants. These groups fulfil criteria one, three and four. Others, such as those who have a traditional long-range or seasonal dependence for survival (e.g. nomads, or distant medicinal plant collectors; Box 10.1), and therefore fulfil criteria one and two, could also be counted as primary stakeholders.

Box 10.1 Nomads as Stakeholders

There is still a large number of transhumant communities that continue to follow traditional (or newly adapted) migratory routes across the South Asian region. Their dependence on widely distributed natural resources brings them in contact with a number of resource management institutional arrangements, ranging from community protected forests to protected areas (eg. Kailadevi Sanctuary which is on the route of the Rabari nomads in western India, or Great Himalayan National Park for the Gaddi nomads in the Indian Himalaya). The relationship between them and the resident stakeholders would have to be negotiated (as has traditionally often been done). There are situations where resident populations have claimed first rights to a resource, only allowing highly restricted uses to non-resident people (eg. in Nepal, see Chhetri and Pandey 1992), and other situations where nomads, earlier welcomed, are now being completely stopped by residents whose needs and attitudes have changed (eg. Kailadevi Sanctuary; see Das 1997).

Different local actors may have differing definitions of primary stakeholders. Residents of Bhaonta-Kolyala (Rajasthan, India) feel that given their enormous effort in conserving and regenerating the forests near their village, they should have the authority to exclude other people who do not abide by their rules. The neighbouring villagers, of course, feel they have as much right to the forest as the residents of Bhaonta-Kolyala.

Primary stakeholders may also have the right to exclude, or restrict, the access of secondary or tertiary stakeholders. For example, only the resident fisherfolk at Rekawa in Sri Lanka are allowed membership to the Fishermen's Cooperative, and have the right to manage the lagoon (Case Study 14). The examples of Bhaonta-Kolyala and Mendha (Lekha) as given above fit the same description, though in none of these examples is this a formally authorised right.

Another illustration of this complexity comes from the Shiwalik hills of Haryana, northern India where there is a conflict between Jholuwal Jats (traditional users), who are only marginally dependent on forests to supplement their fodder requirements, and Motnawali Banjara (more recent settlers) who are primarily dependent on grass from the forests to make ropes, their primary livelihood source (Sarin et.al 1996). Who has the primary right in such instances? Any arrangements for benefit-sharing may have to be flexible enough to accommodate at least bona fide requirements of even relative newcomers.

However, there needs to be some cut-off date for accepting people's claims, or claimants will increase indefinitely to the detriment of the conservation status of the area. The question of who should determine cut off dates, based on what considerations, and who will enforce them, still remains. In India, the central government decided to take 1980 as the cut-off date to regularise encroachments into forests (the year that the Forest Conservation Act was promulgated: see Chapter 5); however, state governments have repeatedly extended this date, especially as a populist measure before elections! In Muthurajawela, Sri Lanka, the conservation plan envisages cooperation from existing encroachers (who are being provided benefits) to ensure that no fresh encroachments take place (see Case Study 18).

Conservationists also suggest that local wildlife should be a primary stakeholder, since it is immediately affected by any decisions taken regarding resource and habitat use. This is undoubtedly a strong ethical point. The problem, of course, is that of representation in decision-making: who will represent wildlife? Conservationists or wildlife officials may consider themselves the spokespersons, and therefore claim primary stakeholdership; however, there is no inevitability in this, for a local community or activist organisation can also claim to be the main spokesperson, since they have interacted with wildlife for the longest period. This is a complex issue that underlies many traditional CWM initiatives, but has been relatively poorly understood and debated.

10.1.2 Other stakeholders

The above criteria could also be used to identify secondary or tertiary stakeholders, people who have lesser or indirect dependence on the resource.

One stakeholder whose status is debatable is the state, or rather those departments with a conservation mandate (eg. the forest or wildlife department). As they only fulfil criterion no. 4 (and possibly no. 5 in terms of jobs and revenues), it could be argued that such agencies should be secondary stakeholders. However, since in most countries the forest/wildlife departments (or similar agencies) retain predominant control, both by policy and in practice, in that sense they are government-appointed primary stakeholders. However, in Nepal, the Forestry Sector Master Plan of 1990

has asserted the need for the Forest Department to be transformed from being a controlling agency to an extension and support structure for community-level Forest User Groups (see Chapter 6). But this has yet to be translated on the ground in a comprehensive way. Furthermore, in several CWM sites in India (eg. Jardhargaon and Bhaonta-Kolyala), though the state is legally the owner of forest lands, it is often only peripherally involved (eg. Mendha (Lekha), Maharashtra), if involved at all.

Other secondary stakeholders would include residents who no longer retain their traditional dependence on local resources but are (or can be) involved in their conservation; and non-government agencies and external experts closely involved with resource conservation. In Mendha (Lekha), India, for instance, NGOs and some government officials may be closely associated with the study circles and other processes, but only the gram sabha (village council) is entitled to make decisions (Case Study 3).

Finally, tourists, the global community which gains from the global benefits of the resource, donors, commercial agents who are interested in the use of the resource, and others interested/involved in conserving or sustainably using the resource, could be classified as secondary (or even tertiary) stakeholders. In some ways, these can be directly involved in a CWM process: foreigners who pay fees to hunt ibex in Hushey Valley, donors who fund CWM projects, tourists who pay for local services or amenities. However, most local people would probably not agree to giving such agencies or individuals a say in decision-making, as this could compromise local priorities (although donors, by the sheer power of their financial contribution, do often have such a say). An advisory role, as in the case of study circles formed by villagers in Mendha (Lekha), India, can be envisaged for these stakeholders.

A legal issue is particularly relevant to the question of relationship between stakeholders living in proximity to each other, as in the case of Bhaonta-Kolyala (Rajasthan, India). A single settlement where CWM is occurring may not be a legally defined governance unit. In India, for instance, several settlements are often clubbed under one *panchayat*, the basic official unit of governance. The 73rd amendment of the Indian Constitution in 1992 has given *panchayats* greater control over local resources and development funds (See Box 5.10). However, where an institutional arrangement for CWM (eg. through a Forest Protection Committee) already exists within a single settlement, the *panchayat* could perhaps be seen as a secondary stakeholder. Certainly the villagers of Mendha (Lekha), Bhaonta-Kolyala and many other CWM sites would prefer this to having another institution, in which people from other villages also wield power, determining the fate of their natural resources. This disjunction between primary stakeholders and formal decision-making institutions is one of the common sources of conflict in all of the region's countries (see section 10.6).

A rough classification of stakeholders based on the case studies undertaken in the South Asia Review, is given in Table 10.1 below. This is a statement of what *is*, not what *ought to be*.

An interesting question is what happens when different stakeholders have conflicting stakes in the same resource? Typically, a forest may be viewed as wildlife habitat by

Table 10.1 Stakeholder analysis of selected CWM Sites in South Asia

CWM site	Primary stakeholders	Secondary/ tertiary stakeholders
Annapurna Conservation Area, Nepal	ACA villagers (relevant village institutions); local hotel associations; King Mahendra Trust for Nature Conservation (ACAP) staff	Tourists; researchers and NGOs other than KMTNC; line agencies; donors
Bhaonta-Kolyala, India	Bhaonta-Kolyala villagers (gram sabha)	Neighbouring villages; Rajasthan Forest Department; Alwar District Administration; NGOs like Tarun Bharat Sangh
Hushey, Pakistan	Hushey Valley villagers; Village Conservation Committees; District Conservation Committee; DFO Baltistan; Assistant Commissioner, Masherbrum	IUCN Pakistan; AKRSP; trophy hunters; tourists; donors
Jardhargaon, India	Jardhargaon villagers (gram sabha, panchayat, van suraksha samiti); Beej Bachao Andolan	Neighbouring villages; Forest Department; Tehri Garhwal District Administration; research groups and NGOs like Kalpavriksh, formal van panchayat
Kokkare Bellur, India	Kokkare Bellur villagers; Hejjar Bellage (Pelican Clan); Mysore Amateur Naturalists; Karnataka Forest Department	Tourists and researchers; district administration; tourists
Mendha (Lekha), India	Mendha (Lekha) villagers (gram sabha and other village institutions)	Neighbouring villages; Panchayat; NGOs like Vrikshamitra; study circle participants from outside; Maharashtra Forest Department; Gadchiroli District Administration
Rekawa, Sri Lanka	Rekawa villagers (relevant village institutions); local administration; Forest Department	Research and development institutions such as University of Colombo; NGOs like IUCN; donors; tourists

an urban conservationist, a resource catchment and/or ancestral abode by local communities, and a source for raw material by an industrialist. Which stake is to be considered higher priority, and using which criteria? At one level, one can say that this would be negotiated amongst the primary stakeholders, perhaps with inputs from the secondary stakeholders. However, even among the primary stakeholders there may remain unresolvable conflicts, or fundamentally conflicting values. In these cases, dispute resolution mechanisms are necessary (Box 11.9, Chapter 11).

10.2 Social differences within and between communities

The term 'community-based wildlife management' centres around the concept of a local 'community'. But who is the local community?

As pointed out by several scholars and field workers, the use of the term 'community' is sometimes based on an incorrect assumption that it comprises one single homogenous entity (DeCosse and Jayawickrama 1998; Sarin et. al. 1996; Western and Wright 1994). As is described below, social stratification and differentiation are common in almost all communities, and different sections (including men and women) have differing interests/stakes in the natural resources around them. In such a situation, a 'community' may not have an inherent potential to come together to manage a common resource. In Hikkaduwa, Sri Lanka (Case Study 17), initial failures in mobilising the community to conserve the marine resources were due to the highly divided and stratified local society, with less powerful sections like fisherfolk unwilling to accept the leadership of elite hoteliers. Similar examples abound in the region.

Conventionally, a local community is defined as a group of people living in settlements near a particular resource, and/or as a group of people with traditional/customary use of that resource. However, as pointed out by Sarin et.al (1996) in the context of some of India's forests, traditional users or right-holders may no longer be dependent on adjoining forests, whereas a more recently settled group may be. Similarly, for Sri Lanka, DeCosse and Jayawickrama (1998) stress that, communities in an area may not be dependent on the nearest natural resources. In Attidiya Sanctuary, for instance, the local community does not depend on the sanctuary for livelihood, but rather on wages on the nearby cities and towns. Indeed, in much of Sri Lanka, the notion of "local community" is rather weak, as a series of external invasions and influences have resulted in villages getting engulfed in the mainstream economy and culture, losing any strong identity that they may have previously had. While this process has happened in the whole South Asian region, Sri Lanka seems to have been particularly strongly affected, perhaps due to a combination of small size and the long history of colonisation.

Many communities exhibit internal inequities and differences based on ethnic origin, caste, class, economic state, religion, occupation, social status, gender and age. These distinctions can create profound differences in interest, capacity and willingness to invest in the management of natural resources. In a situation like this, what benefits one part of a village and meets conservation goals, may harm other parts.

10.2.1 Gender inequities

Inequalities between the sexes exist in all sections of society and all communities. In most resource-dependent communities, women do the bulk of collection of resources like fuel, fodder, and NTFPs. Men and women often view natural resources differently. In Gujarat, western India, men wanted to sell off the entire bamboo harvest from their protected forests while women wanted the village requirements to be fulfilled first (AKRSP 1995).

Despite their important role in, and dependence on, resource use, in most communities (with the possible exception of Sri Lanka, where women's participation is reportedly much higher than other countries), women have very little role in decision-making about the management of natural resources.

In Pakistan, women usually remain alienated from village conservation planning even in CWM areas, and even where PRA exercises are conducted amongst them. Indeed, in most countries of the region, both traditional and new decision-making structures are male dominated. In Bangladesh, this was a constant problem in the community-based fisheries management initiatives that were attempted from time to time, as less powerful sections were left out (Capistrano et. al. nd). Women are similarly kept out of CWM institutions in many cases. Even supposedly participatory institutions such as joint management or community-based ones can be dominated by men (e.g. at Bhaonta-Kolyala; see also Sarin et.al. 1996).

CWM initiatives that ignore gender inequities can actually exacerbate them. At Kailadevi Sanctuary, western India, the decision not to allow axes in the village forest (in order to stop cutting of live trees), was taken by the all-male village forest protection committees; for the women, this represents further hardship because they have to walk farther to collect fuel wood (Das 1997). Indirectly, gender inequities can lead to dissatisfaction and even offences by the women, when pressed very hard for resources.

10.2.2 Wealth and religious inequities

Differences in wealth: Most rural communities contain a mixtures of classes, with concentration of power amongst the upper castes and classes, and a relatively underprivileged status of the lower castes and classes, and of tribals in mixed communities. This has serious impacts on the viability of conservation programmes. Experiences from JFM in India, community forestry in Nepal, and other examples elsewhere, show that in many self-initiated village forest protection committees (FPCs) or state-sponsored Forest User Group (FUGs), lower castes or tribes are either excluded or their representation is nominal (Campbell 1996, Sarin et. al, 1996, Shrestha 1995). Decisions which are imposed on them, such as restrictions on entry into forests, lead to further alienation and disregard for forest conservation.

Official forest management policies and practices in the region have usually favoured revenue generation over the basic needs of the poorest classes (Box 10.2).

Religious differences: Religious differences within communities, eg. amongst Hindus, Muslims, Christians, Buddhists, etc. can also play a very important role in community interactions with the surrounding ecosystem, but little research has been done into this. In at least one case, however, CWM efforts appear to be reducing social divisions (Ritigala Strict Nature Reserve, Sri Lanka; Case Study 16). People of different religions, earlier divided over many issues, have come together for the common cause of conservation-based livelihood generation.

Government programmes in the region are notorious for not benefiting those they are supposed to, for a variety of reasons: hijacking of benefits by locally powerful sections of society, corruption and favouritism among officials, lack of participation of targeted beneficiaries in decision-making and implementation, and others. But inequities can be built into community or NGO-led initiatives as well. On the other hand, where poorer sections are organised, grassroots groups are active, or sensitive officials involved, the distribution of benefits to those who need them is far more successful.

Box 10.2 Who benefits from CWM?

Joint Forest Management in many states of *India* is oriented towards timber production; the interests of the poorest, who are more dependent on NTFPs for their basic subsistence, are given less importance (Fernandes et. al 1988). Similarly, those without access to agricultural land, and therefore dependent on forests or grasslands for their livelihoods, suffer when these habitats are closed off for conservation. In many JFM areas of West Bengal in India, banning tree-felling had a serious economic impact on the landless who mainly depended on the sale of fuelwood and timber for survival. The programme was doomed to fail but for timely state land reforms, which softened this loss (Poffenberger 1994).

In several FUGs of *Nepal*, the forest-dependent blacksmiths suffered when a tree-cutting ban was imposed by a higher caste (Shrestha 1995). Indeed, formal FUGs initiated by the government often include forest staff and a limited number of elite individuals, excluding the disadvantaged from the decision-making process (Chhetri and Pandey 1992). Community management experiences in villages in the lower Shivalik range of Haryana and Punjab states, north India, revealed that the programme was successful only in the villages where private assets were more equitably distributed, while in the villages where land holdings were restricted to only a few, the programme faced failure (Murty 1996). This situation arose because people who owned cattle and land benefited from the protection of the forest, while the landless depended directly on the day to day exploitation of forest resources for their survival.

In Annapurna Conservation Area, Nepal, whilst there is some reservation for lower castes on the Conservation Area Management Committees (CAMC), there is little acceptance of their views and ideas. However, some claim that this reservation has helped 'lower' castes gain greater access to resources and decision-making, and that the 'caste gap' is narrowing. Despite this, the Annapurna authorities have reportedly favoured the dominant Gurung community in allocating infrastructure, with other communities receiving fewer benefits. This has led to a lower level of interest among the latter in CWM initiatives.

At Kokkare Bellur, India, powerful landowners or *panchayat* leaders who have the right market and political connections are flouting an age-old tradition of not cutting trees on which pelicans and storks nest. There is no concerted challenge to this from those villagers who are still protective towards the birds.

10.2.3 Inter-community inequities

Unequal access to a common resource is a problem between communities too, especially where communities have different social or political backgrounds. This is the case, for example, if one community has greater connections with the market, or with politically powerful people from outside, than the other. Such inequities are also common between tribal and non-tribal communities, and between rural and urban populations.

Conservation initiatives can fail if these inter-community inequities are not considered and steps taken to reduce them. For example, Khawa village near

Ranthambhor National Park in Rajasthan, western India, has tried hard to protect the adjacent forests but with only moderate success, as the nearby village of Rawal refuses to comply with conservation rules, and continues to extract timber to supply a nearby town (Desai et. al 1996). Similarly in Mendha (Lekha) and Bhaonta-Kolyala, India, forest protection suffers because neighbouring villages do not respect the conservation rules.

Greater dialogue and coordination amongst communities has been attempted in some CWM initiatives with success. In Kailadevi Sanctuary, India, residents of 12 villages have got together to form a *Baragoan ki Panchayat*, a joint council for dispute resolution on forest and other matters (Das 1997). They try to tackle all disputes amongst villages on their own, without having to go the Forest Department or the police (though this does not always work). In the case of Muthurajawela Marsh and Lagoon area of Sri Lanka (Case Study 18), several villages who were earlier not cooperating with each other have realised, due to community participation, that a combined effort can be much more effective than an individual one.

10.3 Insecure tenure and unclear rights to resources

Countries in the region have varying systems of tenurial rights or customary access to biological resources, small private holdings, large-scale private ownership, communal holdings, state-owned lands, and variations or combinations thereof. In the region as a whole, state ownership and/or control over natural ecosystems and wildlife is most common; in Sri Lanka this is to the tune of almost 90% of the total land (FPU 1995a). Large-scale private ownership is uncommon throughout the region, except in parts of Pakistan.In much of South Asia, traditional patterns of tenure existed in the context of communally owned and managed land and water resources. For instance, the *kipat* tenure in Nepal was a system in which the Shah kings and the Rana prime ministers allowed tribal groups such as Rais and Zimbus to hold land jointly on a clan or lineage basis (Fisher 1991). In Bhutan, the *tsamdrog* (pasture) and *sokshing* (leaf litter collection areas) are officially recognised as traditional use areas of communities while the actual ownership of land is with the Forestry Division of the government. In Mendha (Lekha), Jardhargaon, and Bhaonta-Kolyala the *actual* ownership of land is with the Forest Department, however, the communites enjoy a *notional* or *de facto* ownership of the resource and treat it accordingly. In Jardhargaon, the concept of Civil Soyam Forest is an interesting one, where the Revenue Department owns and controls the forest land, but has to seek Forest Department's permission prior to tree felling. However, this land has now been handed over to the *van panchayat* (a formal village institution for forest conservation, set up by government) for management. This three-way arrangement could create confusion. Unclear tenurial systems often tend to complicate matters can also undermine CWM efforts, e.g. in the state of Rajasthan in India, there are serious disagreements between the Forest Department and the Revenue Department regarding jurisdiction over land that is being used for mining, a lack of clarity which has been effectively used by the mining lobby to operate with impunity. In Bhaonta-Kolyala, India, previous *jagirdari* (pre-Independence landlordism), current Forest Department claims, and *de facto* control by villagers,

creates a confusing situation regarding the boundaries of ownership and control. The notion of 'ownership' itself is more complicated than what many social activists and conservationists may have considered so far. Many communities involved in CWM do not seem to want 'absolute ownership' (to the extent of having the power to alienate), but perhaps more of a custodianship/trusteeship arrangement, with controls and responsibility being wedded together. This notion of 'non-legal', innovative ownership, is born out of traditions (but also as an innovative response to current conditions).The absence of tenurial security and the erosion of community-based tenure have been linked to biodiversity loss. In these situations communities are deprived of the legal means and incentives to exclude newcomers and manage the forest for long-term sustainable benefit to themselves (Box 10.3). In such a situation, many communities become increasingly responsive to market pressures to over-exploit and join in the free-for-all (Lynch and Alcorn 1994).

Box 10.3 Erosion of Tenure Leading to Biodiversity Loss

In Jardhargaon and Bhaonta-Kolyala, *India* villagers point to the decline of forests in neighbouring villages whose residents do not have de facto tenurial control. *Bangladeshi* communities use common property regimes to regulate access to highly biodiverse fisheries in flood plains and wetlands, which are also the habitat for many migratory birds (Lynch and Alcorn 1994). This is however being threatened by loss of tenurial security as such waterbodies are appropriated by private enterprises, to the detriment of the wetland biodiversity. The same is the case with the spread of industrial aquaculture in India's coastal areas, which has alienated local fisherfolk and farmers from their lands and waters, and caused serious biological destruction (Shiva and Karir 1997). In *Pakistan*, observers have noted that uncertain land and water tenures are a hindrance to CWM (Khattak 1998). Chandrashekara and Sankar (1998) point to the situation in the Chinnar Wildlife Sanctuary of Kerala, India, where lack of land tenure and employment opportunities have led to increased fire accidents in the sanctuary caused by the local people themselves.

Absence of legal authority over natural resources also weakens the community's powers to regulate its own members. At the Rekawa Lagoon (Sri Lanka) the absence of legal backing to the community's punitive measures prevents them from stopping fishermen from using the destructive *kraal* method of fishing (Case Study 14; Ekaratne et. al. 1999). At Jardhargaon, the moral authority of the *van suraksha samiti* (forest protection committee) appears to have declined of late, which could possibly be remedied by providing a formal, legal status (Case Study 2; Suryanarayanan and Malhotra 1999).

In India's Joint Forest Management (JFM) programme, Sri Lanka's earlier Community Forestry Project, and other such forestry programmes in South Asia, in the absence of clear tenure local villagers live in fear of government agencies revoking the agreement under some pretext or other, just before harvesting the forest produce which they have been protecting for years (Poffenberger and Singh, 1996; Carter et. al. 1994). Such insecurity leads to inadequate commitment to protect forest areas. Where some tenurial security exists, the participating communities are more willing to invest in labour and protection activities, and defer exploitation of forest resources to benefit from future production increases. This is also the case in

wetlands, illustrated by the experience of Muthurajawela conservation area in Sri Lanka (Case Study 18).

Finally, insecure tenure also leads to insecure benefits. The Kani-TBGRI case (Anuradha 1999; Appendix 1) clearly shows that a potentially productive agreement using the traditional knowledge of a tribe to produce a herbal medicine, ran aground because the Forest Department refused access to the lands on which the source plant grew. Absence of tenure translates itself to lack of any stake in conserving the plant, and lack of the authority to exclude outsiders from exploiting it. It has taken over two years to sort out this issue, and even now the arrangement will remain tentative if the Forest Department retains exclusive control over the relevant forest land.

10.4 Weak mechanisms for ensuring ecological sustainability

Access/rights to benefits have to go hand in hand with *responsibilities* to ensure that conservation is achieved. Without this, and without addressing other critical issues like equity and the pressures of outside commercial forces, community control carries the risk of even worse destruction (Western and Wright 1994). So does continuation of certain traditional rights: eg. in large parts of north-eastern India, tribal councils and villages control most of the forests, and are now rapidly cutting them down to feed hungry sawmills set up in adjacent areas by people from outside the region.

A CWM process can become ecologically unsustainable if care is not taken to ensure that resources are not over-exploited. For instance, in Nepal's Parks and People Project, the conservation objectives have tended to be overlooked with the growing emphasis on socio-economic development (Rodgers and Uprety 1997). At Bhaonta-Kolyala, India, the brief ecological assessments carried out as part of the case study suggest that over-grazing is still a major negative factor in the conserved forest. At Mendha (Lekha), India, the issue of hunting continues to be relatively neglected. Privileges and rights can get misused, or appropriated by others, to extract the maximum from a particular resource. All over South Asia, some elements within communities are aligned to outside commercial and political forces, and misuse their rights to benefit these forces. In Nepal's Royal Chitwan National Park, for instance, grass-cutting permits issued to local villagers are reportedly being misused to provide resources to a nearby paper mill (Mingma Norbu Sherpa, pers. comm. 1997); in some of the mountain protected areas, outsiders (or locals who have migrated out but retain land locally) are cornering tourism benefits by building lodges (Pralad Yonzon, pers. comm. 1997). This is especially the case with biodiversity-based enterprises, where enhancement of the economic value of a resource could well lead to over-exploitation rather than sustainable extraction.

A further challenge is to define what kind of 'use' is good for conservation. This depends on the availability of information and analysis of the ecological impacts of each kind of use, hence the critical importance of research. However, what happens when the livelihood needs of communities do actually clash with conservation goals? It is believed that any such activity would have potentially long-term adverse impacts on the community itself, and therefore it will be against the interests of the

community to pursue it. But for most people this is speculative, while immediate gains are more tangible. One premise of most CWM efforts is that alternatives can and should be found when there is potential conflict between the elements of protection and use. But some contradiction may be seen here between those who are arguing from the perspective of people's rights/entitlement and those advocating conservation goals, which can only be resolved through dialogue and mutual understanding.

The impacts and sustainability of a CWM process can only be gauged by a system of continuous monitoring and periodic evaluation. Unfortunately, this aspect is not well-covered in most of the CWM initiatives in the region. Most initiatives use qualitative indicators of success, but even these are based on ad hoc observations. Some donors have of late begun to insist on such processes, but the results are as yet not clear. Even where monitoring is going on, it is not very participatory, with outsiders usually conducting it (although see some examples in Chapter 11).

10.5 Erosion of local ecological knowledge

Official conservation programmes in most countries have emphasized the use of 'modern' wildlife/ecological science and practices, and the involvement of trained 'experts'. The knowledge and practices of local communities have been largely ignored in the process. However, ecologists are beginning to acknowledge the equal importance and relevance of the knowledge and skills of local communities, which has many advantages for CWM initiatives.[74]

- Firstly, it is deeply integrated within the community's social, cultural, and political environment. As an example, sacred groves often protect important catchments or resource banks (an ecological function), but are also protected as the homes of ancestors or deities (a cultural function or justification). Building conservation strategies upon local community knowledge/practice (LCK)[75] therefore ensures far better acceptance of the strategies than would be the case if they were simply imposed from outside.
- Secondly, LCK incorporates information, attitudes, values, skills, and practices about biodiversity, such as about medicinal plants. There is also considerable dynamism and innovation in LCK, especially in the forms of resource use; this is best seen, for instance, in agriculture, where farmers' ingenuity in the use of habitats and species is remarkable (e.g some 50,000 varieties of rice have been developed by Indian farmers, to suit all kinds of micro-climatic, ecological, and cultural conditions).
- Finally, much LCK has some kind of communal or shared ownership and use,

[74] For a more detailed treatment of this, see Kothari and Das (1998).

[75] It is important to note here that not all traditional practices may constitute LCK, though there is tendency in conservation circles to assume this. For instance, in Nepal, what is often referred to as local community systems were actually feudal revenue-oriented systems followed by the Talukdar or Birta landlords; while such systems can certainly be considered traditional, they did not originate in the communities. Noting this misconception, Gilmour (1990) proposes that a distinction be made between 'traditional' and 'indigenous' practices, with the latter referring to community-initiated systems. The community forestry programme in Bhutan, in fact, has very clearly used this distinction (Desmond 1996).

developed over generations, though individual innovation and privately held knowledge/practices are by no means uncommon.

There are, however, also several weaknesses: an inability to cope with sudden or large-scale changes, vulnerability to disruptive changes caused by changes in any other aspect of society, inequalities in access to different castes/classes/genders, and major gaps relating especially to species which are used by or in some way impinging upon the lives of the villagers, such as small fauna or micro-organisms. Also, some misconceptions about species may lead to outright elimination, e.g. in many parts of South Asia, snakes are killed regardless of whether they are poisonous or not.

Despite these weaknesses, LCK systems have served local communities well for thousands of years. But in the last couple of centuries, and in particular in the last few decades, LCK systems have been severely eroded by a variety of factors. These factors include:

- the displacement/devaluation of traditional knowledge and practice by the modern 'scientific' knowledge system (e.g. replacement of local traditions of medicinal plant use by the modern allopathic system);
- the appropriation and misuse of LCK by the formal (including private) sector, including patenting and claiming intellectual property rights over either the knowledge as it existed or as modified and used (e.g. the numerous IPRs claimed on medicinal properties of plants such as turmeric and neem, known to Indians for centuries);
- the institutional take-over of resources by state/private sector, including the 'nationalisation' of forests and other common lands by the state, and the displacement or infiltration of local village institutions by political parties, government agencies, and market forces; and
- the physical displacement of communities away from their traditional territories.

The erosion of LCK directly leads to negative consequences for biodiversity, as well-tried systems of management, use and conservation break down. This can be seen especially in the case of common property resources; instead of a tightly regulated system of use by the community, the system tends towards a free-for-all, turning the resource into open access property. At Jardhargaon, India, villagers admit that they were the primary cause of deforestation of the village slopes, as their customary rules broke down. All across South Asia, forests, wetlands, pastures, and other habitats, have suffered serious consequences. As knowledge of the intricacies of habitats and species disappears, opportunities for their conservation also diminish, especially as modern systems are often incapable of replacing what is lost (Gilmour and Fisher 1992; Gadgil and Guha 1992; Mendis nd; Capistrano et.al. nd).

Another issue of increasing contention in the region is the tendency of outside agencies and individuals to appropriate LCK for their own purposes, and even apply monopolistic intellectual property rights (IPRs) on them or their derivatives without providing any returns. Examples of pharmaceutical and seed companies doing this are legion (see, eg. annual "biopiracy" updates by RAFI, as *RAFI Communique*; Shiva 1995; Kothari 1997). Such 'biopiracy' threatens the continued use of LCK

amongst communities, disprivileges such communities vis-à-vis outside agencies especially in the market, and facilitates conditions of further homogenisation thereby threatening biological and cultural diversity.

Whilst some efforts are being made to incorporate LCK into wildlife management plans, such efforts are still uncommon, especially in official CWM processes. The stress remains on importing modern or formal systems in most conservation and development programmes in the region, without regard for their impact on LCK or on the resource itself. Even in Nepal, where community forestry attempts to integrate indigenous systems of management, there appear to be relatively few examples of official programmes accepting the practical validity of LCK. Current governance structures, fragmented as they are amongst various disciplines and functions, are also incapable of dealing with the complex inter-linkages that LCK can display.

10.6 A poor balance between costs and benefits

One of the central concepts of CWM is that the benefits gained from conserving a resource go directly to communities, thus creating a vital link between healthy wildlife populations/habitats and local benefits. This is the main way in which incentives are created to ensure that resources are protected. However, there is a significant difference between the potential benefits from conservation programmes in the South Asian region compared with regions like Africa. 'Wildlife utilisation' in the latter implies 'big game' harvesting. The potential for this is extremely limited in South Asia, because of the small populations of most large mammals as well as strong ethical concerns amongst substantial parts of the population. Much greater stress is on the utilisation of plants and habitats as a whole, or on subsistence or non-consumptive uses of animals (eg. hunting for food, or revenue from ecotourism).[76]

In addition, there are also several kinds of costs incurred by communities as a result of their conservation efforts (Saigal 1999; Kothari and Pathak 1999; see also Appendix1):

- *Direct costs:* Labour, money, etc. put into ecosystems protection; foregone current consumption from the ecosystem (opportunity cost).
- *Indirect costs:* Health impacts of temporary reduced access to resources; social impacts of exclusion from protected ecosystem; increased conflicts within and outside community, with those wanting to continue unregulated exploitation; wildlife caused damage to human lives, livestock, and crops.

Whilst local communities incur these costs, the benefits are mainly enjoyed by the non-local national/international communities (tourists, bio-resource based industries, urban consumers, etc.). To local communities this seems just another way of depriving them of livelihood resources. This feeling is heightened when tangible

[76] There are, however, exceptions; for instance the Dhorpatan Hunting Reserve in Nepal (DNPWC 1995), and the Asiatic ibex (*Capra sibirica*) hunting permits in Hushey Valley and other parts of the Northern Areas and North-west Frontier Province of Pakistan (HVO 1997), which are both geared towards bringing substantial revenue to communities. The CWM initiative at Hushey has been marked by an interesting shift in perception towards the Ibex, from being just a 'wild goat' to a highly prized trophy animal. One Ibex is already worth more than a hundred sheep and goat, according to the locals.

economic benefits derived from conservation areas are cornered by outsiders. For instance, it is estimated that at Keoladeo (Bharatpur) National Park in Rajasthan, India, almost all of the substantial tourism revenue generated (approximately Rs. 2.45 million or US$ 6000 per year), goes to private tourist agencies or the government (Goodwin et.al. 1997), while the local communities, on the other hand, lose about Rs 20 million (US $50,000) a year; mostly due to agricultural losses through waterlogging caused by the park's wetland management, as well as through restrictions on fuel and fodder use (Murty 1996).

In most cases the benefits derived from conservation (enhanced water supply, micro-climatic regulation, etc.) are not immediately evident to the local community. In the absence of this, and while access to more tangible resources is being denied (eg. in conventional protected areas), it is difficult to convince the community that wildlife protection is necessary and beneficial. This scenario does not provide a conducive environment for CWM. Many examples the world over show that while local communities can be the best protectors of their natural surrounds, they can also be its worst enemies if they have no stake in those resources. Such alienation and hostility can only be removed if communities themselves become prime recipients of the benefits accruing from conservation.

Even within community-initiated efforts, benefits may not be so visible to some sections of the community, either because they are too intangible, or because the effort has not been fully participatory and transparent. Special efforts are needed to not only reach benefits to these sections, but to make them more visible and clear.

10.7 Inadequate or inappropriate institutions

There is a range of institutional types involved in conservation in the region (Table 10.2). Formal conservation efforts are usually carried out by centralised bureaucratic institutions and agencies. But it is abundantly clear that state agencies on their own have not been able to conserve wildlife efficiently, barring a few spectacular successes. An analysis of the situation in South Asia reveals that government institutions suffer from the following problems, amongst others:

- They tend to be rigid in the application of rules, lacking the flexibility to respond to diverse and dynamic situations.
- They are slow to change, and unable to respond to new challenges.
- They usually ignore, or sometimes even undermine, indigenous structures and institutions, rather than building on or making constructive use of them.
- They almost always lack the human, financial, and technical resource/capacity for conservation.
- They do not gather the support of local communities or other stakeholders, who are alienated by inappropriate laws, policies, institutions, and attitudes.
- Coordination within and between agencies is weak.
- Wildlife/forest agencies are always weaker than development agencies, and have to succumb to pressures/plans to exploit natural habitats and species.
- Corruption amongst their employees sometimes undermines conservation efforts.

Simultaneously, it is also true that traditional local community institutions have been eroded or weakened in the face of myriad outside forces. Official state structures have themselves sometimes undermined and suppressed local institutions. For instance, village-level irrigation management systems in Sri Lanka, pre-colonial era *panchayats* (village councils) in India, or *gaon* (village) *panchayats* in Nepal were all eroded after the creation of centralised bureaucracies during the colonial era, and not much was done until recently to revert back to these institutions after the colonial powers left. Other causes of institutional erosion at the community level include integration into larger political processes (reducing the authority of local leaders), displacement of customary laws by formal ones, demographic pressures, and others.

Table 10.2 Institutional structures for conservation in South Asia

Institutional control	Examples of areas conserved
Exclusively state	Protected areas (most countries) Reserve/Protected/State Forests (India, Bangladesh, Pakistan, Sri Lanka)
Exclusively NGO	(none found)
Exclusively local community	Mendha (Lekha), Bhaonta-Kolyala, Jardhargaon (India)
State/NGO combined	Makalu-Barun Conservation Area (Nepal)
NGO/local community combined	Annapurna Conservation Area (Nepal); Chakrashila Sanctuary (India); Kharshati 'Wildlife Sanctuary' (India)
State/local community combined	JFM areas (India); CF areas (Nepal)
State/NGO/local community	JFM areas (India); Rekawa Lagoon (Sri Lanka); Hushey Community Conservation Area (Pakistan)
Private (individual)	(none found, perhaps private reserves in Pakistan?)

There have been recent attempts to remedy the situation (for example, by providing legal recognition to *panchayats* in India, and by devolving control over forests to the actual user groups in Nepal (see Chapters 5 and 6). But there is in general an absence of linkages between state governance structures and local community institutions in the specific context of wildlife management. Often, there is in fact an adversarial relationship between the two. There is therefore a need to develop alternate structures of governance in which the relative strengths of local and state institutional structures can be merged. Other challenges that have emerged in relation to institutional structures are:

(i) Combining new and old institutional structures may be problematic, especially if their composition and style of functioning is totally different, and if the controls are held by different individuals or groups of individuals. Most effective seems to be

when a new institution is built on an traditional one, or at least incorporating appropriate principles of a traditional one.

(ii) Making CWM institutions truly representative and equitable in decision-making is difficult, as there are often local or external power elites who want to hijack them for their own purposes. This issue requires special attention on part of CWM initiators.

(iii) Though formalising traditional institutions has its advantages, especially vis-à-vis the outside world, it could also stifle localised innovative structures by straightjacketing them into uniform regulations and formats. For instance, in Nepal, it has been noticed that self-initiated resource management institutions, based on unwritten rules and around commonly used resources, often break down when the government or donor-initiated formal systems (*ban samitis*) are imposed on them (Gilmour and Fisher 1992). In India, too, several JFM efforts have faltered as governmental rules regarding composition of the Forest Protection Committees (FPCs) have disrupted delicate balances inherent in locally initiated institutions, or because these rules stipulate the participation of a forest officer at a key position in the FPC (Das 1997). Using the advantages of formalisation without incurring the disadvantages, requires special care and forethought.

(iv) Multiplicity of institutions at the local level can be problematic, though not necessarily. It can be disruptive where a traditional and a new institution have overlapping mandates but different membership, even if both institutions may be community-based. A new Forest Protection Committee set up under a state-sponsored scheme (e.g. JFM in India, CF in Nepal) could have severe conflicts of interest and power with the traditional village council, especially because the latter may feel threatened, or the former may feel helpless if the council decides not to cooperate. This happened initially in Nepal, when the FUGs were created by bypassing the Village Development Committees, who felt threatened by the greater revenue-generating potential of the FUGs. However, this was resolved where membership of the VDCs and the FUGs considerably overlapped. The official status of the main decision-making institutions may also be a factor. Whereas the village councils in Mendha (Lekha) and Bhaonta-Kolyala, India, are informal traditional bodies, the *panchayat* in Jardhargaon, India, is an elected, formal body, partly deriving its powers from the state. Here, there is potential for conflict between the *panchayat* and the *van suraksha samiti* (VSS, or forest protection committee), since the latter is a purely informal body, not subsumed under the former, which might therefore see it impinging on its official powers. Fortunately, this potential has not yet been actualised, but the panchayat has also not been very responsive to requests for help from the VSS.

(v) The role of outside agencies, governmental and non-governmental, can be supportive, but it can also be disruptive. Like government institutions, however, NGOs and donors can also be short-sighted or opportunistic in their approach to CWM. In most countries of the region (except India), conservation and development is so deeply tied up with donor assistance that many field workers and researchers are wondering: what happens when donors pull out? In the past few years, even India has embarked on the road away from self-sufficiency, though even now external assistance is a small part of its overall official conservation financing.

Dependence on outsiders for funding can have a debilitating effect when the donors pull out, not just financially, but also psychologically, as communities lose the motivation to fund-raise when funding agencies withdraw (Gilmour and Fisher 1992; Chhetri and Pandey 1992; pers. comm. with several Nepali and Sri Lankan researchers). This is all the more so in countries like Nepal and Sri Lanka, where the push towards participatory conservation is essentially coming from donors, and may not have yet become either an integral part of the governance structure or a widespread demand from the public (Chapter 9). Researcher Suki Ekaratne notes for Sri Lanka that "foreign-funded projects with foreigners at the helm are also known sometimes to surreptitiously make regular monthly payments to local administrators to harness their support during the project period which is lethal to project sustainability, but is necessary for short-term project progress" (Case Study 14).

Also in Sri Lanka, NGOs involved with community forestry have been observed to often take the same top-down approach as government agencies, and the same biases towards villagers as elite and middle class society (Carter et.al. 1994; Lowry et.al. 1997). NGOs should be able to contribute without necessarily imposing their own values and biases on the community, and without forcing themselves into a decision-making capacity.

10.8 Unfavourable policy and legal environment

Most of the CWM initiatives described in this report have occurred despite an unfavourable policy environment. In most state-sponsored efforts in the region, primary powers and responsibilities continue to lie with the state. While collaborative or community-based management have gone a long way towards benefit-sharing arrangements and giving duties to local communities, they have made less inroads into the power structure which dominates conservation (with the exception of a few initiatives like Annapurna in Nepal). Even in the relatively progressive community forestry programmes in Nepal and JFM in India, ownership and final decision-making are not vested in local communities, though Nepal may be moving faster towards this. A limited empowerment process has also taken place in Sri Lanka (eg. Muthurajawela; see Case Study 18).

Another aspect of the inequality of collaborative or community-based management efforts initiated by the state is the one-way nature of accountability. If a Forest User Group (FUG) in Nepal violates the management plan, the Forest Department has the right to step in and terminate the agreement by which the forest had been handed over to the FUG. If the state violates the rules, the FUG has no such power. In Kailadevi Sanctuary in western India, there is an instance of a village forest protection committee fining a forest officer who violated its rules (Das 1997), but such instances are rare in the region, and they are not sanctioned by law.

Both statutory and customary laws have relevance for the success of CWM initiatives:

10.8.1 Statutory law

Official policies and laws dealing with wildlife and habitat conservation in most countries have been non-participatory, with powers and functions for planning and

implementing conservation programmes being largely held by centralized bureaucracies. Local communities have had virtually no legally enforceable means of involvement, and even where they are involved, it is either through self-attained empowerment, or at the discretion of government agencies. This situation is beginning to change in several ways (Table 10.3).

Table 10.3 Official policy and legal measures in South Asia: Towards CWM

Facilitating CWM	Policy	Law
No recognition	Past policies, such as Indian Forest Policy 1952	Indian Wild Life (Protection) Acts Bangladesh Wildlife (Preservation) Amendment Act 1974 Islamabad Wildlife (Protection, Preservation, Conservation, Management) Ordinance 1979 Sri Lanka Fauna and Flora Protection (Amendment) Act 1993
Partial recognition	National Environmental Management Plan, Bangladesh New Fisheries Management Policy, Bangladesh (1986) National Conservation Strategy, Bhutan National Conservation Strategy and Policy Statement, India (1992) National Conservation Strategy, Nepal National Conservation Strategy, Pakistan (1992); Forest Policy Statement, Pakistan (1991); Proposed Wildlife Policy, Pakistan The Sri Lanka Forestry Sector Master Plan (1995); Coastal Zone Management Plan (CZMP), Sri Lanka (1990) Joint Forest Management and Ecodevelopment guidelines, India	Bhutan Forest and Nature Conservation Act (1995) Indian Forest Act (1927) Nepal Forest Act (1993) National Parks and Wildlife Conservation Act, Nepal (1973, amended 1993) Proposed Indian Wild Life (Protection) Amendment Act Pakistan Forest Act (1927) Sri Lanka Coast Conservation Act (1981) Sri Lanka Forest Ordinance (1907, amended 1995)
Substantial recognition	National Forest Policy, India (1988) National Forest Policy, Nepal (1995) National Conservation Strategy, Pakistan (1992) Draft Wildlife Policy, Pakistan National Forestry Policy, Sri Lanka (1995) Forestry Sector Master Plan, Sri Lanka (1995) Coastal Zone Master Plan, Sri Lanka (1997)	Sri Lanka Fisheries Act No. 2 of 1996 Indian Panchayat (Extension to Scheduled Areas) Act 1996 Proposed Biodiversity Act, India

10.8.2 Customary law

Whilst statutory legislation is only beginning to incorporate CWM, much of CWM itself uses customary laws handed down by tradition, or informal community-made laws which are more recent. These are often uncodified or unwritten, but enjoy a higher level of acceptability with the local community than do statutory laws. Bhaonta-Kolyala, Mendha (Lekha), and Jardhargaon in India, Rekawa in Sri Lanka, Annapurna in Nepal, all have community-formulated rules, some of them coming down from tradition, some more recent, some a hybrid of the two, all of which provide a solid backing to the CWM initiative.

At many CWM sites, a set of rules and regulations have been developed over a period of time that have been arrived at through consensus. These pertain to the sort of activities such as grazing, fuelwood and fodder collection, etc. that are permitted within the village forest and the penalties for violations. These are purely customary (or informal) in content and have no legal mandate. To some extent however they have similar objectives, such as protection of the habitat, but these tend to be generic rather than specifically oriented towards conservation. In Mendha (Lekha), these customary rules are so strong that despite a formal set of rules under the official JFM scheme, the former are more generally accepted, not just by the villagers but also by forest officials.

In Jardhargaon, India, the traditional kool system of irrigation, designed to be equitable, has continued to the present day, while others like the community forest guard have undergone some changes (his fees are now monetary rather than in the form of grains from each household). The koolwale (group in-charge of the kool system) are also in charge of the rigorous rules that govern use of the grassland in Jardhargaon where an elaborate system of open and closed seasons and highly regulated extraction per family is practised.

Formal arrangements by the state also sometimes base themselves on customary law. For instance, in Bhutan, the planning of the Jigme Dorji National Park has followed traditional administrative boundaries of settlements (see Chapter 4). However, in many other cases there appears to be a mismatch between customary law and statutory law, where the latter has not adequately taken the former into account. At Annapurna, the NGO that has promoted the CWM initiative has itself followed formal administrative boundaries (wards), but these do not match traditional forest use boundaries (goshwaris) recognised by villages, creating confusion and conflicts. In Bhaonta-Kolyala, India, what the people consider to be their 'village forest' does not match the 'official' records of the *patwari* (local land records official). In addition, there are also the legally designated Reserved Forest boundaries of the Forest Department with their associated rules and regulations. The people do not have a very clear idea of what legal category begins where and what rules apply therein. Much of this has been discovered only after they have been booked for violations!

Pant (1999), in her theme paper for the Review (see Appendix 1), points out that customary law scores over statutory law in many ways: speedier (sometimes almost instant) justice; greater accessibility to local people; more transparent as the mechanisms are immediately visible; cheaper; and more sensitive to the ability of offenders to pay penalties (thus, smaller penalties for the poor). There are, however, also disadvantages. For instance, the lack of any other forum of redressal in a customary dispute-resolution system, makes it difficult for even genuinely aggrieved parties to get justice. In today's times, of course, they can approach statutory forums if their own customary ones let them down, but this is not always logistically possible. Secondly, given the serious inequities that often pervade local communities, customary law can also be a means by which the dominant sections hold on to their power. It is interesting, for instance, that in Jardhargaon, the *van suraksha samiti*, dominated by men, often blames women for violating rules regarding forest conservation, and recommends that men keep a greater check on their womenfolk! Also, many statutory laws are often (but not necessarily) more progressive when it comes to fundamental human rights.

The critical question then becomes how can customary and statutory law be combined in a way that strengthens their positive features without undermining each other? This is discussed further in Chapter 11.

10.9 A hostile political and economic environment

In each of the countries of the South Asian region, CWM initiatives operate within a political and economic environment that has significant bearing on their success or failure. This has several aspects:

Macro-economic and development policies: In every country of the region (with the possible exception of Bhutan), macro-economic and development policies have paid little attention to natural resource conservation, or to the livelihood needs and cultural values of local communities who are dependent on these resources. Past policies and programmes related to natural resources like forests have been largely exploitative, emphasising the commercial use of these resources over their ecological and social importance. Though policies have shifted considerably in most countries in the 1980s and 1990s, the overall economic thrust is on natural resources as raw material for the market economy. Simultaneously, cultural and social biases continue to operate against rural (especially tribal) populations, which are seen as 'backward' people who need to be 'brought into the mainstream', essentially a euphemism for turning them into labour for the market economy.

Such an environment makes CWM a rather difficult process:

- It puts intense pressure on natural ecosystems and wildlife, making it difficult for the most well-intentioned communities, government agencies, or NGOs to protect them, especially if working in isolation
- It greatly increases the temptation for people to join the market bandwagon, in an attempt to make some quick profits; these may be disprivileged persons who are enticed into a 'better deal', or more well-to-do people who want to make profits or become more powerful.
- It also opens temptation towards corrupt and often illegal activities which undermine conservation efforts.
- It spreads amongst all sections of society the belief that there is only one way to progress, by using up natural resources as fast as possible for material gains, without consideration for the long-term effects. In the process, more sustainable methods of development, local practices and knowledge, beliefs in the intrinsic worth of wildlife and ecosystems, spiritual and cultural links between people and nature, respect for other human beings, and many other aspects of human society which could help us live in greater harmony with our environment, are swept aside. The very conditions that make CWM possible, as discussed in the various sections above, are undermined.

Examples of the above are commonplace. At Rekawa lagoon, Sri Lanka, some of the more powerful fisherfolk continue to use destructive kraal fishing techniques to obtain greater profits, despite strong appeals from other fisherfolk and institutions related to the CWM initiative. Profiting from the timber trade has become, for some

of the villagers of Kokkare Bellur, India, more attractive than the traditional conservation of the trees as nesting spaces for birds that would provide them with guano fertiliser. Attempts by villages in many parts of India to protect patches of forest have frequently been thwarted by other villages connected to the fuelwood or timber market (Desai et. al. 1996; Christopher 1997).

A part of this overall economic scenario is the declining availability of livelihood and employment opportunities in rural areas. A large number of young people leave their villages in search of employment. For instance at Annapurna, Nepal, a very high rate of out-migration for jobs continues even after a decade of the CWM initiative; a major challenge for the sustainability of this initiative.

Globalisation: Globalisation policies in the region also undermine conservation in general and CWM in particular. Various liberalisation and structural adjustment measures have been adopted by different countries at different times, with Sri Lanka being amongst the first and India amongst the last. In both, there appears to be overwhelming evidence of the developmental thrust becoming even less sensitive to ecological and socio-cultural concerns than before (Nanayakkara 1996; Kothari, R. 1995; CEA and Euroconsult 1994; Kothari 1996). The thrust to make production (from agriculture, forestry, fisheries, and other sectors dependent on natural resources) more export-oriented, along with liberalisation of domestic policies on siting and clearing of industries, mines, etc., has meant a much more intense attack on natural ecosystems and local livelihoods. As an example, the 1990s has seen a tremendous increase in fisheries exports by India, fuelling destructive trawling and aquaculture practices all across the country's coastline and marine areas.

The World Trade Organisation's (WTO) powerful push to break down trade barriers, including environmental and social regulations, threatens drastic changes in national policies that may have tried, to some extent, to protect domestic economies, livelihoods, and ecosystems.[77] The Trade Related Intellectual Property Rights (TRIPs) agreement, one of WTO's components, could undermine indigenous knowledge systems and related biodiversity conservation programmes as it tries to thrust upon all countries an IPR regime which would allow the patenting of life forms and related knowledge (Dutfield 1999; Dhar and Chaturvedi 1999; Anuradha 1999). There is also a recent move to expand the influence of the WTO into new sectors, including trade in forest produce and in services. Several international and South Asian NGOs have voiced the fear that this 'new round' of trade liberalisation talks could further deregulate the movement in forest produce and other natural resources, thus further undermining conservation policies. The impacts on CWM can well be envisaged.

Land/water use policies: CWM initiatives in South Asia face another hurdle in the failure of all countries to develop coherent land and water use policies. At Rekawa Lagoon, Sri Lanka, the use of pesticides and fertilisers, soil erosion, and other aspects of land use surrounding the CWM site threaten the sustainability of the initiative as the lagoon itself could be threatened. At Kokkare Bellur, India, increasing commercialisation of fisheries, tamarind fruit, agriculture, and other processes are polluting, over-exploiting, or otherwise straining the habitats that are

[77] See Sharma 1994, for impacts on farmers and agro-biodiversity

required for pelicans and storks to survive; traditional conservation practices are simply not adequate to cope with these trends.

Cultural changes: Wider cultural and attitudinal forces also affect CWM. The new generation increasingly looks down on primary sector occupations (agriculture, forestry, fisheries). Indeed, general integration into the cash economy seems to be a major factor in attitudinal changes. It has, for instance, caused a decline in the voluntary spirit; at Jardhargaon, India, the traditional village-appointed forest guard can no longer make do with fees in the form of grains, and needs cash. The younger generation in most areas is less interested in conservation for ethical or religious reasons, and is more likely to be convinced about it if some economic interest is involved. This is one major reason for the decline in many traditions of conservation (e.g. sacred groves). Members of the *Beej Bachao Andolan* (Save the Seeds Movement) at Jardhargaon, who have been active in reviving traditional seed diversity and protecting forests, are worried that their work may not be carried on by future generations who would much rather take to urban or 'modern' jobs. The same fear is in the minds of elders at Annapurna, Nepal. The decline in spiritual relations with nature is also evident in some places, most prominently at Kokkare Bellur and other such traditional conservation sites.

National politics and democracy: Virtually all major political parties in each country are tied in to the destructive developmental model, notwithstanding the assertions of 'sustainable development' that many of them have made in the past few years. This would not be a major problem were it not for the fact that, in almost all countries, national politics has entered the remotest of villages, forcing on them standardised decision-making processes and undermining local political processes. (Box 10.4).

Box 10.4 National Politics Undermining CWM

In Bastar, the tribal heartland of India and a region of enormous biological diversity, national political parties vie with each other to encourage the cutting of forests for expanding agriculture or for bringing in 'development' works like mining and factories. Factions within each village become aligned to different parties, making the process of building consensus, so essential to CWM, rather difficult. In Sri Lanka, it is noted that the selection of forest guards, or of nursery location, is often influenced by politics rather than technical judgement (Carter et. al. 1994). Such examples are probably common in all countries of the region, but appear not to be very well documented. An upcoming issue in the case of Jardhargaon, India, is the proposed creation of the Uttarakhand state (as a hill district breaking away from Uttar Pradesh, which otherwise consists of both the hills and the plains). Would the new state (lacking a strong non-agricultural base) attack forests to generate revenue, or would it further reinforce community initiatives to protect forests? The villagers of Jardhargaon are apprehensive that the former will take place.

Most important, however, is the centralised nature of the polity. Decision-making is still in the hands of a minority, comprising politicians and top bureaucrats with the strong influence of big industrial corporations, large farmers' groups, and other privileged sections of society. Officially, citizens' democratic rights have till recently been restricted to voting once in a few years, or to occasional public hearings. There

is a general reluctance of the politically powerful, from the village to the national level, to give up power and allow for substantial decentralisation.

This, however, is changing across the region, with a growing movement towards democratic freedom. This is expressed not just in the 'official' means of franchise and a relatively free press, but also through popular movements and methods of resistance. In many parts of India (though not so much in other countries), militant people's movements have re-established rights to natural resources, or demanded greater say in decision-making about the resources they depend on. The demand for 'self-rule' is extremely strong in certain tribal pockets, and even in others, people are beginning to challenge centralised systems of governance by demanding a say in decision-making. The state has had to respond, in some cases with sops, in others with genuine policy changes. Political decentralisation has occurred in one way or the other in Nepal and India; in the latter, a recent legislation has re-established considerable rights of tribals and other local communities (see Box 10.5).

Box 10.5 Political Decentralisation in India: Potential for CWM

In India under the *Constitution (73rd Amendment) Act, 1993, the Panchayati Raj* system, devolving administrative powers to the local village level, has been institutionalised. Each village has an assembly of all the adult members called the gram sabha (village council). A group of villages have a *panchayat* ("committee of five"), whose members are elected by the members of all the *gram sabhas* constituting the *panchayat*. Greater role for the *panchayat* in ecosystem management was envisaged by the 73rd Amendment Act by placing new matters under its jurisdiction, including land improvement, land consolidation and soil conservation, social forestry and minor forest produce.

The subsequent *Panchayats (Extension to Scheduled Areas) Act, 1996* provides even greater scope for such a role in tribal areas. The Act mandates each State to enact a law for scheduled areas that empowers the *gram sabha* (village assembly) to safeguard the traditions and customs of the people, their cultural identity and communal resources. Villages in such areas are endowed with ownership over minor forest produce, and empowered to prevent alienation of land. Though not as far-reaching as many tribal groups struggling for "self-rule" had demanded, these provisions can be used to facilitate the re-establishment of local control over resources and knowledge.

10.10 Conclusion

This chapter has thrown up a range of challenges and issues emerging from the many CWM cases in the region. In the next and final chapter, we draw out some of the lessons from these challenges and the responses to them, and summarise some of the next steps needed if CWM is to become more successful and more widespread in the region.

Meeting the challenge: what is being done, and what next?

This report has tried to demonstrate that communities can conserve, or help to conserve, wildlife habitats and biodiversity. There is an urgent need for encouraging and strengthening ongoing CWM initiatives, as well as spreading the approach to new areas. But this will require that the issues elaborated in Chapter 10 be grappled with at all levels, local to international. In particular there are a number of measures that can be taken to ensure greater sustainability of the approaches described (Box 11.1). These are discussed in more detail below, again drawing on examples from the region.

11.1 The 'community' and equity

The impact of social differentiation on resource management, and the potential impact of conservation programmes on these different strata, have to be tackled, or conservation efforts could be doomed. These can be tackled in a number of ways:

1) Being clear about who comprises the 'community' or primary stakeholders.
2) Understanding the different sectors which make up the community.
3) Creating mechanisms which integrate these different sectors for decision-making and benefit-sharing purposes.

In the context of Nepal's community forestry, but applicable to a wide set of circumstances in South Asia, Gilmour and Fisher (1992) suggest that a 'community' should be defined as a set of people with a similar or mutually recognised interest in the resources of the area, rather than as people living in that area. In this sense, communities or 'user groups' may cut across village, provincial, sometimes even national boundaries. A user may not be local, and a local person may not be a user. Ordinarily, however, users of a particular resource are unlikely to be spread over a very wide territory.

Apart from dependence on a particular resource, other criteria for determining the local community could include: traditional and historical rights, length of residence in an area or of interaction with the resource. Bringing these and other factors into the analysis of 'community' identity would yield a far more realistic and complex picture than one that assumes a homogenous, resident local community. CWM initiatives would benefit greatly from such an understanding.

Box 11.1 Key Ingredients of a Successful CWM Recipe

(not in any order of priority)

The community and equity

1. Clearly identify primary stakeholders for decision-making and benefit-sharing purposes.
2. Make conscious attempts to tackle local and larger-level inequities in social status, economic class, and political power, eg. through equitable representation in CWM institutions.
3. Support benefit-sharing mechanisms which are equitable, and which create a clear link between conservation and local well-being.

Institutions, management, and processes

Community institutions

4. Build on local community knowledge systems and customary practices relevant to conservation.
5. Incorporate strong local leadership, preferably with a second generation or line developing simultaneously.
6. Build on local community institutional structures, traditional and/or new.
7. Ensure clarity and strength of tenurial arrangements, with clearly demarcated rights to resources.
8. Internally generate core funding requirements, even if initially dependent on external sources.

External institutions

9. Orient government, non-government, donor, and other external institutions to become facilitators and supporters of local community processes, ensuring that the latter are empowered to manage their own affairs rather than become dependent on outsiders
10. Support continuous capacity-building for all stakeholders.

Ecological sustainability

11. Use conscious regulations based on local and larger ecological constraints, and on an understanding of ecological impacts of CWM.
12. Undertake constant monitoring and evaluation, by internal and external persons, of the ecological, social, economic, and political aspects of the CWM initiative; and develop local indicators for this.
13. Balance rights with strong responsibilities and duties towards conservation and equity.

Policies and laws

14. Integrate an ability and willingness to tackle external forces of development, commerce, and politics.
15. Provide clear linkages between local actors with national and international supporters and facilitators (within and outside government), without a debilitating dependence on them.
16. Take appropriate national policy and legal measures to facilitate CWM, including space for customary law, positive macro-economic incentives, facilitating role of government agencies, and others.
17. Provide full access of community to information regarding policies and programmes affecting the CWM initiative.

Decision-making and benefit-sharing mechanisms should reflect and reinforce this clear understanding of who the 'community' is. Furthermore, equity should entail the sharing of benefits in a way that is commensurate with the varying sacrifices and contributions made, or damages incurred, in the community (Pimbert and Pretty 1998).

11.1.1 Equitable decision-making

There are many examples of communities themselves overcoming inequities to improve their natural resource base (Box 11.2). At Rekawa Lagoon (Sri Lanka), the village institutions ensure equal representation of the fisherfolk, and their functioning is open and transparent (Case Study 14, Ekaratne et. al. 1999). Distribution of benefits is also done on an equitable basis. At Jardhargaon, India, the benefits of the irrigation system and the conserved grass patch are distributed equitably through both customary and recent regulations. At Mendha (Lekha), India, such distribution of benefits is consciously incorporated as a principle, at least partly deriving from traditions such as that of equal sharing of meat from communal hunts.

Sometimes outside intervention may be necessary in ensuring equity, eg. by providing positive discrimination such as reserving a part of the membership for women or the disprivileged caste/class. In Nepal, the Forest Department sometimes identifies such sections and encourages them to form their own independent users groups, and even leases out patches of forest to them for management and sustainable use (Bharat Shrestha, pers. comm. 1997).

Box 11.2 Conservation in an Inequitous Village

Saigata village is in Gadchiroli District, Maharashtra, western India. The community is internally about as diverse as a village can get in India, with Gond tribals, several Hindu castes, and Buddhists.

In the past Saigata was surrounded by thick forests, but between 1955 and 1975 the forests were all but wiped out. Many villagers themselves had started selling fuelwood in the market. In 1973, under the leadership of an enterprising *dalit* (a person of a traditionally disprivileged caste), Suryabhan Khobragade, a Krushak Charcha Mandal (Agriculturist's Discussion Group) was set up. In 1979, the Mandal called a *gram sabha* (village assembly) meeting to discuss the deforestation. The sabha unanimously decided to regenerate the forests. Those villagers who grazed their goats and sheep in the forest voluntarily sold off their flock. Forty villagers, who earned their livelihood through selling fuelwood, were gradually helped to look for alternative sources of employment (Khobragade n.d.).

In time, these measures and constant vigilance resulted in regeneration of the forest. The denuded areas were covered with a lush growth of grass. The villagers had to battle with the forest authorities for the right to use this grass that had grown because of their efforts. Today, an area of about 270 hectares is covered with mixed forest, in which wildlife (including leopards) too has returned. Since 1993, the village has become a part of the official Joint Forest Management programme of the state government. It has been a remarkable journey for a village traditionally ridden with social inequities, all the more so as the transformation has been led by a *dalit* (Mohan Hirabai Hiralal, pers.comm.).

To overcome gender-based inequities, a case has been made to recognise women's customary access to resources for subsistence and livelihood requirements, for example by assigning independent rights and entitlements (Sarin et. al, 1996; Box 11.3). In some parts of the Indian Himalaya, where the Chipko Movement[78] has been active, self-empowered women's committees have successfully opposed their own menfolk from selling forests to contractors. These committees have also taken up other social reform measures like closing liquor breweries, and reducing dowry practices.

Box 11.3 Women's Participation in CWM

In India efforts were made in 1992 under the JFM resolution to make the participation of women mandatory in local conservation institutions. While in many places this representation has remained a mere formality (with women only attending meetings as a token, remaining silent or not being taken seriously), in others it has made a difference. SARTHI, an NGO working with villages in the Panchamahals district in Gujarat, western India, has reportedly been able to achieve much greater active participation of women in forest protection committees (Sarin & SARTHI 1994).

In Pakistan, where discrimination against women is reportedly amongst the highest in the region, AKRSP has recently initiated separate discussion groups consisting of women (IUCN 1996). In its Biodiversity Project, female staff are now working directly with rural women to include them in project planning and activities. In Nepal, the Management Plan for Forestry Sector 1990 makes it compulsory for Forest User Group committees to comprise at least one-third female members. Although usually meaning a nominal presence of women who are either silent or not heard, the recent involvement of NGOs and educational work amongst women has led to change in some areas. In some cases, separate women's subgroups (upsamitis) have been formed, and there are 50-60 instances of the entire Forest User Group committee consisting of women. Interestingly, as in the Chipko case, such committees tend to diversify from forest protection into action against social evils like smoking, drinking, and gambling (Palit 1996; Bharat Shrestha, pers. comm. 1997).

Involvement also takes place in informal ways. For instance, women are not represented on the gram sabha (village council) in Bhaonta-Kolyala, India, but they have evolved ways of getting their opinions aired through their husbands and other male members of their family.

11.1.2 Equitable benefit sharing

CWM initiatives display a large range of benefit-sharing mechanisms, from official arrangements of funding village bodies to community-managed savings schemes. Many JFM programmes in India, for instance, are typically based on a mechanism in which the Forest Department, having sold off timber or other produce to contractors, shares a pre-determined amount with the local community which has helped to regenerate or protect the forest. The money goes into a bank account in the name of the village *gram sabha*. The new legislation on scheduled (tribal) areas of India, mandates that ownership of (and therefore also revenue from) non-timber forest

[78] A movement of peasants in the Himalaya to save their forests from outside merchants and government agencies; Chipko literally means "to hug", after the famous (though rarely used) method of clinging to a tree when axemen come to cut it, thereby protecting it with one's life.

produce, would belong to the *gram sabha*. Presumably the *gram sabha* would then have the prerogative of deciding how proceeds are to be used, so long as they are able to account for them to the higher levels of governance.

Community-initiated efforts often emphasise the collective nature of the benefits; thus even while individual families may stand to benefit from the fruits of the CWM initiatives, there is a great stress on the village as a collective receiving a major part of the benefits, and then distributing it to families/individuals on the basis of collectively determined criteria. At Hushey Valley, Pakistan, the Village Conservation Committee decided to divide the proceeds from an Ibex trophy hunt (US$10500) into procuring electricity poles and augmenting the Village Conservation Fund. But a part was also distributed equally (Rs. 1700) to each of the households in the village. This gave a clear signal that conservation programmes can bring economic benefits to all... especially if collectively managed, for previously only a single family would have enjoyed a feast if an ibex was killed.

In many CWM cases, there is an emphasis on reserving some of the benefits for future use, eg. through a savings scheme (Mendha (Lekha), India), a grain storage scheme (Mendha (Lekha) and Bhaonta-Kolyata, India), or other such mechanisms which can be used by the needy in the village, or during emergencies. Benefit-sharing mechanisms may also explicitly deal with the existing internal inequities of a village or community, eg. by specifying that the poor be given special treatment, or at least not be deprived of any benefits that others are receiving.

Equally important is the need to ensure that benefit-sharing does not become a source of social disruption (unless of course such disruption is felt to be necessary to shake up existing social inequities) - see Box 11.4. A sudden influx of benefits (especially monetary ones) could create inequities in a relatively homogenous community; existing power disparities could be further consolidated; or such disparities could be reduced. Unfortunately, this aspect has not received the research attention it requires in South Asia, so it is not possible to draw many general lessons or trends as yet.

Box 11.4 Avoiding Inequity in Benefit-sharing

In the case of the Kani-TBGRI arrangement, the fees and royalties transferred by the TBGRI to the Kani tribe are put into a trust fund, managed by Kani appointees (see Appendix 1). This was prompted by the concern that simply paying the handful of Kani tribals who had been the original informants would create new inequities and would be unfair on the rest of the tribe which perhaps also held the same knowledge. Whether this will help to avoid problems in distribution of benefits, remains to be seen.

In Mendha (Lekha), forest officials felt that a straightforward JFM type arrangement of benefit-sharing would not be equitable, because for historical reasons, the village has a much larger area under forest than neighbouring villages, and hence would gain much greater revenue and other benefits, relative to its population size. In response, the villagers have offered to share the benefits with other villages, as long as the latter also protect the forests. Thus a notion of responsibility going hand-in-hand with benefits and rights is embraced by the community.

One issue which clearly emerges in many CWM initiatives is the need to build capacity of local communities to optimise and achieve equitable distribution of benefits. For instance, examples of communities receiving substantial benefits from value enhancement of local products abound, but these often flounder after the initial catalyst (government agency, NGO, or donor) withdraws. At Rekawa Lagoon, Sri Lanka, the community was able to obtain substantial livelihood benefits from the lagoon restocking programme; however, the fisherfolk's capacity has not been completely built up, as is evident from the fact that they are again seeking external intervention in the restocking programme. In Annapurna, Nepal, it has been recommended that developing fruit and vegetable farming may enhance incomes for the local community, given the demand for these products by the large number of tourists who visit the area. However, greater efforts are needed to build the capacity of local people to deal with the demands of the tourism industry and other sectors of the economy on their own terms.

The issue of mechanisms of benefit-sharing has recently become very hotly debated in light of developments in the field of genetic resources and biodiversity. As mentioned in Chapter 10, many local communities are demanding that their intellectual right to traditional or local knowledge be respected, and that the use of such knowledge by 'outsiders' be appropriately compensated or rewarded. The UN Convention on Biological Diversity clearly mandates that the use of such knowledge and associated practices by larger society must be done only with the permission of the communities/people holding this knowledge, and by ensuring that the resulting benefits are equitably shared with them. While there is as yet no national or global agreement on what constitutes 'equitable' benefit-sharing, it is clear that there is now an obligation on the part of everyone in the transaction to ensure that some norms of equity are met.

11.1.3 Making benefits visible

As described in Chapter 10, another major challenge for official CWM programmes is that many of the benefits of CWM may be intangible and long-term. And in the absence in many areas of wildlife from which substantial direct benefits may be derived, any benefits occurring must be made clearly visible to stakeholder communities if the CWM approach is to succeed.

Increasing experience suggests the need for lateral thinking, ie. reaching conservation goals indirectly through developmental or other inputs that are clearly linked to these goals. In Bhaonta-Kolyala, India, improved water harvesting and consequent increased agricultural productivity, was the trigger for forest conservation. In Kokkare Bellur, India, the NGO Mysore Amateur Naturalists have obtained community support for their bird conservation programme by providing health services. At Rekawa Lagoon, Sri Lanka, the shrimp restocking exercise which provided the fisherfolk community with substantial economic benefits later spun off into support for a turtle and mangrove conservation programme, as the community appreciated the importance of maintaining the lagoon's ecological health.

An institutional structure which is focused exclusively on wildlife conservation is less likely to find local support than one which takes up various different community needs. This is one problem with state-initiated institutions such as JFM Forest

Protection Committees in India, which neither deal with overall issues of the village, nor are integrated with other institutions that do (eg. the village council). On the other hand, the *gram sabhas* of Mendha (Lekha) and Bhaonta-Kolyala, India, play both the roles of conservation and overall development/dispute resolution in the village, and are therefore very effective.

Furthermore, benefits of a CWM initiative must offset the costs associated with lost access to resources. In Kokkare Bellur, India, for instance, the Forest Department pays all villagers who promise not to cut down their trees (which are nesting sites for pelicans and storks). Unfortunately, the amount given per tree is far less than what the villagers would get if they cut and sold it (assuming that they want to violate traditions and sell it, which is beginning to happen).

11.2 Institutions, management and processes

Studies of collectively managed fisheries, pastures, forests and so on have shown that to manage a resource effectively, an institution must be transparent, accountable, participatory and fair. It should also have the power to exclude undesirable or unregulated external influences, as well as to regulate the exploitation of resources by its own constituency. The more its members are dependent on the resource being managed, and the more they are tied to each other in reciprocal relationships of various kinds (such as kinship, or barter), the more the institution is likely to be successful (Lele 1996).

A large range of participatory institutional structures handling conservation have gained ground in South Asia (see Chapters 3 to 8). These include:

- traditional resource management institutions (such as *panchayats* in India and Nepal, see Chapters 5 and 6);
- more recent community-initiated institutions (such as the *van suraksha samitis* or Forest Protection Committees of Bhaonta-Kolyala, Mendha (Lekha), and Jardhargaon, India, or the *kulhadi-bandh panchayats* or 'no-axe councils' in Kailadevi, India; see Case Study 6);
- joint state-community institutions (such as Joint Forest Management Village Forest Protection Committees in India), state-sponsored community organisations (such as Forest User Groups in Nepal;
- NGO-motivated institutions (such as Lagoon Fishermen's Association in Rekawa lagoon, Sri Lanka; Conservation Area Management Committee in Annapurna Conservation Area, Nepal; and Village Conservation Committee in Hushey Valley, Pakistan).

There are many lessons to be learnt from the above and other experiences with regard to the creation of appropriate institutional structures for CWM, be they community or external institutions.

11.2.1 Community institutions

Much evidence points to the fact that reviving, building on and adapting existing community-level institutions works better than imposing new ones.

In Nepal, community forestry programmes have created Forest User Groups. Where these have emulated or integrated existing or traditional village institutions, they appear to have been more successful than where they are alien structures (Prabhu Budhathoki, pers. comm. 1997). The revival of the *shingi nawa* system of forest protection in the Sagarmatha National Park, Nepal has been more effective than instituting a new system (Sherpa 1993). In Sri Lanka, several efforts have started with the mobilisation of existing Community Based Organisations (CBOs), eg for the elephant-human conflict reduction project at Kahalla-Pallekele (Case Study 15). In Pakistan, IUCN projects have had some initial success in building on existing structures (eg. the Village Organisations or Women's Organisations set up by AKRSP in previous projects), and are considering forming 'clusters' of Village Organisations at watershed or valley level to address ecosystem-wide issues (Kent Jingfors, pers.comm. 1998). In the Hushey Community Conservation Area in Pakistan, AKRSP used the traditional Baltistani system of *strangso* (a system of dividing a village into four equal groups) to develop its own institutional arrangement, the Hushey Village Organisation. This was further adapted by IUCN Pakistan for the establishment of the Village Conservation Committee as part of the Ibex Conservation Programme. Familiarity of structure and functioning of the local institution among the community has enabled a higher level of acceptability and participation.

Sometimes communities themselves will modify externally initiated structures to suit their traditional patterns (see Box 11.5).

Box 11.5 Adapting Institutions for CWM

In Kailadevi Sanctuary, Rajasthan, India, an official Forest Protection Committee in one village which purported to replace local structures was quietly changed to resemble the latter (Das 1997). In Bhaonta-Kolyala and Mendha (Lekha), apart from the traditional functions the role and functioning of the *gram sabha* has also been adapted to address a range of issues: water, water-harvesting structures; forests, conservation, framing rules for utilisation and deciding penalties for violations; dispute settlement; liasing with government agencies and NGOs; etc. In Mendha (Lekha), while the JFM programme's formal institutional structure remains on paper, the villagers consider the entire *gram sabha* as the van suraksha samiti (Forest Protection Committee).

One interesting feature seems to be that conflicts between community institutions and government agencies are fewer, and the relationship more stable, if the former have been around for some time, and the latter have had a chance to come to grips with the reality of having to deal with a powerful local institution. This is true, for instance, in Mendha (Lekha), India, where initial conflicts over forest use and control have given way to collaboration in a JFM scheme.

11.2.2 Build on local knowledge systems and customary practices relevant to conservation

Several CWM initiatives strongly suggest that building on local community knowledge (LCK), with appropriate inputs of outside knowledge, has helped to establish conservation programmes more firmly than if only outside knowledge and practices had been imposed. This can be seen especially in Nepal, where

Conservation Area planning (eg. for the Annapurna area), Community Forestry practices, and the recent Parks and People Project (Case Study 11), claim to be incorporating considerable local knowledge and practices. Many Forest Users Groups follow traditional boundaries of resource use, and re-employ traditional practices such as appointing a villager as a forest watcher. In Bhutan, traditional administrative boundaries are recognised in the planning of the Jigme Dorji National Park (Chapter 4).

However, LCK cannot always deal with the stress of changing aspirations of people within their own community, changing economic and political environments, and development policies of the state. Pollution coming from outside their own locality, or factors affecting migratory species on their migration routes, may be difficult for local residents to fathom. Thus there is a need to marry LCK with 'outside' or 'modern' knowledge. Whilst some fundamental differences between so-called 'western' or 'modern' science, and the 'eastern' or 'traditional' sciences, may make complete integration difficult (Shankar and Majumdar 1998), a number of interesting initiatives at empowering local communities with appropriate modern information, skills and technologies, suggest that there is indeed substantial meeting ground between the two, and that the results are much more effective when existing LCK is incorporated (see Box 11.6).

Box 11.6 Blending Modern and Traditional Knowledge for CWM

Reviving the local traditional knowledge of water harvesting and using it in conjunction with modern engineering skills, as has been done in Bhaonta-Kolyala and the rest of the Arvari catchment in Rajasthan, India, has helped reduce the water shortage crisis (Case Study 1; and Singh 1998). The shrimp restocking exercise at Rekawa Lagoon, Sri Lanka, also put modern scientific techniques to the service of the local people, whose own skills and knowledge were built upon. The Mysore Amateur Naturalists brought in additional skills for the care of injured birds and fallen chicks, additional knowledge of the changing conditions around Kokkare Bellur village in India (e.g. at the foraging lakes) and renewed enthusiasm for protecting these birds. In Bangladesh, the NGO Nature Conservation Movement combines local and outside knowledge to do biodiversity research with communities (Sakeba Khatun and Anisuzzaman Khan, pers.comm. 1997; and NACOM n.d.). Skills and knowledge to tackle the growing problems related to tourism in the Annapurna Conservation Area, Nepal, were brought to the villagers by the NGO King Mahendra Trust for Nature Conservation. In Hushey Valley, Pakistan, participatory mapping of resources is another field where integration has been successfully attempted (Poole 1995). Yet another is that of the use of medicinal plants, in several parts of South Asia (see Lele et.al. 1998; and the example of Ritigala Strict Nature Reserve, Case Study 16).

More also needs to be done to expose students and experts of formal modern systems to the LCK systems. The formal/modern sector in natural resource management needs to learn the underlying premises, methods, and other aspects of LCK, recognising it as a valid form of knowledge. There is a long way to go before the local community's own forest experts can sit with the formal forestry scientist (or the farmer with the formal agricultural scientist, the fisherperson with the modern fisheries expert), and work together without the latter assuming a position of superiority over the former.

It is here that reversals in the paradigms of research are important. In this, community-led and participatory research becomes the main focus, rather than research led and dictated by outside agencies (see below). At Mendha (Lekha), India, any outside researcher has to get permission from the *gram sabha*; further, outside researchers are actually called in to help in studying issues that the village considers important. Such a situation is not yet common, but several CWM initiatives may be moving in its direction.

Communities also need to be empowered with community intellectual rights which safeguard their knowledge and the values they attach to it, and ensure that they are fairly compensated for the outside world's use of this knowledge (see Anuradha 1999, summarised in Appendix 1). Several models of such community IPRs have been suggested (Nijar 1996; Posey and Dutfield 1996; Shiva et. al. 1997). Others have suggested the use of appropriate individual IPRs for rural innovators (Gupta 1996). In India, an innovative strategy of documenting LCK to benefit from its use is the preparation of Community (or People's) Biodiversity Registers (see Box 11.7).

11.2.3 Ensure security of tenurial arrangements, with clearly demarcated rights to resources

There appears to be overwhelming evidence that one of the essential ingredients of successful CWM is secure tenure and clear rights to resources (but not necessarily 'ownership').

Many communities involved in CWM do not seem to want 'absolute ownership', but perhaps more of a custodianship/trusteeship arrangement, with controls and responsibility being wedded together. This innovative notion of 'non-legal' ownership is partly born out of tradition, and partly an innovative response to current conditions. Under these arrangements the community could go beyond sustained extraction to actually managing the forest to meet evolving objectives. The forest department in this situation would have to redefine its role from policing to facilitation. In Mendha (Lekha), India, villagers have forbidden commercial exploitation of the forests by industry or the forest department. The department had to change its plans to exclude such activities in these forests.

Effectively, a community's right to tenure could encompass access to resources and the ability to exclude others from using these resources, though the state may put some riders on such a right. Such a power to exclude (with exceptions made for legitimate primary stakeholders from afar) is important since it will determine the authority of a community to deal with outside violators; and whether it can have the power of veto or can restrict plans of outside agencies.

11.2.4 Sustainable institutions

Unless there is genuine power-sharing, in other words unless the stakeholders (and in particular the primary stakeholders) are substantially involved in decision-making (taking fully into account local social inequities), institutions will remain short-lived and essentially non-participatory. Secondly, institutions need to be dynamic enough to adapt to changing situations and new challenges; many traditional village structures were not adaptable enough to take in new external challenges, and therefore collapsed or got corrupted.

Box 11.7 Registering Local Community Knowledge And Uses of Biodiversity

Local community knowledge (LCK) systems have usually been orally transmitted, and are not recorded. While this may have sufficed in earlier times, and indeed has advantages over written transmission (such as being far more nuanced and hands-on) which should be encouraged, there also appears to be a need to document these traditions in some form. In this respect, Indian groups and networks involved in environment, health, agriculture, and traditional science and technology, have taken an interesting new initiative. They have prepared a draft format called the Community or People's Biodiversity Register (CBR/PBR), which is aimed at documenting community knowledge and practices related to biological resources (Chhatre et.al. 1998). The aims are multiple:

a) revitalising local knowledge/skills/techniques;
b) protecting traditional/customary rights of local communities by providing proof of resource uses;
c) assessing the economic value of community usage and conservation practices;
d) priority setting for conserving those resources which are under threat;
e) recognising outstanding LCK for rewards;
f) sharing the local knowledge with other communities for mutual benefit;
g) protecting LCK from exploitation by commercial users (including protection against imposition of intellectual property rights by outsiders), by providing proof of prior use; and
h) strengthening the possibility of enforcing prior informed consent of the concerned community before the 'outside' world uses LCK (as required under Article 8j of the Convention on Biological Diversity).

With the help of community-based organisations, CBR/PBRs have been prepared in various villages all over the country (Gadgil 1996). Detailed information on the relationship of villagers with their biological surrounds has been recorded, both in text and visual form. The Indian Ministry of Environment and Forests has been asked to assist in making such documentation efforts widespread, including by publishing the Register format in regional languages, and providing the resulting documents a legal status so that they can be used in disputes over intellectual property rights and piracy of knowledge. In 1998, the central Ministry of Rural Affairs circulated a letter to all state governments to encourage PBR formulation in their villages; later, the government of the south Indian state of Kerala also instructed that PBRs be formulated across the state. A draft Conservation of Biological Diversity law for India contains a clause which could help protect these Registers from being misused or appropriated by outsiders. This is critical, as otherwise there is always a danger of the Registers making LCK much more easily accessible to unscrupulous commercial interests.

Most case studies of CWM suggest that institutional sustainability of community-led initiatives (e.g. water and forest conservation by the *gram sabha* in Bhaonta-Kolyala), may be greater than that of purely government efforts, but is not necessarily guaranteed (e.g. recent problems of the effectiveness of the *van suraksha samiti* in Jardhargaon). Sustainability is also weak where government or donor initiatives are imposed on communities (e.g. the Haric Himalaya scheme in Jardhargaon, India, in which the system of paying the village forest guard collapsed

after the scheme was withdrawn; or the Forest Department's compensation scheme for nesting trees in Kokkare Bellur, India; or the SAMP project at Rekawa Lagoon, where the institution set up with external assistance has become inactive after the withdrawal of this assistance).

Whilst strong leadership is important (Box 11.8), CWM initiatives must outlast individuals and this is partially possible when resilient and transparent procedures are in place. Traditional modes of sustaining institutional arrangements, for instance the management of sacred groves or commonly held pastures, would therefore have important lessons for new CWM initiatives, as some of them have shown resilience and sustainability for several generations.

Box 11.8 Dynamic Leaders and CWM

Trust-building, community mobilisation, linkages with outside forces, and other such essential functions often depend on dynamic leaders. Such leadership can be in the form of a community group (eg. at Muthurajawela marsh/lagoon in Sri Lanka, Case Study 18); or an NGO, (e.g. the group Nature's Beckon at Chakrashila Sanctuary in India, Case Study 5); or an individual (e.g. Devaji Topa in Mendha (Lekha), India; or Vijay Jardhari in Jardhargaon, India). The leader can be from outside or within the community, though with external intervenors, the issues are somewhat different. At Rekawa Lagoon, Sri Lanka, leadership at three levels has been considered critical: at the level of the local administration (the Divisional Secretary Mr. D.A.L. Nimal), at the level of the local community (e.g. the schoolmaster Mr. M.M. Ranjith), and at the level of the user group (fisherfolk leaders such as the President and Secretary of the Fishermen's Cooperative Society). What is essential is that the leader has widespread acceptance; in Hikkaduwa, Sri Lanka, for instance, fisherfolk were suspicious of the self-appointed spokesperson for the community, a hotelier, fearing that he would not truly represent their interests in larger forums (Lowry et. al. 1997; Case Study 17).

A second line of leadership is also crucial. In Bhaonta-Kolyala, India, as the pioneer leaders like Kanhaiyalal Gujjar and Chotelal Gujjar have become more active with mobilisation and awarness work in the entire region, and can devote less time to their own villages, others such as Arjan Gujjar and Dhanna Baba now give more time to local organisational matters. But often this second line is not built up, and can lead to the collapse of an initiative when the initial leader(s) are no longer available.

11.2.5 Consider the status of community institutions

There are several advantages and disadvantages of formalising and institutionalising relationships between various stakeholders. On one hand, formal recognition helps to legitimise, in the eyes of the larger society, particular traditional or customary practices that would otherwise be derided. It also helps to provide legal and administrative protection to community initiatives, which they may need to tackle external/internal threats (e.g. tree-felling contrary to the CWM rules by neighbouring villagers, at Mendha (Lekha) and Bhaonta-Kolyala, India; or poaching in Hushey Valley, Pakistan).

On the other hand, such institutionalisation could stifle localised innovative structures by straightjacketing them into uniform regulations and formats. For

instance, in Nepal, it has been noticed that self-initiated resource management institutions, based on unwritten rules and around commonly used resources, often break down when the government or donor-initiated formal systems (ban samitis) are imposed on them (Gilmour and Fisher 1992). In India, too, several JFM efforts have faltered as government rules regarding composition of the Forest Protection Committees (FPCs) have disrupted delicate balances inherent in locally initiated institutions, or because these rules stipulate the participation of a forest officer at a key position in the FPC (Das 1997). On the other hand, some internal formalisation helps. For instance, IUCN projects in Pakistan insist that any major decision by a project 'community' is done through written resolution by members; this helps to strengthen ownership and accountability in the decision-making process. In Mendha (Lekha), India, records are maintained of all meetings held and decisions taken.

Deciding whether to formalise therefore, may need to be a site-specific decision, based on an understanding of the likely impacts. Generally, it may be wise to leave a well-functioning, informal local arrangement alone, rather than impose a uniform institutional format on it. Decisions such as this should of course be taken with the full involvement of community members already involved in the initiative.

11.2.6 Conflict management needs to be built into the institutional (and legal) structure

Conflicts can arise for several reasons: unfair distribution of CWM benefits, leadership struggles, misuse of power by representatives, violation of community rules, and so on. Where local community/ user groups have been protecting their resources over a period of time, traditional institutions may have evolved means to tackle intra and inter-community conflicts. These should be encouraged and built upon if any new structures are to be developed (Box 11.9).

Box 11.9 Conflict Resolution for CWM

In Bhaonta-Kolyala, Jardhargaon, Mendha (Lekha), Kailadevi Sanctuary, and other CWM efforts in India, communities have revived social boycott and fines to enforce rules for forest protection. The Jardhargaon case study contains an interesting case of conflict between the local community and the *thekedar* (person in-charge) of the village irrigation committee who manages the community grassland. The conflict was over the *thekedar's* decision to keep the grassland closed on a day when the people had already arrived in large numbers to take their allotted one head load per family. The issue was finally resolved after much heated discussion and an apology for miscommunication. In case of disputes regarding offences, village elders sit and deliberate until a resolution is reached. Villagers in Kailadevi even impose a fine against people who complain to the police without first seeking the intervention of the village council! Conservation initiatives should be encouraging the maximum use of such local dispute settling mechanisms. Necessarily, however, state structures will need to be kept as a back-up, since customary or informal mechanisms cannot resolve all conflicts. New dispute-resolution mechanisms can also be set up; at Rekawa, Sri Lanka, the recently created Fishermen's Cooperative Society plays this role.

It is critical that at least the first stage of the dispute resolution process operates at the community level, to make it accessible to everyone in the community, and quicker to dispense justice. However, society at large often distrusts the abilities of

communities to manage their own disputes. At Annapurna Conservation Area, this role was earlier granted to local bodies, but after the promulgation of Conservation Area Regulations in 1996, a government Liaison Officer has been appointed for the purpose, and this has begun to create serious problems as he simply does not have the time, understanding, or perhaps even inclination to deal with disputes over such a vast area. Further, the Liaison Officer has been reported to disregard the rules and regulations framed by local Conservation Area Management Committees.

This is not to suggest that all disputes can or should be resolved at community level. Some cannot be, and may require external dispute resolution bodies (such as formal courts). This may be particularly true of inter-community disputes, such as those in Bhaonta-Kolyala, or Mendha (Lekha), India. However, even these external bodies would do well to encourage local resolutions, or resolutions based on customary law. Pant (1999) has shown, in her theme paper (Appendix 1), how certain decisions by formal courts in Arunachal Pradesh, India, indeed used such an approach.

11.2.7 Financial management and sustainability

Institutions for financial management are critical where CWM initiatives deal with substantial funds. The more localised these institutions are, the more sustainable they may be. In the initial enthusiasm of a CWM initiative, this aspect is often ignored, and could lead to a lack of sustainability. Financial collapse could also happen if substantial funds come from external sources, and a self-generating mechanism is not set up.

There is much to learn from some of the communities and agencies that are trying to become self-financing. At Ritigala Strict Nature Reserve in Sri Lanka, the RITICOF organisation has started a medicinal plant nursery, and begun to trade in some medicinal extracts. The group however recognises that this will not be enough to even carry on its organisational work, so it is considering other sources of self-sustenance, which will be urgently needed once the USAID-sponsored project there ends (see Case Study 16). At Muthurajawela marshes, Sri Lanka, a visitors' centre, and employment as tourist guides, are beginning to bring in resources for the local community (see Case Study 18). The community enterprise initiatives of the Biodiversity Conservation Network at several sites in the region have the explicit intention of creating a self-sustaining system rather than be dependent forever on the donors (Bhatt 1998). Village Conservation Funds in Hushey Valley and other initiatives in Pakistan, an Endowment Fund created from collections of entry fees in the Annapurna Conservation Area, Nepal, a savings scheme and a *gram sabha* corpus fund generated by a minimal tax on the villagers at Mendha (Lekha), India, a *gram kosh* (village fund) at Bhaonta-Kolyala, India, and the Grameen Banks at Kahalla-Pallekele in Sri Lanka (Case Study 15), are other examples of such initiatives.

Even in some of these initiatives, however, problems remain. At Rekawa Lagoon, Sri Lanka, the fisherfolk community does not have the long-term capital to reinvest in the lagoon restocking programme. Two years after a couple of successful restocking exercises, which were supposed to give them enough working capital to continue the programme, the fisherfolk are requesting another external intervention. This brings up the issue of building adequate capacity amongst local communities.

11.2.8 A role for state institutions

Despite increasing emphasis on control and management responsibilities vesting in the community, the state does not become redundant but retains an important role, even where local community institutions are strong. Communities themselves in many areas stress that the state has an important role, especially in providing critical legal and administrative support, to act as a buffer against exploitative outsiders or even insiders. For example, at Hikkaduwa in Sri Lanka (Case Study 17), glass-bottom boat owners recognised the need for externally imposed regulations regarding the number of permitted boats and access to the coral reefs, and welcomed the Department of Wildlife Conservation's role in this.

Even where traditional mechanisms are still prevalent, communities may need to resort to the state to resolve very serious offences or disputes which cannot be dealt with internally. Also, coordination with the state as a whole (and in particular with other line agencies active in the area), with international organisations, and so on, are functions that official conservation agencies need to continue to perform.

There is currently little coordination between the programmes and policies of development departments and those of the conservation agency. This may lead to contradictory activities and use of funds. In Bangladesh, a confusing array of Ministries and Departments are in charge of regulating waterbodies (Capistrano et. al. n.d.). The administrative weaknesses this creates are usually exploited by powerful fish contractors, leaving fisherfolk with a meagre share of potential benefits. Moreover, very often, development and welfare agencies have greater resources than conservation agencies. There have been some notable attempts to improve coordination, however (Box 11.10).

These and other examples of integration and co-ordination need to be analysed for the elements that make them succeed or fail, so that supportive institutional and legal mechanisms can be developed.

Ensuring access to information and transparency

Access to information is one element of empowerment and the means to have a greater say in decisions. Many studies of CWM initiatives in the region highlight the critical importance of information, its generation, availability, access, and use, to community members and other stakeholders. However, in most cases government agencies, corporations, even NGOs, have been able to retain a hold on communities (or well-placed community members on the rest of the community), partly by flouting a greater knowledge of laws, government programmes and ways of functioning, and other aspects which could dominate local life. Breaking this form of domination requires that villagers and other citizens have equal access to information which affects their lives, and have the capacity to use it. Several CWM initiatives are marked by an emphasis on the acquisition of information and knowledge, not just of the local situation, but of the wider linkages within which the community is placed (Box 11.11).

These experiences imply an important role for government; extension. Officials and independent outside experts could bring in the wider perspectives not so easily available to the villagers. In turn they could learn from the detailed site-specific information that the local people have.

Box 11.10 Improving Coordination for CWM: Lessons From Around the Region

In the new Buffer Zone Regulations of Nepal, a District Advisory Committee consisting of Village Development Committees, line agencies, staff of the Parks and People Project, and local villagers, has been constituted for each protected area, to resolve contradictions. In Annapurna Conservation Area, Nepal, the Local Development Office has the task of linking all line agencies and NGOs together, thereby minimising the overlap and conflict. At Muthurajawela and at the Special Area Management areas (Hikkaduwa and Rekawa) in Sri Lanka, the conservation planning process includes all relevant agencies (see Case Studies 14, and 18), though inadequate commitment from government agencies (e.g. at Hikkaduwa in Sri Lanka, see Lowry et.al. 1997 and Case Study 17) means that often this process remains only on paper.

In the Melghat Tiger Reserve of western India, an attempt was made by an enterprising administrator to achieve inter-departmental coordination. He combined the funds from the development departments under him, into a common programme oriented towards providing local tribal communities with alternative biomass and livelihood options (Pardeshi 1996). In some JFM areas too, this has been achieved. However, many of these have been short-lived, dependent on an innovative official; not having been built into the system, the situation often slips back into disarray after this official leaves. However, empowered communities themselves can bring about coordination too. The villagers of Mendha (Lekha), India had insisted that no programme could be implemented without their permission. Thus the village was able to pool the resources of three different departments to provide each family with a biogas plant, a toilet and a bathroom. Under the original plans of three different departments only a few families would have benefited from one or the other of these facilities.

Box 11.11 Study Circles and Other Community Information Sources for CWM

In Mendha (Lekha), India, villagers have evolved a system of information exchange with outsiders through group meetings and discussions, what they locally call abhyas gats or study circles. Through such interaction, they have become aware of the long-term damages of commercial exploitation of forests even though the immediate gains are very high. Through the same interactions the villagers have been able to solve complicated issues such as illegal extraction of resources, encroachments, etc. with which the forest officials in many areas are still struggling. A system of inviting outsiders for village level meetings is also present at Rekawa Lagoon, Sri Lanka. In Jardhargaon, India, information from both within and outside, gathered by the Beej Bachao Andolan, was crucial in initiating the switch back to traditional seeds and agro-practices. At all these and other CWM sites, availability of timely information was also instrumental in helping the community to fight against destructive external forces (mining in Jardhargaon, dam and paper mill in Mendha (Lekha), tourist tower in Kokkare Bellur, causeway in Rekawa, and so on). At Annapurna, Nepal, multiple institutions at the village level and a rising hierarchy of other institutions implies that several different levels need to receive and disseminate information. However it is not known to what extent this actually happens and how it affects the CWM initiative.

In India (perhaps in other countries too), there is now a strong and widespread movement asking for a constitutional right to information. Some states, such as Rajasthan and Tamil Nadu, already have legislation guaranteeing certain kinds of information on request from the public, but even in such cases various provisions give governments widespread powers to withhold documents. Strong mobilisation around this issue, however, has ensured that a comprehensive national law is not too far away.[79]

11.2.9 A role for NGOs

In South Asia, as indeed worldwide (Borrini-Feyerabend 1996; Suri 1996), NGOs are beginning to play a major role in facilitating CWM. This is most striking in the case of Pakistan, where the thrust towards CWM has come from groups like IUCN, WWF, SUNGI Development Foundation, and others (see Chapter 7). Community forestry and recent initiatives in people's participation in protected areas in Nepal, Special Area Management Plan efforts in Sri Lanka, and others, also have substantial donor and NGO input (see Chapters 3 to 8). In India, a bewildering diversity of NGOs is involved, with major inputs into Joint Forest Management (JFM), eco-development, and community-led conservation attempts (see also Chapter 5). Even NGOs which were previously extremely orthodox in their conservation approach, are opening up to the need for participatory processes, e.g. the recent attempt by WWF-India to initiate such a process in the Keoladeo Ghana (Bharatpur) National Park, Rajasthan.

In a reciprocal move, human rights NGOs have increasingly opened up to wildlife issues. Aiding in this process are groups such as Kalpavriksh, Ekta Parishad, Tarun Bharat Sangh, Sanctuary Magazine, and the Indian Institute of Public Administration, which have focused on increasing the dialogue between previously contending actors. One manifestation of this is a series of annual National Consultations on Wildlife Conservation and People's Livelihood Rights (see Joint Statements from the 1997 and 1999 consultations, in Kothari et.al. 1997, and Kalpavriksh 1999, respectively).

The importance of an NGO's catalyst or facilitation role is repeatedly shown in experiences from South Asia (e.g. at Hikkaduwa Sanctuary and Kahalla-Pallekele in Sri Lanka, see Lowry et.al. 1997, and Case Studies 17 and 15; see also Box 11.12).

Box 11.12 NGOs and other External Agencies as Facilitators

In Kokkare Bellur village, India, the role of the NGO Mysore Amateur Naturalists, has been critical in revitalising the village youth towards protecting the pelicans and storks which breed in their village. At Rekawa Lagoon (Sri Lanka), university researchers have played the role of catalysed an ecologically friendly aquaculture process, which has helped the community to avoid falling into the intensive shrimp farming trap. At Hushey Valley (Pakistan), the CWM initiative was catalysed by the Aga Khan Rural Support Programme and IUCN-Pakistan.

11.2.10 Building capacity for sustainability

The strengthening of ongoing CWM initiatives, and the spread of this approach to a much wider area than covered at the moment, is currently limited by inadequate

[79] See various issues of *Transparency: Right to Information Update*, a newsletter brought out by the Press Institute of India, New Delhi.

capacity at various levels. Capacity-building programmes with all stakeholders are necessary to meet the following objectives (adapted from Desai et.al., 1996):

- To enable the people and the state to recognise and analyse the various options for solving problems which may be related to management institutions or partnerships.
- To increase the knowledge base of the partners in CWM about what has to be conserved and why.
- To impart knowledge of the ecological constraints to determine how to shape patterns of resource use.
- To create a clear understanding of roles, responsibilities, rights, and duties.
- To develop leadership to ensure effectiveness of consultation, joint decision-making and conflict resolution.
- To develop skills to handle financial and other administrative aspects.

Communities are often weak on aspects of institutional and financial sustainability; government officers and conservationists do not often understand local community dynamics; ecological monitoring techniques are under-developed....these and other aspects could be dealt with in training and education exercises. Such exercises should be carried out (with appropriate modifications) for different sectors of society, should be able to combine local and outside knowledge, and should lead to mutual learning amongst the various stakeholders in the initiative. The few existing initiatives along these lines, such as the training in JFM, eco-development, and CF techniques for forest officials in India and Nepal, capacity building exercises for community members in handling financial and other administrative aspects of CWM projects, and others, need to spread wider. Developing a few training modules on CWM, incorporating lessons from existing experiences, would be a useful step forward.

So would many more initiatives in CWM-related education for rural and urban youth (Box 11.13). Though rapidly increasing in all countries, they are still woefully inadequate, particularly in areas where CWM initiatives are needed. Integrating CWM ideas and information into curricula, as also stressing on non-formal ways of learning these, would be important steps forward.

Box 11.13 The Importance of Education for CWM

It is not just the capacity of adults that has to be built up to handle CWM. Educational inputs to the youth of the community, are equally critical. Though all the countries of the region have a rapidly increasing network of environmental education activities, these still touch rural youth less the urban student population. NGOs and government agencies have only recently focused attention on this. A number of wildlife conservation agencies, for instance, now have active programmes with children of local communities, taking them into protected areas, organising cultural activities, etc. Often these activities are free for such rural children. NGOs like WWF and IUCN (both in various countries), Centre for Environment Education (which coordinates a South and South-East Asia Network on Environment Education), Kalpavriksh, Nature Conservation Movement Bangladesh, and hundreds of others, are increasingly taking up awareness and educational work relating to CWM with rural youth and their teachers. Many of the CWM sites profiled in the case studies have also included this component. **But the critical need to greatly expand such activities across the region cannot be overstated.**

In the case of local communities, orientation programmes more often than not focus on 'teaching' the value of the environment, or the particular protected area near which they are living. Many field workers have argued that rather than this, what is needed is training in organisational skills, awareness in the implications of outside forces (including policies and laws), and rebuilding, where it has been lost, the ability to value and assess natural resources on one's own terms.

In Sri Lanka, Community-based Organisations (CBOs) created for conservation and development purposes have been found to be weak in certain respects. Various projects therefore focus on training the CBO members to understand local environmental issues, collect relevant information, keep systematic records and books, write proposals and reports, handle field projects, etc. This is also happening in some of the community biodiversity conservation projects in Pakistan.

11.2.11 Promoting participatory processes and dialogue

All CWM initiatives, especially those with multiple stakeholders, need to undertake participatory planning of different activities and processes. This gets community members involved, allows ideas to be discussed, gives people a sense of ownership and contribution towards their CWM effort, and so on. Not all CWM initiatives, however, do this; indeed, many governmental initiatives (such as several JFM efforts in India) do not involve local people in planning at all, and even some NGO-led efforts neglect this. On the other hand, many self-initiated community initiatives do not involve the government, especially due to distrust; such initiatives may even come as manifestations of resistance to state control. Numerous problems would therefore have to be confronted at the attitudinal level; the feeling of *"we know what's best for them"* is common amongst many officials; with the converse feeling of awe, subservience, or hostility towards the state being common amongst local communities, stemming from a long history of conflicts. Changing these will require institutional arrangements which simplify the equations of power and authority, build the capacity of officials to work with communities, create confidence and trust in each other, and allow for mutual learning in an atmosphere of openness.

As a first step, mutually respectful dialogue (rather than one-way communication from conservation officials to villagers) is essential. Across the region, this is now happening in many different situations and with varying results. Most heartening is the fact that such dialogue is taking place even in highly volatile and conflict-ridden areas. One example of this is the Rajaji National Park in northern India, where local villagers, officials, NGOs, and others have been at loggerheads for years, and where violent clashes have taken place in the past (Vania 1997). Thanks to enlightened initiatives taken by some individual wildlife conservationists, foresters, and NGO representatives, 1996-97 witnessed a series of dialogues striving towards some resolution between the livelihood rights of local people and the wildlife values of the area (Rathore 1997).

Very often, policy or programmatic changes towards participatory management are not followed by appropriate changes on the ground, as implementing staff are still oriented towards the old mode of working. In Nepal, for instance, the bold new pronouncements of handing over forests to FUGs, with forest officials working as extension agents rather than control and command agents, have in many places

remained on paper. The staff needs reorientation towards understanding people's needs and rights, appreciating their knowledge and practices, and grasping the social complexities of communities (Chhetri and Pandey 1992).

11.3 Ecological sustainability

As described in Chapter 10, without clear mechanisms for ensuring and monitoring sustainable resource use, CWM will not automatically lead to sustainable wildlife and habitats, and may even hasten their demise.

Appropriate planning is essential to demarcate certain areas that, because of their vulnerability, may have to be kept aside as strict reserves, while others could be amenable to varying degrees of human use. Some South Asian countries have responded by developing multiple categories of protected areas, or through appropriate zonation (see Chapters 3 to 8). It is critical, however, that such measures are done jointly by local communities and relevant official agencies, otherwise they could end up being short-lived.

Management plans can be drawn up and approved jointly between wildlife authorities and user groups. In Nepal's community forestry programmes, Forest User Groups (FUGs) make their own management plans, which are approved by the Forest Department, who then monitors their implementation. If conservation requirements built into the plan are not being met, the Department can intervene and in extreme cases, scrap the arrangement by which the FUG was given control over the nearby forest (Narayan Poudel pers. comm. 1997). Unfortunately, no country yet has a legal system which allows the community to take similar action against the official agency, if the latter violates the agreement or management plan. In Kailadevi Sanctuary, one village forest protection committee actually fined a forest official who cut a tree in their community protected forest, but such instances are rare and only occur when the community has considerable de facto power.

Monitoring mechanisms are also needed to ensure that resources are not over-exploited through CWM initiatives. The Biodiversity Conservation Network in its various biodiversity enterprise initiatives in the region has integrated detailed monitoring procedures (Bhatt 1998). In Nepal, it conducted some baseline research in the buffer zones of Chitwan and Bardia National Parks, where the Parks and People Project was being launched; subsequent monitoring has shown that there has been an increase in some wildlife populations, including the rhinoceros and the tiger (Mingma Norbu Sherpa, pers. comm. 1997). Under this project, the warden of the protected area also carries out monitoring with the help of staff, and submits monthly reports to the Department of National Parks and Wildlife Conservation (Narayan Poudel, pers. comm. 1997). In the case of Rekawa Lagoon (Sri Lanka), there has been fortnightly monitoring of the shrimp restocking exercise, both of the amount of catch and of the income being received by the fisherfolk. This has helped to assess the economic impact of the initiative, and to gauge the need for further such initiatives. However, monitoring of the overall ecological impacts of the initiative has not been carried out.

The example of the Biligiri Rangaswamy Temple Sanctuary in southern India is instructive. Here, scientific bodies and NGOs are conducting detailed impact studies

of non-timber forest produce collection by local tribals, and working with them to extract less rather than more, provided the price obtained for this produce can be considerably enhanced (Bhatt 1998; Lele et.al. 1998). Tentative success in this indicates that the danger of over-exploitation can be avoided if safeguards are taken.

One essential step is to develop simple and quick indicators, which could be used by villagers and frontline government staff to monitor CWM efforts. Villagers often have their own indicators for success and failure, which could be mixed and matched with those of outside experts. Similarly, periodic evaluations should be fully participatory, involving various stakeholders, and in particular local communities (Box 11.14), though of course independent evaluators would also be needed. Most governments and donors have only recently accepted the necessity of such evaluation (relevant examples being the UNDP evaluation of the Parks and People Project of Nepal, see Rodgers and Uprety 1997; an assessment of the Special Area Management Plan for Hikkaduwa and Rekawa of Sri Lanka, see Lowry et.al. 1997; and a UNDP evaluation of the IUCN-Pakistan Biodiversity Project: see Garratt et.al. 1997).

Box 11.14 Participatory Monitoring

In Pakistan, under the Maintaining Biodiversity with Rural Community Development project of the Aga Khan Rural Support Programme and IUCN, villagers have been trained to carry out wildlife surveys and monitoring exercises, and are now conducting yearly evaluations of the conservation and development plans they have developed (IUCN 1996a; *People and Biodiversity* 1997). Some participatory monitoring is reportedly also taking place in the Makalu Barun Conservation Area of Nepal (see Case Study 10).

At Hushey Valley, Pakistan,ibex populations are closely monitored by Village Wildlife Guides. They were selected from within the community and trained in wildlife survey techniques by AKRSP, IUCN and the Forests and Wildlife Department. In addition they are also expected to monitor livestock depredation by snow leopard, report poaching and act as guides when trophy hunting expeditions arrive in the village.

11.4 Policies and laws

CWM initiatives would become more widespread with the backing of supportive laws and policies. CWM has to be about sharing not just benefits, but decision-making powers also. Policy and legal measures are therefore required which:

- empower local, resource-dependent communities to manage and protect ecosystems and species, and facilitate the participation of all other stakeholders in various capacities;
- ensure the rights of these people to the biomass and other livelihood means, including appropriate tenurial arrangements;
- regulate human activities to ensure their compatibility with conservation and sustainable livelihood values; in particular, prohibiting destructive commercial-industrial activities in areas of conservation or cultural value.

Policy and law will have to be mindful of the many issues raised above in the context of CWM: clearly identifying primary/secondary stakeholders, ensuring

equitable decision-making opportunities and benefit-sharing, safeguarding legitimate community rights and tenure, facilitating benefit-sharing, and ensuring conservation.

Most importantly, policies and laws will have to be flexible enough to allow for the extremely diverse ecological and socio-economic conditions in the region. Pakistan's model of a separate wildlife legislation for each province presents some interesting insights (see Chapter 7), though there appears to be no analysis of its efficacy. The Nepal policy of community forestry too, appears to have considerable flexibility; its guidelines for the formation of Forest Users Groups has provisions for Forest Department staff to work with people in identifying actual users of the forests before making the management plan for the area. This helps it to understand the existing social and political structure, to understand and include existing forest-related knowledge and management systems, to mediate in resolving conflicts, and to identify the underprivileged sections of the society to ensure that they get a just share of benefits (HMG 1995). However, several people have observed that actual implementation of these guidelines is still seriously lacking.

Blending customary and statutory law will also help support CWM. Pant (1999) recommends that customary and statutory law can be made complementary in the following ways:

1. Customary and community laws need to be given official encouragement, including recognising them in statutory law.
2. Neutral conflict resolution mechanisms need to be incorporated into natural resource laws.
3. Education about the law is required at all levels: at the community level about statutory laws, and at the level of official authorities about customary law. The law departments should engage in extension work to popularise law, while NGOs and others should document customary and community laws and make them available to the authorities.
4. Statutory policy and law-making needs to be made much more participatory, opening it up to members of the public.
5. CWM initiatives must stress a community approach, since only then will adherence to community framed rules remain (see also Appendix 1).

International policies related to natural resources and local communities are increasingly veering towards strengthening customary law (Box 11.15). However, international agreements have no meaning until translated into national measures. Many countries have taken the above seriously, and incorporated appropriate provisions in their legal and policy framework. The impact is as yet not very visible in the South Asian region, though some countries are independently putting into place legislation to protect or authorise customary law. India's *Panchayat (Extension to Scheduled Areas) Act 1996* (see Chapter 5), for instance, explicitly states that "state legislation on the Panchayats… shall be in consonance with the customary law, social and religious practices, and traditional management practices of community resources". Subsequent Acts by individual Indian states have provided for protection of the customary modes of dispute resolution, though it has been justifiably pointed out that single pieces of legislation extending to entire states may be counter-productive if they straightjacket the enormous diversity of customary laws into one uniform set (Roy Burman 1997).

Box 11.15 International Policy and Customary Law

The Convention on Biological Diversity (1992) requires countries to *"respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity"* (Article 8j), and further to *"protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements"* (Article 10c). The UN Draft Declaration on the Rights of Indigenous Peoples (1993), is stronger, stressing that *"indigenous peoples have the right to promote, develop, and maintain their institutional structures and their distinctive juridical customs, traditions, procedures, and practices, in accordance with internationally recognised human rights standards"* and further, that they have *"the right to the full recognition of their laws, traditions, and customs, land-tenure systems, and institutions for the development and management of resources"*. Much before this (1989), International Labour Organisation Convention 169 (Convention Concerning Indigenous Peoples in Independent Countries), had already afforded limited recognition of customary law.

Wider developmental, land-use and economic policies also need to be complementary to CWM approaches. For example, a comprehensive land/water use policy could identify areas which are needed for various critical functions, eg. watershed and catchment protection, biodiversity and wildlife conservation, agricultural production, etc. Necessarily, this has to be a long-term plan, not amenable to the whims of changing governments, and able to adapt through a widespread process of consultation and research. Conservationists and environmentalists have repeatedly suggested that areas important for conservation, including CWM sites, should be visualised within the larger landscape in which they are situated, and this larger landscape should be planned keeping in mind the conservation requirements of such sites (Miller 1996; WCPA/IUCN 1997). Such landscape level plans can be built from participatory local level plans. Unfortunately, no country in South Asia is close to implementing such a process, though active discussion has begun.[80]

Several of the CWM initiatives have developed an effective response to wider economic and political trends:

- *Alternate livelihoods:* The focus of Sri Lanka's Rekawa Lagoon initiative on increasing incomes from fisheries, with conservation being a significant side-effect, has effectively averted the entry of destructive aquaculture into the area. At Bhaonta-Kolyala and a number of nearby villages in Rajasthan, India, renewal of water and land resources has provided greater opportunities within the region, thereby reducing the outflow of young people looking for jobs.
- *Resistance:* Destructive commercial/developmental projects have been resisted, such as the successful struggle against a major dam, and against bamboo felling by a paper mill, in Mendha (Lekha) and other villages of Gadchiroli district, India; stopping mining in Jardhargaon, India and in other sites such as the Sariska Tiger

[80] In India, the Wildlife Institute and the LBS Academy of Administration held a national workshop on the issue in 1999.

Reserve, Rajasthan, India; closing down brick kilns that were destroying coral reefs, and many others.

- *Empowerment:* A sense of village organisation and pride in one's own capacities, institutional structures, and knowledge systems has been rekindled. For instance, at Mendha (Lekha), India, the *gram sabha* (village council) has become powerful enough to stop any outside interference in village affairs without its explicit permission; at Kokkare Bellur, the efforts of Mysore Amateur Naturalists members may be helping to revive pride in the traditional protection of nesting storks and pelicans.

These are critical inputs into an overall challenge to current paths of development and centralised modes of governance; but they must be seen only as part of the response, not sufficient in themselves.

Grassroots and mass movements are other vital inputs into CWM processes. The tribal uprising in eastern India, now a full-blown political struggle for a separate Jharkhand (literally, "land of trees"), started partly as a protest against the conversion of natural forests into monocultural plantations by the Forest Department, and the general takeover of natural resources by the state (CSE 1982). Such grassroots activism has now spread all over India in myriad forms: resistance against destructive development projects (with successes like stopping major dams in central India's forested tribal belt, or banning of mechanised trawlers off India's coasts), revival of community controls over forests and other natural resources, and implementation of alternative developmental strategies for energy, water, agriculture, and small scale industries.

The spread, intensity and impact of the grassroots movement in India does not seem to be matched elsewhere in the region, although community and NGO initiatives for forest protection have been awarded by the Jara Juri Trust in Nepal (see Chapter 6). Struggles against dams (e.g. Arul III hydel project in Nepal, Kalabagh dam in Pakistan), industries, commercial trawling in the seas, commercial aquaculture (Sri Lanka), and other 'destructive development' projects, though rarer, have been waged in these countries. Nevertheless, it is possible that the absence of a long history of resistance, a much greater breakdown of communities and community spirit (Sri Lanka), more autocratic forms of governance (Pakistan, Bangladesh), and other factors hamper the growth of grassroots activism in many countries of the region.

In all countries, it is also being increasingly realised that natural resource conservation cannot take place in isolation from other democratic struggles, such as those of women and oppressed castes/classes/tribes. Joint actions and dialogues are helping to evolve ways to tackle problems such as internal inequity, the invasion of global/national commercial forces, and so on.

11.5 Next steps: strengthening the process

What can be done by those concerned to strengthen and spread CWM in the region? There are two main approaches which are important to focus on in taking forward the lessons learned to date.

11.5.1 Regional networking

To facilitate local and national level actions, and to strengthen CWM efforts in general, it is crucial that networking be stepped up. Networking within each country, and among countries of the region, is very weak, especially on CWM related issues. This leads to the following problems:

- Information on CWM is not very well exchanged amongst the various CWM initiatives in each country, and amongst the countries in the region. There are only some sporadic attempts at such information exchange, with the result that the level of ignorance of each others' initiatives is very high.
- Dependence on experts from outside the region (usually from industrialised countries), is rather high. This is ironic, given that the region now has so much on-ground experience and conceptual expertise. Even more ironic is that new policy thrusts towards participatory conservation are often still coming from external donors, in most countries. In countries other than India and possibly Nepal, there is not much evidence of a groundswell of community and citizens' opinion towards CWM (though this could be partly due to a lack of documentation of such efforts).

Some efforts to improve networking are already happening. For instance at the regional level, a number of workshops have helped to spread information and build synergies (Box 11.16).

Box 11.16 Networking for CWM

The following meetings have already started the networking ball rolling:

- an IUCN-sponsored meeting on collaborative management at Murree, Pakistan in 1996;
- a UNESCO-sponsored Regional Workshop on Community Based Conservation in New Delhi in February 1997;
- a South Asia meeting of the IUCN World Commission on Protected Areas in May 1997;
- an Asian level meeting on Collaborative Management of Protected Areas in Nepal in May 1998.

The process of conducting this study itself resulted in the initiation of some networking, through the visits of the Coordinating Team to various CWM sites and countries, a mid-term workshop with key partners in India in 1998, discussions with several individuals and groups, and collaboration in the case studies. An end of the study meeting is planned, in conjunction with the regional congress of the IUCN, in March 2000.

Such networking can be further facilitated through:

- Local level dialogues, related to specific sites, amongst the various stakeholders involved.
- National and regional workshops of the kind mentioned above, perhaps focusing on specific aspects of CWM.
- Publication of case studies, thematic papers, and overviews of CWM in the region,

and their widespread dissemination; CWM initiatives are far more numerous and widespread than is currently known, and documenting them (perhaps in the form of a directory, with brief information on each initiative)[81] would provide the public exposure that CWM needs in order to establish itself as a significant method of conservation. This would also help to identify sites and topics which need further investigation, and locate more contact persons and organisations who should be part of the network.

- Dissemination of material on CWM through non-printed media also, such as films, and street theatre and other folk media.
- Establishment of documentation centres at national and regional levels, which could systematically and regularly service the information needs of people in each country.
- Producing a regular newsletter on CWM issues.
- Undertaking exchange visits, for people involved in CWM, among the various countries, to visit each others' CWM sites.
- Linking with other networks and initiatives in the region, and with CWM initiatives/networks in other regions of the world.
- Setting up permanent national and regional forums for continuous interaction, both within the mandate of the South Asia Association for Regional Cooperation (SAARC), and independently for all stakeholders.
- Developing a few demonstration sites, areas with existing CWM initiatives which need strengthening, or altogether new sites. With built-in process documentation (Box 11.17), monitoring and evaluation, capacity-building of various stakeholders, and other aspects, the lessons which will be learnt from such sites would be invaluable for all future attempts at spreading CWM in the region.

Box 11.17 Learning from the Process

A number of studies on CWM initiatives exist, but these are usually restricted to what the initiatives are doing at a particular point in time. They often do not give a good idea of the process by which the initiative arrived at this point. In particular, the following elements are weakly developed in research reports, though they may be strong in oral traditions: how did the initiative start, what were the motivations of the initiators, how did it progress, what were the crucial elements which made it happen, what were the hurdles, what modifications did it undergo while in progress, what were the outcomes? Much greater focus on *oral history* would perhaps yield better understanding of these aspects of the CWM process. Also needed is more systematic monitoring (both by CWM participants and by others), and independent evaluations by people who are not involved in the initiative.

11.5.2 Policy advocacy and lobbying

Ultimately, CWM initiatives will flourish and multiply only if a conducive policy environment is created. There is considerable pressure on national governments to change policies and laws to make them more supportive of CWM. For instance, there is a strong demand for local communities who are engaged in CWM initiatives to obtain legal authority of some kind. Some such changes have indeed come about

[81] Such a directory is under preparation for India, by some of the Coordinating Team members as part of the environmental action group Kalpavriksh. The same team is also exploring the idea of a collaborative process of making such directories for other South Asian countries.

over the last few years, but there is a long way still to go. Efforts at lobbying for such changes need to be strengthened: the research work and networking mentioned above will certainly help in this. Also of help will be a much wider exposure to ongoing CWM initiatives, as there is a great ignorance amongst government and urban conservation agencies about them, or the impression that such efforts are isolated and of little relevance to national policy. A series of clear policy briefs for decision-makers, along with their participation in workshops and demonstration tours, would be of great help. Ultimately, though, it will be mainly through people's pressure and self-empowerment, supported by a range of rural and urban groups and individuals, and other such processes that are described in some of the case studies in this book, that will lead to meaningful, long-lasting policy changes.

Appendix 1

Summaries of theme papers commissioned for the South Asia Review

1. Benefit-sharing and incentives for community wildlife management[82]

World-wide, it is being realised that one major step towards biodiversity conservation is creating a stake for local communities. The biological diversity of any area is a local resource, in that it forms the basis of the livelihood security of local communities. The same biodiversity is also a national and global resource, in that the nation and humanity as a whole benefits from it aesthetically, socially, and economically. It is therefore the responsibility of all beneficiaries to share the cost incurred in conservation. However, in reality the division of costs and benefits in the arena of wildlife conservation so far has been heavily skewed in the favour of the national and global society, especially because those who derive local benefits from it do not have much of a voice in decision-making.

By and large, local human communities residing amidst wildlife and other biological resources have paid almost all the direct cost of conserving them, including the following:

- *Loss of access to basic needs:* Conventional conservation efforts have often restricted the people's access to the resources they have traditionally depended on.
- *Damage caused by wildlife:* Incidents of damage to property (crop and livestock) and life by wildlife have increased with the increase in the population of wild animals and decrease in habitat. There is inadequate or very delayed compensation for these losses.

---

[82] Excerpted from: Kothari, A. and Pathak, N. 1999. *Incentives for Community Based Conservation: South Asia Overview and the Legal Situation in India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London. Sources of information are available from the main paper.

- *Loss of self-respect and dignity leading to cultural disruption:* Most of these communities are viewed as thieves of a 'national' resource, and considered 'backward' and illiterate, even though in many cases they may actually be ecologically more literate than national decision-makers.
- *Displacement:* Traditional communities have sometimes been forcibly evicted from protected areas.
- *Loss of opportunities:* Conservation restrictions have caused people to forego significant opportunities for livelihood and development, while at the same time not being provided with alternatives.
- *Loss of power:* Communities have often been reduced to receiving and following decisions made far away; and even their capacity to take decisions has declined.
- *Loss of traditional knowledge and practices:* Unrecognised by outside society, given a low status, stolen by scientific and commercial interests with insignificant returns coming back, and having become redundant in the face of the challenges of modern times, local communities have lost a considerable part of their knowledge related to biodiversity.

Addressing these losses would require the provision of *benefits* and *incentives* to local communities, and the reduction of *costs* incurred by them.

Benefit-sharing and incentive measures

There is a range of incentive measures, or measures to tackle disincentives, which could help to move towards a more conservation and sustainable use-oriented society:

Security of tenure, rights to resources: Possibly the most critical incentive measure, in the case of common property resources, is a revival of tenurial security. In this way, guaranteed access to livelihood resources, in association with conservation responsibilities, is itself the biggest form of benefit-sharing. In some countries, there have been encouraging moves towards establishing tenurial security (see below).

Material benefit-sharing measures: These include access to biomass resources, share of revenues earned from gate fees, tourism, and other such activities (eg. at the Annapurna Conservation Area in Nepal); direct economic returns from conservation and sustainable use activities (eg. training local youth to become birdwatching guides at Corbett National Park, Uttar Pradesh, India); financial rewards for reporting illegal activities (eg. at Sagarmatha National Park of Nepal, funds generated from the fines imposed on offenders in the park are utilized for community development works).

Appropriate livelihood and developmental inputs: Many communities in conservation areas are in need of development inputs, such as local measures for water harvesting, land regeneration, marketing links for local products, and so on. Indeed, such inputs can often be a major incentive for conservation, eg. water harvesting in Bhaonta-Kolyala and other villages of Alwar district of Rajasthan, western India; or developmental inputs in the Kalam Integrated Development Project in Pakistan; or appropriate marketing linkages in the Biligiri Ranganaswamy Temple Sanctuary, Karnataka, India.

Capacity enhancement, training, education. Though communities have considerable knowledge about natural resources, in the current context it may not be sufficient to meet conservation and livelihood requirements. Culturally appropriate technical inputs to build on existing skills, training in research, resource mapping and monitoring techniques, training in institutional activities such as record-keeping and accounting, are some examples of ways to enhance the ability of people to handle conservation and benefit-sharing measures.

Social recognition, awards, empowerment, and other non-material incentives: Non-material incentives can work as powerfully as material ones. Social recognition for exemplary conservation work, for instance, is a major encouragement. Perhaps most important is the sense of empowerment that communities get when they are able to organise conservation and development activities, and take part in decision-making. This empowerment enables them not only to achieve what they started off with, but also indirectly benefits them in their interaction with outsiders (including, especially, government agencies) and in their confidence and ability to handle even unrelated problems. At Mendha-Lekha, a tiny tribal village in western India, it has helped them to stand up to the might of a paper mill, and to creatively use government schemes for village welfare.

Intellectual property rights: Current models of intellectual property rights (IPRs) are not suitable for most community-based knowledge purposes, as they are individualistic, monopolistic, and often violate the ethical tenets by which communities organise their knowledge systems. Alternative models that recognise community-based knowledge (even if individually generated), allow for exclusion of life forms from patentability, provide for continuation of the socio-cultural milieu which makes biodiversity-based innovation thrive, and are equitable in their impacts, have been suggested by many groups and individuals, and need to be explored by all countries in the region. Lessons from ongoing knowledge-related benefit-sharing arrangements, such as the Kani-TBGRI agreement in Kerala, India (see theme paper 4 in this appendix), need to be used widely.

Removal of perverse incentives: Reducing or eliminating the costs paid by communities, as listed above, is important. These include better and swifter compensation for damage by wild animals, making up the opportunity costs that communities are asked to pay for conservation, and removing economic subsidies for biodiversity destruction.

Legal and policy implications: the case of India

It is important to assess the policy and legal environment of conservation, to judge its readiness to incorporate the above measures. To take the specific example of India, it appears that there are opportunities for introducing benefit-sharing measures within current laws, but there is also a need for changes in these laws, to make them more supportive of such measures. To give some examples:

1. *The Forest Act of 1927* (also applicable to Bangladesh and Pakistan), is generally not conducive to community-oriented incentive measures. However, one provision, for transfer of state forests to village communities (as Village Forests) provides such options. It has, unfortunately, been rarely used in these countries.

Overall changes are needed in the Forest Act to enable people's participation in management and benefit-sharing even from state-owned forests.

2. *The Indian Forest Policy of 1988*, has provided considerable new scope. For instance, it explicitly states that the first charge on forest produce should be to local communities. India's programme of JFM, a major step towards benefit-sharing, has received a great boost from this policy.
3. *The Wild Life (Protection) Act* is not very conducive to benefit-sharing and participation of local communities. Some scope exists in the form of rewards for informants of poaching, continuation of usufructory rights in sanctuaries at the discretion of state officials, and provision of extracted resources from protected areas (PAs) if such extraction is good for wildlife management. To reach the full potential of benefit-sharing, however, the WLPA needs to empower local communities to take part in planning, implementation, and monitoring of PAs, and to guarantee them security of tenure over resources of survival and livelihood. The draft Amendment to the *Wild Life Protection Act (Proposed) 1997*, provides for greater benefit-sharing and participatory measures, eg. through two new PA categories, though this is greatly restricted by other provisions (eg. that these new categories cannot be extended to existing PAs).
4. The proposed *Biological Diversity Act* has scope to encourage processes by which lifestyles and livelihoods that are conservation-oriented can be continued. It has specific provisions for benefit-sharing relating to the use of biological and genetic resources and knowlege, including empowering local communities to have a say in such use. It sets up biodiversity funds at local, state, and national levels, to provide incentives to communities.
5. Finally, perhaps the greatest potential exists with recent laws relating to village-level bodies (*panchayats* and *gram sabhas*, or village councils and village assemblies). Brought in through constitutional amendment, these laws provide far greater power over local resources and developmental projects than was available before. One provision of specific importance is the granting of ownership of non-timber forest produce to tribals in Scheduled Areas of India. It will be necessary to clarify the relationship of these laws with existing natural resource laws, especially to ensure that conservation objectives do not suffer.

Issues to Tackle in Benefit-sharing

It is important to consider the following issues before extending benefit-sharing arrangements:

1) Who is the local community?

2) Within the community who are the primary, secondary and tertiary users of the resource. Who are the actual disprivileged sections and what special provisions should be made for them?

3) Who should be involved in the process of decision-making?

4) What should the legal status of benefits be for a particular area: rights, leases, concessions, or others?

5) What should be the mechanism of sharing benefits? Who should decide that and how could it be made equitable?

6) How would the benefits become sustainable and long-lasting?

Considerable experience on tackling these questions is being developed in South Asia and elsewhere (see Chapters 3-8).

2. Customary law vis-à-vis statutory law in community wildlife management: cases from Nepal and Arunachal Pradesh, India[83]

An analysis of conservation-related statutory legislation in Nepal and India reveals several points of difference between statutory and customary law, as well as areas of complementarity.

The main laws relevant in **Nepal** are:

- Forest Act 1992 and Forest Rules 1995 including community forestry
- National Park and Wildlife Conservation Act 1973 and the Himalayan National Park Regulation 1980
- National Park and Wildlife Conservation Act 1973 with third amendment in 1989, the Conservation Area Management Regulation 1996 and the model Bill by ACAP
- National Park and Wildlife Conservation Act 1973 with the fourth amendment in 1993 and the Buffer Zone Management Regulation 1996

The laws in **India** are:

- Indian Forest Act 1927
- Forest Conservation Act 1980
- Forest Policy of 1952 and 1988
- Joint Forest Management Circular
- Wildlife Protection Act 1972
- Provisions of the Panchayat (Extension to Scheduled Areas) Act 1996
- Arunachal Pradesh State Laws (Assam Forest Regulation; Assam Frontier (Administration of Justice) Regulation 1945; and Arunachal Pradesh (Protection of Customary Laws and Social Practices) Bill 1994)

Customary laws are still strong in many parts of Arunachal Pradesh in India, and areas such as Annapurna in Nepal (see Case Study 9). In many cases, where they have eroded or declined in importance, recent community-based conservation (CBC) or community-based wildlife management (CWM) initiatives have attempted to either revive them or evolve new community rules. However, there is not much recognition, at official levels, of these rules.

Customary law scores over statutory law in many ways: speedier (sometimes almost instant) justice; greater accessibility to local people; more transparent as the mechanisms are immediately visible; cheaper; and more sensitive to the ability of offenders to pay penalties (thus, smaller penalties for the poor). There are, however, also disadvantages. For instance, the lack of any other forum of redressal in a customary dispute-resolution system makes it difficult for even genuinely aggrieved parties to get justice. In today's times, of course, they can approach statutory forums if their own customary ones let them down, but this is not always logistically

83 Excerpted from: Pant, Ruchi 1999, *Customs and Conservation: Traditional and Modern Law in Arunachal Pradesh, India, and Annapurna, Nepal*. Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project, Kalpavriksh, New Delhi and IIED, London. This paper was built on previous fieldwork undertaken by the author, on the results of other case studies in the South Asia Review, and on fresh fieldwork undertaken in 1998-99.

possible. Secondly, given the serious inequities that often pervade local communities (see Chapter 10), customary law can also be a means by which the dominant sections hold on to their power. Also, many statutory laws are often (but not necessarily) more progressive when it comes to fundamental human rights.

Detailed analysis of the above listed laws and instances reveals that existing conservation legislation is weak in local-level conflict resolution in both countries. Such resolution is still often effectively dealt with by customary modes, though in modern contexts this too frequently fails. At several sites, it is clear that rules and regulations evolved through a community process are difficult to administer beyond a point, especially if violators happen to be members of neighboring communities who do not recognise these rules and regulations.

The critical question then becomes: how can customary and statutory law be combined such that the positive elements are mutually strengthened, while avoiding a process of undermining each other?

The following measures are needed to make customary and statutory law complementary:

1. Customary and community laws need to be given official encouragement, including through their recognition in statutory law.
2. Provisions concerning neutral conflict-resolution mechanisms need to be incorporated into laws relating to natural resources.
3. Education about the law is required at all levels: at the community level about statutory laws, and at the level of official authorities about customary law. It is suggested that the Law Departments should engage in extension work to popularise law, while NGOs and others should document customary and community laws and make them available to the authorities.
4. Statutory policy and law-making need to be made much more participatory, opening them up to members of the public.
5. Further studies are required of judgements emanating from courts at all levels, in both countries, to determine how customary law has been dealt with by them, and how they have tried to relate customary law with statutory law.

3. Economic aspects of community wildlife management[84]

Though one often comes across assertions that community-based conservation (CBC) or community wildlife management (CWM) initiatives have improved the socio-economic status of the participating communities, these are not often backed up with systematic assessments of the relative costs incurred and benefits gained.

One of the important lessons of the Social Forestry project in India through the 1970s-80s, was that for an initiative to succeed in the long term, it must provide economic benefits (monetary/other) at the community level. To some extent this has been recognized by the subsequent Joint Forest Management (JFM) initiatives, which offer a share in revenues from timber and non-timber forest produce (NTFP). However, by and large, assured NTFP flows and greater control over resources, rather than timber or revenues, are what communities seem to want.

There are a whole series of direct/indirect benefits and costs that could potentially accrue to a community in a CBC or CWM initiative. These are:

- *Direct benefits:* Increased availability of products such as fuelwood, poles, timber, fodder grass, non-timber forest produce, and aquatic produce; reduced drudgery; revenue from various sources; employment generation; and infrastructure and development inputs.
- *Indirect benefits:* Improved flow in watercourses, higher groundwater table, and reduced soil erosion; stabilisation of the micro-climate; aesthetics and recreation; cultural benefits; reduction in distributional disparities; social and political control, empowerment and recognition.
- *Direct costs:* Efforts and resources involved in protecting an area of forest; loss of consumption opportunities from the forest area (opportunity costs).
- *Indirect costs:* Health and social impacts, including those relating to the temporary reduction in access to protected forest; increased conflicts, eg. between the protecting community and a neighbouring community which does not respect the protection rules; damage to crops, livestock, and humans by increasing wildlife.

It is important to identify the potential stakeholders who in some way will be affected by the conservation initiative. These could include:

- the local community involved directly with the CWM effort (and within that, different user groups, social groups, classes, etc.);
- neighbouring communities;
- formal local institutions such as *panchayats;*
- nomadic pastoralists and other communities that are mobile by profession;
- the Forest Department;
- national/global society and future generations.

[84] Excerpted from: Sangal, Sushil. *Does Community-Based Conservation Make Economic Sense? Lessons from India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London. Sources of information are available from the main paper.

An initial assessment seems to indicate that the existing policy/legal framework is not geared to favour CBC/CWM initiatives. However, this is changing now, for instance, with the Forest Policy of 1988, the Government of India circular and subsequent state notifications on JFM, and the proposed introduction of two new categories of protected areas in the draft amendments to the *Wild Life Act* which give communities a greater stake in conservation (see Chapter 5).

An economic assessment of CBC/CWM should involve the following:

- selection of one or more CWM initiatives for analysis and comparison;
- identification of key stakeholders in the selected CWM initiative(s);
- identification of potential benefits and costs;
- valuation of benefits and costs.

A visible and tangible stake is a must for the long-term success of any CBC/CWM programme. However, one will have to see the benefits and costs of conservation from the community's perspective to understand its motivation for participation. A community-centric economic analysis can be helpful for designing a successful conservation programme. Issues of intra-community differences need to be carefully looked at in this analysis. It is also important to understand how the broader policy framework, under which any conservation programme is operating, alters the conservation related benefits and costs of different stakeholders. Some of the possible methods for valuation of benefits and costs include:

Market Prices: Market price is a fair approximation of value in case of marketable goods/services. For example, the value of NTFP's collected for self-consumption can be calculated by finding out the quantity and the local market rate. In some cases shadow prices may be used to reflect the greater premium being put by the community on production of goods and services (such as medicinal plants) nearer to the village. This premium should also reflect the safety net role of forests in times of droughts and other emergencies.

Opportunity Costs: Costs associated with the protection effort (closure of forest) may be determined by analysing the best alternative foregone. This could include costs associated with patrolling the forest (other labour use (e.g. wages) foregone), foregoing fuelwood and fodder collection from the patch for self-consumption and/or sale (income foregone) and investing greater time and effort in collecting forest products (other employment foregone).

Productivity Analysis: For resources that are inputs in the production of marketable products (e.g. irrigation water and mulching material for agriculture crops), value can be estimated by the change in the value of the output of marketable products when all other inputs are kept constant. This will, of course, need accurate data which may not be easily available everywhere.

Financial Costs Saved: There may be financial cost-saving due to the conservation programme. For example, the life of a community irrigation tank may increase by several years due to reduced silting and the community may have to invest less time, labour and money in its maintenance. Or the Forest Department may have to employ fewer guards.

Residual Value Method: Some forest and wildlife products may not be directly marketable by themselves but their end products may be, eg. raingear made from a grass (*Aristida adscensionis*) and mats made from the leaves of Phoenix sylvestris. The value of such forest products can be obtained by deducting the value of all inputs other than the forest product from the price of the end product.

Substitution: Some wildlife and forest products are not traded in the market but have very close substitutes. For example, many wild tubers taste quite similar to potatoes and are used as a substitute for them. In such cases, the local price of the traded substitute can be taken as a fair approximation of the value of the wildlife or forest product.

Comparative Valuation: There are several wildlife and forest products that are usually consumed in the forest itself (eg. some berries, nuts, small animals). It is difficult to determine the exact quantities of such products. The valuation of such products can be done by comparing them with some other standard product consumed at home which has a market value.

Contingent Valuation: These are direct methods of valuing goods and services and are based on the assumption that the respondent understands the good/service to be valued and its contribution to his/her economic life. The common method is ask for the 'Willingness to Pay' of the respondents for certain good or service, though innovations like the 'Willingness to Accept' a certain amount in lieu of goods and services available from the forest have also been suggested.

One should always keep in mind the inherent assumptions and limitations of different tools and methods, especially while valuing conservation related benefits and costs. There are many aspects of community-based programmes that make the use of standard economic tools difficult. For instance, how does one value benefits like empowerment or costs like loss of cultural values? Similarly many community-based programmes have no particular time frame or clearly identifiable 'start' and 'end'. It is almost impossible to find out about all the inputs that went into a programme once it is a few years old. How does one do a cost-benefit analysis in such a case?

These outstanding issues need to be worked on and better methods need to be developed for valuing these benefits and costs. It is important to remember that economic valuation methods only provide the best estimate possible *subject to the limitations of methods, tools and data.* Still, this is preferable to decision-making based purely on *intuition*, that has come to characterise many community-based initiatives.

4. Indigenous knowledge and benefit-sharing: a case from India

The United Nations Convention on Biological Diversity (CBD), concluded at the Earth Summit in 1992, mandates that where utilisation of the knowledge of local and indigenous communities leads to benefits, such benefits shall be equitably shared with the holders of such knowledge. This assumes significance in light of a recent benefit-sharing agreement between the Tropical Botanic Garden and Research Institute (TBGRI), a government-established research institute based in the southern Indian state of Kerala, and the Kani tribals of the same state. This agreement is based on the development of a pharmaceutical drug, developed on the basis of the knowledge, information and the natural resources that the Kanis have nurtured for many years.

The history of the agreement and its implementation provides a clear illustration that such benefit-sharing measures and tacit intellectual property rights remain limited and myopic, in the absence of other fundamental rights such as the rights to land, access to the resource, and adequate governance structures.

The Benefit-sharing arrangement

A team of TBGRI scientists working under the All India Coordinated Research Project on Ethnobiology, was part of a botanical expedition into the forests of the Western Ghats of Southern Kerala, in December 1987. They were accompanied by a few men of the Kani tribe as guides. During the arduous treks across the forests the scientists noticed that the tribals constantly ate some fruits which kept them energetic and agile. When the exhausted scientists were offered these, they also felt a "sudden flush of energy and strength." When asked about the source of the fruit, however, the Kanis were reluctant to reveal it, saying that it was sacred information and a tribal secret. It was after much persuasion that they showed the plant from which the fruit (which they called *Aanogyappacha)* was obtained. The scientists then collected some specimens of the plant (*Trichopus zeylanicus)* to study its properties.

A detailed scientific investigation and pharmacological screening of the plant revealed the presence of certain glycolipids and non-steroidal compounds which had anti-stress, anti-hepatotoxic and immunodolatory/immunorestorative properties. Eventually, the drug Jeevani was formulated with this and three other medicinal plants as ingredients. Thereafter, a licence was given to manufacture Jeevani to Arya Vaidya Pharmacy (Coimbatore) Ltd. (a private company) for a period of seven years for a fee of Rs. one million (approximately $25,000). It was also decided that the Kani tribals would receive 50 per cent of the licence fee, as well as 50 per cent of the royalty obtained by TBGRI on sale of the drug.

Fears and concerns about the arrangement have been expressed by various governmental and non-governmental institutions and individuals. There is no uniformity in the Kanis' perception of the benefit-sharing proposed by TBGRI. The Kanis are no longer one cohesive unit or community. TBGRI has primarily been interacting with members of the tribe from one village panchayat area. Whilst these Kanis have been supportive of and appreciative of TBGRI's role, Kanis from other areas have expressed their misgivings about the arrangement, especially because TBGRI has not consulted them. From TBGRI's point of view, there was no legal

requirement, and they were not told of any customary requirement for seeking the permission of medicinal practitioners among the Kanis.

Regarding appropriation of tribal medical knowledge, TBGRI points out that tribal knowledge systems have always influenced other systems; that this particular instance of use of the Kanis' knowledge to manufacture Jeevani does not have the implication of hampering the traditional practices of the tribals. In addition, the institute emphasises that *Aarogyappacha* was never used for medicinal purposes by the tribals; that they consumed only the fruit as an energy-provider, whereas the medicinal properties of the plant have been identified in its leaves through research conducted by TBGRI.

This view, however, is open to criticism, firstly because TBGRI knew, on its own admission, that the knowledge about the plant was secret and sacred; second, TBGRI knew of the traditional structure and existence of the Plathis (a group of nine medicine men) among the Kanis who have specific knowledge of the flora and fauna of the region, and their medicinal value. Despite TBGRI's argument that *Aarogyapachcha* was not used as a medicine by the Kanis, this has been disputed in that use of the plant as part of a composite ecosystem is the medicinal heritage of the Kanis. The arrangement also raises serious questions about the ethics of obtaining "Prior Informed Consent" of the originator of a resource and information.

Objections to the arrangement have also been raised by the Kerala Institute for Research, Training and Development of Scheduled Castes and Scheduled Tribes (KIRTADS), a Government of Kerala undertaking. It feels that the only way tribal medicine can survive is by preserving its original form and premises, otherwise it is liable to be misused as a convenient resource base for other systems of medicine. TBGRI has also been severely criticised for the fee at which the rights to manufacture has been given to AVP. The 2 per cent royalty payable to TBGRI by AVP has also been questioned as being far too low.

A further critical issue concerns the Kanis' rights and control over the land they inhabit. Most of the forests in this area have been declared as Reserved Forest under the *Indian Forest Act, 1927*, thereby coming under the stricter jurisdiction of the Forest Department. The list of minor forest produce issued by the Forest Department does not include any part of *T. zeylanicus*, and it has been hesitant to grant permission to the tribals to grow and harvest the leaves of the plant. Their fear primarily stems from attempts by private concerns to smuggle the plant from the reserved forest area.

The fact that the Kanis do not have adequate and secure tenurial rights to the forest resources they live amongst and are dependent on the Forest Department's permission for the use of these resources, affects the efficacy of the arrangement. They also cannot do much about outsiders exploiting these resources; and in the absence of a stake in the conservation of the resources, the interference of outsiders may not be a source of concern to them. The issue of benefit sharing cannot be resolved unless these rights are assured, and unless the community is provided the legal means and incentives to conserve the resources for long-term sustainable benefit to themselves.

TBGRI and AVP believe that there are means to sustainably harvest the plants that are not being sufficiently explored. As of the time of writing this report however, there is no scheme for cultivation of the plant.

In November 1997, some of the Kanis got together, and with assistance from TBGRI, registered a trust called *Kerala Kani Samudaya Kshema Trust*. It consists entirely of tribals. The President and Vice-President of the Trust are the two Kanis who imparted knowledge to TBGRI regarding Aarogyappacha. The decision to form the trust was made in a local meeting of around 40 Kanis. The trust deed states the objectives of the Trust to be: welfare and development activities for Kanis in Kerala, preparation of a biodiversity register to document the knowledge base of the Kanis, and evolving and supporting methods to promote sustainable use and conservation of biological resources. TBGRI believes that formation of the Trust would result in greater involvement of the Kanis in the benefit sharing arrangement. However Kanis from a number of areas are yet to become part of the Trust.

Next steps

The following steps are necessary:

- Initiate communication with the Kanis from all parts of Thiruvananthapuramdistrict, and explore ways of involving them to a larger extent in the planning and implementation phases.
- Create a platform where Kanis (representing the various settlements),TBGRI, the Forest Department, KIRTADS and AVP can discuss the various aspects of the benefit sharing arrangement.
- Assess the potential ecological impact and economic feasibility of large scale cultivation and harvesting of the leaves of *Trichopus zeylanicus travancoricus*, and examine ways of harvest the leaves sustainably.
- Establish mechanisms to prevent piracy of the plant, and exploitation of the tribals by 'outside' interests.
- Examine ways in which the Forest Department and the Kanis can collaborate to safeguarde the area. Issues of land/forest rights and ownership, and providing tenurial security to the tribe should be considered.
- Examine schemes such as the one proposed by AVP for purchasing the leaves harvested by the tribals at a fair price.
- Explore schemes for involving Kanis in the actual production of Jeevani and for imparting the relevant technical training for the same.

Appendix 2

Key contacts and sources of information for the review[85]

Bangladesh

Syed Salamat Ali, Department of Forests
Shajahan Bhuiya
Saleemul Haq, Bangladesh Centre for Advanced Studies
Kazi Zaker Hussain, Wildlife Society of Bangladesh
M. Anwarul Islam, (formerly) IUCN Bangladesh
Md. Anwarul Islam, Institute of Life Sciences, Jahangirnagar University
G.M.M.E. Karim, Wildlife Conservation Society of Bangladesh
Munjurul H. Khan, Ministry of Environment and Forests
Anisuzzaman Khan, Nature Conservation Movement
Sakeba Khatun, Nature Conservation Movement
Farhad Mazhar, UBINIG
Hasna J. Moudud, Coastal Area Resource Development and Management Association
Haroun-er-Rashid, Bangladesh POUSH
S.M.A. Rashid, Centre for Advanced Studies in Natural Resources and Management
Amala Reddy, Bangladesh Centre for Advanced Studies

Bhutan

Kunzang Dorji, National Environment Commission, Royal Government of Bhutan
Seeta Giri, Save the Children Federation
Kin Gyeltshen, Forestry Service Division, Royal Government of Bhutan
Ugen Rahten, National Women's Association of Bhutan
Mingma Norbu Sherpa, formerly with WWF-Bhutan
Dechen Tshiring, National Environment Commission
Mincha Wangdi, Royal Society for the Protection of Nature

[85] Placed country-wise, alphabetically according to surname. Information was provided by these people through questionnaires, personal discussions or correspondence, and/or relevant documents. No questionnaires were sent for India nor were any of the persons listed met exclusively for the purpose of the Review, other than those involved in the case studies or theme paper writing. This is because the authors are already familiar with the work of several dozen individuals and groups in India, and were able to use it without referring back to these people.

India

Arvind Anjum, Dalma Mukti Vahini
R.V. Anuradha, Kalpavriksh
Abdhesh Gangwar, Centre for Environment Education - North-east
Vivek Gour-Broome, Kalpavriksh
Kanhaiya Gujar, Bhaonta village and Tarun Bharat Sangh
Mohan Hirabai Hiralal, Vrukshamitra
Raghu Jardhari, Jardhargaon village and Beej Bachao Andolan
Vijay Jardhari, Jardhargaon village and Beej Bachao Andolan
Arun Jindal, Society for Sustainable Development
Sara Jolly, Film-maker
Roshni Kutty, Kalpavriksh
K. Manu, Mysore Amateur Naturalists
Sunil Nautiyal, G.B. Pant Institute of Himalayan Environment and Development
Ruchi Pant, ATREE
Sushil Saigal, EcoTech Services
Rajiv Senwal, G.B. Pant Institute of Himalayan Environment and Development
D. Shridhar, Freelance ecologist
Rajender Singh, Tarun Bharat Sangh
Devaji Topa, Mendha (Lekha) village
Sanjay Upadhyay, Enviro-Legal Defence Firm

Nepal

Devendra Amatya, WWF -Nepal
Shyam Bajimaya, Department of National Parks and Wildlife Conservation, Govt. of Nepal
Siddartha B. Bajracharya, Annapurna Conservation Area Project, King Mahendra Trust for Nature Conservation
Kedar Basnet, Continental Research Forum
Anupam Bhatia, ICIMOD
Prabhu Budhathoki, Parks and People Project, Department of National Parks and Wildlife Conservation
Narayan P. Dhakal, King Mahendra Trust for Nature Conservation
Eric Dinerstein, WWF-US
Don Gilmour, formerly with IUCN-International
Amrit Lal Joshi, Ministry of Forests and Soil Conservation
Krishna K.C., Department of Geography, Tribhuvan University and Continental Research Forum
Krishna Prasad Oli, IUCN-Nepal
Surya Pandey, Department of National Parks and Wildlife Conservation
Egbert Pelinck, ICIMOD
Krishna Pd. Poudel, Continental Research Forum
Narayan Poudel, Department of National Parks and Wildlife Conservation
Arup Rajoria, King Mahendra Trust for Nature Conservation
Camille Richard, ICIMOD
Uday Raj Sharma, Ministry of Forests and Soil Conservation
Bharat Shrestha, Mobilisation and Development (MODE)
Krishna B. Shrestha, Forest Department
Mingma Norbu Sherpa, formerly with WWF-Nepal
Pralad Yonzon, Resources Nepal

Pakistan

Javed Ahmed, IUCN Pakistan
Shahid Amjad, National Institute of Oceanography
Tanveer Arif, SCOPE
Abdul A. Chaudhury, Punjab Wildlife and Parks
Mushtaq Gadi, SUNGI Development Foundation
Kent Jingfors, formerly with IUCN-Pakistan
Aban Marker Kabraji, IUCN-Pakistan
Ashiq Ahmed Khan, formerly with WWF-Pakistan
G.M. Khattak, Environment Section, PE & D Department

Sri Lanka

A.H.M.R. Abeyrathne, Organisation for Resource Development and Environment
M.D. Abeysisrigunawardana, Department of Zoology, University of Colombo
N. Attapatu, Department of Wildlife Conservation
Jayasinghe Balasooriya, Wayamba Govi Sanwardana Padanama
H.M. Bandaratillake, Forest Department
Torben Berner, IUCN-Sri Lanka
Jinasri Dadallage, Wildlife Trust of Sri Lanka
John Davenport, University of London
Lalanath De Silva, Environmental Foundation Limited
N.W. Dissanayake, Department of Wildlife Conservation
Suki Ekaratne, Dept. of Zoology, Univ. of Colombo
M.F.M. Falil, formerly with USAID
Kapila Fernando, IUCN-Sri Lanka
Ranjen L. Fernando, Wildlife and Nature Protection Society of Sri Lanka
Avanthi Jayatilake, Environment and Management Lanka (Pvt.) Lmt.
Sherine Jayawickrama, formerly with USAID
S.S. Jinendradasa, Department of Zoology, University of Colombo
Kithsiri Kannangara, Sea Turtle Protecting Association and Research Project
Sarath Kotagama, Department of Zoology, University of Colombo
G.L. Anandalal Nanayakkara, Attorney-at-Law
Nirmalie Pallewatta, IUCN-Sri Lanka
H.S. Panwar, formerly with FAO
H.N.R. Perera, Coast Conservation Department
J. Samarakoon, Central Environmental Authority
Hans van Zon, formerly with Central Environmental Authority
H.D.V.S. Vattala, Visitor Centre Muthurajawela
Jayantha Wickramanayake, Asia Foundation
H.J.M. Wickremeratne, formerly with USAID
L.C.A. de S Wijesinghe, formerly with IUCN-Sri Lanka
Dhraman Wickremaratne, Sri Lanka Environmental Journalists Forum
Hemantha Withanage, Environmental Foundation Ltd.

References

1. Citations for case studies undertaken for South Asia review

Case Study 1. Bhaonta-Kolyala, India

Shresth, S., with Shridhar Devidas. 1999. *Forest Revival and Traditional Water Harvesting: Community Based Conservation at Bhaonta-Kolyala, Rajasthan, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 2. Jardhargaon, India

Suryanarayanan, J. and Malhotra, P. with Semwal, R. and Nautiyal, S. 1999. *Regenerating Forests, Traditional Irrigation and Agro-biodiversity: Community Based Conservation in Jardhargaon, Uttar Pradesh, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 3. Mendha (Lekha), India

Pathak, N. with Gour-Broome, Vivek. 1999. *Tribal Self-Rule and Natural Resource Management: Community Based Conservation in Mendha (Lekha), Maharashtra, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 4. Kokkare Bellur, India

Manu, K. and Jolly, Sara. 1999. *Pelicans and People: The Two-Tier Village of Kokkare Bellur, Karnataka, India.* Case study for South Asian Regional Review of

Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 9. Annapurna, Nepal

Krishna, K.C., Basnet, Kedar and Poudel, K.P. 1999. *People's Empowerment Amidst the Peaks: Community Based Conservation at Annapurna Conservation Area, Nepal.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 12. Hushey Valley, Pakistan

Raja, Naeem Ashraf, with Ibrahim, M., Ali, Roze, and Aslam, M. 1999. *From Alienation to Ownership: Conservation and Development in Hushey Valley, Pakistan.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Case Study 14. Rekawa Lagoon, Sri Lanka

Ekaratne, S.U.K., Jinendradasa, S.S., Abeysisrigunawardana, M.D., and Davenport, J. 1997. *Coastal Conservation Through Enterprise: A Case Study of Rekawa Lagoon, Sri Lanka.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

2. Citations for theme papers prepared for South Asia Review

Theme Paper 1. Kothari, A. and Pathak, N. 1999. *Incentives for Community Based Conservation: South Asia Overview and the Legal Situation in India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project, Kalpavriksh, New Delhi and IIED, London.

Theme Paper 2. Pant, Ruchi. 1999. *Customs and Conservation: Traditional and Modern Law in Arunachal Pradesh, India, and Annapurna, Nepal.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Theme Paper 3. Saigal, Sushil. 1999. *Does Community-Based Conservation Make Economic Sense?* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Theme Paper 4. Anuradha, R.V. 1999. *Sharing the Benefits of Biodiversity: The Kani-TBGRI Deal in Kerala, India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

3. All Other References

Abeyrathne, A.H.M.R. 1997. *An Experience on Human-Elephant Conflict Management 1993-1997.* Organization for Resource Development and Environment. Sri Lanka.

Agarwal, C. and Saigal, S. 1996. *Joint Forest Management in India: A Brief Review.* Draft Paper for Discussion. Society for Promotion of Wasteland Development, New Delhi.

Ahmed, A. 1996. *Khunjerab National Park Management Plan.* WWF-Pakistan, Lahore.

Ahmed, A. 1997. *Case study material on Conservation of Chilghoza Forest Ecosystem in the Suleman Mountain Range, Baluchistan, Pakistan.* Unpublished.

Ahmed, J., Hayat, S., and Zafar, I. 1995. An Overview of the Karakoram environment and resources. In IUCN-Pakistan 1995. *Proceedings of the Karakoram Workshop: The First Consultative Workshop on the Central Karakoram National Park and World Heritage Site Nomination. Skardu, Pakistan, 28-29 September 1994.* IUCN-Pakistan, Karachi.

Ahmed, J. and Mahmood, F. 1998. *Changing perspectives on forest policy. Policy that Works for Forests and People series no. 1.* IUCN Pakistan and International Institute of Environment and Development, London

AKRSP (I). 1995. *Soliya Harvesting - Gender Perspective.* Mimeo. Ahmedabad. As cited in Sarin et.al. 1996.

Alfred, J.R.B., Das, A.K., and Sanyal, A.K. 1998. *Faunal Diversity in India.* Zoological Survey of India, Calcutta.

Ali, S.S. 1994. Conservation of Faunal Resources. In: Hussain, Z. and G. Acharya. (Eds.) 1994. *Mangroves of the Sundarbans. Volume Two: Bangladesh.* IUCN, Bangkok.Ali, S.S. and Ghulam, Habib M.D. 1998. Collaborative management of protected areas in Bangladesh (case studies). Paper presented at *Workshop on Collaborative Management of Protected Areas in the Asian Region,* Royal Chitwan National Park, Nepal, 25-28 May 1998.

Anon. 1996. *Conservation and Improvement of the Environment in Bangladesh: Situation and Prospects.* Draft paper presented at a seminar organised by Bangladesh Unnayan Parishad to mark the 25th Anniversary of the Independence of Bangladesh.

Anuradha, R.V. 1999. *Sharing the Benefits of Biodiversity: The Kani-TBGRI Deal in Kerala, India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Anuradha, R.V. 1999. Between the CBD and the TRIPs: IPRs and what it means for local and indigenous communities. Paper presented at the *International Workshop on Biodiversity Conservation and Intellectual Property Rights, 29-31 January, 1999,* New Delhi, RIS/Kalpavriksh/IUCN.

Bajpai, R.K. 1999. Free as a bird: The Kheechan phenomenon. *Sanctuary Asia,* XIX (1), February 1999.

Baldwin, M. (Ed.) 1991. *Natural Resources of Sri Lanka: Conditions and Trends.* Natural Resources, Energy and Science Authority of Sri Lanka and USAID, Colombo.

Batisse, M. 1993. Biosphere Reserves: An Overview. *Nature and Resources* 29 (1-4).

Baviskar, A. 1998. *Social Concerns in Ecodevelopment.* Paper presenteed at National Seminar on Ecodocumentation. Wildlife Institute of India, Dehra Dun, November 26-27, 1998.

Bhatt, S. 1998. Conservation Through Community Enterprise. In Kothari et.al. 1998.

Bhatt, S. and Kothari, A. 1997. *Protected Areas in India: Proposal for an Expanded System of Categories.* In Kothari et.al. 1997.

Borrini-Feyerabend, G. 1996. *Collaborative Management of Protected Areas: Tailoring the Approach to the Context.* IUCN, Gland.

Bunting, B.W., Sherpa, M.N., and Wright, R.M. 1991. *Annapurna Conservation Area: Nepal's New Approach to Protected Area Management.* In West and Brechin 1991.

Campbell, J. 1996. Personal Communication. As cited in Sarin et. al. 1996. *CANSA Newsletter.* Vol.2, No. 3, Jan.-Mar. 1993. Climate Action Network - South Asia

Capistrano, A.D., Hossain, M., and Ahmed, M. Undated. Poverty Alleviation, Empowerment and Sustainable Resource Use: Experiments in Inland Fisheries Management in Bangladesh. Unpublished ms.

Carter, J., Connelly, S. and Wilson, N. 1994. *Participatory Forestry in Sri Lanka: Why So Limited? Change on the Horizon.* Rural Development Forestry Network Paper 17b, Overseas Development Institute, London.

CCD. 1990/1996. *Coastal Zone Management Plan.* Coast Conservation Department (CCD), Colombo. (Revised in 1996).

CEA & Euroconsult. 1994. *Conservation Management Plan: Muthurajawela Marsh and Negambo Lagoon.* Wetland Conservation Project - Sri Lanka. Central Environmental Authority (CEA), Sri Lanka & Euroconsult, Netherlands.

Champion, H.G. and Seth, S.K. 1968. *A Revised Survey of Forest Types in India.* Manager of Publications, Government of India, Delhi.

Chandrashekara, U.M. and Sankar, S. 1998. Tribals and Conservation: Chinnar Sanctuary, India. In Kothari et.al.1998.

Chhatre, A., Sheshagiri Rao, P.R., Ghate, Utkarsh, Pramod P., Ganguly, A., and Gadgil, M. 1998. *Srishtigyaan: A Methodology Manual for People's Biodiversity Registers.* Srishti Jigyasa Parivar, Bangalore.

Chhetri, R.B. and T.R. Pandey. 1992. *User Group Forestry in the Far-Western Region of Nepal: Case studies from Baitadi and Achham.* ICIMOD, Kathmandu.

Chowdhury, R.A. and Ahmed, I. 1994. History of Forest Management. In: Hussain, Z. and G. Acharya. (Eds.) 1994. *Mangroves of the Sundarbans. Volume Two: Bangladesh.* IUCN, Bangkok.Christopher, K. 1997. Dalma Wildlife Sanctuary: Prospects for Joint Management. In: Kothari, A., Vania, F., Das, P., Christopher, K., and Jha, S (eds.). 1997. *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India.* Indian Institute of Public Administration, New Delhi.

Cipriani, L. 1966. *The Andaman Islanders.* Cited in Rao, S. 1996. *Treasured Islands: An Environmental Handbook for Teachers in the Andaman and Nicobar Islands.* Kalpavriksh, New Delhi and ANET, Madras.

CSE. 1982. *The State of India's Environment: A Citizen's Report.* Centre for Science and Environment, New Delhi.

Das, P. 1997. Kailadevi Wildlife Sanctuary: Prospects for Joint Management. In: Kothari, A., Vania, F., Das, P., Christopher, K., and Jha, S (eds.). 1997. *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India.* Indian Institute of Public Administration, New Delhi.

Datta, Soumyadeep. 1998. An NGO-initiated Sanctuary: Chakrashila, India. In: Kothari, A., Pathak, N., Anuradha, R.V., and Taneja, B. (eds.). 1998. *Communities and Conservation: Natural Resource Management in South and Central Asia.* Sage Publications and UNESCO, New Delhi.

DeCosse, P.J. and Jayawickrama, S. 1998. Issues and Opportunities in Co-Management: Lessons from Sri Lanka. In Kothari et.al. 1998.

Desai, K., Sachdeva, S., Lall, J., Jindal, A., Sherasiya, A., and Joshi, M. 1996. Human Resource Development for Joint Protected Area Management. In Kothari et.al. 1996.

Desmond, Dennis F. 1996. *Current Concepts in Community Forestry.* Social Forestry and Extension Section, Forestry Services Division, Ministry of Agriculture, Royal Government of Bhutan, Thimphu.

Dhar, B. and Chaturvedi, S. 1999. Implications of the Regime of Intellectual Property Protection for Biodiversity: A Developing Country Perspective. Paper presented at the International Workshop on Biodiversity Conservation and Intellectual Property Rights, 29-31 January, 1999, New Delhi, RIS/Kalpavriksh/IUCN.

DNPWC and WMI. 1990a. The Makalu-Barun National Park and Conservation Area: Management Plan. Department of National Parks and Wildlife Conservation (DNPWC), Kathmandu and Woodland Mountain Institute (WMI), Franklin.

DNPWC and WMI. 1990b. Threatened Wildlife, Crop and Wildlife-Depredation and Grazing in the Makalu-Barun Conservation Area. Report 12: The Makalu-Barun Conservation Project Working Paper Publication Series. Department of National Parks and Wildlife Conservation (DNPWC), Kathmandu and Woodland Mountain Institute (WMI), Franklin.

DNPWC and WMI. 1992a. Conceptual Model for Activating User's Groups in the Makalu-Barun Area. Report 21: The Makalu-Barun Conservation Project Working Paper Publication Series. Department of National Parks and Wildlife Conservation (DNPWC), Kathmandu and Woodland Mountain Institute (WMI), Franklin.

DNPWC and WMI. 1992b. Status of Community Needs, Resources and Development: Solukhumbu District. Report 20: The Makalu-Barun Conservation Project Working Paper Publication Series. Department of National Parks and Wildlife Conservation (DNPWC), Kathmandu and Woodland Mountain Institute (WMI), Franklin.

DNPWC and WMI. 1993. *The Makalu-Barun Conservation Project (Annual Report 1993).* Department of National Parks and Wildlife Conservation (DNPWC) and Woodlands Mountain Institute (WMI), Franklin.

DNPWC. 1995. Dhorpatan Hunting Reserve. Department of National Parks and Wildlife Conservation, Nepal. (pamphlet)

DNPWC. 1996. *Parks and People Project NEP/94/001: Status Report (January 1995-June 1996).* Department of National Parks and Wildlife Conservation (DNPWC), and UNDP.

DNPWC. 1997. An Overview of Parks and People Project NEP/94/001. Department of National Parks and Wildlife Conservation (DNPWC), Kathmandu and UNDP.

DNPWC. 1997. Parks and People Programme Annual Report 1997. Department of National Parks and Wildlife Conservation, Kathmandu.

Dorji, K. 1997. Nature Conservation in Bhutan: A Case Study of Jigme Dorji National Park. Paper presented at South Asia Regional Workshop on Community-based Conservation : Policy and Practice. Indian Institute of Public Administration, New Delhi, 9-11 February 1997.

Dutfield, G. 1999. Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties. Paper commissioned for IUCN Project on The Convention on Biological Diversity and the International Trade Regime. Unpublished.

Ekaratne, S.U.K., Jinendradasa, S.S., Abeysisrigunawardana, M.D., and Davenport, J. 1997. *Coastal Conservation Through Enterprise: A Case Study of Rekawa Lagoon, Sri Lanka.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

EPC. 1993. *Nepal Environmental Policy and Action Plan: Integrating environment and development.* His Majesty's Government of Nepal, Environmental Protection Council (EPC), Kathmandu.

FAO. 1991. Second Interim Report on the State of Tropical Forests by Forest Resources Assessment 1990 Project. Tenth World Forestry Congress, September 1991, Paris.

Fernandes, W. (ed.). 1996. *Drafting a People's Forest Bill.* Indian Social Institute, New Delhi.

Fernandes, W., Menon, G., and Viegas, P. 1988. *Forests, Environment and Tribal Economy: Deforestation, Impoverishment, and Marginalisation in Orissa.* Indian Social Institute, Delhi.

Fisher, R.J. 1991. Studying Indigenous Forest Management Systems in Nepal: Toward a More Systematic Approach. Environment and Policy Institute, East-West Centre, Honolulu.

Forest Survey of India. 1997. *State of Forests Report, 1997.* Ministry of Environment and Forests, Dehradun.

FPU. 1995a. *Sri Lanka Forestry Sector Master Plan.* Forestry Planning Unit (FPU), Ministry of Agriculture, Lands & Forestry, Colombo.

FPU. 1995b. *Sri Lanka Forestry Sector Master Plan: National Forestry Policy and Executive Summary.* Forestry Planning Unit (FPU), Ministry of Agriculture, Lands & Forestry, Colombo

Fuller, S. 1995. Towards a Management Planning Process for the Central Karakoram National Park and World Heritage Site. In IUCN-Pakistan 1995.

Gadgil, M 1987. *Culture, Perceptions and Attitudes to The Environment.* Technical Report No. 30. Centre for Ecological Sciences, Indian Institute of Science, Bangalore.

Gadgil, M. 1996. People's Biodiversity Register: A Record of India's Wealth. *Amruth* Vol. 1 Issue 5, October 1996.

Gadgil, M. and Guha, R. 1992. *This Fissured Land.* Oxford University Press, New Delhi.

Gadgil, M. and Joshi, N. 1994. Assessment of Biosphere Reserves Programme. Report submitted to the Ministry of Environment and Forests, Government of India. Unpublished.

Gadgil, M. and Guha, R. 1995. *Ecology and Equity: The Use and Abuse of Nature in Contemporary India*. Penguin Books, New Delhi.

Garratt, Murphree, and Shirazi. 1997. Maintaining Biodiversity in Pakistan with Rural Community Development: Report of the Independent Evaluation/Formulation Mission. UNDP.

Gilmour, D A. 1990. Resource Availability and Indigenous Forest Management Systems in Nepal. *Society and Natural Resource* Vol 3.

Gilmour D A and R.J. Fisher. 1992. *Villages, Forests and Foresters: The Philosophy, Process and Practice of Community Forestry in Nepal*. Sahayogi Press, Kathmandu.

Gokhale, Y., Velankar R., Subash Chandran, M.D., and Gadgil, M. 1997. Sacred Woods, Grasslands and Waterbodies as Self-organised Systems of Conservation. RANWA, Pune. Unpublished.

GoNWFP. 1997. *Sarhad Provincial Conservation Strategy*. IUCN-Pakistan Sarhad Programme Office (SPO), Peshawar -248 PP.

Goodwin, H.J., Kent, I.J., Parker, K.T., and Walpole, M.J. 1997. Tourism, Conservation and Sustainable Development, Volume II: Keoladeo National Park. Unpublished.

Gujja, Biksham and Pimbert, M. Undated. Community Based Planning for Wetland Management: Lessons from the Uechali Complex in Pakistan. WWF-International. Gland.

GoP. 1998. *Biodiversity Action Plan for Pakistan*. Ministry of Environment, Local Government and Rural Development, Islamabad.

GoP/IUCN-Pakistan. 1991. *The Pakistan National Conservation Strategy*. IUCN-Pakistan and Environment & Urban Affairs Division, Government of Pakistan, Karachi.

GoP/IUCN-Pakistan. 1992. *The Pakistan National Conservation Strategy*. IUCN-Pakistan and Environment & Urban Affairs Division, Government of Pakistan, Karachi.

Government of India. 1997. *Statistical Abstract India 1997*. Central Statistical Organisation, Department of Statistics, Ministry of Planning and Programme Implementation, Government of India, New Delhi.

Gupta, A. 1996. Rewarding Creativity for Conserving Diversity in Third World: Can IPR Regime Serve the Needs of Contemporary and Traditional Knowledge Experts and Communities in Third World. Working Paper 1339. Indian Institute of Management, Ahmedabad.

Gurung, G. 1995. Indigenous Resource Management System of Manang Village in North Central Nepal: A Case Study and a Project Proposal. Paper Prepared for the Participatory Seminar-cum-Workshop to Develop Projects on Resource Management and Sustainable Livelihoods for Traditional Societies, Faislabad, Pakistan.

Hayley, F.A. 1923. *The Laws and Customs of the Sinhalese or Kandyan Law*. Navrang, New Delhi (1993 reprint).

Biralal, M.H. and Tare, S. Undated. Forests and People: A Participatory Study on Food, Fuel, Fodder, Fertiliser, Water, and Employment in 22 Villages of Dhanora Tehsil, Gadchiroli. Vrikshamitra, Gadchiroli, Maharashtra.

HMG. 1995. Operational Guidelines for Community Forestry Development Programme (2051). Department of Forests, Ministry of Forests and Soil Conservation, His Majesty's Government, Kathmandu.

HMG/IUCN. 1988. *Building on Success: The National Conservation Strategy for Nepal.* His Majesty's Government of Nepal and IUCN - The World Conservation Union, Kathmandu.

HSAM. 1996. *Special Area Management Plan for Hikkaduwa Marine Sanctuary and Environs, Sri Lanka.* Hikkaduwa Special Area Management and Marine Sanctuary Coordination Committee, Coastal Resources Management Project, Coast Conservation Department, and National Aquatic Resources Agency, Colombo.

Hussain, Z. and G. Acharya. (Eds.) 1994. *Mangroves of the Sundarbans. Volume Two: Bangladesh.* IUCN, Bangkok.

HVO. 1997. *Ibex Conservation Plan, Hushey Valley (Ghanche District).* Hushey Village Organisation (HVO) and IUCN-Pakistan.

IBWL. 1983. *Eliciting Public Support for Wildlife Conservation.* Report of the Task Force, Indian Board for Wildlife, Government of India, New Delhi.

IUCN-Nepal. 1996. *IUCN Nepal Vision Statement.* IUCN-Nepal, Kathmandu.

IUCN-Pakistan. 1995. *Proceedings of the Karakoram Workshop: The First Consultative Workshop on the Central Karakoram National Park and World Heritage Site Nomination. Skardu, Pakistan, 28-29 September 1994.* IUCN-Pakistan, Karachi.

IUCN-Pakistan. 1996. *The Nature of Pakistan: A Guide to Conservation and Development Issues.* IUCN - The World Conservation Union, Gland, and WWF-Pakistan, Lahore.

IUCN-Pakistan, UNDP and GoP. 1997a. Maintaining Biodiversity in Pakistan with Rural Community Development. Annual Progress Report January - December 1997. IUCN-Pakistan Programme, UNDP and Government of Pakistan, Karachi.

IUCN -Pakistan, UNDP and GoP. 1997b. Biological Diversity in Pakistan. IUCN Pakistan, UNDP & Govt of Pakistan, Karachi.

Jackson Rodney, Nepali Hari Saran and Sherpa Ang Ritu. n.d. Aspects of Wildlife Protection and Utilization in the Makalu-Barun Conservation Area. DNPWC, Kathmandu and Woodland Mountain Institute, Franklin.

Jamal, N. 1996. Getting the Balance Right at Khunjerab. *Dawn*, 1 December, 1996.

Jayatilake, A, Pallewatte, N., and Wickramanayaka, J. 1997. Sri Lanka Country Report. Paper presented at Regional Workshop on Community-based Conservation: Policy and Practice. Indian Institute of Public Administration, New Delhi, 9-11 February 1997.

Jerdon.T.C. 1864. *The Birds of India* Vol. 2, Jerdon, Calcutta.

Johari, Radhika. 1993. Review of Findings and Recommendations of Rapid Socio-Economic Surveys Conducted in and around Manas National Park and Proposed Black Mountains-Manas Area. WWF-Bhutan, Thimphu.

JPAM Update: News Towards Joint Protected Area Management. Kalpavriksh, Pune.

Kalpavriksh and others. 1999. Intervention in WWF-India vs. Union of India and others (writ petition (civil) no. 337 of 1995).

Karnacharya, S.C. 1987. Community Forestry Management, Experiences of the Community Forestry Development Project. *Banko Janakari* 1(4): 30-36.

Kemf, E. 1993. *Law of the Mother: Protecting Indigenous Peoples in Protected Areas.* Sierra Club Books, San Francisco.

Kenting Earth Science Report. 1984. Land Resources Mapping Project, Water Resources Report.

Khan, M.A.R. 1982. *Wildlife of Bangladesh.* University of Dhaka, Dhaka.

Khanna, S.K. and Sudarshan, K.N. 1997. *Encyclopaedia of South Asia: Pakistan.* A.P.H. Publishing Corporation. New Delhi.

Khare, A. 1998. Community-based Conservation in India. In Kothari et.al. 1998.

Khattak, G.M. 1998. Community-Based Conservation: Experiences from Pakistan. In Kothari et.al. 1998.

Khobragade, S. Undated. Ek Gaon Saigata: Van Saurakshanasathi Gram Sabhecha Sangharsh ('A Village Saigata: One Village Assembly's Struggle to Protect Forests'). Unpublished note in Marathi, facilitated by H.B. Ingle.

Kothari, A. 1996. Environment and the New Economic Policies. *In Alternative Economic Survey 1995-96.* Alternative Survey Group and Delhi Science Forum, Delhi.

Kothari, A. 1997. *Understanding Biodiversity: Life, Equity, and Sustainability.* Tracts for the Times. Orient Longman. Delhi.

Kothari, A. 1999. To Save the Sanctuaries. *Frontline*, July 30, 1999.

Kothari, A. and Das, P. 1998. Local Community Knowledge and Practices: Implications for Biodiversity. *2nd Congress on Traditional Sciences and Technologies of India, 26-31 December 1995, Chennai: Selected Papers, Vol. 1.* PPST Foundation, Chennai, India. Abridged version in Posey, D.A. (ed.). 1999. Cultural and Spiritual Values of Biodiversity. A Complementary Contribution to the Global Biodiversity Assessment. UNEP, Nairobi and Intermediate Technology Publications. London.

Kothari, A., Pathak, N., Anuradha, R.V., and Taneja, B. (eds.). 1998. *Communities and Conservation: Natural Resource Management in South and Central Asia.* Sage Publications and UNESCO, New Delhi.

Kothari, A. and Pathak, N. 1999. *Benefit-sharing and Incentives for Community-Based Conservation: Legal Implications.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh. New Delhi and IIED, London.

Kothari, A., Singh, N., and Suri, S. (eds.). 1996. *People and Protected Areas: Towards Participatory Conservation in India.* Sage Publications, New Delhi.

Kothari, A., Suri, S. and Singh, N. 1995. Conservation in India: A new Direction. *Economic and Political Weekly.* October 28, 1995.

Kothari, A., Vania, F., Das, P., Christopher, K., and Jha, S (eds.). 1997. *Building Bridges for Conservation: Towards Joint Management of Protected Areas in India.* Indian Institute of Public Administration, New Delhi.

Kothari, R. 1995. Perspectives on Decentralisation. *Vikalp.* Vol.IV. No.2.

Knudsen, A.J. 1996. Outmoded Relics or Effective Conservation Measures: National Parks and Problems of Nature Conservation in Northern Pakistan. Paper prepared for the workshop "Nature Conservation and Human Rights in Asia", September 26-28, 1996, Oslo.

Krishna, K.C., Basnet, Kedar, and Poudel, K.P. 1999. *People's Empowerment Amidst the Peaks: Community Based Conservation at Annapurna Conservation Area, Nepal.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED. London.

Krishnan, B.J. 1996. Legal Implications of Joint Management of Protected Areas. In Kothari et.al. 1996.

Kurup, V.S.P. (eds.). 1996. *New Voices in Indian Forestry.* Society for Promotion of Wastelands Development, New Delhi.

Lele, S. 1996. Environmental Governance. *Seminar*. February 1996.

Lele, S., Murali, K.S., and Bawa, K.S. 1998. Community Enterprise for Conservation in India: Biligiri Rangaiaswamy Temple Santuary. In Kothari et.al. 1998.

Lowry, K., Pallewatta, N., and Dainis, A.P. 1997. *Special Area Management Projects at Hikkaduwa and Rekawa: A Preliminary Assessment.* Coastal Resources Management Project. Sri Lanka.

Lynch, O.J., and Alcorn, J.B. 1994. Tenurial Rights and Community-based Conservation. In Western and Wright (eds.) 1994.

Lynch, O.J. and Talbott, K. 1995. *Balancing Acts: Community Based Forest Management and National Law in Asia and the Pacific.* World Resources Institute, Washington D.C.

Manu, K. and Jolly, S. 1999. *Pelicans and People: The Two-Tier Village of Kokkare Bellur, Karnataka, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.

Mendis, D.L.O. n.d. The Value of Indigenous Knowledge: The Case of Water & Soil Conservation in Sri Lanka. Forest Department, Ministry of Lands, Irrigation & Mahaweli Development.

Metcalfe, S. 1994. The Zimbabwe Community Areas Resource Management Programme for Indigenous Resources (CAMPFIRE). In Western and Wright 1994.

Miller, K. 1996. *Balancing the Scales: Guidelines for Increasing Biodiversity's Chances through Bioregional Management.* World Resources Institute, Washington D.C.

Ministry of Environment & Forests. 1990. *National Strategy for Conservation and Sustainable Development: Report of the Core Team.* Government of India. New Delhi.

Ministry of Environment and Forests. 1994. *Conservation of Biological Diversity in India: An Approach.* Government of India, New Delhi.

Ministry of Environment and Forests. 1998. *Implementation of Article 6 of the Convention on Biological Diversity: National Report.* Government of India, New Delhi.

Mock, J. and O'Neil, K. 1996. Survey of Ecotourism Potential in the Biodiversity Project Area. IUCN Pakistan.

MoEF Bangladesh. 1991. *Towards Sustainable Development: The National Conservation Strategy for Bangladesh.* Ministry of Environment and Forests, Government of Bangladesh, and IUCN - Bangladesh. Dhaka.

MoEF Bangladesh. 1995. *National Environment Management Action Plan (NEMAP) Volume 1a: and 2.* Ministry of Environment and Forests. Government of Bangladesh, Dhaka.

MSFD. 1998. *Proceedings of Workshop on Biodiversity Conservation in Maharashtra: Vision Beyond 2000.* Maharashtra State Forest Department, Government of Maharashtra. Nagpur.

MTEWA. 1995. Strategy for the Preparation of a Biodiversity Action Plan. Ministry of Transport, Environment, and Women's Affairs. Colombo.
Murty, M.N. 1996. Contractual Arrangements for Sharing Benefits from Preservation: Joint Management of Wildlife. In Kothari et.al. 1996.
Myers, N. 1988. Threatened Biotas: 'Hot-Spots' in Tropical Forests. The Environmentalist 8(3):187-208.
Myers, N. 1990. The Biodiversity Challenge: Expanded Hot-Spot Analysis. *The Environmentalist* 10:243-256.
NACOM. Undated. Brochure of the Nature Conservation Movement, Dhaka, Bangladesh.
Nakashima, Steven. n.d. An Analysis of the Human-Elephant Conflict Project at Kahalla Pallekele.
Nanayakkara, G.L. Anandalal. 1987. The Status of Community Forestry in Sri Lanka. In Stevens, M.E. (ed.). *Regional Community Forestry Training Cntre for Asia-Pacific*. Report of a Seminar on Regional Communit Forestry Training Centre for Asia-Pacific. RECOFTC Report: 1, Bangkok.
Nanayakkara, G.L. Anandalal. 1996. Common Property Utilisation and Development. *Soba* 6(1):36 42, January 1996.
Naqi, S.A. 1989. Licensing Versus Leasing System for Fishing Access. In Aguero, M., Huq, S., Rahman, A.K.A., and Ahmed, M. (eds.). *Inland Fisheries Management in Bangladesh*. Department of Fisheries, Dhaka, Bangladesh Centre for Advanced Studies. Dhaka, and International Centre for Living Aquatic Resources Management, Manila.
NEC. 1992. *Bhutan: Towards Sustainable Development in a Sustainable Environment*. National Environment Commission (NEC), Thimphu.
NES. 1992. *Bhutan: Towards Sustainable Development in a Unique Environment*. National Environmental Secretariat (NES). Planning Commission. Thimphu.
Nijar, G.S. 1996. *In Defence of Biodiversity and Indigenous Knowledge: A Conceptual Framework and the Essential Elements of a Rights Regime*. Third World Network, Malaysia.
Niven, Christine, Noble, John, Forsyth, Susan and Wheeler, Tony. 1996. *Sri Lanka: A Lonely Planet Travel Survival Kit*. Lonely Planet Publication, Hawthorn, Australia.
Oli, K.P. 1998. *Conflict Resolution and mediation in Natural Resource Management in Nepal*. IUCN Nepal, Kathmandu
Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, Cambridge.
Pakistan Forest Institute (1996). Forestry Statistics of Pakistan. Peshawar.
Palit, S. 1996. *Comparative Analysis of Policy and Institutional Dimensions of Community Forestry in India and Nepal*. Discussion Paper Series no. MNR 96/4, ICIMOD, Kathmandu.
Panday, K.K. 1997. *Jara Juri: Going to the Roots*. Jara Juri Trust, Jawalakhel, Nepal.
Pant, R. 1999. *Customs and Conservation: Traditional and Modern Law in Arunachal Pradesh, India, and Annapurna, Nepal*. Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its *Evaluating Eden* Project. Kalpavriksh, New Delhi and IIED, London.
Pardeshi, P. 1996. Conserving Maharashtra's Biodiversity through Ecodevelopment. In Kothari et.al 1996.

Pathak, N. with Gour-Broome, V. 1999. *Tribal Self-Rule and Natural Resource Management: Community Based Conservation in Mendha (Lekha), Maharashtra, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

People and Biodiversity, March 1997. IUCN-Pakistan, Gilgit, Pakistan.

Pimbert, M.P. and Gujjar, B. 1997. Village Voices Challenging Wetland Management Policies: Experiences in Participatory Rural Appraisal from India and Pakistan. Nature and Resources Vol. 33(1): 34-42.

Pimbert, M. and Pretty, J. 1998. Diversity and Sustainability in Community-Based Conservation. In Kothari et.al. 1998.

Poffenberger, M. 1994. The Resurgence of Community Forest Management in Eastern India. In Western and Wright 1994.

Poffenberger, M. and Singh, C. 1996. Communities and the State: Re-establishing the Balance in Indian Forest Policy. In Poffenberger and McGean 1996.

Poffenberger, M. and McGean, B. 1996. Village Voices, Forest Choices: Joint Forest Management in India. Oxford University Press, New Delhi.

Poole, P. 1995. *Indigenous Peoples, Mapping and Biodiversity Conservation.* Biodiversity Support Programme, Washington D.C.

Posey, D. and Dutfield, G. 1996. *Beyond Intellectual Property Rights.* International Development Research Centre, Ottawa.

RAFI Communique. Annual "Biopiracy Update". Rural Foundation Advancement International, Winnipeg.

Rahman, Dr. A. 1995. Environment Management Planning: Human Resource Development with Particular Reference to Gender Issue. Paper presented at Workshop on Incorporation of Nature Conservation Issues and Concerns in the National Planning and Policy Making Processes, 26-28 December 1995, Dhaka.

Raja, Naeem Ashraf. 1999. *From Alienation to Ownership: Conservation and Development in Hushey Valley, Pakistan.* Case study report for Phase II of South Asia Regional Review of Community Initiatives in Conservation. Mimeo.

Ramakrishnan, P.S. 1998. *Conserving the Sacred: Ecological and Policy Implications.* In Kothari et.al. 1998.

Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M. (eds.). 1998. *Conserving the Sacred for Biodiversity Management.* UNESCO and Oxford & IBH Publishing Co., New Delhi.

Rao, Kishore. 1999. Collaborative Management of Protected Areas in India. *Policy Matters* (Newsletter of the IUCN Commission on Environmental, Economic and Social Policy), Issue No. 5, July 1999.

Rashid, S. 1996. A Brave Rescue Bid. *The News,* 29 November, 1996.

Rathore, B.M.S. 1997. New Partnerships for Conservation. Paper presented at the Regional Workshop on Community-Based Conservation, February 9-11, 1997, Indian Institute of Public Administration, New Delhi.

RGoB. 1995. *Royal Manas National Park, Bhutan: Conservation Management Plan. 1995-2000.* Nature Conservation Section, Forestry Services Division, Royal Government of Bhutan, Thimphu.

RGoB. 1996. *Jigme Dorji National Park, Bhutan: Conservation Management Plan, 1996-97 to 2000-01.* Nature Conservation Section, Forestry Services Division, Royal Government of Bhutan, Thimphu.

RGoB and UNDP. 1996. *Social Forestry Field Manual No. 2: Planning Together : Using Participatory Rural Appraisal in the Planning Stage of Community Forestry.* Social Forestry and Extension Section, Forestry Services Division, Ministry of Agriculture, Royal Government of Bhutan, with UNDP.

RLEK and PRIA. 1993. Report on National Workshop on Declining Access and Control over Natural Resources in National Parks and Sanctuaries. Forest Research Institute, Dehradun, 28-30 October, 1993. Rural Litigation and Entitlement Kendra (RLEK), Dehradun, and Society for Participatory Research in Asia (PRIA), New Delhi.

Rodgers, W.A. and Panwar, H.S. 1988. *Planning a Wildlife Protected Area Network in India.* Wildlife Institute of India, Dehradun.

Rodgers, W.A. and Uprety, B.K. 1997. Parks and People Project (GEF Biodiversity Conservation Project NEP/94/001): Report of the Mid-term Evaluation. Summary. United Nations Development Programme, Nepal.

Rosario, E.A. 1997. Conservation Management Plan, Manual for Protected Areas in Bangladesh. GOB/WB Forest Resources Management Project. Mandala Agricultural Development Corporation, Forest Department, Dhaka.

Roy Burman, B.K. 1997. *Seventy Third and Seventy Fourth Amendments to the Constitution: Public Discourse and State Response.* PRI Occasional Paper No. 1. Society for Participatory Research in Asia, New Delhi.

RSAM. 1996. *Special Area Management for Rekawa Lagoon, Sri Lanka.* Rekawa Special Area Management Coordinating Committee, Coastal Resources Management Project. Coast Conservation Department, National Aquatic Resources Agency, Colombo.

Saifullah, S.M. 1997. *Management of the Indus Delta Mangroves.* In Haq, B.U. et. al (eds) Coastal Zone Management Imperative for Maritime Developing Nations.

Saigal, Sushil. 1997. Beyond Experimentation : Emerging Issues in the Institutionalization of Joint Forest Management in India. Society for Promotion of Wastelands Development, New Delhi.

Saigal, Sushil. 1999. *Does Community-Based Conservation Make Economic Sense?* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Samarakoon, J. 1995. Participatory Planning and Integrated Coastal Management for an Estuarine-Peat Marsh Ecosystem in Sri Lanka. Paper presented at a Workshop on Coastal and Marine Environmental Management, 27-29 March, 1995, Bangkok.

Santiapillai, C. 1997. Balancing Elephant Conservation with Human Interests. *Daily News*, 6 August, 1997.

Sarin, M., with Ray, L., Raju, M.S., Chatterjee, M., Bannerjee, N., and Hiremath, S. 1996. *Who is Gaining? Who is Losing? Gender and Equity Concerns in Joint Forest Management.* Gender and Equity Sub-Group, National Support Group for JFM. Society for Promotion of Wasteland Development, New Delhi . Shorter version, titled 'Gender and Equity Concerns in Joint Forest Management'. in Kothari et.al. 1998.

Sarin, M. and SARTHI. 1994. The View from the Ground: Community Perspectives in Joint Forest Management in Gujarat, India. Paper presented at the IIED Symposium: In Local Hands : Community-based Sustainable Management, Sussex, July 4–8, 1994. As cited in Sarin et.al. 1996.

Scott, D.A. and Poole, C.M. 1989. *Directory of Asian Wetlands.* Asian Wetlands Bureau. Kuala Lampur.

Shankar, D. and Majumdar, B. 1998. Beyond the Biodiversity Convention: The Challenges Facing the Biocultural Heritage of India's Medicinal Plants. *2nd Congress on Traditional Sciences and Technologies, 26-31 December 1997, Chennai, Selected Papers Vol. I: Agriculture and Livestock Management. Water Management. Biodiversity.* PPST Foundation, Chennai.

Sharma, Devinder. 1994. *GATT and India: The Politics of Agriculture.* Konark Publishers, Delhi.

Sharma, Uday Raj. 1998. Country Paper - Nepal. Paper presented at the Workshop on Collaborative Management of Protected Areas in the Asian Region, 25-29 May 1998, Royal Chitwan National Park, Nepal.

Shengji, Pei. (Ed.) 1995. *Banking on Biodiversity: Report on the Regional Consultation on Biodiversity Assessment in the Hindu-Kush Himalayas.* ICIMOD, Kathmandu.

Sherpa, M.N. nd. Biodiversity Conservation in Bhutan. Mimeo.

Sherpa, M.N. 1993. Grass Roots in a Himalayan Kingdom. In Kemf 1993.

Sherpa, M.N., Coburn, B. and Gurung, C.P. 1986. *Annapurna Conservation Area Project: Operational Plan.* King Mahendra Trust for Nature Conservation, Kathmandu.

Shiva, V. 1995. *Captive Minds. Captive Lives: Ethics, Ecology and Patents on Life.* Research Foundation for Science, Technology and Natural Resource Policy. Dehra Dun.

Shiva, V., Jafri, A.H., Bedi, G., and Holla-Bhar, R. 1997. *The Enclosure and Recovery of the Commons.* Research Foundation for Science, Technology and Ecology, New Delhi.

Shiva, V. and Karir, G. 1997. Towards Sustainable Agriculture: Chemmeenkettu. Research Foundation for Science, Technology and Ecology, New Delhi.

Shresth, S., with Shridhar Devidas. 1999. *Forest Revival and Traditional Water Harvesting: Community Based Conservation at Bhaonta-Kolyala, Rajasthan, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Shrestha, T.B. 1995. Conservation of Biodiversity in Nepal: Approaches of IUCN Nepal. In Shengji, Pei (Ed.)

Shrestha, B. 1998. Involving Local Communities in Conservation: The Case of Nepal. In Kothari et.al. 1998.

Shrestha, B.K. 1996. *Nepal Madhyasthata Samuha: Community Forestry in Nepal-An overview of conflicts.* ICIMOD. Kathmandu.

Singh, R.P., Bhattacharya, P., Roy, S.B., Yadav, G., and Mahapatra, S. 1995. Community Forestry: A Case Study from Kudada, Bihar. In Roy, S.B. (ed.). 1995. *Experiences from Participatory Forest Management.* Inter-India Publications, New Delhi.

Singh, Rajendra. 1998. People's Protected Areas: Alwar District, India. In Kothari et.al. 1998.

Slavin, T. 1993. Survival in a Vertical Desert. In Kemf 1993.

Subramanya, S. and Manu, K. 1996. Saving the Spotbilled Pelican. Hornbill. No.2/96, Bombay Natural History Society. Bombay.

Suryanarayanan, J. and Malhotra, P. with Semwal, R. and Nautiyal, S. 1999. *Regenerating Forests. Traditional Irrigation and Agro-biodiversity: Community Based Conservation in Jardhargaon, Uttar Pradesh, India.* Case study for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh, New Delhi and IIED, London.

Suri, S. 1996. Peoples Involvement in Protected Areas: Experiences from abroad and lessons from India. In Kothari et. al. 1996.

Tiwari, N.R. 1998. Biodiversity Conservation in Nepal. *In Eco-regional Cooperation for Biodiversity Conservation in the Himalaya.* UNDP, WWF and ICIMOD, Kathmandu

Tsering, Dechen. 1996. The Bhutanese Experience of Managing Natural Resources. Paper presented at the international seminar on 'Newer Sources of National Insecurity in South Asia', organized by Regional Centre for Strategic Studies (RCSS), Colombo, 7-11 November. 1996. Paro, Bhutan.

Tucker, R.P. 1991. Resident Peoples and Wildlife Reserves in India: The Prehistory of a Strategy. In West, and Brechin 1991.

UNDP. 1998. *Human Development Report 1998.* United Nations Development Programme, New York.

Upadhyay, Sanjay. 1999. *Community Based Conservation and the Law in Rajasthan, India.* Theme paper for South Asian Regional Review of Community Involvement in Conservation, sponsored by the International Institute of Environment and Development under its Evaluating Eden Project. Kalpavriksh. New Delhi and IIED, London. Draft.

Uragoda, C.G. 1994. *Wildlife Conservation in Sri Lanka.* Wildlife and Nature Protection Society of Sri Lanka, Colombo.

Urfi, A.J. and Jethwa, Narender. 1999. A Heronry at Seelaj. *Hornbill*, 1999(2), June.

Vijayan, V.S. 1991. *Keoladeo National Park Ecology Study: Final Report.* Bombay Natural History Society, Bombay.

Wangchuk, T.R. and Caron, C.M. Undated. Overlapping Sanctuaries: Complementary Resource and Land Utilisation Patterns Betweeen Human Beings and Blacknecked Cran (*Grus nigricollis*) in the Phobjikha Valley. Nature Conservation Section. Royal Government of Bhutan and WWF-Bhutan, Thimphu.

WCMC 1992. *Global biodiversity: Status of the Earth's Living Resources.* World Conservation Monitoring Centre (WCMC), Cambridge.

WCPA/IUCN. 1997. Protected Areas in the Twenty first Century : From Islands to Networks, Conference Report. World Commission on Protected Areas, IUCN - The World Conservation Union. Gland, Switzerland.

WCPA/IUCN. 1998. *South Asia Regional Action Plan for Protected Areas in South Asia.* World Commission on Protected Areas, South Asia, New Delhi.

Wells, M.P. 1994. A Profile and Interim Assessment of the Annapurna Conservation Project. In Western, D. and R.M. Wright.

West, P.C. and Brechin, S.R. (eds.). 1991. *Resident Peoples and National Parks: Social Dilemmas and Strategies in International Conservation.* University of Arizona Press, Tucson (Arizona).

Western, D. and Wright, R.M. 1994. The Background to Community-based Conservation. In Western and Wright (eds.) 1994.

Western, D. and Wright, R.M. (eds.) 1994. *Natural Connections: Perspectives in Community-based Conservation.* Island Press, Washington D.C.

Wijesooriya, A., Weraganna, W.S., and Pallewatta, N. 1998. Country Paper - Sri Lanka. Paper presented at the Workshop on Collaborative Management of Protected Areas in the Asian Region. Royal Chitawan National Park, Nepal, 25-28 May, 1998.

World Bank. 1996. *Staff Appraisal Report on India's Ecodevelopment Project.* Report No. 14914-IN. South Asia Department, Agriculture and Water Division. Washington D.C.

World Bank. 1997. *World Development Indicators.* The World Bank, Washington DC.

WWF Bhutan. 1995. *WWF Bhutan Program: Progress Report 1992-1995.* WWF Bhutan, Thimphu.

WWF-Pakistan. 1996. *An Ecotourist's Guide to Khunjerab National Park.* WWF-Pakistan, Lahore.

iied

International Institute for Environment and Development

KALPAVRIKSH

Environmental Action Group

The **Evaluating Eden** project emerged from an earlier review of key issues in community wildlife management (CWM), which resulted in the **Whose Eden?** report (IIED, 1994). **Whose Eden?** focused mainly, although not exclusively, on experience in Africa, and was based largely on a review of literature. **Evaluating Eden** was initiated to take forward the debate on community wildlife management, by widening the geographical focus and looking beyond the literature.

The **Evaluating Eden** project is a collaborative research project supported by the Development Directorate (formerly the DGVIII) of the EC and the Dutch Ministry of Foreign Affairs–DGIS which aims to explore the myths and realities of community-based wildlife management. The project is coordinated by IIED with regional research teams from collaborating institutions in South and South-East Asia, South and Central America, West, Central, East and Southern Africa, Canada and Australia.

The **Evaluating Eden Series** contains reports from each of these regions together with individual case study reports and theme papers.

Where Communities Care is jointly published by IIED UK and Kalpavriksh – Environmental Action Group, India. Funding for this publication has generously been provided by the Swedish International Development Agency (SIDA).

Series editor
Dilys Roe

Biodiversity & Livelihoods Group
International Institute for Environment and Development
3 Endsleigh Street
LONDON WC1H ODD UK
Email: mailbox@iied.org

Kalpavriksh
Apt 5, Shree Dutta Krupa
908 Deccan Gymkhana
Pune 411004
India

Design: Eileen Higgins
Cover illustration © Christine Bass
Printers: Russell Press, Nottingham, UK
Printed on Highland Velvet Pro, 100% chlorine free

ISSN 1561-8382