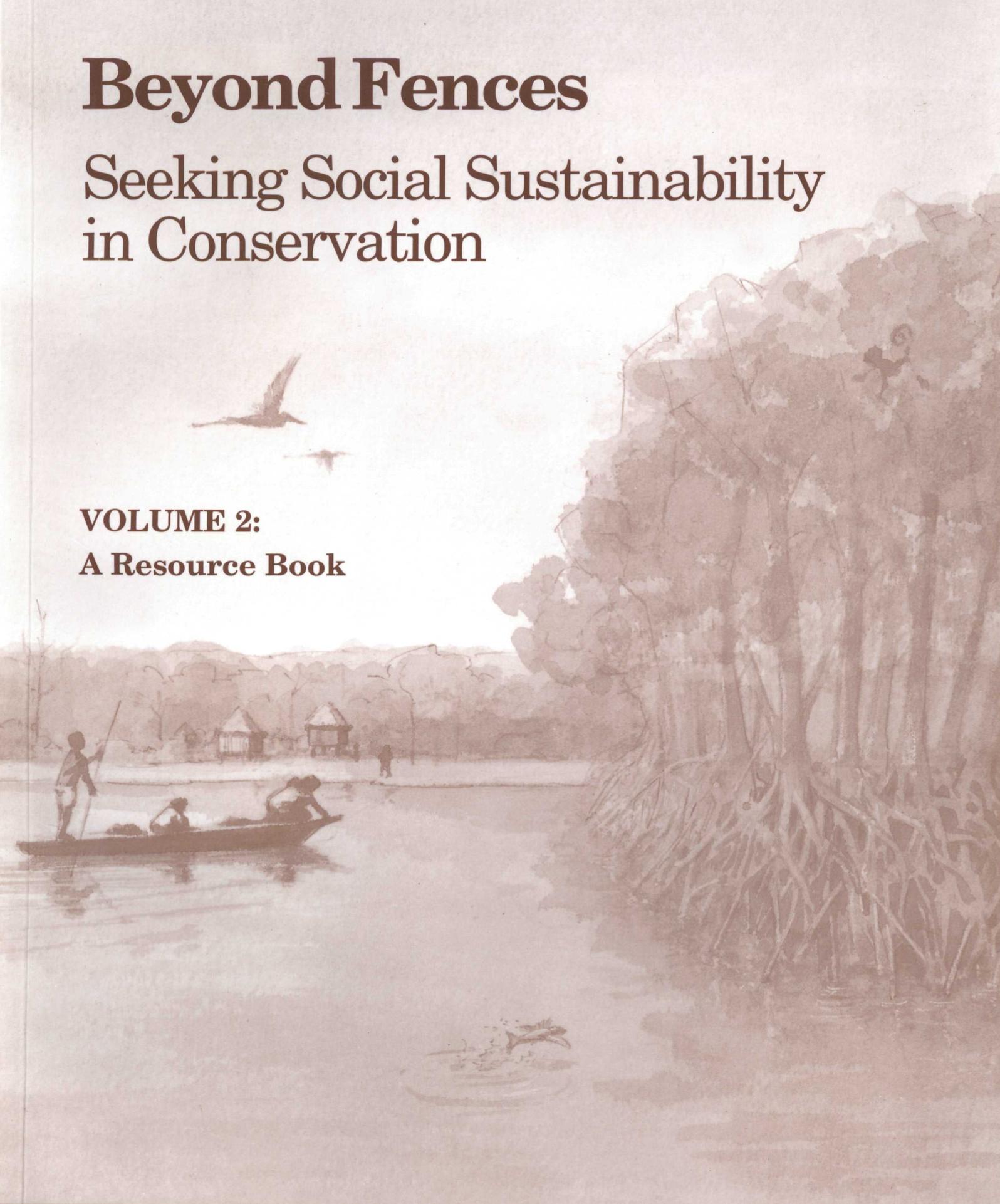


Beyond Fences

Seeking Social Sustainability in Conservation

**VOLUME 2:
A Resource Book**

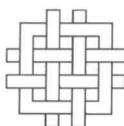


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IUCN
The World Conservation Union

Beyond Fences

Seeking Social Sustainability in Conservation



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Beyond Fences

Seeking Social Sustainability in Conservation

**VOLUME 2:
A Resource Book**

Edited by Grazia Borrini-Feyerabend
with Dianne Buchan

Acknowledgments

This publication is the result of a collaborative exercise and incorporates contributions from more than 100 people from over 20 countries. The names of these people and the roles they played are listed in the Contributors sections at the end of Volumes 1 and 2. The Biodiversity Support Program, the Social Policy and Resettlement Division of the World Bank, the PVO-NGO-NRMS project, the World Wildlife Fund-US, CIFOR and Inter cooperation provided financial support to IUCN for implementing the project, and staff from these organizations — Janis Alcorn, Michael Brown, Gloria Davis, John Krijnen, Patricia Larson, Kathleen McPhail, and Eva Wollenberg — contributed ideas, contacts, and written materials to the editor and IUCN project manager — Grazia Borrini-Feyerabend — throughout the process. The IUCN Social Policy Group was able to manage the process thanks to the sponsorship of the Danish International Development Agency (DANIDA), which is gratefully acknowledged.

The project began with discussions between BSP and IUCN in mid-1994, which later involved other institutions interested in participating in a joint undertaking. The project was officially launched with professional staff from the sponsoring agencies establishing the Project Coordination Committee, which guided the project throughout, and with a workshop at IUCN headquarters in December 1994. On the basis of the workshop's results, the editor conceived the original design of organizing the work around key questions — focusing on processes and offering examples rather than creating a definitive book of answers — and produced a draft volume in the spring of 1995.

In the following months, the draft was reviewed by members of the Project Coordinating Committee and by many field-based professionals around the world, all of whom provided general and specific feedback. In particular, input was sought and received on the "options for action" and on experiences and examples that could illustrate their relevant benefits and drawbacks. The examples received are now listed in Volume 2, and the general input and comments have been incorporated throughout the text of the two volumes. Dianne Buchan, a consultant with the IUCN Social Policy Group, was in charge of much of this work.

While developing the first volume, a number of terms and concepts deserving some detailed illustration were identified. In the fall of 1995, experts on the relevant subjects were contacted and asked to write short papers on those topics, now included in the book as "concept files". These were further supplemented by a section on participatory tools and processes written by the editor and Dianne Buchan from their own personal experiences, existing literature and contributions received. In March 1996, the Project Coordinating Committee reviewed progress and provided further input to both volumes. A revised version was distributed to several independent reviewers in the summer of 1996. Their comments were integrated and further suggestions from the Coordinat-

ing Committee were added up to January 1997. The kindness and flexibility of Fabrizio Prati, illustrator, Patricia Halladay, designer, and Susan Broomfield, chief SPG secretary, were invaluable in the process.

The editor designed the structure and wrote some of the original draft texts, later commented upon by contributors. Other original drafts were written by members of the Coordinating Committee and later edited at IUCN. Sections without named authors are thus all a 'joint product' of various contributors and the editor.

I am sincerely grateful to all the people who contributed to Beyond Fences for their generous and inspiring insights, their responsiveness to questions and their readiness to debate. Personally, I wish to dedicate this work to Tata, a woman who never learned to read or write, and yet knew extremely well how to deal with people, animals, plants and the land. May she inspire the users of these volumes to go beyond the written words.

Grazia Borrini-Feyerabend
Gland, Switzerland, February 1997

Section 4: Concept files

4.1	Social actors and stakeholders.....	3
4.2	Indigenous resource management systems.....	8
4.3	Local institutions for resource management.....	14
4.4	Population dynamics and conservation.....	17
4.5	Gender concerns in conservation.....	22
4.6	Participation in conservation: why, what, when, how?.....	26
4.7	Equity in conservation.....	32
4.8	Applied ethics in conservation.....	35
4.9	Biodiversity and rural livelihood.....	38
4.10	Local knowledge in conservation.....	41
4.11	Indigenous peoples and protected areas.....	44
4.12	Social concerns in population resettlement.....	50
4.13	Poverty, wealth and environmental degradation.....	55
4.14	Common property, communal property and open access regimes.....	59
4.15	Conflicts in conservation.....	62
4.16	Collaborative management for conservation.....	65
4.17	Governance and the rule of law.....	68
4.18	Decentralizing and devolving government.....	70
4.19	Primary environmental care.....	74
4.20	Sustainable use of wildlife.....	79
4.21	Sustainable farming, forestry and fishing practices.....	82
4.22	Ecotourism.....	86
4.23	Compensation and substitution programmes.....	91
4.24	Jobs in conservation.....	94
4.25	Economic valuation in conservation.....	96
4.26	Incentives and disincentives to conservation.....	100
4.27	A project or a process?.....	103
4.28	Management styles.....	107
4.29	Cross-cultural communication and local media.....	111
4.30	Social sustainability.....	115

Contents

Volume 2

Section 5: Participatory tools and processes

5.1	Social Communication.....	121
5.1.1	Community and public meetings.....	122
5.1.2	Audio-visual presentations.....	124
5.1.3	Picture stories (flip charts and flannel boards).....	126
5.1.4	Street or village theatre.....	128
5.1.5	Radio programmes.....	129
5.2	Information gathering and assessment.....	130
5.2.1	Natural group interviews.....	131
5.2.2	Focus group interviews.....	132
5.2.3	Semi-structured interviews with key informants.....	134
5.2.4	Photo appraisal and slide language.....	135
5.2.5	Observational walks and transect diagrams.....	136
5.2.6	Trend analysis.....	137
5.2.7	Land-use mapping.....	138
5.2.8	Historical mapping.....	139
5.2.9	Seasonal calendars.....	140
5.2.10	Gender analysis.....	141
5.3	Planning.....	143
5.3.1	Group brainstorming.....	144
5.3.2	Guided imagery.....	145
5.3.3	Problem and solution mapping.....	147
5.3.4	Nominal group technique.....	148
5.3.5	Ranking exercises.....	150
5.4	Conflict management.....	152
5.4.1	A process for negotiation/mediation.....	153
5.5	Monitoring and evaluation.....	157
5.5.1	Stakeholder accounts.....	158
5.5.2	Community involvement to plan the evaluation.....	160
5.5.3	Community-based environmental assessment.....	162
5.5.4	SWOL analysis.....	163
5.6	References and further readings.....	165

Section 6: Examples from the field

Identifying stakeholders and informing them about the conservation initiative

6.1	Inventory of actual/potential stakeholders.....	171
6.2	Stakeholder analysis.....	173
6.3	Information campaign.....	174
6.4	Public relations service.....	176
6.5	Environmental discussion sessions.....	177

Building on the capacities of stakeholders and developing long-term relationships among them and the conservation initiative

6.6	Promoting internal discussion within each stakeholder group.....	180
6.7	Helping stakeholders organize.....	182
6.8	Meetings and workshops to build bridges among stakeholders.....	185
6.9	Visits to similar initiatives.....	186
6.10	Strengthening local institutions for resource management..	188
6.11	Conservation Councils.....	189
6.12	Institution for conflict management.....	191
6.13	Training and incentives for staff.....	192
6.14	Promoting an effective legal basis for participation.....	194

Involving the stakeholders in the management of the conservation initiative

6.15	Assisting local communities to develop their own conservation initiatives.....	195
6.16	Participatory appraisal and planning.....	198
6.17	Collaborative management agreement.....	203
6.18	Collaborative management institution.....	207
6.19	Devolving the initiative to local institutions.....	210
6.20	Participatory monitoring and evaluation.....	212

Understanding local management systems, local claims, needs and potential conservation impacts

6.21	Review of indigenous/customary systems.....	213
6.22	Participatory review of customary claims.....	215
6.23	Review of national policies and laws.....	216
6.24	Assessment of local uses of natural resources.....	219
6.25	Social impact assessment (SIA).....	223

Planning to integrate conservation and the meeting of local needs	
6.26	Open meetings among stakeholders.....225
6.27	Special events and 'ideas fairs'.....227
6.28	Visits to successful initiatives.....229
6.29	Building upon local knowledge and skills.....231
6.30	Participatory planning to integrate local needs.....233
6.31	Zoning to separate incompatible land uses.....236
Generating benefits for local stakeholders	
6.32	Primary environmental care (PEC) projects.....238
6.33	Jobs for local people.....242
6.34	Local distribution of revenues.....244
6.35	Compensation and substitution programmes.....246
Enhancing the sustainability of benefits to stakeholders	
6.36	Financial feasibility studies.....248
6.37	Linking benefits with efforts in conservation.....250
6.38	Supportive links with relevant services.....251
6.39	Monitoring land tenure and land values.....254
6.40	Incentives to conservation accountability.....254
6.41	Biodiversity monitoring and surveillance by local people... 256
6.42	Integrating initiatives with local empowerment.....258
Improving internal relationships among staff and building upon their commitment and capacities	
6.43	Staff review of internal management issues.....259
6.44	Regular staff meetings.....260
6.45	On-the-job capacity building.....260
6.46	Decentralizing decision-making.....262
6.47	Reviewing the initiative for timing and flexibility.....264
Improving relationships among staff and local stakeholders	
6.48	Hiring staff from the local area.....264
6.49	Staff visits to the field operations.....267
6.50	Cultural presentations for the staff of the initiative.....267
6.51	Integrating local culture and traditions.....269
Sustaining the relationship between the conservation initiative and local stakeholders	
6.52	Extraordinary staff and stakeholder meetings.....271
6.53	Ongoing communication programme.....272
6.54	Monitoring change in local communities.....273
6.55	Networking with local leaders and opinion-makers.....274
	References.....276
	Contributors.....279

Introduction

Why these resource books?.....	1
What will the books provide?.....	1
What will the books not provide?.....	2
Who are the books for?.....	2
What is a "conservation initiative"?.....	2
Using the resource books.....	3
Seeking social sustainability.....	11

Section 1: Involving the people

1.1 Involving the people.....	20
1.2 Key questions.....	22
1.3 Indicators of participation.....	32
1.4 Options for action.....	34

Section 2: Addressing local needs in conservation

2.1 Addressing local needs in conservation.....	56
2.2 Key questions.....	58
2.3 Indicators of local needs being addressed.....	68
2.4 Options for action.....	70

Section 3: Managing a sustainable initiative

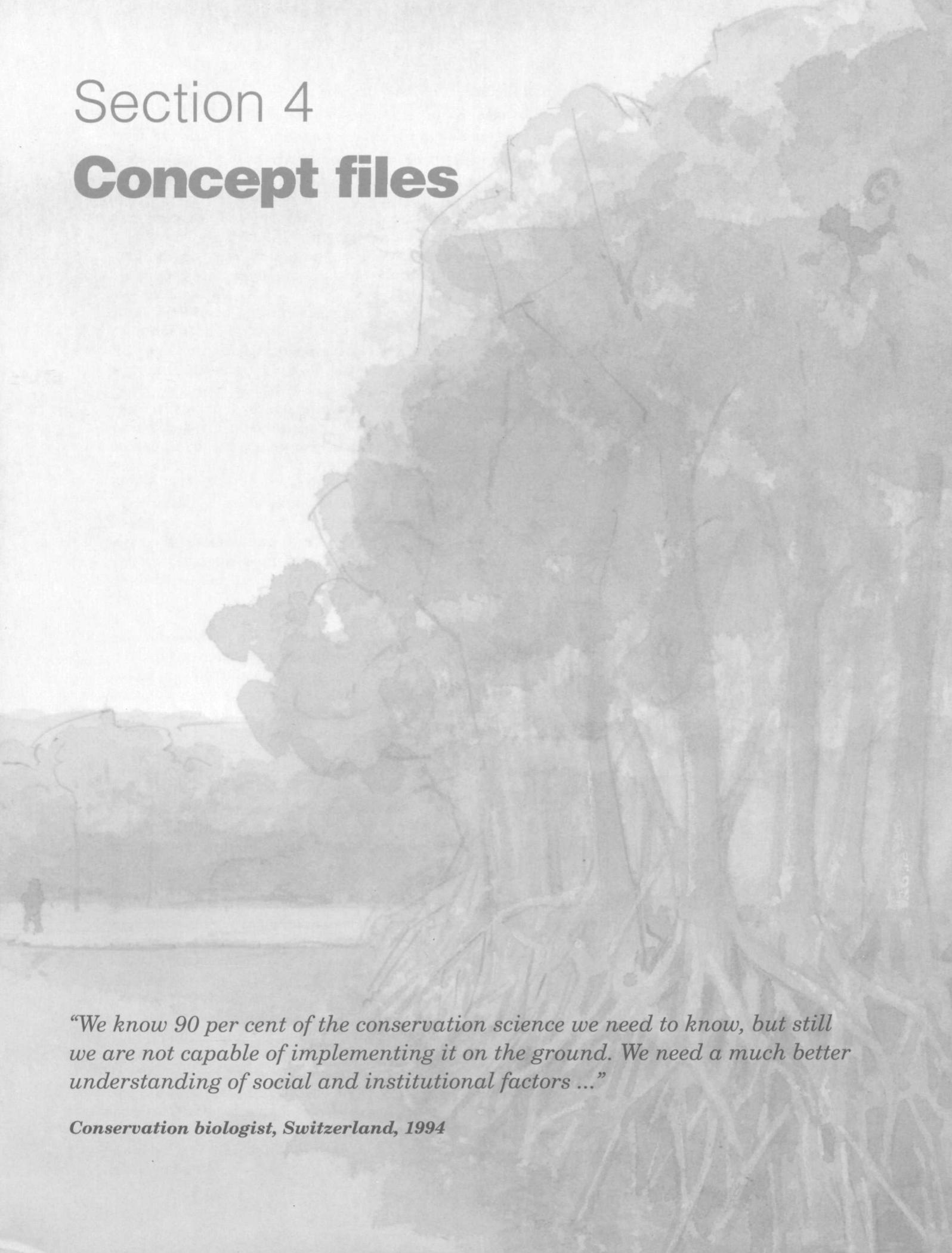
3.1 Managing a sustainable initiative.....	94
3.2 Key questions.....	96
3.3 Indicators of sustainable internal management.....	102
3.4 Options for action.....	104

General References.....	118
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Contributors.....	125
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Contents

Volume 1



Section 4

Concept files

“We know 90 per cent of the conservation science we need to know, but still we are not capable of implementing it on the ground. We need a much better understanding of social and institutional factors ...”

Conservation biologist, Switzerland, 1994

This section includes a number of short papers on topical subjects of relevance for social concerns in conservation. The papers provide a condensed introduction to the topics and a brief illustration of some relevant terms and concepts. The views expressed in the papers do not necessarily agree with one another, and some even challenge others. We hope this will offer both a basis to discuss issues and a stimulus to think further and debate them.

Decisions and actions that affect the conservation of a given territory or set of natural resources are taken by different 'social actors' at different places and levels.

There is no single, general classification for such actors which, among others, can include:

- individuals (e.g., owners of land holdings);
- families and households (e.g., long-term local residents);
- traditional groups (e.g., extended families and clans);
- community-based groups (e.g., self-interest organizations of resource-users, neighbourhood associations, gender or age-based associations, etc.);
- local traditional authorities (e.g., a village council of elders, a traditional chief);
- political authorities prescribed by national laws (e.g., elected representatives at village or district levels);
- non-governmental bodies that link different relevant communities (e.g., a council of village representatives, a district-level association of fishermen societies);
- local governance structures (administration, police, the judicial system);
- agencies with legal jurisdiction over the relevant natural resources (e.g., a state park agency with or without local offices);
- local governmental services (e.g., education, health, forestry and agriculture extension);
- relevant non-governmental organizations (e.g., dedicated to environment or development) at local, national and international level;
- political party structures (at various levels);
- religious bodies (at various levels);
- national interest organizations (e.g., a workers' union — also called people's associations);
- national service organizations (e.g., the Lions Club);
- cultural and voluntary associations of various kinds (e.g., a club for the study of unique national landscapes, an association of tourists);
- businesses and commercial enterprises (local, national and international, from local cooperatives to international corporations);
- universities and research organizations;
- local banks and credit institutions;
- government authorities at district and regional level;
- national governments;
- foreign aid agencies;
- staff and consultants of relevant projects and programmes;
- international government bodies (e.g., UNICEF, FAO, UNEP); and
- international unions (e.g., IUCN).

While we use the broad term "social actors" for the individuals, groups and institutions who interact with natural resources on any basis (including casual or indirect reasons), we use the term "stakeholders" to indicate those social actors who have a direct, significant and specific stake in a given territory or set of natural resources. This may originate from geographical proximity, historical association, dependence for livelihood, institutional mandate, economic interest or a variety of other concerns. What is important, however, is that:

- stakeholders are usually **aware of their own interests** in the management of the territory or set of resources;

4.1

Social actors and stakeholders

Grazia Borrini-Feyerabend and Michael Brown

Different stakeholders generally possess different interests, different ways of perceiving problems and opportunities about natural resources, and different approaches to conservation. They should all be equitably represented in developing an effective management system for the resources of common interest.

- stakeholders usually possess **specific capacities** (e.g., knowledge, skills) **and/or comparative advantages** (e.g., proximity, mandate) for such management; and
- stakeholders are usually **willing to invest specific resources** (e.g., time, money, political authority) for such management.

Different stakeholders generally possess different interests, different ways of perceiving problems and opportunities about natural resources, and different approaches to conservation. They should all be equitably represented in developing an effective management system for the resources of common interest.

Box 1: Community-based groups (CBGs)

Community-based groups (CBGs) are formal and informal groups of local people (e.g., a user group, a local cooperative, a village council, a residents' association) established to support the socio-economic and environmental interests of their individual members or of the community as a whole.

Typical main assets:

- *local knowledge, skills and resources;*
- *built-in flexibility;*
- *direct responsiveness to local interests and conditions;*
- *socio-cultural cohesiveness with local communities;*
- *confidence and trust of the local people.*

Example: the naam groups of Burkina Faso

The naam groups are traditional village youth associations composed of women (age 15 to 21) and men (age 20 to 35). The groups have several purposes, including promoting solidarity, cooperation, friendship and loyalty among the young and carrying out socially useful tasks. Typically, a naam group engages in paid activities — such as harvesting for others or selling various products — to collect money for a once-a-year festivity. As affiliates of the national association 6S, the naam groups have begun channelling part of this money into development initiatives they run themselves, with impressive results.

Example: the zanjeras in the Philippines

The zanjeras of the Philippines are traditional associations that aim to assure adequate and consistent delivery of irrigation water to all their members. The zanjeras distribute water rights and labour duties (e.g., for maintenance and repairs) to land ownership proportionally by means of the atar system (for instance: owning one hectare of land = one atar = receiving the water needed to irrigate one hectare + providing one day of labour per month). The zanjeras can earn income by selling water to non-members; usually such income goes to cover maintenance costs of the irrigation system (cement, construction supplies, tools, food for the workers, lawyers' fees, etc.). Many zanjeras have been in operation for more than two centuries. They allow for the costs and benefits of communal work to be distributed proportionally, and for remarkable ease and flexibility of accounting procedures (e.g., when land is subdivided, the new owners share water and labour duties among themselves).

The most basic stakeholders in the conservation of a given territory or set of natural resources are the people living within or close to them, usually grouped under the term "local community" (or communities). In many situations these people are directly and strongly dependent on the local resources for their livelihood, cultural identity and well-being.

Communities are complex entities, within which differences of ethnic origin, class, caste, age, gender, profession and economic and social status can create profound differences in interests, capacities and willingness to invest for the management of local resources. That which benefits one group and meets conservation objectives may harm another. For example, wildlife revenues may bring revenues to men, but more abundant wildlife may create a cost to women (e.g., because of crop damage). Even people sharing the same livelihood basis or personal characteristics (e.g., farmers, unemployed youth) should not be assumed to speak with one voice. In other words, local communities generally include a variety of stakeholders. Local divergences and conflicts need to be recognized, together with the practical necessity of negotiation.

Box 2: Non-governmental organizations (NGOs)

Non-governmental organizations (NGOs) are non-profit groups — staffed by voluntary and/or professional workers — acting in society on the basis of common concerns and specific capacities.

Typical main assets:

- *professional expertise (knowledge, skills) in a specific subject (e.g., agroforestry, preventive health care);*
- *demonstrated effectiveness in pursuing common concerns;*
- *capacity to communicate and establish links at various levels;*
- *responsiveness and flexibility;*
- *social standing and autonomy.*

Example: Asociacion ANAI, Costa Rica

The aim of this Costa Rican NGO is to promote sustainable development in the region of Talamanca, Costa Rica. Work is centred on supporting community-based groups (see previous box), assisting them in their tasks (e.g., through technical advice in agroforestry and agro-ecology, organizational aid, training in a variety of skills) and promoting the conservation and sustainable use of natural resources (e.g., by sustainable yield practices, assurance of land tenure, reforestation with native tree species, strategic support to endangered wildlife, creation of protected areas and ecotourism zones, etc.).

Example: Zimbabwe Trust, Zimbabwe

Zimtrust is registered in Zimbabwe as a welfare NGO, and in the United Kingdom as a charity. All full time staff are Zimbabwean and based in Zimbabwe. The NGO aims to relieve poverty and improve the quality of life in rural areas. Its strategy emphasizes participation of local people in identifying, appraising, planning, implementing, monitoring and evaluating their own development initiatives. It also emphasizes the development of local institutions capable of managing natural resources while generating employment and income. The trust provides managerial, technical, material and financial support to several programmes, as well as training in various skills. The best known programme co-assisted by Zimtrust is the Communal Areas Wildlife Management Programme (CAMPFIRE).

If it is rare for local residents to avoid diverging perspectives and conflicts, situations become even more complex when non-local stakeholders enter the picture. District administrators expecting to hold their post for just a couple of years, international conservation advocates, aggressive entrepreneurs, staff of national NGOs: they all bring forth particular views, capacities and interests. They both enrich and complicate the process and outcome of management.

Box 3: People's associations (PAs)

People's associations (PAs) are district, regional or national bodies established with the explicit objective of representing the views and interests of a category of people (e.g., people with the same ethnicity, caste, gender, age group, profession, etc.).

Typical main assets:

- *large membership;*
- *capacity to serve the interests of the members;*
- *social standing and autonomy;*
- *accountability to members.*

Example: the union of rubber tappers in the state of Acre (Brazil)

The Amazon's rubber tappers are extremely poor; their economic survival is tied to the preservation of the tropical forest. Their union — headed in the 1980s by Chico Mendez — came to the world's attention because of its opposition to the clearing of large parts of the forests in the state of Acre to create cattle pastures. The union demanded that forest areas — much of which under ownership that was disputed or unclear — be designated by the state government as reserves where only non-timber products could be extracted. The interests at play were powerful and ruthless. Mendez was assassinated in 1989 for his leading role in the union's struggle, but not in vain, since the following year the governor of Acre established four reserves according to the union's request. The largest of them, Chico Mendez Extractive Reserve, covers almost a million hectares of forest. Today the reserves have the support of the Brazilian government and of many international donors.

When an agency aims at facilitating a management agreement among various parties, at least two crucial, difficult-to-answer questions need to be addressed. First and foremost: who are the 'legitimate' stakeholders to take part in discussions and, possibly, in management roles? For instance, in the case of the coastal resources of a small Caribbean island, is a recently migrated hotelier who is interested in developing the beach front as much a stakeholder as the fishermen and families who have lived on the island for generations? If a forest constitutes a crucial water catchment for several communities downstream, are those communities to be considered stakeholders as much as the communities upstream, those living side by side with the forest and directly depending on it for their livelihood and income? If a management agreement for a protected area has to be signed between a state agency and local residents, should parish-level representatives be involved or village-level representatives? To answer questions such as these, it may be useful to clarify and apply some considerations and criteria, which could include:

- existing rights to land or natural resources;
- continuity of relationship (e.g., residents versus visitors and tourists);

- unique knowledge and skills for the management of the resources at stake;
- losses and damage incurred in the management process;
- historical and cultural relations with the resources at stake;
- degree of economic and social reliance on such resources;
- degree of effort and interest in management;
- equity in the access to the resources and the distribution of benefits from their use;
- compatibility of the interests and activities of the stakeholders with national conservation and development policies; and
- present or potential impact of the activities of the stakeholder on the resource base.

On the basis of considerations such as these, it is possible to distinguish among "primary" and "secondary" stakeholders. This could then lead to different voices in decision-making and different roles, rights and responsibilities in management. The process of identifying stakeholders and figuring out their respective importance regarding decisions on the natural resources at stake is sometimes referred to as stakeholder analysis. Such an analysis is best done in a participatory way, although care must be taken so that people and groups with a limited capacity to assert and represent themselves are not overpowered by others. It is also important that the final number of stakeholders involved in management is well balanced: not too many so as to complicate and slow down the process and not so few as to leave out some key players (see also the concept file on local institutions for resource management). In all cases, it should be clear that people who believe themselves to be "stakeholders" are allowed to claim such a status and to argue their case on the basis of criteria such as those listed above.

After stakeholders have been identified, a second challenging question is: how can the stakeholders meet, communicate, build trust among themselves, negotiate and agree on a common course of action? Section 5 of *Beyond Fences* offers a variety of ideas for a professional team to interact with stakeholders and involve them in several ways in a conservation initiative. These may be able to help in the establishment of a management institution in which the stakeholders are permanently represented. (See also the concept file "Collaborative management for conservation" in this section.)

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4.2

Indigenous resource management systems

Janis B. Alcorn

Indigenous resource management systems cannot be separated from other aspects of life in those areas where people depend on their immediate environment for their livelihood.

The term "indigenous resource management system" (IRM) includes local strategies, institutions, and technologies of farming, herding, hunting, fishing, and gathering. Local people often have a rich and detailed knowledge of local plants, animals and ecological relationships, sometimes called traditional ecological knowledge (TEK) or indigenous knowledge systems (IKS). People who have derived resource management systems appropriate to their local ecological and social situations are sometimes called ecosystem people, as opposed to biosphere people (such as the urbanized citizens of industrial societies) who depend on resources imported from distant places (Dasmann, 1984). The specific knowledge of ecosystem peoples is but one aspect of their resource management systems.

In most traditional societies, the Earth is understood to be the source of all that is good. Local folklore warns of the misfortunes that befall those who fail to respect the Earth, water, wildlife, and trees. These values and beliefs are learned from relatives and neighbours as part of childhood experience. They are embedded in the local language, including songs and stories, and reflected in art. The value given to nature is evident in decision-making in all spheres of life. "Making a living" and "taking care of things" are not separated from "conservation" as is the case in urban societies. The successful evolution and functioning of an IRM depend on shared cultural values, social rules, and systems for conflict management which have local legitimacy. In other words, in those areas where people depend on their immediate environment for their livelihood, indigenous resource management systems cannot be separated from other aspects of life. Appropriate social behaviour includes appropriate behaviour toward nature; e.g., correct ways to hunt animals, showing respect for the prey and its family, etc.

Agro-ecosystems

The land and waters of a group (or coexisting groups) form the agro-ecosystem within which their IRMs operate. Usually, IRMs maintain wild species and their habitats in some parts of the group's territory, while altering habitats in other areas to favour the growth of crops and livestock. For example, wild species such as edible grubs, caterpillars, and termites are often managed, insofar as their food plants and/or other habitat requirements are maintained or encouraged within the agro-ecosystem. In some cases, farmers increase the food plants of insects or game by planting or protecting them. In other cases, their habitats are normal byproducts of the farming system, such as secondary growth in fallows of swidden systems.

In weighing factors as they make farming decisions, farmers include the benefits of maintaining the habitats of useful insects and game. Agroforestry systems (the inclusion of trees in agricultural systems) are a common, complex type of IRM in the humid tropics; such systems may maintain trees among crops, create successional situations where trees follow crops in a given field, or maintain forest patches separate from fields (particularly where watershed management is a concern).

Through their IRMs, communities and individuals "embroider on a canvas of nature" (de Schlippe quote on the Zande) to create mosaics over the existing ecological diversity. Some of the "embroidery" is very subtle. The mosaics are made of many more pieces than residential areas and agricultural fields (those which outsiders usually recognize as areas under management). Areas important for fishing, hunting

game and gathering fuelwood, medicine, artisan's materials and other wild products are often very important for local livelihoods and regulated by subtle mechanisms such as the rules governing inheritance of tenurial rights to use particular areas or resources. Often it is these zones that are "cut out" of village territories during demarcation of protected areas. Such alienation undermines the traditional dispute-management regime (including the authorities who traditionally allocated rights to resources in those areas) and undermines existing curbs on land/resource use.

Among ecosystem people, local feedback leads to recognition of resource over-exploitation. The response may be to substitute another species, if one is available. Or, the feedback may lead to taboos on the use of a species or its exploitation. In some cases, despite feedback, over-exploitation may lead to local extinction of a species, particularly if a substitute is not available. But if damage to the ecosystem becomes clearly visible, a shift in livelihood strategy is also likely to occur.

In response to feedback and tensions among individuals seeking access to resources, institutions have arisen to ensure continued community access to resources and restrict use by outsiders. These institutions result from a political process of trade-offs among members of a community who must work together because of their interdependence. These are often referred to as "communal property" management systems, since access to the resources in question is regulated by the local group of individuals, as opposed to public property claimed by the state. Communal property regulation is integrated into a broader community system that defines and allocates individual and group rights to particular resources within the lands held by the community. (See also the concept file: Common property, communal property, and open access regimes.)

Institutions and tenure

Tenure refers to a bundle of rights and responsibilities in regard to specified resources — who can, and can't, do what with which resource. The effectiveness of tenure systems depends on their widespread acceptance and adherence to rules governing access; on the strength of local institutions and organizations that administer local justice; and on the guidance of local leaders committed to the values of the system. Some have described traditional tenurial systems as a form of "institutional capital" (Field, 1984), because compliance is sustained with a low investment in enforcement.

Within a given community, some rights to resources may be close to individual ownership (e.g., they may include right of inheritance). At the same time, rights to other resources may be shared within the community: a form of communal property. Often, while farmers have individual tenure over crop land, the community recognizes the rights of all community members to gather from noncultivated lands. Or private individual rights (usually given to a kin group or family) may hold for part of a year, and community members have the right to use the space and its resources at other times.

Farmers may have rights to their crop yields, but may also recognize the rights of migratory pastoralists over wild forage and crop residues after harvest, as well as the rights of anyone to collect medicinal plants from the field at any time of the year. In addition, rules often regulate the harvest of particularly valuable wild resources. There may also be

communal labour obligations for maintaining wild resources. Enforcement is often accomplished through social pressure, but may include stiff penalties determined by a group of elders or other traditional authoritative body. In societies that rely primarily on gathering, different groups may have rights to particular geographic areas, but still allow neighbouring groups to use their territories when local weather conditions reduce productivity during particular years. Communities often recognize reciprocal rights to share the resources of other communities during times of famine or social unrest.

While communal property is a type of tenure, in traditional societies the community to whom the resources belong includes the ancestors, the spirits, and the unborn, as well as the living people of a community. These resources are part of a unit that includes living things, air, water, land, forest, reefs, and the subsurface space. Rituals often mark the boundaries of the lands and waters belonging to the community. An individual's rights to community membership and hence to community resources are usually determined through kinship. Disputes over "who" has rights to "what resources" for "what purposes" are resolved locally through dispute-resolution mechanisms that evolve as the community changes with time.

Management rules

Local rules that restrict who uses how much of a biological resource require effective local social institutions, accepted rights and obligations, and a shared vision for interpretation and action. Traditional conservation ethics support local tenurial institutions using social pressures to influence an individual's decisions and encourage compliance. This involves not only people vested with authority within particular local organizations designed to regulate resource access; it also includes local curers and diviners who use shared ethics to identify and apply social pressure against those who break the rules. The effectiveness of the tenure system depends on widespread acceptance of and adherence to rules governing access, strong local institutions to administer local justice, and guidance by local leaders committed to the values of the system itself.

Farmers, fishers, and pastoralists generally value the diversity of available ecological zones and allocate resource use in ways that are both: a) conscious of the spatial, distributional and ecological consequences on the broader landscape-wide mosaic; and b) conscious of the social impacts of resource distribution on individuals and on the community at large. An IRM can include rules for allocation of resources within a community and/or between communities. Less obvious rules, such as those involving marriage, may reinforce the desired resource allocation. For example, Tukanoan fishing communities in the rich waters of the upper Amazon are responsible for distributing fish to other Tukanoan communities with few fishery resources (Chernela, 1993). Marriage rules require out-marriage between resource-rich and resource-poor villages and support reciprocity.

Box4 Caste and resource management

In India, IRMs often require cooperation among castes. These are endogamous groups who are bound to each other by kinship, reciprocal obligations and customs and have a particular profession that relies on particular set of resources. Access to the resources necessary for a given profession is restricted to a particular caste, which in turn functions as an essential element of the larger society. For example, in Uttara Kannada District of Karnataka state, there are 19 castes (Gadgil, 1989). People who fish from boats are divided into three castes, which use three different areas for fishing: river, estuary, and coast. The subclans of each of these castes use particular territories within their caste's larger territory. Three castes are agriculturalists who also collect shellfish, hunt mammals and birds. Each agriculturalist caste has other special differences; two weave mats but use different species of plants. In addition, there is one horticulturist caste, two entertainer castes (one of which taps toddy palms), barbers, washermen, artisans (potters, goldsmiths, carpenters, blacksmiths, lime-makers, stone-workers, tanners, and basket-weavers), and traders. Bamboo is reserved for the use of hide tanners, and deer can only be hunted by one of these 19 castes. All the castes work together in close-knit villages. Prior to colonization, villages and their castes managed their common forest and fishery resources successfully through their local IRMs.

Maintaining watershed forests and fishing waters often requires cooperation within and among villages that share access to the resource. Annual rituals are often used to reaffirm villagers' respect for nature and the spirits that will punish them if they damage nature. Offerings are made to the forest and water spirits. These annual rites reaffirm villagers' commitment to each other and everyone's right to enough of the resource for subsistence needs. The rituals may initiate formal meetings where people discuss substantive issues and disputes that occurred during the previous year. They may also provide opportunities to amend regulations about resource distribution, maintenance of infrastructure (such as barriers and canals), conflict management, and watershed forest preservation.

IRMs manage game-hunting in a variety of ways similar to those used for regulating extraction of wild plants, e.g., through regulating the number of hunters (as in the lineage husbandry described by Marks, 1994), restricting access to areas that can be hunted or fished, or establishing the seasons when hunting is allowed. Hunting, like gathering, depends on the availability of natural habitat as part of the land-use mosaic. Hence, management of agricultural areas also affects game management. IRM regulation of hunting is not well-documented, but some surprisingly complex systems have been found. Traditional use of fire technology for game management, for example, relies on ecological knowledge in order to use fire in the right season and places in order to maintain the desired mosaic of microhabitats. In northern Alberta, Canada, trappers maintain fire yards (meadows, prairies, and small forest openings) and fire corridors (banks of streams, lakeshores, sloughs, and trails) to create microhabitats as a "fire mosaic" in the larger forested landscape (Lewis, 1989). Aborigines in northern Australia use fire to create a mixture of different ages of successional situations within a given habitat type, and to protect other sites from fire, enhancing the available range of habitats for game (Lewis, 1989).

Sacred forests may be strategically placed to cover different ecological zones where they provide a haven for animal reproduction and other wild resources, especially medicinal plants and plants that are not used in large quantities. Societies often delimit sacred forests in areas where most natural forest has been cut down for agriculture, degraded by overgrazing, or threatened by other land-use changes. Sometimes these forests serve as burial grounds for high-status individuals, or as the grounds of temples or homes of spirits. IRMs include a variety of means for creating and maintaining crop and livestock genetic diversity through social mechanisms such as seed trading networks, lineage ownership, etc. as well as through specific local techniques for propagation and experimentation.

Conservation as culture

While the techniques and tools of resource management are easily seen, and some aspects of traditional knowledge are easily documented, direct discussion of "resource management" is not usually a productive way to understand local IRMs. Local people often do not view nature as a bundle of resources; there may be no translation of the term "resource" in their language. IRMs themselves are rarely visible and labelled in local languages. Their patterns, however, can be identified by studying the landscape (through exercises like RRA and PRA, or by community-based mapping) and by exercises in which the outsider attempts to make the choices necessary to carry out livelihood activities as if he or she were a naive new member of the community.

Social factors are the most fragile components of IRMs; they are most susceptible to damage or loss due to changes in apparently unrelated spheres of local life. Formal schooling and loss of local language are among the most radical change agents. Cultural values that support IRMs are shared and passed on to younger people through songs, stories, ritual texts, and other verbal communications in the local language. When language is changed, the new values of the new language are adopted. These new values often do not support the old ways. Second, increasing influence of the market economy has a profound indirect influence on IRMs through transformation of non-monetary values into monetary values. It introduces the idea that land, labour, and nature are commodities, instead of a sacred heritage that binds the members of the community to one another.

The labour requirements of IRMs (building communal fish traps, patrolling forest areas, serving as game bosses, etc.) often involve reciprocal exchanges. If people choose instead to take jobs for pay, then IRMs may fail for lack of contributed labour.

The loss of authority of elders' councils and other traditional decision-makers is the third critical threat to IRMs. When the central government imposes a new local government and fails to recognize the tenuous rights of communities as mediated by traditional governing bodies, then the traditional rules regulating resource access lose their legitimacy. When a community's legitimacy as an authority has been usurped by the state, community property becomes no one's property. Hardin's famous "tragedy of the commons" model (1968) describes the problems of open access that can occur in this way.

Where social and economic conditions are in flux, migrants, contract labour, or people resettled by states often enter areas claimed by other

communities. They may not recognize the subsistence values of many species, and may harvest known valuable wild products using a "deplete and switch" strategy. This type of activity often occurs along roads opened by logging or mining companies. The immigrants may be able to run IRMs appropriate to their old resources, but they often lack the knowledge and institutions necessary to manage the new sets of resources. Their activities often come into conflict with the IRMs of the original residents.

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4.3

Local institutions for resource management

Elinor Ostrom

Local institutions for resource management include a wide diversity of organizational forms. Institutions include rules and a common understanding about how problems are to be addressed and solved in a particular community. Sometimes institutions are formally established, with electoral procedures for selecting officials, specified dues (or taxes) for members, and rules that outline the rights and duties of all members. In other cases institutions are not formally constituted but still manage to regulate the use of resource systems over long periods of time. The diversity of types of local institutions is immense. It is possibly as valuable for the survival of humanity as the diversity of biological resources.

Before determining how best to govern and manage local resources, one needs to know a great deal about the type of resource system involved. Many resource systems are "public goods"; that is, one person's use of a public good does not subtract from the amount available to others. An example is enjoying the beauty of a forest or the other non-consumptive ecological services that forests provide. It should be noted that, once public goods are provided for some individuals, it is difficult to exclude others.

Other resource systems are "common-pool resources". Common-pool resources share one attribute with public goods: the difficulty and cost of excluding potential beneficiaries. They differ from public goods in regard to the "subtractability" of resource use. When one farmer diverts water onto his or her land, for example, that water is subtracted from the amount available to others. When one additional animal is put out on a common pasture, the fodder consumed by that animal is not available to others.

Many resource systems generate some benefits that are public goods and others that are common-pool resources. Forests not only provide peace, quiet, and beauty to many people; the ones who harvest timber or non-timber forest products receive personal gains and subtract resource units every time. Inshore fisheries not only provide important aesthetic values and values related to biodiversity; they also provide essential protein for local residents.

When resources are primarily public goods, the major incentive problem that public policies must face is that of 'free riding'. Those who can gain benefits without contributing to the cost of providing the benefits are trying to ride free on the efforts of others. This is also a problem when resources are primarily common-pool resources. Overuse leading to congestion or destruction of the resource system is an additional difficulty.

Both local users and government officials should be involved in designing appropriate institutions for resource management. The key challenge is to overcome the perverse incentives of ungoverned or open-access common pool resources. Designing appropriate institutions is, however, an activity with many hazards. These include the following.

Including too many or too few individuals in the institutions created to govern and manage resource systems. Ideally, all those people and groups who stand to gain or lose significantly by the controlled use of a resource system (stakeholders) should be included. However, including too many individuals who are indifferent to the long-term sustainability of a resource raises the cost of decision-making,

brings in people strongly opposed to paying their share of costs (because they receive few benefits), and involves those with little direct information about local conditions. On the other hand, if too few individuals are included, those who are included may not want to bear costs that benefit those who are excluded. In addition, a smaller group may have difficulty generating sufficient resources to control and manage the resource, and their interests may not preclude depleting a resource that could be sustained over a long period.

Using a blueprint approach to institutional design. Because a particular set of rules works well in one setting, it does not necessarily work equally well elsewhere. This is true even when two sets of resources appear to be similar. Many factors affect the particular costs and benefits of governing and using a resource system. One issue, for instance, is whether or not there is "physical storage" to even out the flow of resources. This makes a substantial difference, particularly when the resources have market value.

Marketable rights to stored water work relatively well. It is possible to define a long-term safe yield for groundwater basins through careful empirical research. Once defined, water rights to this yield can be allocated. When rights are allocated, a market for them frequently emerges. Rights can then be sold to those with the highest valued use. While it is expensive to carry out the initial research to define a sustainable level of use, costs can be spread over a long period of time. Continued investment is also needed, however, to monitor the amount of water withdrawn each year. In a region where electricity is used to power pumps, monitoring electricity-use data is a low-cost method of monitoring.

These rights are often called "individual transferable quotas" (ITQs). In fishery policy, the ITQ system does not work well when fish stocks fluctuate wildly and the cost of obtaining annual information about them is high and not considered reliable by participants. Thus, no good rule is a panacea for all kinds of problems. The rules used to govern a resource need to match the attributes of the resource itself.

Presuming that local institutions will solve problems rapidly. In addition to storage, there are many other attributes of a physical resource system that may affect participants' incentive to follow some rules of use. If a resource system is relatively small and the people using it can get and share accurate information, then sustainable use should be achieved over time.

Yet learning rarely occurs rapidly. Finding rules that are efficient and fair is a trial-and-error process of great complexity. Some rules may lead to unexpected results. Some local systems will fail to find solutions. Others will falter and then learn from their mistakes. If central officials believe they can do better than local institutions, and resent sharing power, they may use any failure of a local institution as an example of what happens when authority is placed at a local level (information about the failures of national or international systems may be kept confidential or blamed on others).

Presuming that local (or national, or international) institutions are the correct scale for all governance arrangements. Resource systems do not come in one size; neither should their governance arrangements. For instance, many resource systems have diverse flows

One option is to build "nested institutions", which protect the interests of a larger community while allowing for flexible regulations for the smaller communities. Simply building nested structures is not enough, however.

of benefits and costs that affect more than one community. Whether the long-term benefits are enough to offset high initial costs depends to a large extent on how much the future is valued by participants and on the security of their rights to the resources in the future. In addition to those benefits and costs directly tied to harvesting resources, other benefits (such as protection of biodiversity), which are non-consumptive in nature, should be considered.

One option is to build "nested institutions", which protect the interests of a larger community while allowing for flexible regulations for the smaller communities. Simply building nested structures is not enough, however. There must be sufficient long-term incentives for stakeholders at diverse scales, or tensions among them may become a problem. Again, time is needed to achieve a balance among diverse interests.

When resource systems are already stressed, it is difficult to find the time to design effective, nested institutions. Short-term harvesting prohibitions may work if harvesters understand that this will lead to rebuilding the resources. However, such measures are successful in the long term only when this time can be devoted to designing a complex, nested institution that can respond to future concerns before they reach emergency levels.

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Population dynamics refers to the growth or decline of a population in a specific territory (e.g., a country, a region, a municipality, or a village).

The population of a territory grows when:

- there is an excess of births over deaths (natural increase); or
- there are more people arriving than departing (in-migration).

The population of a territory declines when:

- there are more deaths than births (natural decrease); or
- there are more people leaving the territory than coming into it (out-migration).

A simple population dynamics balancing equation can be written as:

$$\text{Pop2} = \text{Pop1} + (\text{births} - \text{deaths}) + (\text{in-migration} - \text{out-migration})$$

where the population at year 2 (Pop2) equals the population at year 1 (Pop1) plus births, minus deaths, and plus or minus net migration during the year. Of course, it is possible for a natural increase to be balanced by migration away from the area or for a natural decrease to be balanced by in-migration. In such cases the population of the territory would remain the same, though the age and sex distribution might be significantly altered.

Age and sex distribution represents the proportional distribution by age and sex of people living in a territory. For instance, a territory might have 40 per cent of its population under age 15, 50 per cent between the ages of 15 and 64, and 10 per cent over age 65. This represents a "young age distribution", because a high proportion of the population is concentrated in the youngest age groups. Further, the sex composition might be 40 per cent male and 60 per cent female, which could reflect either male out-migration or the tendency for women to live longer than men.

Population dynamics affects the degree and rate of the use of natural resources. Conversely, the presence or absence of available natural resources is a determinant of local population size and density, and of the movement of people into and out of a territory.

4.4

Population dynamics and conservation

Grazia Borrini-
Feyerabend, Alex de
Sherbinin and Gayl Ness

What is meant by "population dynamics"?

How does it affect conservation?

Population growth

Today, many populations in the developing world are growing rapidly. This is largely due to rapid declines in mortality (especially infant mortality) while fertility has declined only slightly. Rapid population growth puts more pressure on resources, and declining resources make life more difficult for people. In the rural areas of the developing world rapid population growth may mean that:

- more people need more wood for fuel and housing, so more trees have to be cut down; forests decline in size; and women, who are the principal wood gatherers, have to walk farther for wood for cooking;
- more people need more land to grow crops, and end up planting on lands that erode easily; there is not enough land for the children when they grow up, so they have to work for others or move to towns to find jobs;

- more people need more food and must take too many fish from lakes and streams or too much game from the forests; fish and game become more scarce; people have even less to eat;
- more people need more water for agriculture, drinking and cooking, and more for their own sanitation; but more people also means more polluted water, which can also mean more sickness and death;
- changes taking place in the environment are more rapid, reducing the time available for planning.

Yet, increases in population size or density do not always signal declines in human well-being or environmental quality. In places, higher population density leads to:

- more intense cultivation of land;
- higher yields per hectare; and
- more opportunities for local marketing of produce.

The effect of rapid population growth on local productive capacity and on the environment depends on a variety of factors, including soil fertility, the resilience of the natural resource base, the technologies employed by local populations and the socio-economic and political environment at large.

Population decline

Population decline can also have an impact on local resources. In some cases it can be beneficial, particularly when ecosystems left undisturbed revert to a richer level of biodiversity. This, however, usually requires decades, if not centuries, and some ecosystems may never return to their pre-human settlement condition.

Population decline can also be harmful to the environment, specifically in cases where human-managed environments provide a rich habitat for a wide variety of species. The breakdown of interaction between human communities and local ecosystems may even lead to a net loss in local biodiversity (Ghimire and Pimbert, 1996).

Migration

People have always moved from place to place. Nomads and pastoralists move with their herds in search of better pasture land. Individuals move to new places to find land, work, or a better living environment. Sometimes people are driven out of their homes by floods, droughts or violence.

People coming into an area will need to use local resources, and this may make local attempts at conservation more difficult. If a territory is seen to be relatively rich in resources (more jobs or land) people will want to move into the area.

One of the major demographic phenomena of the late 20th century has been the rapid growth of urban areas as a direct consequence of out-migration from rural areas. Urban areas in the developing world are growing at a rate one to two per cent faster than national population growth rates. This is due largely to the concentration of economic opportunities, infrastructure, and social services.

Box 5: Conservation without counting

The government of a developing country established a national park 30 years ago. The only people living nearby were in a small village of 400 at the edge of an escarpment. They planted corn, fished, and hunted for their food. Planning for the park did not take account of this village. Today the village has 1,500 people, is growing at about three per cent per year, and more than half the inhabitants are under 15 years of age. Villagers complain: "...government put the boundary of the park right next to our village, and forbids hunting in the park. If we cannot hunt, we have less to eat, and the baboons come to take our crops". Hunting does continue in the park and the game population is declining. Villagers also complain that there will not be enough land for their children. Already many young people have to migrate to the towns to find work. The future does not look good to them, nor does the conservation of the park's wild species.

Failure to take account of population dynamics can lead to failure in conservation initiatives. When we plan for conservation of resources, we must ask how many people live around or in the conservation area, how many of the resources they need for their welfare and survival, and how those people are changing in numbers and in composition. Are they growing or declining? Are there going to be more or fewer children with respect to a given number of adults? Are there going to be more or fewer women with respect to a given number of men (e.g., because of male migration)? How are these phenomena going to affect their livelihood and their interaction with and dependence on natural resources?

Natural increase (births minus deaths) is the easiest to study. There are good and effective tools for counting numbers of people and estimating how many there will be in five, ten or 20 years. This is done with population projections, an easy technique that provides good predictions of the future size and age and sex composition of populations.

Making population projections allows people in a village or district to see how many people, and of what ages, there will be in the future. Local people can then use these estimates for planning purposes. They can, for example:

- try to increase the land available in the future, or move towards more intensive production systems;
- build more infrastructure (e.g., schools for the expected increase in the number of children);
- get assistance from family planning organizations to reduce local births;
- get assistance from public health services to reduce local deaths and diseases; or
- attempt to increase in-migration to have more people, or to limit it to have fewer people in the future.

Taking population dynamics into account

Birth and death rates can be changed. Death rates can be reduced by better diet, cleaner water, better sanitation and improved preventive and curative health care. Much of this can be achieved fairly easily and is usually not controversial. Everyone wants better health.

The birth rate can also be reduced easily and safely. Today there are government and non-governmental family planning programmes that can help people to limit the number of births and increase the amount of time between them. These programmes have been successful in reducing fertility in highly varied contexts. Well-run programmes are also very effective in improving the health of women and of children.

Family planning programmes are sometimes opposed on religious or cultural grounds. Such opposition often conflicts with the real needs of women who, because of their responsibilities in child-bearing and child-rearing, increasingly prefer to have fewer children. Surveys show that in many countries there is a large unmet need for family planning among women; that is, many women who express a desire to limit or space births do not have access to family planning services.

Local communities do have the power to influence population dynamics. Frequently, the issue of population dynamics is among the first identified by villagers discussing local conservation matters.

Box 6: Conservation with counting (and more!)

In another country that will remain unnamed villagers worked with a government agency to plan together for conservation of game in their nearby forest. As part of the basic assessment, a population projection was done. This showed the villagers that the number of local residents would grow from 1,200 to 2,500 in just 25 years, with many more children needing schooling, and many more young people needing jobs. To plan for this, the village worked out a scheme with the government where they acquired responsibility for the management of the forest. The government helped them build a rustic tourist lodge on the shore of a lake bordering the forest; the villagers now act as wildlife guides for the tourists, and sell them crafts and food.

The local institution in charge of managing the forests often calls for community meetings to discuss various problems and decisions to be taken. There have been lengthy debates about the difficult working conditions of women, the scarcity of good agricultural land, the declining catch of fish in the lake and the growing number of households. Today, several women regularly visit the district health centre and receive health and family planning services. Although transport to the health centre is not easily available, the health of children is generally improving and women have — and wish to have — fewer children than before. People feel reasonably secure of their livelihood and the game population in the forest is not, at least at the moment, in jeopardy.

Migration is not so easy to change. Whereas population growth through natural increase tends to be more or less predictable, migration can change population size dramatically from one year to the next. Witness the boom and bust cycles of some mining towns, where people initially attracted to new job opportunities quickly move out when mineral resources are depleted and the industry closes down.

People may be attracted to a new area by the lure of new opportunities or unexploited resources (so-called pull factors), or they may be driven into an area by violence, drought, famine, or lack of opportunity in their original lands (push factors). The construction of a new road or landing strip may also open up previously inaccessible lands, thus removing barriers to migration.

Government policy can provide incentives and disincentives to migrants. Incentives can include giving new settlers rights to virgin land

or land occupied by indigenous peoples. Disincentives can include enforcement of land tenure laws, or recognition of the right of preexisting groups to have control of local resources. Policy in the form of state-sponsored violence against disenfranchised populations can also affect population movements, inducing people to move into previously protected areas in order to escape persecution.

What can be done at the local level?

Local communities do have the power to influence population dynamics. Frequently, the issue of population dynamics is among the first identified by villagers discussing local conservation matters. As illustrated in Box 6, a community engaged in internal discussions and accustomed to organize and take action may make more use of health and family planning services (or even set up their own if necessary). The villagers may also figure out ways of stopping the out-migration of their best work force, or of preventing newcomers from settling in their area. This could be facilitated by well-organized land tenure regimes and well-established rules for access to common land and resources. And local institutions for resource management are likely to be of paramount importance.

Improving women's status is a key ingredient for sustainable development. Educated women and women who form self-help associations are more likely to be aware of environmental issues and also more likely to practice family planning. Village women's associations, in conjunction with local institutions for resource management, can go a long way toward improving the use of natural resources, and gaining equitable access to them.

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4.5

Gender concerns in conservation

Anoja Wickramasinghe

Women's relationship to natural resources

Women's relationship to natural resources has evolved over generations and is embedded in culture. In terms of tribal living, it is possible to visualize how the division of tasks evolved. Women took care of the extended family, which includes a multitude of tasks: home maintenance; caring for children, the sick and the elderly; producing crops; gathering food for family consumption; fetching water; and collecting fuelwood.

In hunting and gathering societies, women were in a privileged position because of the availability of resources. In such societies, women developed technologies freely. For instance, household utensils were made using the leaves of trees, shrubs, palms and grasses; edible and medicinal oils were extracted from nuts and kernels; leaves, roots, stems, nuts and fruits were used as food; and species for domestication were collected and nurtured. Women also developed technologies for making mats and for drying grains and other food. Great knowledge and skill converted resources into usable forms.

In more recent and 'advanced' societies, women who carry the knowledge, experience and skills of utilizing and managing resources have been increasingly confined to a narrow household sphere. They have been deprived of traditional authority over resource management and have become dependent on market products. In addition, with the continuing fragmentation of land among family members (particularly sons) women's access to resources has shrunk. Attending to traditional tasks has become problematic and drudgery has increased. Over the last two centuries women's share of the formal economy and the production sectors, particularly in rural areas, has fallen dramatically. Women's sphere has been reduced to a narrowly defined domestic life while men's access to resource use and management has broadened dramatically. I speak on the basis of my knowledge of Sri Lanka, but the same considerations apply to many other societies.

Women and agricultural production

Women's autonomy over resource management should be treated as a key issue if resources are to be sustained. Unless such a transition is accepted, powerful, male-dominated institutions will control the resources and deepen the problems faced by rural women.

During recent decades, women have been displaced in resource management. Traditional soil and water conservation practices and organic fertilizer and pest control techniques have been replaced by externally-designed, more expensive methods. New hybrid varieties grown for cash revenue have become increasingly dominant. Replacing women's low-cost, self-sustaining management practices with short-term crop-specific external inputs has exhausted the resource base of the land. Soils, water, organic compounds and the wealth of wild plant species — frequently used for mulching, fodder and medicinal purposes — are threatened.

Decisions over selecting seeds, crop mixtures, applying traditional technologies, controlling pests and weeds and enriching soils no longer belong to women. Even attempts to restore traditional and cultural resources and introduce "environmentally friendly technologies" assume a male-dominated institutional frame. "Organic farming" is an example. Men's efforts in demonstration plots and experimental trials are usually publicized, while the organic farming practices continued by women through their experience and knowledge are overlooked. Long-standing indigenous resource management practices, which include organic fertilization, pest control by applying ash, and weed control by

applying crop residues, are harmonious with the total environment and within the capacity of women. Women's long-standing relationship with natural resources is overlooked to the detriment of recovery. In many countries, the customary division of labour relegates the handling of tools and equipment and the extension of credit exclusively to males, on the basis of men's ownership of land.

During early civilization, natural cultivars were transferred into the farmlands by early agriculturalists. Women were largely responsible for gathering and preparing food and medicinal herbs, and were knowledgeable about the resources, their locations and their domestication and propagation. With the transition to commercial crops, traditional cultivars have been replaced with a few high-yielding varieties, at the cost of biodiversity and women's control over genetic resources. The diversity in the genetic resources, maintained through natural selection without environmental stresses, is lessened. With the introduction of foreign varieties, traditional practices of storing seeds collected in the wilderness or at harvesting are often abandoned.

Women's contribution to biodiversity

Box 7: Biodiversity loss in Kelegama, Sri Lanka

The nature of biodiversity changes was highly visible in the course of conducting research in Kelegama, Sri Lanka, during 1987-1989. Although the women interviewed were able to recall numerous locations where widely-used plant varieties were once obtained, they were unable to find these varieties any more. In addition, the overall environmental degradation in these areas has inhibited the migration of seed-carriers like birds and animals. About 14 varieties of root crops, used during off-harvest seasons as a substitute for the staple diet of rice, are no longer available. Nearly 84 varieties of plants, with medicinal and food values, have been lost. Indigenous varieties of millet, cassava, wild rice, sesame, pumpkins, melons, cucumbers and herbs are no longer available. What is seen in the case of Sri Lanka is not only a transition from local cultivars to foreign ones, but also a transition from women's control over genetic resources to external gene pools managed by male-dominated sectors. The costs are the depletion of diversity and more expensive seeds and other materials.

The history of women's link with natural resources shows a pattern of retreat. The forest, for example, once used by women as a free resource for a multitude of products, is now greatly reduced. Also, many forests are demarcated as "protected areas" where women are forbidden to extract forest products. As a result, women must often walk long distances to collect wood and spend more time burning raw or wet wood. As a result they compromise their leisure, productive and household activities.

Women and forest resources

Women are increasingly forced to depend largely on man-made, privately-owned systems. Women bear the brunt of resource depletion, becoming exhausted as supplies fall. With the continuous fragmentation of land, and increasing landlessness, the problems associated with fuelwood scarcities will only grow.

The limited insight into the problems of deforestation and the restriction of state intervention to producing timber reduces the forest's ability to meet many survival needs. The forest economy built up by women over generations has collapsed. Despite the obvious magnitude of the crisis, fuelwood is not a major concern for foresters. Yet for women, collecting fuelwood is debilitating drudgery, which requires more and more energy and time. Today, the links among women, survival and forest products are the least acknowledged elements of the forestry sector.

With the realization of the adverse affects of deforestation and the resulting environmental crisis, some attempts are being made, with women's participation, to reclaim the livable environment. But women's labour is not a remedy in itself. Women need to contribute to formulating strategies for conserving forests; managers of forest conservation programmes must reformulate policies to accommodate women's knowledge and needs.

Women and water resources

Not only is water essential for drinking, cooking, hygiene and sanitation, it also permits women to produce vegetables in their gardens for the family pot. Women without adequate supplies of clean water nearby face enormous difficulties. During water scarcities, women's ability to assure health, food security and proper nutrition for their family is jeopardized. In addition, reduced crop production as a result of water shortage reduces the ability of women to earn an income from casual work in the fields of others.

Depending on the distance and depth of water, a considerable amount of labour is needed to make it available. Where springs do not emerge at the surface, women have to lift water out of dug wells. Even if surface water in rivers and tanks is accessible, heavy contamination is a major deterrent in some areas.

Water gathering requires additional time which could be spent on production activities or household welfare. It also weakens physical and mental health. Moreover, women's inability to fetch adequate quantities tends to reduce the amount of water used. A study covering two villages in Sri Lanka (Kolobissa and Rassagala) showed that women spent at least six to eight hours a day fetching water for domestic use alone.

Strategies for empowerment

It is hard to achieve gender equity in access to resources and management decisions on the grounds of women's potential contributions to conservation. It requires the transformation of social attitudes, commercial interests, policies and politics. Resource policies need to be restructured to reflect grassroots needs. Women want to be contributors to the sustainable management of resources. Policy-makers however, remain reluctant.

Much information is still needed to sensitize decision-makers about the potential contribution of women. In some countries, a shortage of information and poor awareness of issues remains a constraint to the grassroots approach required. Moreover, most women have no formally organized institutions to influence national policy. Special efforts are required of policy-makers and programme designers if women are to contribute to resource management strategies.

How can women be empowered to modify the systems that damage the natural resources? How can this happen in countries where cultural constraints exclude women from decision-making structures? One prerequisite is a recognition of equal rights to resources, including household land. This requires the acceptance of women as well as men as legal owners to the land.

Women's autonomy over resource management should be treated as a key issue if resources are to be sustained. Unless such a transition is accepted, powerful, male-dominated institutions will control the resources and deepen the problems faced by rural women. The solution lies in providing a fair share and opportunity to women who have the knowledge, experience and desire to take care of resources for the sustenance of future generations.

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4.6

Participation in conservation: why, what, when, how?

Grazia Borrini-Feyerabend

If we understand "participation" in the simplest of its meanings — taking part, sharing, acting together — people's participation is nothing less than the basic texture of social life. For millennia, people have "participated" in shaping their cultures and survival strategies in an immense variety of ecological environments. For the greater part of human existence, this sharing of tasks and responsibilities took place in self-regulated small groups — 50 or 60 individuals — who interacted face-to-face and shared the hunting, gathering, leisure and learning of daily life.

With the advent of agriculture, and especially with the development of industrial production, social units grew in size and became internally diversified and specialized. Regulations and enterprises developed and, promoted by special groups, had to face the consensus, the indifference or the opposition of the rest of society. Spontaneous participation became an important test of confidence and trust.

In recent decades, large-scale planning, government services and regulations, entrepreneurial projects and development schemes have increasingly dominated socio-political life. In this context, "people's participation" is valued and sought after by virtually all institutions, large and small alike. Why is this so? What benefits can be expected from participation; in particular, what are the benefits for a conservation initiative?

Benefits of participation

To begin with, participation is a condition by which local knowledge, skills and resources can be mobilized and fully employed. Local people may understand very well the causes and possible remedies of deforestation or soil erosion in their environment. They may know how to find and use plants of unique properties or how to prevent animals from damaging new seedlings. They may be able to offer labour, land, food, shelter or tools to run a project. Contributions like these increase the flexibility of an initiative and its responsiveness to local conditions. They also reduce the chance of mistakes with major environmental consequences and often mean the difference between success and failure. In fact, the overriding benefit of people's participation is the increased effectiveness of any initiative.

Another major benefit is a more efficient use of resources. Local knowledge and skills help minimize waste and obtain results with limited investments. Participation can bring to the project the full benefits of human and material resources that would otherwise remain idle or poorly utilized, and local monitoring discourages the undue use of assets and promotes accountability and respect for rules.

Most of all, however, the participation of local people provides a unique assurance of the sustainability of a conservation initiative. In fact, local people are — at least potentially — the most directly interested in the positive results of such initiatives. When people initiate them or participate in setting them up; when they invest their own hopes and resources in them, they are likely to remain motivated to sustain them in the long run. In fact, most local communities possess greater stability and continuity than national governments. Their investments are made for the next generation rather than for the next election.

Agencies concerned with the effectiveness, efficiency and sustainability of conservation initiatives can thus profit from people's participation. But participation directly benefits local people as well. When people take part in assessing environmental problems, resources and opportunities, they acquire information and enhance their awareness of the factors that play a role in their lives. When people act and contribute, they often acquire new skills and have the opportunity of organizing themselves, with a variety of returns for local equity, self-reliance and building of community or group identity.

Box 8: What to expect from participation

You can expect the following when people participate in a conservation initiative:

- *local knowledge, skills and resources are used more fully;*
 - *the initiative becomes more effective, more efficient and more sustainable;*
 - *local people and outsiders share and enhance their awareness of problems, resources and opportunities;*
 - *local people and outsiders share and diversify their relevant knowledge and skills;*
 - *local associations and institutions are created or become stronger and more capable;*
 - *local initiative and self-reliance are encouraged and cultivated;*
 - *the local society is likely to become more mature, and less paternalistic; and*
 - *development, democracy and equity are broadly promoted.*
-

The participation of local people provides a unique assurance of the sustainability of the conservation initiative ... most local communities possess greater stability and continuity than national governments. Their investments are made for the next generation rather than for the next election

Given all the benefits listed above, is participation universally desirable? Does it create any problems? The management of an initiative may wish to consider the following potential issues and constraints:

- Full local participation and empowerment are best developed in a democratic society. Yet, many communities affected by conservation initiatives are highly hierarchical in nature and generally follow the decisions of their leaders. In those communities, the participation of certain disadvantaged groups may clash with local customs (e.g., the participation of women, the landless, ethnic minorities, etc).
- The very concept of participation may be alien to some cultures and groups. For instance, it may be that the self-assertion required to express one's views and interests (which differ from those of others) is considered 'unseemly' and clashes with accepted behavioural norms. The very fact that different interests exist within a community is a concept largely derived from the economic and cultural context of modern western societies.
- National governments may not support local participation or empowerment, especially if they regard it as a threat to their own authority, or as encouragement to opposition groups. A participatory approach may also not be viable because of local political opposition or sheer lack of norms and institutional support.
- Participatory processes require certain investments of time and resources. These resources may not be available or the relevant activities may not have been foreseen in the original plan of the conservation initiative. In that case, creativity and managerial resourcefulness are necessary.

Problems with participation

- Participatory approaches require commitment over time and results may take a long time to appear. This can tax the patience of donors, managers, staff and local people alike. Threats against natural resources may be escalating, and the urgency of taking action may discourage people from undertaking a lengthy participatory processes.
- Time and resource investments may be required to reach a good level of communication between the local people and the national or expatriate staff in the conservation initiative.
- Some compromises in conservation objectives may need to be made. For instance, a conservation initiative designed by outsiders may propose a total ban on local access to natural resources, which may be simply unacceptable to the locals.
- The emphasis on the process of participation may take attention and resources away from the technical content of the conservation initiative.
- The process of participation needs expert facilitation and clear objectives, to avoid chaotic meetings and a general loss of direction for the initiative.

Box 9: Ambiguity in participation

The current widespread interest in people's participation in environmental and development programmes surely derives from the impressive benefits that participation is expected to bring. It also derives, however, from a certain ambiguity about the concept itself. The possible interpretations of participation (which also reflect alternative interpretations of the concepts of development and democracy) span from it being "a means to facilitate and improve external interventions" to being "an end in itself.

If local people participate, they are willing to contribute local resources: this is the basic rationale for promoting participation as "a means". For instance, people participate when they provide free labour for local construction, free or low-cost lodging and food for external workers, or necessary land, timber, building materials, animals, water, etc. From this point of view, participation considers only the people who are involved in specific activities in a given period of time. The phenomenon is relatively easy to monitor and evaluate.

The rationale of participation as "an end in itself is more lofty, and its practice and evaluation are more complex. People participate when they take an active role in planning, deciding, implementing and evaluating initiatives. In this way, people — in particular the poor and disadvantaged — end up organizing to overcome problems and to gain more control over their local environment and livelihood. Thus, seeking participation aims beyond the horizon of a specific initiative. A main indicator of success is the development and strengthening of local organizations, which can represent people's interests and concerns long after a specific initiative has ceased to exist.

The above views can appear incompatible, but, as often happens in real life, specific people in specific contexts end up being more influential than ideological approaches in determining results. At times, participation promoted for the sake of savings and work efficiency has caused a major development of local awareness and concern. On other occasions, well-intentioned agencies never managed to arouse the interest of local people for their own development and/or empowerment.

There is no 'recipe' for participation, nor any all-purpose description of what it should entail. But every effort should be made to overcome ambiguity, and to be explicit about why, where, when and how people are expected to participate in the conservation initiative (see Box 10: Specificity in participation). When this is done, it is usually found that certain conditions and forms of support are needed, i.e., that participation needs to be allowed, facilitated and promoted. It may seem to be a paradox, but people's participation in a conservation initiative has to be specifically planned.

Box 10: Specificity in participation

- *Who is interested that local people participate in the conservation initiative? The people themselves? The management of the initiative? Others? Why are they interested?*
 - *In what aspects of the initiative and in what activities are people expected to participate? What is expected to happen? How will one know that people did participate?*
 - *What channels, means and mechanisms of participation exist?*
 - *What conditions, incentives and kinds of support are provided?*
 - *When is participation expected to start? How long is it expected to last?*
 - *Will all local people have the same opportunities to participate?*
 - *Are people expected to participate directly or via representatives?*
 - *Who can be accepted as a representative and why?*
 - *How and by whom is participation going to be monitored and evaluated?*
-

The answers to this question can be many. For instance the following, or various combinations of the following, can all be taken as examples of participation in a conservation initiative:

- local people assessing their needs and resources, and recognizing the opportunities offered by the conservation initiative;
- local people taking part in collecting and analyzing environmental and socio-economic information;
- local people being consulted on key issues about the initiative (in particular, objectives, design, and key management decisions);
- local people contributing to planning and decision-making about the initiative at various levels (e.g., local, district, regional, national) — this may entail specific negotiation sessions;
- local people initiating action (i.e., local groups identifying new project needs, and taking action to deal with them, which is different than deciding on tasks identified by project management);
- local people providing labour and resources to implement the conservation initiative;
- local people taking part in ongoing decision-making during the implementation of activities;
- local people assuming specific functions and responsibilities for the conservation initiative, including becoming members of its official management body;
- local people acquiring benefits from the conservation initiative (this is a poorly recognized form of participation);
- local people developing effective partnerships with other stakeholders and agreeing on a specific sharing of benefits and costs about the conservation initiative;
- local people taking part to monitor and evaluate the initiative.

How do we seek participation?

What would constitute "effective participation" in a conservation initiative?

Box 11: Avenues of participation

There are several possible ways for people to participate:

- *direct participation (face-to-face; people personally express their opinions, discuss, vote, work, offer a material contribution, receive a benefit, etc; basically people represent themselves);*
 - *semi-direct participation (people delegate others — relatives, friends, respected members of their community, representatives of a community-based group — to represent them in all sorts of activities, but maintain a direct, face-to-face relationship with their representatives);*
 - *indirect participation (people delegate others — experts, appointees of large associations, NGOs, parties or government officials — to represent them in all sorts of activities, but rarely, if ever, interact with their representatives on a person-to-person basis).*
-

It is important to remember that not all local people possess the same capacities, interests or willingness to participate in a conservation initiative. Distinguishing among different stakeholders and making sure that they are all given a chance to participate is crucial (see concept file on social actors and stakeholders).

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4.7

Equity in conservation

Narpat S. Jodha
with a contribution by
Dianne Russell

Through methods such as Participatory Rural Appraisal (PRA), stakeholder analysis and other participatory approaches, stakeholders are increasingly being involved in the processes of analyzing the environmental situation and are choosing, designing and implementing their conservation initiatives.

Equity in conservation concerns the way conservation activities affect the quality of life of individuals and communities. Conservation initiatives may cause an uneven spread of costs and benefits over space and time. To an extent, such uneven distribution is unavoidable because conservation measures imply changes in the existing pattern of resource access and use, processing methods, etc. These changes may affect different social groups in different ways, and may create or accentuate social and economic inequalities. For example: the restoration of a watershed may require restriction in resource use in the uphill communities, while downhill communities are the recipients of the main benefits (more and clearer water, less sediments, etc.).

In some situations, however, the uneven distribution of sacrifices and rewards may help redress existing inequities by upgrading the land and other resources owned and/or used by the poor, who generally inhabit land which is inferior and less productive. In one successful watershed development project (Tejpura, near Jhansi, India) disproportionately higher benefits to the poor were achieved in this manner. Yet, unless properly guarded against, the chances of conservation measures contributing to rural inequalities remain high.

A few issues are of particular importance. First, the poor (be they small farmers in a village in a community context or developing countries in the global context) generally possess degraded or rapidly declining resources as well as scarce capacity and means for rehabilitation and conservation.

Second, many conservation programmes, such as reforestation activities, require long development periods before producing results. The immediate sacrifices required may worsen the already vulnerable situation of the poor, making conservation measures unattractive and unacceptable to them.

Third, national, regional or global conservation programmes that involve the establishment of wildlife parks, biodiversity reserves and protected areas too often overlook the concerns and needs of local communities.

Safeguards to enhance equity in conservation programmes may involve a mix of measures dealing with compensation for sacrifices, providing a share in the gains (both short-term and long-term), incorporating the views of affected people in the choice and design of conservation measures and involving them in the implementation of specific activities.

Important steps in understanding and deciding the mix of remedial measures include:

- identifying the boundaries of the initiative, the people potentially affected by the conservation measures, and their current status in terms of access and dependence on resources, production strategies and practices;
- devising strategies and plans to minimize the disruption of people's lives and maintain their access to resources;
- involving people as much as possible in decision-making and in making it more sensitive to equity concerns;
- identifying compensatory measures to help those who will be adversely affected (especially the poor).

While some of these steps are of a technical nature (e.g., compromises in strategies and plans), others involve local socio-economic realities (e.g., equity-promoting compensatory measures). The latter are significantly influenced by existing institutional arrangements and decision-making processes associated with the conservation initiative.

Many such arrangements within the prevalent culture of conservation are characterized by the following:

- a mechanical approach, where techniques and budgets take precedence over people's views and concerns;
- conservation initiatives conceived, designed and imposed from above (the prevailing power structure decides who gains and how);
- those affected by the conservation initiative being left voiceless and involved, if at all, only as wage labour (e.g., digging soil or planting trees).

Fortunately the situation is changing, albeit slowly. Through methods such as Participatory Rural Appraisal (PRA), stakeholder analysis and other participatory approaches, stakeholders are increasingly being involved in the processes of analyzing the environmental situation and are choosing, designing and implementing their conservation initiatives.

Participatory approaches often require NGOs to play a catalytic role. These organizations can operate in a fairly decentralized way, giving an effective voice to the local people. The evidence, although limited and scattered, suggests that participatory approaches not only help address equity issues more effectively and enhance the sustainability of conservation projects, but, in very concrete terms, also enhance the quality of conservation work and may reduce its costs. This can reduce the dependence on external agencies and funding.

Through genuine participation, enhanced local capacities and a decentralized approach to conservation initiatives, communities organize themselves for action and equity issues can be effectively addressed.

Community organizing involves an activity or series of activities designed to mobilize communities (people living, working or investing together) toward specific social, economic or political goals. Even the smallest communities are made up of interlocking interest groups (families, clans, church groups, guilds, land-owners, castes, etc.) that do not necessarily have the same goals or perspectives, yet can act together as individuals and interest groups to achieve common goals.

Communities can be mobilized by external actors for various reasons: to curry favour and gain clients; to obtain funds from governments and donors; to promote a project or policy; or for genuine humanitarian concerns. Local people can also initiate action on their own, e.g., to get better returns for their labour, develop new revenue sources, build infrastructure, or acquire new skills.

From the outset it is important to understand the role of different actors within the community, and to know which external actors wield significant influence. Community organizing efforts can mask efforts by elites to mobilize labour for their own projects or to gain support for projects that will benefit them. Often organizing is designed to 'con-

Community organizing

Dianne Russell

vince' a community to adopt a new technology or practice that is preferred by governments or elites. Genuine grassroots mobilization to gain better access to resources may be perceived by governments as dangerous and be actually repressed. If caution is exercised to avoid potential troubles such as the ones above, outside actors and local communities can work together profitably to attain political, economic and social goals.

Organizing usually begins with assessments and strategy sessions that bring together members of the community. Depending on the project and the community, this may involve representatives of families or interest groups, or the entire community. An initial session might involve mapping needs and resources. What are the local needs and goals (e.g., building a clinic, starting an adult literacy program, getting clean water)? What resources and skills are needed to accomplish these goals? Important skills include the ability to mobilize others to get work done, to account for what has been accomplished and who has benefited from the community's labour, and to resolve disputes stemming from different interest groups participating in common projects.

Dependence on external actors to sustain community organizing is a frequent problem, particularly where the services provided by external experts exceed the community's technical capacity and funds are managed by outsiders. Learning to manage funds over time and invest in long-term activities is one of the biggest challenges facing communities.

In many countries, there are structures to mobilize savings and investment at the local level. Those which have been found effective in community organizing include rotating credit associations or tontines, and mutual aid funds. Sometimes community projects involve shared labour only, with little or no monetary input.

The implications of community organizing for conservation are numerous. To develop sustainable efforts, community organizers need to analyze different interest groups, types of mobilization efforts, and mechanisms for resolving conflicts. Understanding the role of external actors in community organizing is also critical. Conservation activities that are to benefit from community organizing need to be able to meet local needs and fit within local decision-making and investment structures.

"Ethics?" Gilbert, a South African farmer whose livestock is regularly eaten by lions that roam outside nearby Kruger National Park, looked at me oddly. "Of course we have ethics. But what do ethics have to do with putting food on the table?"

What, for that matter, do ethics have to do with conservation? In the context of saving nature, the term "ethics" can be misleading. Used carelessly, it takes you nowhere fast. The noun implies that there is a right and a wrong: shaky ground on which to build a robust programme. Whose right? Whose wrong?

Better, perhaps, would be a conservation approach which recognizes a principle I term "complexity". By this I mean that a conservation project, if it is to be successful, should recognize that people have practical and spiritual connections with nature.

We need nature to provide food, clean air and fresh water. We need nature to give us building materials, fodder for animals and potentially-useful genes for new crops and new medicines: all the pragmatic benefits that 'green' economists insist on being included in systems of national accounts.

A conservation initiative should also recognize that people have spiritual connections with nature. Of course, the word "spiritual" is as loaded as the word "ethics". I use it in the sense of a non-pragmatic, emotional, often cultural, sometimes religious, usually personal, connection with nature. Building a bird's nest is spiritual; as might be planting a tree.

Most conservation schemes encourage governments to establish protected areas through legislation. Unfortunately, legislation might not provide all the answers, and many modern conservation areas fail because the legislation doesn't have community support. A classic example is the system of Project Tiger reserves in India, several of which are, according to Madhav Gadgil of the Indian Institute of Science, "threatened by discontented local tribal people". Local communities argue that the Delhi-based conservationists value animals more highly than they do people.

An example of how "community reserves" can serve local people can be found in the thousands of sacred forests scattered throughout Asia, Africa and other parts of the world. Sacred forests comprise some of the most successful Asian conservation programmes; it is ironic that they thrive simply because they are based largely on the community's needs and not on what the often-distant government decides should be a priority. In India, and many other parts of the world, sacred groves, or "life reserves", as one Indian villager describes them, survive today without benefit of government protection, without government nature wardens, without government education centres and sometimes even without government goodwill. Primarily Hindu or Buddhist-oriented, sacred groves flourish because they serve people's physical and spiritual needs. Unlike the current view of "empowerment", which often means that the people who really hold the power grudgingly give up a tiny slice to their poorer cousins, sacred groves are rich, diverse, mysterious intact forests which often flourish against all odds amidst urban sprawl and village development. They reflect a refreshing view of nature for the people, by the people.

4.8

Applied ethics in conservation

Paul Spencer
Sochaczewski

Unlike the current view of "empowerment", which often means that the people who really hold the power grudgingly give up a tiny slice to their poorer cousins, sacred groves are rich, diverse, mysterious intact forests which often flourish against all odds amidst urban sprawl and village development.

In Zimbabwe I saw the practical integration of pragmatic needs with 'spiritual' foundations. Near the Great Zimbabwe Ruins, symbol of an ancient and proud empire, Chief Murinye raises his right fist in the air and shouts "*pamberi nehondo yemiti*, forward, the war of the trees!" This is the war cry of ZIRRCO (Zimbabwean Institute of Religious Research and Ecological Conservation), created in 1972 by Zimbabwean Inus Daneel.

ZIRRCO was created, Daneel says, "out of sheer necessity. The countryside was turning into a moonscape". ZIRRCO has planted 1.2 million trees through an imaginative approach which places tree-planting in the dual contexts of practical environmental needs and traditional spiritual and cultural values, in this case the country's 1970s *chimurenga* liberation struggle against the white supremacist regime of Ian Smith. ZIRRCO operates in Masvingo Province, and today counts some 328 chiefs and 65 headmen as supporters.

"Some people in this dry region have to walk five kilometres to get water," Daneel observes. "Trees will help provide regular water. But the problem is that just one in 17 trees planted in Africa survive. Here we have a survival rate of 20 to 30 per cent. This is a link between faith and earthkeeping. It is practical work".

Practical, in the ZIRRCO context, means planting trees to provide fuelwood, to stop erosion, and to provide fruit for people and fodder for domestic animals. It is also spiritual work, since trees support Zimbabwean's varied traditions and belief patterns.

Chief S. M. Mugabe notes that ZIRRCO's objective is to shift the war of liberation to the land, and to put that war in a practical and spiritual context. Chief Murinye adds that the independence war unified Christian and traditional beliefs, and that "the need now is to bring them together for the war of trees". Recognizing Zimbabwe's religious diversity, ZIRRCO works with traditional healers and chiefs, and also with the dozens of African traditional Christian churches.

Regardless of religious orientation (and the borderline between denominations is often vague), all Zimbabweans realize the importance of rain. During the long dry period, it is common for Zimbabwe newspapers to run stories like "Battle for control of Njelele shrine", which told of the passionate disputes among three prominent families to manage a tree-covered hill that is important in rain-making ceremonies. Water is the critical issue here, and trees help keep streams flowing year round. The most effective wars are those fought for an ideal: democracy or religion come to mind. Or, in Zimbabwe's case, an objective of a just war is to gain the blessings of the ancestors.

My introduction to a ZIRRCO tree-planting event took place with traditional tribal priests who brewed beer under a cork tree, part of an ancient rain-making ceremony. My guide was Chief Murinye who, like most members of ZIRRCO, has taken on a *nom de guerre* that reflects a tree name, in his case *muwuyu*, or great baobab. "The graves of our forefathers are naked [devoid of trees]. We're ashamed. Our ancestors are watching what we do here. If they approve they'll send rain." During the ritual I have been named *mushavi*, or fig. I plant trees with Chizu, an 11-year-old girl. Her *nom de guerre* is *mitobge*: custard apple.

One hot afternoon in Zano village, I joined some 50 bishops of various African independent Christian churches, who sprinkled holy water on ground that was soon to welcome tree saplings. Bishop Mutikizizi, tall and elegant in a scarlet robe and light blue cape, white scarf and six-pointed crown of scarlet cloth and sequins, offered communion to the villagers and simultaneously blessed the tiny saplings they held in their hands.

The bishop hears confession from his parishioners. Confessions of pride and sloth and bad behaviour that are probably similar to those most priests hear anywhere in the world. And confessions of ecological sins. One woman nursing a baby confesses: "I've cut a living tree without planting one to replace it". An old man admits to clearing natural vegetation in order to grow crops on riverbanks. Another man says: "I failed to manage contours on steep land". Yet another admits to letting his goats overgraze pasture land. Daneel believes that ultimately, unrepentant ecological sinners will increasingly find themselves debarred from participating in the Eucharist.

Reverend Solomon Zvanaka, ZIRRCO General Secretary, adds: "We fought for the land but once we got it the land was eroded. The traditional healers and tribal chiefs emphasize the war and bring back customs that were thrown away by white rule. And the [Christian] bishops look at our work as taking responsibility for the creation". Chief Murinye observes "there is a correlation between sins and drought. We need peace at all levels, peace within ourselves, and peace with the earth".

4.9

Biodiversity and rural livelihood

Ashish Kothari

The intricate relationship between wild and domesticated ecosystems and species, in terms of inter-crossing, pollination, pest control, water/soil cycles, etc. is often well-understood by such communities; their landscape is a mosaic of human-made and natural habitats merging into one other.

For city-dwellers who are used to getting their daily needs from the market, it is difficult to appreciate the extent of rural communities' direct dependence on biological resources. A vast section of humanity still derives its livelihood, as well as its cultural and bodily sustenance, from the resources directly available from forests, wetlands, grasslands, and marine areas. Even predominantly agricultural communities continue to depend on such resources for a number of requirements.

Here we look briefly at this dependence, emphasising how the diversity of biological resources available to a community leads directly to greater livelihood security. Livelihood is defined here as the way of life and work which helps persons or communities to meet their needs for survival. An understanding of the relationship between livelihood and biodiversity is essential in planning conservation strategies which are socially and ecologically sustainable.

"The economic and social values of much of the biodiversity that nurtures people in and around protected areas have been ignored or under-perceived by outside professionals. This has biased conventional resource planning in integrated conservation and development projects in favour of major food crops and species of commercial importance" (Ghimire and Pimbert, 1996).

Rural populations typically require the following for their livelihood: food (including drink), fuel, fodder, medicine, material for construction and implements, and products to exchange or sell in markets. Traditional societies have always met these requirements from biological and other natural elements, in most cases from ecosystems immediately surrounding them. At least 3,000 species of plants have been used through history for food purposes alone; some 21,000 species have been used for medicinal purposes. In India even today, more than 3,000 species of plants are in use by tribal and non-tribal peasant communities for medicinal uses.

Communities in various pre-industrial modes of existence — hunting-gathering, fishing, pastoral, and agricultural — have varying degrees and kinds of dependence on biodiversity.

Predominantly hunting-gathering and subsistence fishing communities are typically those most directly and completely dependent on wildlife, with most of their survival requirements met by the plants and animals which inhabit their ecosystems. Such communities not only use a great diversity of biological elements (some tribal communities using several hundred species of plants and animals; in a region of Peru, fruits of 193 species are consumed), but also use each element in a diversity of ways (a single *Grewia* species is used in the Indian Himalayas for fodder, fuel, fertilizer, fibre, soap, and medicine). Such diversification is a critical response mechanism to ensure sustainability of resource use. Natural ecosystems are likely to be degraded and face collapse if some elements are overused, and hunting-gathering or fishing communities do not have the luxury of switching to alternatives if this happens.

Nomadic pastoralists and shifting cultivators, undeservedly condemned by wider society as being destructive, actually make optimum use of the biodiversity of ecosystems and species. They depend on ecosystems which cannot withstand sustained use (tropical rainforests, grasslands, etc.), so they have adapted to using a larger range, thereby allowing fragile ecosystems to 'rest' and regenerate. A large number of plant

species are used for the requirements of livestock, including fodder and medicine. In India, there is even a systematic traditional science of animal veterinary care (*Mrgayurveda*), which specifies the use of a large diversity of plants for medicinal purposes.

Subsistence cultivators attempt to optimize their production systems by using a diversity of crop-livestock systems, supplemented by resources taken from natural ecosystems. Typically, the genetic diversity developed by such farmers is very high; in India, cultivators have used over 50,000 varieties of rice alone. Nearby forests and wetlands are used for leaf manure, pest control products, supplemental food, fodder, biomass fuel, medicinal products, and a range of other needs. The intricate relationship between wild and domesticated ecosystems and species, in terms of inter-crossing, pollination, pest control, water/soil cycles, etc. is often well-understood by such communities; their landscape is a mosaic of human-made and natural habitats merging into one other.

Even the market requirements of such communities are met by this biodiversity. Across the world, for instance, a great variety of non-timber produce is extracted by communities living in or adjacent to forests. Bamboo, cane, medicines, fruits and nuts, honey, gum, oils, fibre, spices, resin, biopesticides, etc: the range of products is almost infinite. For centuries these products have been bartered in traditional markets and across great distances; with the entry of the monetary market, they are also important sources of income for rural populations. Studies in Botswana and other countries suggest that, even for many farming families, income from wild products is higher than from cultivated ones.

Direct dependence on biodiversity is lowest for large commercial farmers, but it nevertheless continues to be very real in an indirect way: the continued survival and upgrading of agriculture still depends on genetic and other inputs from wild relatives and traditional varieties of crops and livestock. In addition, new sources of food and other agricultural products continue to be found from wild plants and animals.

Although the issue has not been studied in depth, there are strong indications that the economic value of sustainable harvests of a diversity of forest produce is higher than if the forest were to be cleared for timber, or converted into a monoculture plantation. If one adds the social and cultural values of biodiversity, the net importance may be far greater. This can be a powerful argument for conservation.

To conclude, biodiversity is critically important to people's livelihood in the following ways:

- it provides many and diverse subsistence requirements that a rural community needs for survival, including food, fodder, fuel, housing/agricultural material, cultural and spiritual sustenance;
- it provides an element of livelihood stability — the failure of one element of biodiversity does not lead to collapse, since alternative elements are usually available;
- it allows local communities a degree of self-reliance and independence from the market and government, since many goods and services can be obtained locally;
- it provides a variety of products which can be bartered and sold in markets by rural communities, thereby enabling them to gain access to goods and services that they are not able to get locally.

It should be obvious from the above that any strategy for conservation of biodiversity needs to be sensitive to this dependence. Approaches which restrict local access to biological resources without the provision of adequate alternatives are bound to generate suffering and hostility, and therefore will never be socially sustainable. Indeed, such approaches can force the existing practices to become unsustainable, as community self-regulation practices and restraints break down when people have to illegally extract their required resources.

Conversely, approaches which ensure sustainable access to livelihood resources, enhance the benefits which local populations can derive from natural ecosystems, and attempt to change unsustainable practices through enabling and persuading rather than force, will generate the public support which alone can make conservation effective.

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The earth's remarkable cultural diversity and heritage reflect the extent of local knowledge of natural systems and how they are best managed to meet human needs. For thousands of years communities around the world have experimented with technologies, social systems, beliefs and values which allowed them to sustain themselves in an immense range of ecosystems. Today the growing dominance of western systems of scientific thought, governance structures and modern technologies is displacing many of the older ways of dealing with our environment. While the erosion and extinction of community-based resource management institutions have not been studied as much as biodiversity loss, they are also rapid and accelerating as they are supplanted by modern systems of government, market economies, and urban culture. In another generation, local knowledge of forest biology, sustainable use practices and management institutions may be largely lost. Only through national policies and programmes that extend legitimacy to informal community management systems — and through cultures that value them — can they continue to function.

In recent years there has been a growing interest in integrating local knowledge into development planning and resource management systems. Unfortunately, this effort has largely involved collecting a limited amount of information about farming systems, forest management practices, and knowledge of traditional medicinal species. While participatory rapid appraisal (PRA) methods can help generate this type of information, current techniques often reveal only a small amount of such knowledge with respect to their embedding systems of resource management. What is perhaps far more fundamental is engaging local communities in meaningful dialogues and building on such knowledge. To do this, we need ongoing communication and a way for the socio-cultural systems of disempowered groups, often linguistically different, to negotiate with modern, urban-based societies and governments.

In the field of forest management, much of the attention paid to local knowledge focuses on revealing the commercial potential of information regarding species utilization. Two understudied but critically important categories of indigenous knowledge include local resource management institutions and land-use systems. Locally-instituted mechanisms to control access, participatory decision-making processes, and conflict resolution procedures will be even more necessary to sustain the resources as population and economic pressures on forests increase. Understanding and supporting such institutions and their function will enable government agencies and other stakeholders to collaborate in the sustainably productive use of forests.

Many local land and forest technologies, designed over hundreds of years to meet site specific conditions, have proved to be both productive and sustainable. Yet, they have received only marginal attention in development planning, while untested modern techniques have been subsidized and supported through policies and programmes. In many contexts, local forest-use systems may remain the most appropriate practices. In other situations, they can be further enhanced through emerging science and new market opportunities. Local technologies, however, are never applied in a vacuum. They are usually supported through traditional institutions, which constitute the broader forest management system. Policies which reinforce community tenure rights to forest resources need to be linked to programmes which encourage the practice and development of such systems.

4.10

Local knowledge in conservation

Mark Poffenberger

Two understudied but critically important categories of indigenous knowledge include local resource management institutions and land-use systems. Locally-instituted mechanisms to control access, participatory decision-making processes, and conflict resolution procedures will be even more necessary to sustain the resources as population and economic pressures on forests increase

Since knowledge of these local systems rests with the community, government planners need to establish communication channels on management objectives and operations. Yet, planners are often from different social class backgrounds, and even cultural and linguistic groups, than the communities they plan for. Transferring information from indigenous, rural communities to urban-based organizations presents problems. A common frame of reference needs to be established whereby information can be shared and its implications assessed. Typically, local information is translated into the language of the urban planner and administrator, often losing meaning and specificity in the process.

Systems of local management need to be understood by planners if they are to be used to develop collaborative systems, linking informal community groups with larger governance structures. For example, many local communities have complex resource-use systems, each with their own names, sets of use rules and restrictions, tenure status, and technologies. Among the Tai ethnic minority of northern Vietnam, there are at least four major categories of forest, ranging from strict protection, secondary productions, bamboo, and long rotation agriculture-young forest. Government planners need to establish land-use systems, using local names and terminology, to facilitate discussions with communities regarding management policies and programmes affecting their areas.

Complex systems of leadership, decision-making, dispute arbitration, and other components of local management systems also need to be identified by local terms; initially to facilitate communications between outsiders and community members, and over the long term to bring these elements effectively into collaborative decision-making. Local management systems may be better understood by working with communities to visually illustrate processes and systems. Ethno-land-use typologies are particularly helpful in identifying resource interaction patterns.

Local knowledge also extends to attitudes and beliefs. Of particular importance are local perceptions of resource rights, which are often based on the community's history in the area. Different communities and other stakeholders may share a common history, but differ in their interpretation of past events and agreements. This information is important in developing collaborative management mechanisms and agreements.

The realm of local knowledge, attitudes, and beliefs is so vast that it cannot be realistically integrated within the planning of most development activities and policies. But it is critically important that those institutions and resource management systems which operate and interface with policy and programmes are not only acknowledged, but understood and integrated with emerging government strategies.

Perhaps the first step necessary is mapping and documenting the existence of such systems. One Indonesian community forestry mapping specialist noted: "Just the process of recording the villagers' knowledge of their land and their history is empowering... The maps give the villagers some means of communicating with other land users, and some negotiating platform if there are conflicts." (Sirait, 1995). Similarly, when a Vietnamese forestry research team asked a district official about local management, he replied that it was the first time

anyone from the capital had shown interest in traditional systems, even though much of the area's critical watersheds were protected under the informal institutions of the ethnic minorities of the area.

Until very recently, there was a clear message from the world's capitals and centres of development. Local knowledge was irrelevant, and modern technologies and 'scientific' information were the only basis for development. This arrogant perspective is beginning to change, although there are daunting complexities in creating common frames of reference that might merge local and modern government cultures of management. Simply acknowledging that local knowledge is a valuable resource in evolving sustainable development strategies and resource management systems is a first step. More will need to follow.

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4.11

Indigenous peoples and protected areas

Janis B. Alcorn

Issues and opportunities

Conservationists have increasingly recognized the enormous spatial and political overlap between protected areas and indigenous peoples (Alcorn 1994). While most protected areas overlap with local communities to some degree, and hence require the general actions outlined in this resource set, there are special problems and opportunities related to achieving conservation programmes in collaboration with indigenous communities (Colchester 1995b). These problems and opportunities are also widespread, since in many cases the local people inside and near protected areas are indigenous peoples; particularly in the Americas where 80 per cent of protected areas include indigenous peoples.

Working with indigenous peoples requires paying conscious attention to the issues and opportunities that arise from recognizing and supporting the coexistence of a people whose cultural values and institutions differ from those of the dominant culture. As a result, some conservation agencies have entered into dialogues with indigenous communities to identify specific avenues for appropriate collaboration. At the same time, however, many other conservation agencies continue to ignore the presence and rights of indigenous peoples in areas targeted for conservation of biological diversity. This concept file summarizes the key concepts and opportunities related to this issue.

Box 12: Indigenous peoples

Peoples are considered indigenous if they are:

- a) *tribal peoples in countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regarded wholly or partially by their own customs or traditions or by special laws or regulation; or*
- b) *peoples in countries who are regarded by themselves or others as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain, or wish to retain, some or all of their own social, economic, spiritual, cultural and political characteristics and institutions.*

ILO, 1989

Most indigenous peoples are politically marginal groups living within the borders of nation states dominated by other ethnic groups and labelled by generic terms that cover many different peoples within a nation state (e.g., tribals, hill tribes, Indians, indios, sea gypsies, pygmies, dayaks, igorots, inuit, bedouins). Indigenous peoples claim property rights to ancestral lands/waters, and they claim the right to retain their own customary laws, traditions, languages, and institutions, as well as the right to represent themselves through their own organizations (Hitchcock, n.d.). Often, however, these rights are not recognized or defended by the states controlling the areas where they live. Indigenous peoples living in areas of high biodiversity can also generally be characterized as ecosystem people (see concept file on indigenous resource management systems) who are closely linked to their local land/water base and who have developed resource management systems and social institutions which are responsive to environmental feedback.

The term "protected area" used here follows the definitions established by IUCN. It covers the full range of existing categories, from areas under strict protection to areas under multiple use management, including areas that are defined locally with, or without, national recognition (such as sacred groves). The success of a protected area depends on the strong local presence of organizations that have a vested interest in maintaining the protected area, and the capacity to prevent unacceptable uses of the area's resources.

Box 13: Protected areas

A protected area is an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means. Different protected area categories include (IUCN, 1994):

- I. strict natural reserve/wilderness area;*
 - II. national park;*
 - III. natural monument;*
 - IV. habitat/species conservation area;*
 - V. protected area landscape/seascape; and*
 - VI. managed resource protected area.*
-

The failure to include and support indigenous peoples in decision-making lies at the heart of the issues emerging from the intersection of protected areas and indigenous peoples' lands and waters. If conservationists recognize indigenous peoples' rights, then they must also accept the responsibility of ensuring that indigenous peoples play a central and long-term role in decision-making related to protected areas.

Decision-making issues are associated with two main thematic areas:

- selecting protected areas sites, and
- implementing protected areas.

Indigenous people are seldom consulted when decisions are made about where state-sponsored protected areas are to be established, or about how those protected areas should be managed. When such areas are selected without decision-making by indigenous peoples, forced relocation and other forms of resettlement often follow, initiating a series of negative events that weaken opportunities for building partnerships. Resettlement has a broad impact, including restrictions on management of, and access to, food, medicines, fuel, pasture, water sources and sacred sites within the protected area or buffer zone. This impact is similar to that of forced relocation.

Indigenous people are seldom consulted when decisions are made about where state-sponsored protected areas are to be established, or about how those protected areas should be managed.

Both relocation and resettlement restrictions disrupt social structure and cultures and directly threaten physical and economic well-being. Resettlement often disrupts the lives of people who live in or use the lands where people have been forced to go, which in turn lead to secondary social and cultural processes that also erode support for protected areas (see also the concept file on social concerns in resettlement programmes).

Current protected area selection and management structures may even undermine prospects for future participation of indigenous peoples in decision-making. Indigenous peoples' decision-making processes occur through traditional institutions guided by cultural values that are

generally supportive of conservation goals. Yet most states create new organizations and institutions to carry out state-imposed programmes (including protected area programmes) and thereby undermine existing institutions (see Colchester 1995a).

This can lead to a double failure: of both new organizations and strong pre-existing institutions. In addition, broad state policies usually enforce the integration of indigenous people into the mainstream consumer culture by actively destroying traditional values, customs, and language.

At times conservationists have allied themselves with military-based states and thereby legitimized some human rights abuses against indigenous peoples who resist the implementation of protected areas on their lands (Peluso, 1993). These violations of indigenous peoples' rights have led to anger and armed resistance, both of which have negative consequences for the sustainability of conservation. During the last decade, indigenous peoples have raised the issues of human rights violations by conservationists at international levels.

By failing to treat indigenous peoples as decision-makers with valuable insights and prior rights, conservationists have turned potentially win-win situations into lose-lose ones. Indigenous peoples have suffered the consequences of conservationists' decisions, and conservationists are realizing they have lost critical opportunities for achieving their desired goals.

Recognizing those lost opportunities, conservationists have developed new initiatives to respond to the convergence of indigenous peoples and protected areas. These include:

- policy and legal reforms; and
- new methods for planning, implementing and monitoring protected areas.

Most existing initiatives in these two areas are taking small, cautious steps toward recognizing indigenous peoples' rights to participate in decision-making.

Policy and legal reforms

Policy and legal reforms are necessary to enable indigenous peoples to participate in real decision-making. At the international level, policy reforms are being started within donor and development agencies (e.g., Asian Development Bank, World Bank, Interamerican Development Bank, Dutch bilateral aid). But these policies are often very narrowly applied; the on-the-ground impact of donor projects on indigenous peoples and their natural environment continues to be negative. Joint efforts between conservation organizations and indigenous peoples are developing specific collaborative policies for guiding protected area management (e.g., World Wild Fund for Nature, IUCN).

A few countries offer examples of how policies can create support for protected area management by indigenous people. In Mexico, Australia, Panama and Papua New Guinea, for example, policies recognize indigenous peoples' rights to establish, administer and benefit from protected areas under programmes that offer support and assistance from the state in response to requests from the communities (c.f. Cordell, 1993; Fingleton, 1993; Grupo para la Conservacion del Tropico en Mexico, 1992; Herlihy, 1990; Hill and Press, 1994; Toledo, 1992).

In those countries, other policies indirectly support protected area management, by recognizing communal property, defending indigenous peoples' rights, promoting income-generation opportunities for local communities, and supporting cultural values and institutions through radio access, educational programmes and development councils. Yet, other sectoral policies continue to conflict with the mandate under which these reforms were promulgated; policies on mining and agricultural loans are particularly problematic. The examples from Mexico, Australia, Panama and Papua New Guinea are not ideal, but they are on the cutting edge of reform worldwide.

Globally, broad policy and legal reforms will be essential to support true coexistence — which is the necessary basis of real partnerships between indigenous peoples and others. Unless indigenous peoples are allowed to maintain their coexistence by preserving their own religions, languages, customary laws, and institutions within the structures of the nation state, then narrow reforms focused on protected areas are not likely to have sustainable conservation impacts. In many places, settlers have moved into areas occupied by indigenous peoples, and this presents a thorny set of problems that cannot be avoided in efforts to support coexistence. Solutions to these problems cannot simply be mandated; lasting solutions can only be worked out through processes involving local stakeholders.

The second key area of reform covers the specific methods and structures used in protected area planning, implementation, and monitoring. Although there are programmes which recognize protected areas established by indigenous peoples themselves, there are few examples of indigenous peoples being consulted in developing national protected areas systems, or even in demarcating the borders of specific protected areas, even these are two obvious areas for potential collaboration. In recent years, there has been increased talk of co-management. Yet, in most countries, co-management programmes offer insufficient opportunities for indigenous peoples to take the lead in decision-making (e.g., Chapeskie, 1995).

New methods and structures

Decision-making processes are controlled by government and indigenous peoples' participation is often limited to representation on a board dominated by non-indigenous people and operating under concepts and rules defined by non-indigenous value systems. This type of decision-making does not build on the strengths of coexistence. If support for coexistence becomes a priority, then increased emphasis must be placed on ensuring that indigenous peoples' decision-making is based on full information. Conservation agencies should focus on providing such information and assisting indigenous peoples to implement and evaluate their own decisions.

Today, indigenous people are most frequently being offered opportunities to monitor wildlife populations, but governments generally fail to acknowledge indigenous peoples rights to monitor other aspects of protected area management. For example, governments generally ignore indigenous peoples reports on the negative conservation impacts of mining, logging, and other capital-intensive extractive activities within protected areas.

Community-based mapping offers one of the most promising ways to initiate the participation of indigenous peoples in protected area management (Poole, 1995). If mapping is properly implemented in a highly participatory manner, it offers twin benefits. On the one hand, it produces specific information about conservation in a medium that both parties understand; this can start the process of negotiation and information-sharing. Second, it is a tool for community organizing that brings people together. Sharing knowledge about the state of their territory is tantamount to sharing the most essential knowledge about themselves, because of the close relationship between space, history and identity among most indigenous peoples. Mapping reminds individuals of their cultural ties to a place and informs outsiders of their rights to the area. Mapping to negotiate rights in protected areas has rarely been used, however, by pastoralists or other peoples with seasonal rights to resources. (For mapping and other methods see Section 5, Volume 2.)

There is strong resistance to recognizing indigenous peoples' decision-making rights in many quarters, including national agencies and international conservation organizations. Fears of loss of control continue to drive the promulgation of myths and counter-myths. Hardline conservationists think that those who support indigenous peoples' rights are the same ones who believe indigenous peoples are 'natural conservationists' or 'noble savages' (Alcorn, 1994). This misrepresents the primary reason why conservationists should recognize the decision-making authority of indigenous peoples; that is, indigenous people have prior rights over the lands/waters in which conservationists are expressing interest, including the rights to make decisions about how to manage those lands. While in many cases indigenous peoples do make decisions based on strong conservation values, this should not be the criteria for recognizing indigenous peoples rights in protected area selection and management.

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4.12

Social concerns in population resettlement

Michael M. Cernea

Population resettlement processes result from different causes and take multiple forms, but one broad way to categorize them is to distinguish between: a) voluntary resettlement processes (e.g., voluntary migration, settling of new lands); and b) involuntary resettlement processes (e.g., flight from war, relocation caused by infrastructure programmes or by the creation of protected areas). My focus in this brief article is on the second category, particularly on relocation caused by development or nature conservation programs. I will summarize the key social and environmental concerns that must be recognized and addressed in such situations.

Avoid or minimize displacements

The sheer magnitude of involuntary population displacements has increased considerably over the last few decades. Recent estimates indicate that in every single year during the 1990s, at least 10 million people enter a process of involuntary displacement and relocation. This is caused by a cohort of programmes such as in dam construction, urban infrastructure and transportation facilities. In comparison, resettlement caused by conservation programmes (parks, biosphere reserves, etc.) is much more limited, but this should not mean that less attention should be paid to its complexity and possible negative impacts.

National parks are collective goods. The creation and protection of collective goods should not occur, however, at the expense of the individual livelihoods of the resident people. Removing the resident population has too often been standard practice in park creation; even today such decisions are sometimes taken too easily, without sufficient consideration of alternative forms of resident co-management and on-site protection.

We know that, throughout human history, changes in land- and water-use patterns have made resettlement necessary. Such resettlement will be needed in the future as well. While involuntary relocation must be avoided whenever possible, the need for resettlement cannot be eliminated completely. Irrigation for thirsty fields, wider roads in clogged downtowns and protection of biosphere reserves from consumptive overuse are all necessary. If involuntary displacements are, to a certain extent, inevitable, they must be minimized whenever they cannot be completely avoided. This includes conservation schemes. Most important, displacements must be carried out in a way that will protect the livelihoods of those displaced and prevent secondary environmental damage as well.

Concerns and risks; impoverishment

What is still insufficiently understood, both by government officials and by many in the environment and conservationist community, is the long-term socio-economic impact of displacement on resident people.

The main risk of forced displacement is impoverishment of the displaced people, many of whom are poor to begin with. This risk is not abstract: social research has documented that inequitably planned and irresponsibly implemented resettlement causes increased poverty. Therefore, the main social concerns in involuntary resettlement must revolve around the inherent risks. Policy-makers, planners, and conservationists should focus on such risks and translate their concerns in commensurate mitigating actions.

What should be the main concerns of conservationists, as well as of all development practitioners, when relocation processes are undertaken? I have examined a vast body of empirical data and compared field findings of sociological studies about the basic socio-economic processes that occur when people are forcibly displaced. These comparisons have revealed recurring characteristics. I identified a pattern of eight main potential risks which, if not counteracted specifically and systematically, lead to a painful reality.¹ Avoiding these risks should be the main concern of policy-makers, NGOs, planners, environmentalists.

Taken together, these eight processes represent a risk model that captures the economic, social and cultural impoverishment of displaced people. The model predicts that the displaced people are at risk to lose natural capital, human-made (physical) capital, human capital, and social capital. These processes and risks are:

- 1. Landlessness.** Expropriation of land removes the main foundation on which people build productive systems, commercial activities and livelihoods. This is the main form of de-capitalization and pauperization of the people who are displaced, because both natural and man-made capital are lost.
- 2. Joblessness.** Loss of wage employment occurs both in rural and urban displacement. People losing jobs may be landless agricultural labourers, service workers, or artisans. Creating new jobs for them is difficult and requires substantial investment. Therefore, the unemployment or underemployment among resettlers lingers long after physical relocation.
- 3. Homelessness.** Loss of housing and shelter may be only temporary for many people, but for some it remains a chronic condition. In a broader cultural sense, homelessness is also placelessness, loss of a group's cultural space and identity, or cultural impoverishment.²
- 4. Marginalization.** Marginalization occurs when relocated families lose economic power and slide down towards lesser socio-economic positions: middle income farm-households become small land-holders; small shopkeepers and craftspeople lose business and fall below poverty thresholds, and so on.
- 5. Increased morbidity and mortality.** Vulnerability to illness is increased by forced relocation, which tends to be associated with increased stress, psychological traumas, and the outbreak of parasitic and vector-borne diseases. Serious decreases in health levels result from unsafe water supply and sewage systems that proliferate epidemic infections, diarrhea, dysentery, etc.
- 6. Food insecurity.** Forced uprooting diminishes self-sufficiency, dismantles local arrangements for food supply, and thus increases the risk that people will fall into chronic food insecurity. This is defined as calorie-protein intake levels below the minimum necessary for normal growth and work.
- 7. Loss of access to common property.** Poor farmers, particularly those without assets, suffer a loss of access to the common property goods belonging to communities that are relocated (e.g., loss of access to forests, water bodies, grazing lands, etc.). This represents a form of income loss and livelihood deterioration that is typically overlooked by planners and therefore uncompensated.

Resource stewardship or replacing the stewards? Impoverishment through displacement is not justifiable on conservation grounds: the two goals of protection of livelihoods and conservation of vital natural resources are compatible and must be harmonized.

8. Social disintegration. The dismantling of community structures and social organization, the dispersion of informal and formal networks, local associations, etc. is a massive loss of social capital. Such elusive disintegration undermines livelihoods in ways uncounted and unrecognized by planners, and is among the most pervasive causes of enduring disempowerment and impoverishment.

The risks discussed above differently affect different categories of people: rural and urban, tribal and non-tribal groups, children and the elderly. Significant research findings show that women suffer the impacts of displacement most severely³. Moving people involuntarily also raises legal issues of human rights (see box).

Box 14: Resettlement in Côte d'Ivoire

For a forestry project in Côte d'Ivoire, West Africa, co-financed by the World Bank, the requirements of the Bank's resettlement policy were applied. The project was intended to prepare and introduce forest management plans for several high-priority areas. Before the project, the country's Forestry Department initiated a crash campaign to recover control of forests. It used forestry staff trained as a paramilitary force, with no compensation and little concern for forest communities that were to be evicted. Learning through an appraisal process that the policy of the Forestry Department was to evict up to 200,000 residents in a similar manner, the World Bank's mission opposed and rejected this approach. The Bank sought and received agreement on a different course of action which would reduce overall displacement from about 200,000 people to less than 40,000; provide better conditions for resettlers; consolidate existing scattered populations into "agroforestry zones" within the legal limits of classified forests; and integrate resettlers into forest management plans. This approach, much more socially and culturally sensitive, is new for Côte d'Ivoire and was never considered before this project. What could have been a massive and violent uprooting for tens of thousands of people was averted.

The ongoing Côte d'Ivoire project is still far from being problem-free; the new government policy of relocation has been drafted, but its implementation has been postponed repeatedly. In addition, the "forest-farmers" commissions established for finding alternative areas are only partly active and forest management plans have taken a long time to prepare. Because of this, the World Bank has kept the initiative on its "problem project" list and monitors it closely. Forest authorities and the agency managing the project have renounced violent, uncompensated displacement, but learning new ways has not been easy. Currently, the staff are learning how to carry out constructive relocation, how to provide better conditions for the forest people scheduled to move to agroforestry zones, and how to integrate resettlers effectively into forest management plans. On completion, the experience of this project, with its successes and weaknesses, will contain many lessons about what should be replicated and what should be avoided in managing the relationships between resident people and park resources.

The potential for violating individual and group rights under domestic and international law makes compulsory resettlement unlike any other development activity. The fact that appeal courts frequently and significantly raise compensation levels for lost assets reflects the recognition

in legal systems that people cannot be arbitrarily displaced without just compensation, regardless of national need. However, not all affected parties have access to legal remedies to enforce those rights.

Worldwide resettlement experiences show that, in many countries, the single most damaging factor of relocation is the absence of policy and legal frameworks that define the rights and entitlements of people affected by state-imposed displacements. Within such policy vacuums, standards are disregarded, arbitrariness sets in, and the powerless are victimized once again, rather than being allowed to share in the benefits of development and good environmental management.

Social concerns in resettlement, as in most domains, are inextricably linked to environmental concerns. Relocation out of parks, for instance, suddenly increases population densities in host areas to levels that may exceed their carrying capacity and entail the overuse and abuse of natural resources. After losing access to common property natural resources, displaced people tend to encroach on reserved forests and generally increase the pressure on common property resources of the host area. Thus, relocation may become a source of increased social tensions and host-resettler conflicts. Involving residents in co-management on a profitable and sustainable basis is the best alternative to relocation, because it enables at-risk people to avoid displacement risks and share in the benefits of the conservation programme.

Resettlement and demography

The risk model that I proposed above should be seen as a working tool for preparing relocation plans (only when relocation becomes inevitable) that would be responsive to the concern for the welfare of the affected people, and would monitor how such plans are implemented. Indeed, risk recognition and analysis are crucial for sound planning and for the argument that impoverishment through displacement can be counteracted.

From preventing impoverishment to reconstructing livelihoods

The eight characteristics of impoverishment described above provide a warning model that captures the lessons of many real processes and clearly point to what must be avoided. The predictive capacity of such a model helps adopt timely counteractive or compensating measures for risk management. The basic policy message embodied in the above model is that these intrinsic socio-economic risks must be brought under control through an encompassing strategy. They cannot be tamed through random piecemeal measures based solely on cash compensation for lost assets.

Most important, if this risk model is reversed, it provides an action model for constructively reestablishing those displaced.⁴ In other words, standing the risk model on its head suggests precisely what needs to be done to restore the incomes of those displaced and, whenever possible, to improve them. More specifically: landlessness risks should be met through planned land-based re-establishment; homelessness through sound housing programs; joblessness through alternative sustainable employment; increased morbidity through adequate prevention, education, and improved health care assistance; community disarticulation through purposive community reconstruction and host-resettler integrative strategies.

In conclusion, it is crucial to emphasize that there are trade-offs and alternatives to displacement, particularly in nature conservation programs. The primary effort should be in preventing the displacement of resident people; mitigation only becomes an issue when relocation is unavoidable. If resident people must be relocated, the conditions under which this takes place should be carefully defined. Impoverishment through displacement is not justifiable on conservation grounds: the two goals of protection of livelihoods and conservation of vital natural resources are compatible and must be harmonized. Equitable, socially fair and workable approaches to planning, financing and implementing relocation can defeat all the impoverishment risks described in the model above.

Notes

1. Cernea, M. M., "Understanding and Preventing Impoverishment from Displacement: Reflections on the State of Knowledge", Keynote Address presented at the International Conference on Development-Induced Displacement, *Journal of Refugee Studies*, Vol. 8, 3, 1995.
2. See the gripping story written by anthropologist Colin Turnbull about the disastrous displacement of the Ik tribe in Uganda for the purpose of creating a natural park (Turnbull, C., *The Mountain People*, New York, Simon & Schuster, 1972).
3. Fernandes, W., "The Impact of Displacement on Women from the Weaker Sections in India", paper presented at the International Conference on Development-Induced Displacement, Oxford, January, 1995.
4. Cernea, M. M., *Eight Main Risks: Impoverishment and Social Justice in Resettlement*, The World Bank, Environment Department Papers, 1996.

See also, as general references

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The environment is more than just trees and tigers, threatened plants and ecosystems. It is the entity in which we all subsist, and on which our entire agricultural and industrial development depends. Development can take place at the cost of the environment only up to a point. Beyond that point it will be like the foolish person who was trying to cut the very branch on which he was sitting. Development without a concern for the environment can only be development for the short term. In the long term, it will become anti-development and can go on only at the cost of enormous human suffering, increased poverty and oppression. That point may be rapidly approaching.

Simply speaking, the major environmental problems in the West are due to waste disposal: problems of air and water pollution and of disposal of highly toxic industrial and nuclear wastes. Although problems of acid rain have definitely increased and there does not yet seem to be any solution to the problems of toxic wastes, it is true that some cities and rivers do appear to be cleaner.

In the Third World, as industrialization increases, waste disposal problems are getting worse day by day, but they are still not the major or the only environmental problems; those clearly arise out of the misuse of natural resources, soils, forests and water. To a great extent these problems are created by the pressure to produce raw materials for modern industry.

The food needs of the West have also played havoc with the lands of the Third World. More than a quarter of all Central American forests have been destroyed since 1960 for cattle ranching; 85 to 95 per cent of the beef produced has gone to the U.S. while domestic consumption of beef in Central America has fallen dramatically. In the U.S., this beef has mainly been used to make pet food and hamburgers.

Beef from Central American is half the price of grass-fed beef produced in U.S, although the price of Central American beef does not represent its actual ecological cost. Cattle ranching has proved to be the worst form of land use for the fragile soils of these tropical moist forests. Within five to seven years their productivity drops dramatically and cattle ranchers have to move on.

In India, the first major attack on the forests of the northeast came with the establishment of tea plantations. The current over-fishing on India's coasts, and those of almost all southeast Asian countries, is due to the heavy demand for prawns in Western and Japanese markets. This over-fishing is leading to considerable tensions between traditional fisherfolk and trawler owners; violent encounters between the two are regularly reported. Recently, Indonesia completely banned trawlers from its coastal waters, and several countries, including India, have set up regulations to prevent trawler operators from fishing in areas near the coast. This zone is reserved for the traditional fisherfolk. But policing trawlers over such an extensive coastline is an expensive proposition and regulations are therefore seldom observed or enforced.

The pattern of environmental exploitation that we see on a global scale simply reproduces itself on a national scale. What Western industry does to the Third World environment, Indian industry does to the Indian environment. Nearly half of the industrial output in India is accounted for by operations that can be termed biomass-based indus-

4.13

Poverty, wealth and environmental degradation

Anil Agarwal

Environmental destruction by the rich

tries; that is, cotton textiles, rayon, paper, plywood, rubber, soap, sugar, tobacco, jute, chocolate, food processing and packaging. Each of these industries exerts an enormous pressure on the country's cultivated and forest lands. They need crop lands, they need forests, and they need energy and irrigation.

The first lesson is therefore clear: the main source of environmental destruction in the world is the demand for natural resources generated by the consumption of the rich (whether they are rich nations or rich individuals and groups within nations). Because of this gargantuan appetite, it is mainly these wastes that contribute to the global pollution load.

The poor and their environment

The second lesson is that it is the poor that are affected the most by environmental destruction. The field experience of voluntary groups shows clearly that eradicating poverty in a country like India is simply not possible without the rational management of our environment; conversely, environmental destruction will only intensify poverty. The reason is simple, though seldom recognized. The vast majority of the rural households meet their daily household needs through biomass or biomass-related products which are mostly collected freely from the immediate environment. In short, they live within a biomass-based subsistence economy. Food, fuel (firewood, cow-dung, crop-wastes), fodder, fertilizer (organic manure, forest litter, leaf mulch), building materials (poles, thatch), herbs and clothing are all biomass products.

Water is another crucial product for survival. Water is not biomass itself, but its availability is closely related to the level of biomass available in the surrounding environment. Once the forest disappears, the local pond silts up, the village well dries up, and the perennial stream becomes reduced to a seasonal one. The water balance becomes totally upset with the destruction of vegetation: in a monsoon climate like that in India, with highly uneven rainfall over the year, environmental degradation means greatly increased runoff and floods during the peak water season and greatly increased drought and water scarcity in the lean dry season.

It is not enough to preserve biological diversity in just those areas of our country where the flora and fauna are genetically rich and diverse by setting up biosphere reserves and national parks; biological diversity must be preserved and/or recreated in every village ecosystem.

The magnitude of India's dependence on biomass for meeting crucial household needs can be appreciated by looking at the country's energy situation. Indians love to point out that India has the world's tenth largest industrial output. But even so, over 50 per cent of the fuel consumption in India is for a fundamental activity for survival like cooking. In developed countries, cooking consumes less than ten per cent of total national fuel consumption. Even more important for India is the fact that over 90 per cent of the cooking fuel in India is biomass: that is, firewood, cow-dung and crop wastes.

Biomass resources not only meet crucial household needs, they also provide a range of raw materials for traditional occupations and crafts and therefore are a major source of employment. Firewood and cow-dung are important sources of fuel for potters; bullock carts and catamarans are made from wood; bamboo is a vital raw material for basket weavers, and so on. Traditional crafts are threatened not only by the introduction of modern products but also by the acute shortage of biomass-based raw materials. A study from the Indian Institute of Science — the first in India on the changing market of bullock carts — reports that people in Ungra village in Karnataka can now no longer

afford to buy new bullock carts with traditional wooden wheels because wood has become extremely expensive. A recent report from the Murugappa Chettiar Research Centre in Madras states that traditional fisherfolk now find it very difficult to make new catamarans because the special wood they use is so scarce and expensive.

Social activists in Saharanpur have pointed out the travails of the baan-makers who have now been deprived of their source of bhabhar grass. The Uttar Pradesh Forest Development Corporation's discrimination in favour of paper mills has turned thousands of these baan workers into destitute, landless labourers and urban migrants. Wood is now difficult to get even for making agricultural implements like ploughs, especially the wood that has been traditionally used for these implements. Few people know that one of the factors that led to the Chipko movement was the anger of the local people over the forest department's refusal to provide ash wood for making ploughs to them, allocating it instead to sporting goods manufacturers.

Fodder is another vital resource that suffers acute shortages. With less than three per cent of the world's land mass, India supports 15 per cent of its cattle, 52 per cent of its buffaloes and 15 per cent of its goats. These animals play an extremely important role in the integrated system of agriculture and animal husbandry that Indian farmers practise. As a study from the tribal areas of Gujarat shows, shortage of fodder, especially from public lands, means that poor landless households and marginal farmers do not benefit very much from the milk cooperatives and animal improvement schemes in the region.

The natural environment in India has steadily undergone an extensive transformation. There are two major pressures operating on the country's natural resources. The first, generated by population growth and thus by increased household demand for biomass resources, has been widely talked about. The poor often get blamed for the destruction of the environment. But the second set of pressures, generated by modernization, industrialization and the general penetration of the cash economy, are seldom talked about, even in policy-making circles.

The transformation of nature

Modernization affects nature in two ways. First, it is extremely destructive of the environment in its search for cheap biomass-based raw materials and for cheap opportunities for waste disposal. There is no attempt being made to internalize environmental costs; both public and private industrialists prefer to pass them on to society. State governments also give away large tracts of forests for a pittance and ignore water pollution control laws to get a few more factories.

Modernization affects nature in another way: by steadily transforming its very character. The tendency is to reduce diversity in nature and replace it with high-yield monocultures. The ecological role of the original environment is usually disregarded in this transformation. In social terms, the change is generally away from a nature that has traditionally supported household and community needs and towards one nature that is geared to meet urban and industrial needs: a nature that is essentially cash generating. Excellent examples of such transformations are the pine forests in place of the old oak forests in the Himalayas, the teak forests in place of the sal forests in the Chottanagpur Plateau, eucalyptus plantations in place of natural forests in the Western Ghats and now the proposals to grow oil palms in place of the

tropical forests in the Great Nicobar Islands. Both these phenomena — the destruction of the original nature and the creation of a new, commercially oriented nature — have been taking place simultaneously in the Indian environment on a massive scale.

The effect of this massive environmental change has been disastrous for the people. In India there is an extremely high level of poverty and high population density. There is hardly any ecological space left in the physical environment which is not occupied by one human group or another for its sustenance. If human activity results in the destruction of an ecological space, or in its transformation to benefit the more powerful groups in society, then inevitably those who were dependant on that space will suffer. Development in this case leads to displacement and dispossession and will inevitably raise questions of social injustice and conflict.

The planting of eucalyptus on farmers' fields, and even on so-called barren fields, is an excellent example of this. What happens to the poor people when eucalyptus is planted on a farmer's field? We have an example from a village in Punjab where a rich farmer, a former governor with over 100 hectares of land, stopped growing cotton and has switched to eucalyptus. As long as he grew cotton, enormous quantities of crop waste was available for landless labourers in the village to use as fuel. Because of the shortage of firewood, these crop wastes were the major and almost the only source of fuel. Now, with eucalyptus being grown, their main source of fuel is gone, putting them in a precarious position. This is a case where afforestation has actually created a fuel famine for the neediest community. Foresters all over the country complain that women even take away dry eucalyptus leaves for use as fuel, thus destroying any chance of the leaves breaking down into humus and enriching the soil. But what else can these women do?

What we see in India today is a growing conflict over the use of natural resources — biomass in particular — between the two sectors of the country's economy: the cash economy or modern sector on the one hand and the non-monetary, biomass-based subsistence economy or traditional sector on the other. The destruction and transformation of the environment are already having an immediate and daily effect on the following groups (as well as others): artisans, nomads, tribes, fisherfolk, and women from almost landless, marginal and small farming households. These groups add up to nearly three-quarters of the country's entire rural population. And unlike the situation in the West, the question of environmental destruction is now not only an issue related to quality of life, it is a question of survival.

Towards holistic management

If these are the problems, then what do we do about them? First of all, there must be much more holistic thinking regarding the management of land and water resources. It is not enough to preserve biological diversity in just those areas of our country where the flora and fauna are genetically rich and diverse by setting up biosphere reserves and national parks; biological diversity must be preserved and/or recreated in every village ecosystem. Concentrating on the production of a few commodities (cereals, for instance) is totally inadequate in a society which is only partly monetized and where the vast majority still have to depend on access to free biomass resources from the immediate environment. Every village has to become a biosphere reserve.

The terms "common property", "communal property" and "open access regimes" relate to resources used by humankind and to the social conditions that regulate such use. These terms, and the definitions given to them, are central to the body of study known as common property theory which has become increasingly important for the understanding of social sustainability in conservation and resource use. We should keep in mind, however, that they represent intellectual abstractions and types which may over-generalize or fail to adequately reflect on-the-ground social or ecological realities.

Before examining the three terms, it is useful to grasp a few related concepts: resources, resource use and ownership.

Natural resources are those components of nature which are used or are estimated to have use for people. Behind this deceptively brief and utilitarian definition are certain factors which are important to consider:

- "Use" can be a direct factor in the production of goods and services, but it can also be indirect when a resource is seen as a component contributing to ecosystem sustainability.
- Resources are culturally and technologically determined. Cultures shape demand; until they create a use for a natural resource, that "resource" remains latent. Similarly, the development of technologies can create a resource use previously not present. As an example, block granite is a fairly abundant natural occurrence in Zimbabwe but for centuries it was perceived as a feature of the natural landscape rather than a resource. This changed when a demand for 'black marble' in the urban cultural architecture of Japan and other urbanized societies, together with the development of a technology for mining and milling, turned granite into a prized commodity. Other examples abound, such as the conversion of oil and gas into resources by cultural demand and technology (Berkes, 1989: 34).
- Use-demand and scarcity — perceived or actual, present or future — are the complimentary and primary incentives for the regulation of resource use. Until these factors are present, regulatory mechanisms tend to be absent.

Resources are often thought of as property: things exclusively owned by a person or group of persons. Ownership, however, is never absolute. It is rather a set of rights to use the resource with certain limitations regarding the rights of others. The strength of ownership is determined by its time-frame and the conditions attached to it. The longer its duration — its "tenure" — the stronger it will be. The fewer conditions attached to it, the stronger it will be. As Alchian says, the strength of ownership "can be defined by the extent to which the owner's decision to use the resource actually determines its use" (Alchian, 1987: 1031).

Ownership is thus better understood as a set of entitlements to use resources. It involves relationships between people as well as relationships between people and resources. Resource-use rights are socially determined. This social determination arises from a variety of standards including formal legislation, tradition and cultural norms, and socio-economic interaction. These multiple sources of legitimization and enforcement explain the frequent discrepancy between the *de jure* and *de facto* resource rights of users; i.e., between what is prescribed by norms and laws and what actually happens in real life.

4.14

Common property, communal property and open access regimes

Marshall Murphree

Resources and resource use

Ownership

Resource-use rights are socially determined. This social determination arises from a variety of standards including formal legislation, tradition and cultural norms, and socio-economic interaction.

Common property

The term "common property" can be used to define a resource (or bundle of resources) or to define an ownership or use-rights regime. To avoid this confusion, some scholars refer to common property resources when dealing with the resources concerned and common property regimes when dealing with arrangements which regulate their use.

In the first use, common property resources are technically defined as "a class of resources for which exclusion is difficult and joint use involves subtractability" (Berkes, 1989: 7). Riverine water resources are a good example. Expectations would preclude prohibitions of use, particularly by riparian users for domestic and livestock purposes. Exclusion is therefore difficult, but extraction by any user may affect availability for others. By contrast, certain types of natural resources are more adaptable to exclusive use by the right holder or owner. Subtractability for others does not arise except possibly in the context of ecosystem concerns. A piece of arable land serves as an example.

The second use of the term relates not to the nature of the resource concerned but to the regime which regulates it. In this sense common property is often contrasted to state property and private property. In effect, common property resources, as defined earlier, can and often are managed by a state regime and thus are also considered state property. But not all common property is managed by the state, since it can also be regulated by a communal regime. Communal regimes can be considered private if we take "private" to mean "resource rights owned by non-state entities, whether individually or as groups" (Lynch and Alcorn, 1994: 375).

Communal property

Communal property resources are common property resources which are under the jurisdiction of a community of users. The term "community" can be defined spatially, socio-culturally or economically. Usually, although not always, it is used to refer to a residential group small enough for the sanctions of tradition and peer pressure to be significant in self-regulation, with spatial and social boundaries that set it apart from others. Certain resources may be individually used within these boundaries, but the common property resources are regarded as collective assets and fall under communal management.

To be sustainable, the communal property regime must have a defined membership with rules for inclusion and exclusion. It must have rules regarding access to resources which regulate internal competition. It must have the institutional means to ensure that the collective good is not eroded by specific interests. Finally, it must have appropriate legitimacy both internally and externally. In other words, it must have strong ownership. Many communal resource regimes are weak because they do not have the appropriate backing of the state or of their own constituencies.

Open access regimes

While this term is often used, it is better to speak of open access resources. Open access resources are those which are available to anyone and effectively the property of no one. This condition can arise when there is no demand for or perceived scarcity of the resource concerned and thus no collective attempt to control its use. More frequently, however, open access situations are the result of ineffective resource rights regimes which claim authority over a resource but lack the means to fulfil the responsibilities involved. This can apply to indi-

vidual, communal or state regimes but is particularly true of state bureaucracies which typically base their legitimization on legislation rather than capacity. "Unfortunately, most state property regimes are examples of the state's reach exceeding its grasp" (Bromley and Cernea, 1989). The vacuum in control and management thus leads to unconstrained exploitation, which is highly threatening to sustainability. Recognition of this is largely responsible for the advocacy of state devolution of proprietorship to individual or communal resource rights regimes.

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4.15

Conflicts in conservation

Connie Lewis

A successful conflict resolution process is one in which stakeholders (individuals or groups who are directly involved in the conflict, or who may be affected by how the conflict is resolved) have the opportunity to really understand each other's needs, develop a range of alternatives to address those needs, and reach a mutually agreeable solution.

Causes of conflicts in conservation areas

Areas of environmental conservation are refuges of tranquillity and peace. They are also places where conflict occurs. Conflicts relating to these areas are often related to enormous and intractable problems like poverty and global environmental degradation. In a world with so many problems and in which the biophysical environment and socio-cultural systems are changing rapidly, conflicts involving protected areas are inevitable.

It is important to remember that, to the extent that conflict represents the productive interaction of competing interests and values, it is a useful and ever-present function in a dynamic society. Conflicts that are properly addressed can be opportunities for problems to be identified and solved, and progress achieved. However, as we all know so well, many conflicts become counterproductive and destructive, leading to bad results and hostile relationships. Conservation professionals face the challenge of trying to address conflicts so that unproductive consequences are avoided, while human well-being and the natural environment are protected.

A successful conflict resolution process is one in which stakeholders (individuals or groups who are directly involved in the conflict, or who may be affected by how the conflict is resolved) have the opportunity to really understand each other's needs, develop a range of alternatives to address those needs, and reach a mutually agreeable solution. The emphasis is on communication. Another way to think about this kind of conflict resolution approach is as joint problem-solving or decision-making where there is a disagreement. This is something we all do every day, with our families, friends and co-workers. Many of the same common-sense approaches we use in those settings can be applied to conservation area conflicts.

The term "conflict" can be taken to mean just about any situation in which there is a clash of interests or ideas. In the context of a conservation initiative, it usually suggests that there is a group or groups whose interests are in opposition to those of the protected area. It is often very difficult to precisely define the limits of conservation area conflicts because they are frequently rooted in issues like poverty and overpopulation. The only way to resolve some of these conflicts in the long term is to promote economic development while simultaneously trying to conserve the natural resources of the area concerned. In cases where a conflict is particularly intractable and long-standing, it may be necessary to think about conflict management rather than conflict resolution: to focus on minimizing the damage from the conflict and to try to take incremental steps toward resolution.

There are many reasons why conflicts arise in conservation areas. The primary cause is usually either:

- a lack of attention to the process of involving local people and others who care about the conservation area in planning, management, and decision-making for the area; and/or
- people in nearby communities having needs (for grazing land, firewood, building materials, fodder, medicinal plants, hunting, etc.) that conflict with the objectives of the conservation area.

Conflict resolution efforts that deal with only one of these dimensions are not likely to succeed.

Characteristics of conflicts in conservation

Understanding several important characteristics of conflicts in conservation areas may help in the search for ways to manage and resolve them. Many of these characteristics apply to other conflicts as well, but they are especially critical in the context of conservation initiatives.

One characteristic of many conservation area conflicts is that they involve a large number of stakeholders (i.e., individuals or groups who are directly involved in the conflict, or who may be affected by how the conflict is resolved); all with their own needs, perspectives, values and goals. They may include people who live within the boundaries of the conservation initiative (sometimes indigenous groups with long-standing claims to the land); people living in nearby communities (who may have a tradition of using the land within the conservation area for firewood collection, pasture, building materials, medicinal plants, hunting or other uses); and people from near and far whose interest is in the conservation values of the area (for example tourists, hunters, and local, national or international NGOs who value the area for its wildlife, scenery and wilderness characteristics).

The managers and staff of the conservation initiative are also stakeholders, as are scientists who may utilize the area for research projects. There also may be local, regional, and national government entities that benefit from or suffer from the protection of the natural resources. In some cases the stakeholders of a conservation area may include guerrillas or other warring factions who use the area as a refuge. The variety and number of stakeholders and the interplay among local, national and international interests present a challenge to anyone attempting to understand, manage or resolve these conflicts.

A second characteristic is that many of the factors that affect the management and resolution of conservation area lie outside the boundaries of the area concerned and are largely beyond the control of the conservation initiative's management. These include institutional, legal, political, and economic influences (e.g., changes in political leadership, new institutional protocols, economic problems, and environmental impacts that degrade the environment of the area, such as air/water pollution, water scarcity, etc.). Consequently, managers must often broaden their horizons far beyond the conservation area itself to respond effectively to conflicts which threaten the initiative.

A third characteristic is that conservation area conflicts involve both scientific and socio-cultural phenomena. Conflicts are often complicated by scientific uncertainty or by tension between scientific and traditional/anecdotal or local knowledge. The need to make recommendations in the face of missing or contradictory data is often one of the most frustrating aspects of conflict response in conservation areas.

Finally, most conservation areas are faced with a shortage of financial resources. This inhibits the ability of the managers to deal with conflict situations, (e.g., to pay compensation, obtain the data that could help settle the conflict, hire outside expertise, pay for vehicles, guns and other supplies that are necessary for enforcement, etc.).

Lessons for managers of conservation initiatives

Conservation area managers are likely to find themselves in a variety of roles in the conflicts that affect their areas. They may be mediators, negotiators, experts, advisors, defenders, or decision-makers. Often they find themselves in more than one of these roles at once. Regardless of the role the management of the conservation initiative plays at any particular time, he or she will obviously be a critical person in the conflict and may be in a position to help achieve a resolution.

Address conflicts in ways appropriate to the local situation.

Conflicts occur, and must be addressed, within a particular cultural, political and social context. Any conflict management approach must be appropriate for the context in which it occurs and must take local conflict-resolution customs and institutions into account. This notwithstanding, there are three general principles that should be applicable to the majority of conservation area conflicts (see also subsection 6.4 of this resource set):

- focus on underlying interests;
- involve all significantly affected stakeholders in a fair and respectful process; and
- understand the power that various stakeholders have and take that into account when trying to resolve a conflict.

When appropriate, involve NGOs in the process. Non-governmental organizations (NGOs) can play a tremendously important role in conflict resolution. Their role and power in society varies a great deal around the world, but increasingly, many NGOs wield considerable influence. The ability of an NGO to play an effective role and what exactly that role might be in a conflict situation depends a great deal on what the NGO is set up to do, on its credibility with local people and the government, and on its vision and resources. Many NGOs have been created expressly for the purpose of providing advocacy and support for particular protected areas. For obvious reasons, it makes sense for conservation area managers to cultivate relationships with these NGOs and to utilize the resources they can provide. As legitimate entities with real interests at stake, they should be included fully in conservation area participatory processes, both at the creation of the area and in ongoing management.

Support the process with enforcement measures. In some instances, conflict resolution may reduce the need for enforcement, especially when conflict resolution addresses the real interests that underlie the conflict. In most cases, however, enforcement will continue to be a necessary compliment to the conflict resolution effort. Enforcement is important and necessary to:

- protect the resources while conflict resolution is underway;
- provide an incentive for violators to enter into discussions about how to resolve that conflict; and
- ensure that agreements are implemented.

Enforcement can be labour-intensive and costly. There are a number of ways, however, in which enforcement can be integrated with the ongoing function of the conservation initiative, and its effectiveness can be enhanced. Options include strengthening incentives and minimizing disincentives for compliance; trying to get as much understanding as possible and 'ownership' by local people of the rules that are being enforced; entering into collaborative efforts/partnerships with the local people to design and conduct enforcement efforts; and, if possible, using local community members as enforcement personnel.

The term "collaborative management" (at times also referred to as co-management, joint management, shared-management or round-table agreement) describes a partnership among different stakeholders for the management of a territory or set of resources. The stakeholders — which typically include the agency with jurisdiction over the territory or set of resources as well as organizations of local residents and resource users — develop an agreement which specifies their respective roles, responsibilities and rights in management.

The agreement usually identifies:

- a territory (or set of resources) and its boundaries;
- the range of functions and sustainable uses it can provide;
- the recognized stakeholders;
- the functions, rights and responsibilities of each stakeholder;
- an agreed set of management priorities and a management plan;
- procedures for dealing with conflicts and negotiating collective decisions about all of the above;
- procedures for enforcing such decisions; and
- specific rules for monitoring, evaluating and reviewing the agreement, and the relative management plan, as appropriate.

Collaborative management differs from other forms of participatory management in that it entails a conscious and official distribution of responsibility, with the formal vesting of some authority. In this sense, co-management goes beyond community consultation and participatory planning to establish more durable, verifiable and equitable forms of participation, involving all relevant and legitimate stakeholders in the management and conservation of resources.

Co-management also differs from what the literature describes as "community-based resource management" because it recognizes that it is not generally possible nor desirable to vest all management authority in the community. The state should and will always retain some responsibility, if only for the provision of an overall policy framework for conservation and management.

The justification for collaborative management is, in many respects, the same justification for participation which has been given elsewhere in this resource book. There are, however, three additional arguments which can be made in favour of the formal sharing of authority which is proposed here.

1. The commitment of resource users and other stakeholders to a conservation initiative is likely to be stronger if they have a clear sense that they will be part of the management arrangements and decision-making bodies which will be established as a result.
2. From a wide range of experiences throughout the world, it can be demonstrated that decentralizing management responsibility and vesting authority in non-governmental and community institutions as partners in collaborative management arrangements can result in more effective action. Through co-management, resources from the community can be mobilized and applied, and the need for enforcement and control can be reduced.
3. It is important to consider that, through formal collaboration, and through the vesting of some of the management authority at the community level, a conservation initiative or programme can help in a much-needed process of community empowerment and local institutional development. In this manner, conservation contributes to a critical social development agenda.

4.16

Collaborative management for conservation

Yves Renard

Collaborative management differs from other forms of participatory management in that it entails a conscious and official distribution of responsibility, with the formal vesting of some authority.

The establishment of a co-management arrangement is the result of a participatory process of planning and decision-making and often involves a conflict management process as well. But collaborative management will not always be the preferable option, and it is therefore critical for the leaders of and participants in a conservation initiative to be able to recognize the conditions that would favour such an arrangement. The existence and strength of community institutions is perhaps the most important of these conditions.

Management agreements

By definition, the main element of a collaborative management arrangement is a formal agreement between two or more parties. There are various types of co-management agreements, depending on the conditions and requirements of each situation. In order to be meaningful and effective, a management agreement must involve the body which has legal authority over the resource or the area (usually the state) covered under the agreement. In cases where there were traditional users of a resource before the advent of the conservation initiative, it would also be necessary — except in very special circumstances — to ensure that they are part of an agreement. The parties in an agreement for collaborative management can therefore include state agencies, NGOs, local government institutions, community groups, cooperatives and other organizations of resource users.

Typically, a management agreement describes the object of the agreement (a resource, a protected area, an activity, a sector) and the parties to the agreement, and defines the rights and responsibilities of all parties. In this sense, the agreement must be a clear statement of "who does what", and it must cover all aspects of management: information collection and management, enforcement and regulation, uses of resources, allocation of benefits, etc. Typically, the agreement provides for the establishment of a management body which represents all parties and which is vested with some of the joint authority.

While the scope of management agreements can be very broad, experience shows that there are a number of key factors which are critical in ensuring their success and viability, and which must be included in their terms. These are as follows:

- there must be clear and recognized boundaries for the area at stake — co-management agreements will be ineffective if the object of the agreement is vague or ill-defined, or if the parties in the agreement have different understandings of the purpose of their collaboration;
- rights and rules must be clearly spelled out — agreements will fail to achieve their objectives if the duties and benefits of the various parties are ambiguously set out, if community partners do not have a clear sense of security, or if the allocation of rights and responsibilities is not perceived as fair by all;
- information must be made available to all those who participate in management decisions and control — information is power, and collaborative management demands that all relevant information be accessible. Otherwise, those who do not have access to the information will feel that they can be cheated, and they will not be able to play their role effectively. This demands that partners in the agreement participate in monitoring and research activities, and that data and information be interpreted in the appropriate form and language;

- there must be effective enforcement of rules — perhaps more than other arrangements, collaborative management demands that those measures adopted and agreed upon be enforced effectively. In the case of more conventional regimes, like the management of a protected area by a national park authority, incomplete enforcement may weaken the effectiveness of management and the authority of the park service, but would not necessarily threaten the arrangement as a whole. In the case of a collaborative agreement, the failure by one party to comply, even partially, with the terms of the agreement places the entire arrangement at risk;
- there must be conflict resolution mechanisms — resource management is never static, conditions evolve, and it is always possible that conflicts will arise, at one point or another, among the partners in a co-management agreement. Therefore there must be, within the agreement itself, and within the institutions that participate in the management, forms and mechanisms to address and resolve these conflicts whenever they occur;
- all parties to the agreement must be accountable and there must be provisions for sanctions — a typical weakness of co-management agreements comes from their failure to make all parties accountable. It is obviously difficult for a conservation initiative establishing a collaborative management agreement to request that a government agency be made fully accountable to its community partners, and local political realities must be taken into account. Yet the objectives of making all partners equally accountable must be kept in mind, and there are subtle ways of achieving this. Similarly, the agreements must provide for sanctions in cases where a partner does not comply with the agreed terms;
- community partners in the agreement must be represented by strong institutions — a co-management agreement will not succeed unless all parties feel that they are on an equal footing. This demands that community institutions be strengthened to ensure that they are democratic, representative and effective in their roles as co-managers of the resources and their uses. Otherwise, there is a risk of implementation of the agreement being dominated by the strongest partner.

Even when the above conditions are present, collaborative management cannot succeed in the absence of a favourable policy context. Indeed, the reluctance of governmental institutions to share power and authority is usually the greatest obstacle to the adoption of collaborative management arrangements. It is therefore necessary to advocate and support policy changes in directions which are more conducive to participatory approaches to conservation, and to use positive experiences in collaborative management to illustrate the benefits that can be derived from the formal sharing of authority for conservation and resource management.

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4.17

Governance and the rule of law

Pascal Girot

One of the basic premises of social sustainability of conservation initiatives is that the governing institutions and laws that rule them be respected by all the relevant social actors and stakeholders. Compliance (or non-compliance) of social actors to the rule of law is indicative of the degree of cohesion of society as a whole, and of the level of legitimacy of governing institutions. Non-compliance and scant governance can seriously undermine attempts at incorporating social concerns into conservation initiatives.

Adequate governance depends on:

- the legitimacy of the political system and the resulting respect shown to its institutions by the majority of people, who comply to and accept the rule of law; and
- the efficacy or reliability of governing institutions (measured to some degree by the capacity of a political system to solve problems, and to achieve a consensus through compromise).

A governance crisis occurs when the legitimacy of a governing body is undermined by its lack of efficacy, or by the polarization of political opponents vying for control over public institutions. A situation of ungovernability can be characterized by the following aspects:

- the use of violence by interest groups or by a sector of society as a means of persuasion or influence over public policies and institutions;
- the chronic instability of public institutions, or their mandate, features or purpose undergoing constant change;
- the deficiencies of governing institutions, if the conflict-solving capacity of government officials and bureaucrats is so low as to encourage citizens to take the law into their own hands; or
- corruption and graft of civil servants, who use their public office to enhance their own economic and political interests.

The compliance (or non-compliance) of social actors to the rule of law is indicative of the degree of cohesion of society as a whole, and of the level of legitimacy of governing institutions.

These aspects are rampant in many countries, although the degree of ungovernability varies greatly from one context to the next. The issue of scale is also paramount for understanding the degree of governance in a given territory, region or country. The territorial cohesion of many states depends on governing institutions' ability to allow for regional differences, be they under federal or unitary systems, and to tolerate varying degrees of territorial autonomy within a single jurisdiction.

Latin America is an interesting example to study and monitor the quality of governance of public institutions and political parties. A recurring characteristic is a clash between rigid institutions, where decisions are centralized, and emerging regional economic sectors with real power but political under-representation. Following several decades of revolutionary experiments, the heritage of political violence in Latin America also contributes greatly to situations of ungovernability, in spite of an overall return to democratic forms of government. For instance, the resurgence of armed movements, as in Chiapas, Mexico, illustrates that recourse to violence to defend local or regional interests is still seen as a valid option in Latin America. Mexico's persistent rift between rich and poor as a result of structural adjustment policies, and the growing repudiation of political and fiscal injustice, are also reactions to a situation of ungovernability.

How can a crisis of governance affect natural resource management and conservation initiatives? The most immediate impact is on compliance to the rules and regulations that govern the access to and use of re-

sources. If the rule of law is replaced by the rule of factional violence there will be a direct effect on the way natural resources will be managed. Political violence, institutional instability, corruption and graft promote short-term, profit-motivated approaches to resource management, since shifting rules and regulations may curtail the capacity of certain sectors to gain access and rights to natural resources.

In many countries the instability and lack of efficacy in institutions governing land tenure have undermined the sustainability of conservation initiatives. The lack of compliance to the rule of law also reinforces the emergence of local *caudillos*, who are often linked to organized crime. The drug trafficking cartels in Latin America are an example of the regional and national power of these emerging economic sectors, and their capacity to impose their will, often through violent means.

In a context of ongoing structural adjustment policies affecting public institutions, the greatest challenge is strengthening local institutions in charge of managing resources. Decentralization is underway in many countries; greater responsibilities for natural resource management and law enforcement will be transferred to local governments. These arrangements will require building "nested institutions" that are flexible enough to protect interests of national communities while providing for local needs. Respect for and compliance with these new institutional arrangements depends a great deal on their capacity to solve problems more efficiently. Above all, their endurance will hinge on their ability to stop the downward spiral of political violence, institutional instability and corruption by building upon legitimate groups and interests.

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4.18

Decentralizing and dewolving government

Barbara Wyckoff-Baird

Webster's Dictionary defines "decentralization" as the distribution of functions and powers from a central authority to regional and local authorities. For example, a government agency hands over certain decision-making powers to their staff at the local level (i.e., at the branch offices of the same institution). In turn, the regional and local authorities work within the parameters of the mission and philosophy of their central agency and must keep the central agency informed of any actions they take.

Similarly, "devolution" can be defined as the transference of some authority from one body to another, most frequently to the more local level. However, while decentralization applies to a process internal to a given institution, devolution may involve and usually does involve different institutional bodies. For example, community institutions are given the authority to make and enforce rules for resource management in their area, or district councils are given the right to receive and distribute revenue generated from natural resources. The local authority may or may not share the mission and philosophy of the central agency, although the central agency believes that its objectives will be met by the local authority. Devolution implies the recognition of local authorities in terms of their rights and independence from the central agency or government, as well as the transference of certain powers. Too often, central governments decentralize their functions without really devolving them.

Worldwide, governments have tended to centralize decision-making, control and enforcement of natural resource management in government agencies at a national level. Yet these agencies have often proven ineffective at managing renewable natural resources, often bringing about resource degradation rather than sustainable use. Lack of funding, large-scale bureaucracies and struggles for power and political influence: they all limit the effectiveness of centralized agencies as natural resource managers.

Furthermore, these agencies are most often located in urban centres and are socially and geographically distanced from the resources and resource users in question. When a government ranger has to radio the head office for the permission to kill a problem animal and must wait days until the appropriate official has made a decision and sent the message back, the problem animal has long since moved on. The government and ranger have, once again, lost the confidence of the local community. Bromley and Cernea (1989) comment: "Unfortunately, most state property regimes are examples of the state's reach exceeding its grasp".

In addition, the potential effectiveness of central governments to govern and manage these resources is limited by the wide variability of the following: the natural resources themselves; the ecological contexts where they occur; and the social systems within which they are managed. Central governments lack the in-depth local knowledge of resource potential and management patterns to be able to make and enforce appropriate management regimes. Users face a far more manageable problem: they only need to have a thorough knowledge of the resources found in their area. Experience has shown that a great many resource users have such knowledge.

The first step in devolving government is recognizing local institutions as legitimate actors in the governance of natural resources. In theory, this is not complicated; the national government must pass legislation officially recognizing these institutions, publicize it to all concerned, and provide for its enforcement. In practice, however, it is difficult to implement legislation in a meaningful way. Those who hold power are predictably reluctant to devolve it to communities. Not only do they fear that their own power base will be reduced, but they also may believe that resource users are not capable of governing or managing their resources for sustained yield and that trained technicians can do a better job. Experience (Murphree, 1991) shows that, even when power is decentralized to regional or district levels, the authorities at these levels may not take the additional step of fully devolving power to local institutions. Having been denied recognition and authority in the past, they are generally unwilling to pass on any newly won legitimacy to lower levels.

In community-based resource management, the central government recognizes local institutions and devolves to them certain powers, including the power to:

- make, modify and suppress rules (including who has rights to use resources and how);
- enforce rules;
- monitor application and compliance with rules;
- resolve conflicts relating to these rules; and
- mobilize resources to carry out activities.

While central governments may be prepared to devolve rights to make, monitor and enforce the rules governing resource use, they are usually reluctant to devolve authority for conflict negotiation. They are also especially reluctant to devolve the authority to mobilize resources, particularly financial ones. Governments may fear that they will lose the control and power that comes with decision-making over financial resources. Furthermore, they often believe that communities lack the skills to manage these funds and will misuse them. What tends to happen is that responsibilities for planning and implementing programmes are devolved to lower levels, but the necessary funds are not. Examples exist of elaborate bottom-up planning processes, including village, district, and regional development plans, but with budgets still determined by the sectoral ministries at national level.

Both traditional and elected authorities have an interest in developing the local community and in managing the natural resources that assist that development.

Unlike the situation in other sectors, decentralization or devolution of current government responsibilities for natural resource management is at the sole discretion of the government. Frequently, legislation includes statements that the rights and responsibilities being devolved to the local level can be revoked if certain conditions are not met. It is generally the central government which sets these conditions and monitors compliance. Similarly, the rights and responsibilities for management of resources might be devolved to local authorities, while tenure or ownership are not.

The powers, rights, and responsibilities of central government over natural resource management can be decentralized or devolved to several different levels and types of structures. These include traditional or customary authorities, locally-elected community institutions, and district or regional bodies. Both traditional and elected authorities have an interest in developing the local community and in managing

the natural resources that assist that development. However, if their functions and duties are not harmonized, the conflicts and overlaps of their activities can have a negative impact on the local community and, potentially, the natural resource base. In fact, the potential for conflict to arise between groups that have previously lacked the authority to assert claims to natural resources is often cited as a reason not to devolve authority over natural resource management and governance.

If the objective of devolving government is to increase the participation of local users in resource management, then local management bodies must be able to involve all users, or their representatives, in decision-making. Too often, decision-making bodies are elected or appointed and then forget to whom they are responsible and accountable. They make decisions in isolation from the resource users.

In development, and more recently in conservation initiatives, emphasis is placed on elected, representational structures as the primary mechanism for supporting community participation. There are examples, however (Wyckoff-Baird, 1996), where the very idea of representation, or of one person speaking for another, is foreign to the existing culture and beliefs. In such cases, individuals may be speaking just for themselves, yet outsiders believe they are hearing the opinions of the broader community. In other cases, where traditional or customary leaders are vested with resource management powers, representation can still be problematic. While customary institutions have several strengths and a degree of popular support and status, they are not always representative. This is particularly true of women and the poor, who are disproportionately affected by natural resource management decisions.

What seems to be critical to the question of representation is not whether outsiders (e.g., central government, project planners) have successfully identified each stakeholder group and ensured their voices are heard (a task almost impossible to accomplish). Rather, the challenge is to establish a process whereby the community itself can regularly review the stakeholder groups, identify new ones as they emerge, and assess whether the chosen representatives still reflect the opinions of the group.

While centralized decision-making and control has rarely worked, Swift (1995) suggests that the state has a definite role to play in creating the conditions necessary for effective resource management at the local level, including:

- establishing a policy framework conducive to sustainable resource management;
- providing a legal framework for resource tenure;
- investing in building institutional capacity at a local level;
- acting as an arbitrator of last resort in the event of conflict, particularly over boundary disputes, and guaranteeing equality of advocacy in disputes;
- guaranteeing minimum democratic processes in local administration;
- providing the appropriate macro-economic framework, including equitable policies on subsidies, transfers, and prices, and investments in infrastructure; and
- providing technical inputs and support in natural resource management.

Decentralization and devolution of government are critical in setting the stage for management and governance of natural resources on a sustainable basis. Careful attention must be paid, however, not only to the legislative framework, but to the actual situation on the ground. Experience shows that interests at both the national and local level will work against devolution of authority when it means a decrease in their own power. Finally, while decentralizing and devolving government is a necessary condition for local participation to occur, it is no guarantee that it will, in fact, occur.

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4.19

Primary environmental care

Grazia Borrini-Feyerabend

Primary environmental care is an approach to community-based sustainable development matured on the basis of field experience. Many people and organizations — from both developing and industrialized countries — contributed to assembling this experience. Most of them worked in participatory projects in poor urban and rural areas. Some were involved in primary health care, and water and sanitation programs. Others worked in large and small "integrated rural development" schemes. Still others were simply concerned about improving their own quality of life — and that of their communities — by making optimal use of scarce resources. The knowledge and skills they acquired from their practice with methods and tools, their tribulations with conflicts and failures, and their excitement with solved problems and satisfied people, contributed to a consensus on what is important to strive for and how. To give visibility, legitimacy, incentive and impulse to such a consensus, a name was found: primary environmental care (PEC).

Box 15: Primary Environmental care (PEC)

PEC is a process by which local communities — with varying degrees of external support — organize themselves and strengthen, enrich and apply their means and capacities (know-how, technologies and practices) for the care of their environment while simultaneously satisfying their needs. In synthesis, PEC integrates three objectives:

- *meeting local needs;*
- *protecting the local environment; and*
- *empowering local communities.*

The intelligence, experience, interests and priorities of people and communities, and their willingness to work together for common objectives, are what PEC is all about.

PEC's objectives are not new, but its approach integrates them. This affirms that the management of local environments becomes effective and sustainable when linked with the satisfaction of the needs (income, food, health, etc.) of local communities, and when all those concerned are involved and empowered to participate.

Meeting local needs means that people can maintain, produce or gain access to the goods and services (food, shelter, income, health care, education, transportation, etc.) necessary for life, health and well-being.

Protecting the local environment means different activities under different conditions (e.g., eliminating a fire hazard, cleaning and protecting a watershed, preventing flooding, halting an unsustainable extraction of timber from a local forest, improving tilling practices to protect topsoil, restoring a degraded communal building, leaving the habitat of wildlife undisturbed, etc.).

Empowering local communities means that communities, groups and individuals get more control over the factors influencing their lives. This usually involves several stages, in which people discuss and identify their common problems and opportunities and then organize and take action in partnership with others. Securing tenure for the natural resources protected by the work of local people is a most important element of the empowerment process, and is essential for sustainability. With security of tenure, in fact, the long-term economic interests of people tend to merge with the long-term 'interests' of the environment.

People who work toward common interests develop a sense of solidarity and common identity, learn how to establish and follow their own rules and how to pull together resources and overcome problems.

If a community engages in PEC, many sensitive issues are bound to be encountered, and many conflicts, between local and non-local interests and opinions, are likely to emerge. Such conflicts can arise in the planning stages (e.g., when trade-offs among environmental, economic and social goals, and priorities for action must be agreed upon) or during implementation of activities (e.g., when some try to take advantage of others, or problems and mistakes become apparent). Communities should always anticipate the active opposition of groups with vested interests.

The 'community' may only be united and well-defined in theory. Community members may not feel a sense of common identity, may not be equally aware or concerned about problems and ready to commit resources, and may not manage to achieve any consensus about what to do. In fact, major differences and contrasts are common among community members and subgroups. Women, ethnic minorities or religious minorities may not be allowed to participate in decision-making or in common endeavours on the same conditions of others. In such cases, PEC requires a significant change in local habits and departure from cultural norms. A lengthy process of community-building may be necessary before PEC activities can begin.

Local empowerment can only be based on the concerns of community members and their willingness to be involved. Certainly, it cannot be 'brought in' from outside. From outside, however, it can be impeded. In this sense, PEC needs to be 'politically feasible', a condition often difficult to achieve. Other constraints to PEC may be a lack of capital, information, expertise, or the incapacity of local people to organize, manage finances or deal with government officials. Supporting institutions (governmental and non-governmental, national and international, profit-oriented or solidarity-oriented) can help communities overcoming these constraints.

What are the challenges of PEC?

- the first is political: assuring people a fair amount of self-determination and control over local resources;
- the second is institutional: developing local institutions capable of gathering local knowledge and skills and delivering good ideas and honest practice;
- the third is socio-economic: assuring social acceptance and fair economic returns for sound environmental activities;

Last but not least, there is a challenge of intelligence and ingenuity: identifying the 'win-win' solutions by which both the environment and people can profit (for illustrations of PEC initiatives see the field examples 32 a-f in section 6 of Volume 2).

If the process of PEC is complex and difficult, its rewards are certainly worthwhile. People who work toward common interests develop a sense of solidarity and common identity, learn how to establish and follow their own rules and how to pull together resources and overcome problems. In the process, they create new employment opportunities, mobilize individuals and resources that were idle and under-exploited, and innovate and diversify the basis of their own livelihood. It is the experience of many communities that such initiatives can take off even with relatively small capital investment. When those initiatives benefit both the environment and the people, a sense of community responsibility for the environment grows and thrives.

In a general sense, any society that supports its people and manages its resources in a sustainable way is involved in PEC. In fact, such a society must include people who organize and take action to achieve those results, and PEC can be taken as a basic tenet of sustainable development, wherever it may apply.

In a more restricted sense, PEC represents a 'quality approach' to development cooperation. It is the approach of the NGOs and agencies that support communities to figure out for themselves how to respond to their needs and the needs of their environment. In this sense one refers to PEC programs, PEC projects, etc. These are characterized by:

- the full involvement of interested people and communities, from design to management and evaluation of specific plans (see section 5, volume 2);
- long-term, flexible support — no blueprint plans! — to meet needs (e.g., credit, information, technical assistance) as they arise;
- technologies that are environmentally sound and responsive to local needs and socio-cultural preferences (e.g., agro-ecology, agro-forestry, simple techniques for water supply and sanitation, housing designed by local people, community-based disaster preparedness, development and demonstration approaches, community-run urban services, community-controlled tourism, etc.);
- great attention to the motivations and skills of all those involved (e.g., opportunities to exchange and discuss experiences, timely assistance and supervision, opportunities for training, etc.); and
- transparency (e.g., providing full information on who decides and is responsible for what) and accurate monitoring and evaluation (as a counterpart to flexibility).

Box 16: Conditions for success in PEC

1. Capacity to organize and participate

All community members need to be able to play a role in decision-making that affects livelihoods; in particular, decisions over access, control and management of common resources. This implies the right to set up community gatherings and organizations. Women must be able to fully participate and capitalize on their role as environmental managers for the benefit of themselves, their households and the whole community.

2. Capacity to influence development priorities

Development programmes need to be oriented to the priorities felt and expressed by communities, in full partnership with the national authorities and the aid agency that may be involved. As a result, the entry point for external assistance may not always be an environmental priority but a community need, such as employment, housing or health care.

3. Integration of local knowledge and awareness of the environment

Communities need to be involved in gathering and analyzing environmental data. Providing external environmental information and advice should be based on a dialogue with the community. Building on and integrating traditional knowledge and skills is essential.

4. Access to natural resources

Communities need access, equitable internal distribution and security of tenure for all the natural resources necessary to their livelihood. Security of land tenure in urban and rural settings is particularly important;

only when tenure is safely secured does the motivation for long-term improvements emerge.

5. Access to financial resources

Communities need access to loan and credit facilities that rely on record of payment rather than on collateral, which communities often lack.

6. Access to environmentally-sound technologies

Communities need access to environmentally-sound technologies. These are best developed by way of participatory research, to assure that they respond to felt needs and are adapted to local conditions, and are gender-appropriate, affordable, efficient, usable and repairable by locals. In particular, there is a strong need for alternatives to the environmentally "unsound" technologies presently in use.

7. Governmental support

Governments are the indispensable partners of communities in PEC. They must not only allow the process of community-based environmental management to take place, but actively support it. To do so, it is vital to have a legislative framework for environmental protection, including monitoring and enforcement, and an integrated set of sectoral services that can address community needs. Administrative decentralization is another very important step towards the PEC process.

8. Access to information and public accountability

These need to be provided in governmental policy and decision-making and in all aid-assisted activities. Community empowerment cannot be achieved in an information vacuum or without a chance for the community to evaluate and discuss responsibilities.

9. External support

Institutions (governmental and non-governmental) that can offer experience, expertise and skills in support of the PEC process at the community level need to be developed and strengthened. A network of multi-disciplinary institutions capable of carrying out relevant research and training for PEC is also needed.

10. Appropriate time frame and adaptive planning

More time is required than for capital-intensive approaches. Experience suggests that ten-year programmes are realistic, although benefits should occur far earlier. Flexibility in project planning by an interactive approach ('learning' rather than 'blueprint') and adequate monitoring are also needed. Donors must be prepared for low initial levels of disbursement, and for changes in priorities.

11. Access to environmentally-sound and socially-responsive practices

Communities need access to such practices and tools, particularly:

- *participatory assessment of problems and resources;*
 - *effective education, training and social communication;*
 - *local organization, planning and management of community-based initiatives;*
 - *sustainable production (e.g., agro-ecology, agroforestry, integrated pest management, recycling schemes, renewable sources of energy, biogas plants, fish ponds, etc.); and*
 - *participatory monitoring and evaluation.*
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The greatest threat to conservation of biological diversity in most countries arises from competing forms of land use; not, as is commonly perceived, from the overexploitation of wild resources. Tenure systems, legislation and economic incentives should be complimentary in creating a climate which is favourable for sustaining wild animals and their habitats.

The foundation of sustainability is this: users are more likely to conserve resources when it is in their interest to do so. In the majority of cases ecological considerations are secondary. The probability that use will be sustainable and resources conserved is greatly increased when the following considerations are taken into account and principles applied.

Tenure is the most important issue affecting sustainability of resource use. The term "tenure" includes all aspects of ownership, proprietorship and rights of access to resources. Rights may be vested in the state, the community or the individual: the crucial point is to avoid open access resource systems. Sustainable use is more likely when the following occur:

- rights of access are clearly defined and accepted;
- the ability to enforce those rights exists;
- the unit of management and accountability is small and efficient; and
- its members share a common understanding and purpose.

4.20

Sustainable use of wildlife

Rowan Martin

Tenure principles

Biological, ecological, and management principles

a. Conservation of ecosystems has a higher priority than stabilizing individual species populations. There is a need to shift attention away from individual animals and species to the ecosystem. This will require focusing on environmental impacts, which includes social and cultural impacts, rather than on consumption versus non-consumption issues.

b. Any use of a wild species will cause a change in an ecosystem. It is unrealistic to expect that use can be conducted without any appreciable or detectable alteration to ecological communities.

c. The ultimate criterion of sustainability is the persistence of the species. Species populations can be regarded as being sustainably used if their genetic and demographic characteristics under exploitation do not affect population viability. Expressed in another way, provided a species population is not reduced to the level that extinction is a real threat, then use can be regarded as sustainable. In ecosystems characterized by large environmental fluctuations this may be the only criterion of sustainability.

d. All species populations can be used: there is no arbitrary population size threshold below which use should be prohibited if such use would be beneficial to the conservation of the species and the ecosystem. Sustainable use relies on an offtake proportional to the size of a population; even very small populations can withstand limited harvests.

e. Use may, and often does, improve the status of the used population. This is the basis of the argument for use as a conservation tool; the clear corollary is that non-use is the risky option. The precautionary principle should be applied in this sense: it is risky not to use resources, therefore we should use them.

f. While it is often stated that declining populations should not be harvested, this cliché can be refuted with numerous examples. If a wildlife population is declining and the primary cause is not harvesting but some other reason (e.g., competition with cattle), very often the promotion of legal use will secure the desired reversal. The institutional context under which harvesting is applied is critical.

g. It is often stated that any population which has undergone a significant decline in numbers as a result of over-harvesting needs to be 'rested' or should be subject to a moratorium on use. This is not scientifically defensible. When a population is freed from exploitation it will increase (assuming harvesting was the factor causing its decline) to some new level. If harvesting is then re-initiated at a sustainable rate, the population will go on to re-stabilize at some new level with an adjusted age structure. The time taken to reach this final state from the time the moratorium was imposed is the same as if the sustainable harvest proportion had been imposed at the outset.

h. Holding a species at a constant level (or, conversely, attempting to maintain a constant harvest) is likely to adversely affect the resilience of ecosystems. The assumption that the environment is stable or static makes no allowance for the large environmental fluctuations of the arid and semi-arid ecosystems which characterize much of the globe.

i. In consumptive use systems, offtakes should generally be tailored to reduce biological risk. However, this common wisdom should not be an endorsement for misapplication of the "precautionary principle". In competitive land-use situations, injudicious use of the precautionary principle may result in disadvantages for biodiversity conservation.

Economic principles

a. If the economic returns from use of a species are reinvested in its conservation and management this will generally be beneficial for the status of the species.

b. All species should have value. Attempts to destroy markets for species and species products seldom result in the correct incentives for conservation.

c. Use is more likely to be sustainable when:

- the benefits derived from use are greater than the costs of conservation;
- the rate of return from sustainable harvesting at least equals the return from alternative options including 'mining' the resource to secure its total capital value in the short term. Short-term economic policies may provide perverse incentives, which act against sustainable use; and
- there are well-regulated legal markets with strong links to legal producers.

d. Tenure and pricing mechanisms exert the greatest influence on biodiversity conservation. In any given situation it should be an objective to internalize costs and benefits and to regulate only where the inherent -fugitive nature of a resource precludes this.

In most developing countries the option of zero use is unrealistic. Use will take place illegally and unsustainably if simplistic attempts are made to ban it. The challenge is to make use sustainable; this requires an adaptive management approach.

Adaptive management entails:

- a basic hypothesis about the workings of the system to be managed;
- a clear statement of management objectives; and
- the establishment of a monitoring system to provide the information needed to modify the management system or the objectives, or to revise the hypothesis if necessary.

Adaptive management need not necessarily be confined to ecological issues. It can be applied in the broadest sense to any complex system and can be designed to take into account political, economic and social effects.

The preferred options for use of wildlife should emphasize value-added systems such as photographic tourism and sport hunting, where the use involves no more than low-level "skimming" from populations.

Where use entails the removal of large numbers of animals, either for a commercial harvest or to deal with problems of overabundance, attempts to impose constancy on naturally fluctuating ecosystems should be avoided because of the dangers of brittle pathologies for species and ecosystems.

It may be better to subject populations to a blitz in one year and allow them to rest for several years or to introduce an element of randomness into the harvest, rather than attempting to fine-tune management to annual population estimates. The syndrome of cautious fiddling with species populations should also be avoided; this makes it impossible to detect or evaluate the effects of management actions.

Wherever possible, emphasis should be shifted from single species commodity production to multi-species value-added management. A single species situation can always be treated as a singular case within a multi-species system.

Application of the principles

The foundation of sustainability is this: users are more likely to conserve resources when it is in their interest to do so. In the majority of cases ecological considerations are secondary.

The wildlife industry in Zimbabwe is based on multi-species systems. It avoids the pitfall of competing in the commodity production market where cattle would probably produce meat and hides more efficiently from the same land. Although consumptive use is a feature of the wildlife industry (hunting, culling of species populations above carrying capacity, cropping of some ungulate populations for meat and hides), the industry is resilient because of a diversity of management options, many of which can be practised simultaneously. If the market is temporarily poor for one option, another can be pursued.

4.21

Sustainable farming, forestry and fishery practices

Roy Hagen

Sustainable resource use

Sustainability is a widely accepted goal of natural resource management, but it is a difficult concept to define precisely; there is no universally accepted definition. Sustainability depends on what one is trying to sustain. It depends on whether one is talking about sustainability over several decades or over several millennia.

Agriculture, forestry and fisheries are based on the use of the natural resources of soil, water, plants and animals and the genetic diversity of plants and animals. Resource use systems can be said to be sustainable if, over time, they maintain the natural productivity of these resources, the genetic diversity of the plants and animals concerned, and the ecosystem functions of recycling of nutrients, water, carbon, and oxygen.

The question of sustainability can quickly become complicated. If one adds the caveat that sustainable systems must not rely on the use of non-renewable resources, then that eliminates nearly all of the farming, forestry and fisheries systems of the developed world. Nearly all of them, in fact, rely in some fashion on the use of fossil fuels, which are not renewable. The world is going to run out of them; most of the reserves of fossil fuels will be depleted in the next century. One of the greatest challenges facing humankind is to make the transition to renewable, and therefore sustainable, energy sources.

Sustainable agriculture

Unsustainable agriculture is one of the greatest threats to natural resources, natural areas and biodiversity. If productive agriculture cannot be sustained, farmers are obliged to convert more and more of the remaining range, forest and savanna lands into new fields — generally on more marginal sites where agriculture is inherently more difficult to sustain. This can lead to an accelerating downward spiral resulting in desertification, severe land degradation and impoverishment of rural people.

Sustainable agriculture depends first and foremost on the maintenance of soil fertility. Soil fertility depends primarily on the maintenance of soil organic matter, suitable soil pH and on adequate levels of the essential nutrients needed by crop plants, in a form available for absorption by plant roots. Maintaining adequate levels of soil organic matter is key to a soil's cultivation and structure, its water-holding capacity, its ability to hold nutrients in an available form and its pH balance. This is especially true in highly weathered tropical soils. The maintenance of soil organic matter is much more problematic in the tropics, however, because organic matter breaks down or oxidizes faster in high temperatures than it does in a cool, temperate climate. This is one of the reasons why slash-and-burn cultivation is unsustainable in certain conditions.

Soil fertility depends on the way the individual farmer manages his or her croplands. It depends on what the farmer does to prevent soil from eroding away. It depends on the quantity and type of crop residues, animal manure and other organic matter that are returned to the soil. Finally it depends on the farmer's ability to replace the soil nutrients that are inevitably lost over time through crop harvest, leaching, erosion, etc.

Erosion of shallow soils down to bedrock can permanently destroy a site's agricultural potential. Even erosion of deep soils can quickly diminish soil fertility because erosion first removes the topsoil where organic matter and soil nutrients are concentrated. Adverse effects of erosion are only felt over a period of years. Farmers can minimize erosion through a wide array of techniques that include agronomic practices, different types of tillage (including no-tillage), physical erosion control structures, contour vegetation strips, agroforestry techniques, etc. The extent to which erosion control measures should be subsidized is an issue that is frequently debated.

Ironically, maintaining good soil fertility is itself dependent on soil fertility. Badly degraded, infertile soils do not yield enough biomass of crop residues to restore or maintain good levels of soil organic matter. Degraded soils low in organic matter commonly become very acid. Nitrogen-fixing herbaceous and agroforestry species are typically incapable of fixing nitrogen in very acid soils. It is much easier to sustain the fertility of fertile soils than to restore badly degraded soils.

The sustainability of human life depends on the sustainable use of natural resources. We must all work towards making our resource production and harvesting systems more sustainable.

Adequate levels of essential soil nutrients can generally be maintained on small areas, such as garden plots, through the addition of locally available fertilizers such as animal manure, compost, etc. For larger areas, especially for cereal crops, this is generally not possible, especially in terms of soil phosphate. Over 60 per cent of the phosphate used by cereal crops is typically concentrated in the cereal grain and is removed at harvest, rarely to be returned to the soil. The maintenance of adequate levels of soil nutrients over the long term will generally require some minimum level inputs of chemical fertilizers or other mineral inputs (such as rock phosphate).

Of course, inputs must be purchased. To purchase fertilizers, farmers must produce a crop surplus that goes well beyond their subsistence needs. One can thus argue that subsistence-level agriculture cannot be ecologically sustainable except at very low population levels that allow long fallow periods to restore soil fertility through natural processes. While 'modern' agriculture may not be sustainable because of high levels of inputs of fossil fuels and environmentally hazardous levels of chemical fertilizers and pesticides, subsistence-level agriculture is probably also unsustainable at today's population levels. This is an issue that has not received adequate attention.

New diseases and insect pests are continually evolving. Sustainable agriculture also depends on a diverse genetic base for crop plants that allows for the development of new resistant varieties over time. This genetic base is rapidly diminishing for many crops. Unlike soil fertility maintenance, this is an issue that individual farmers can do little about. It must be addressed by national governments and international scientific, environmental and policy groups.

There is no commonly agreed definition of sustainable forest management, especially of natural forests. Some would argue that forest management should not change the forest in any way. This is largely impractical unless one simply wants to preserve a watershed or a natural area. Even the definition of what is 'natural' can be, and frequently is, hotly debated. It is now recognized that most natural forests are far more dynamic than was previously thought and are continuously changing due to 'natural' processes.

Sustainable forestry

Managing a forest will inevitably change it, especially when forests are managed for wood products. Disagreement concerns the level of acceptable change. Again the question is: what does one want to sustain? The following ideas are proposed:

- the ecosystem functions of recycling of nutrients, oxygen, carbon, water, etc. should be sustained;
- the genetic and species diversity of the plants and animals, i.e., the biodiversity of the forest, should be largely sustained;
- for extractive use of a forest, the production and yield of a range of products should be ecologically and economically sustained, although the specific mix of products will inevitably change over time as markets and needs for these products change.

Managed forests must be protected and cared for. Harvest levels must be controlled based on the ecological potential of the forest. For extractive use, some form of intervention is necessary to assure the regeneration of valuable species. Because of the relatively long time involved in forest management compared to agriculture, land tenure and resource access rights, as well as other policies and institutions, become critical factors determining forest sustainability. Forests must be protected and cared for. Those who protect and care for the forest must be among the principal beneficiaries of the use of the forest. If not, they will have little incentive to act.

Sustainable fishery practices

Sustainable fisheries depend primarily on controlling how and when fish are harvested and on maintaining the quality of fish habitat, primarily the quality of water, breeding areas, feeding areas and, sometimes, cover. Over-fishing will rarely drive a species offish to extinction — people will usually stop fishing when fish populations become too low. A given species can be eliminated, however, through changes in water quality or pollutants, through destruction of spawning grounds or by the introduction of exotic species that out-compete and replace the native species.

Fisheries can be severely depleted (and potentially destroyed) by over-fishing, to the point where the sustainable harvest is at an extremely low level when compared to the potential productivity of the fishery. When fishing pressures build up, the only way to avoid over-fishing is to have effective controls on who fishes and/or on how and when they fish. Open access fisheries can easily lead to a classic "tragedy of the commons". Control may be vested in the hands of a local community or a national or international organization, but someone must control access if the fishery is to remain productive.

If access to the fishery can be controlled, then sustaining a near optimum harvest depends on the following:

- indigenous and/or modern biological knowledge of the fish to be managed;
- some type of monitoring to determine the condition and productivity of the fishery; and
- a management system to adjust the conditions of harvest as a function of the monitoring.

Critical factors are the numbers of mature, breeding size fish, especially females, and the availability of suitable breeding grounds for them to lay their eggs, and areas for the young to develop.

Techniques for managing a fishery include the following:

- limiting the number of people who may fish;
- controlling the fishing techniques that may be used;
- controlling the mesh size of nets to prevent the harvest of immature fish;
- controlling the areas in which fishing is permitted, to protect spawning grounds, estuaries or other critical sites;
- controlling the timing of open seasons; and
- imposing size limits on fish that may be kept.

Sustainable agriculture, forestry and fisheries are important because everyone in the world depends, directly or indirectly, on these resources. The sustainability of human life depends on the sustainable use of natural resources. We must all work towards making our resource production and harvesting systems more sustainable.

4.22

Ecotourism

Peter Valentine
with a contribution by
Gerardo Budowski

Tourism can be very beneficial for conservation. Tourism has generated a large industry in almost every country and is a potent force for change. The evolution of ecotourism provides new potential for conservation initiatives, but not without careful attention being paid to a number of important details.

The term "ecotourism" refers to tourism based on the natural environment and conducted in an ecologically sustainable manner. There have been many types of nature tourism in the past — people enjoying an interaction with nature, from big-game hunting to wildlife viewing and photography — but most were not ecologically sustainable and some had a serious impact on the environment. The idea of ecotourism is to develop a form of tourism which is based on enjoying nature but also helps protect the environment. It recognizes that, if we are not careful in our management, even apparently harmless activities (such as wildlife viewing) can seriously damage the environment. Damage can include disturbance to wildlife (which may lead to increased mortality), soil erosion from vehicle or boat use, pollution from various activities associated with the access of tourists and supporting infrastructure and ecosystem damage due to selective harvest of species as souvenirs.

Understanding ecotourism

Successful ecotourism involves a close and mutually supporting partnership among three key elements:

- the natural environment (conservation areas, parks, customary land, tribal land, private land);
- the local communities associated with the natural environment; and
- the tourism system associated with the natural environment (tourists, operators and other components of the industry which enable the tourists to enjoy the environment).

The natural environment must benefit, communities must benefit, and the tourists and tourism businesses must benefit. In ecology this type of relationship is called symbiosis or mutualism; each participant must get some reward. The example in Box 17 illustrates this point. Without this partnership, tourism may exploit local people and places and actually work against conservation.

Box 17: Enipein Marine Park

The village of Enipein, in Micronesia, established a marine park over part of their land and water. In conjunction with a development support programme the villagers built traditional canoes, using the skills of elders and training young men in the process. Once the canoes were built, an ecotourism venture was started by bringing tourists from the larger centres out to the village and giving them the opportunity to canoe along the mangrove waterways and within the reef lagoon of the marine park. Local guides helped the tourists appreciate the natural environment, talked about the traditional canoes and told some of the local stories. A feast was provided at the end of the day with traditional foods and local ceremonies. The villagers were paid US\$35 per tourist. In this example everyone benefited: the environment was managed carefully as a park (which meant restrictions on some uses); the villagers maintained their traditional skills, learned new skills and gained cash income (all villagers are partners in the income); and the tourists enjoyed a wonderful experience and enhanced their appreciation of the environment.

The key content of the tourism experience — arranged by both tour operators and conservation managers — is also crucial in the partnership. Successful ecotourism should do the following:

- promote positive environmental ethics (teach and encourage appropriate behaviour);
- concentrate on the intrinsic values of the specific ecosystem rather than on facilities and services — visitors should come to the area because of some special properties of the local ecosystem;
- involve a direct experience with nature;
- be supported by high-quality preparation on the part of both providers and participants — gratification is based on appreciation and/or education, not on thrills;
- not degrade or exploit the natural environment either directly or indirectly; and
- contribute to the management and protection of the natural environment.

Box 18: An eco-facade for tourism?

Many claims concerning the benefits of ecotourism are exaggerated, or owe more to labelling and marketing than to genuine reality. Often projects are planned and carried out without local consent or support and end up threatening local cultures, economies, and natural resource bases. Critics of ecotourism regard it as an eco-facade: a tactic to conceal consumptive and exploitative practices by 'greening' them.

One of the most serious impacts of ecotourism is the expropriation of virgin territories — national parks, wildlife parks and other wilderness areas — which are packaged for ecotourists. Ecotourism caters mostly to urbanized societies and the new middle-class alternative lifestyles. Searching for untouched places, 'off the beaten track', travellers have already opened up many destinations which previously were totally undisturbed.

In socio-economic terms, diverse local activities have been replaced by an ecotourism monoculture. Contrary to claims, local people do not necessarily benefit from ecotourism. Tourism-related employment is greatly overrated: locals are usually left with low-paying service jobs such as porters or food and souvenir vendors. In addition, they are not assured of year-round employment; workers may be laid off during the off-season. As with conventional tourism, most money is made by foreign airlines, tourism operators, and developers who repatriate profit to their own more economically advanced countries.

(From an article by A. Pleumarom in Environmental Justice Networker, No. 6, Winter 1995.)

Expected outcome of ecotourism

The evolution of ecotourism provides a new tool which can be extremely valuable for conservation initiatives, but not without careful attention being paid to a number of important details

Based on several recent reviews of ecotourism and protected areas, a number of principles and concerns need to be considered in any partnership between tourism, local people and natural environments. Some of these concerns are exemplified in the following questions:

1. Is there a strong role for local people in the partnership?
2. How can local people gain benefits from tourism? (Local people could organize material goods for sale, especially those already made in the society such as clothing items, household items or decorative items; local people could develop guiding skills to take

Key issues to consider in developing a partnership

- tourists into the park and help them understand it; local people could sell food to tourists, either fresh or dried, and so on.)
3. What are the possible impacts of tourism on the natural environment? (In a coastal area these could include too many mangrove crabs and crayfish taken to feed the tourists; damage to coral from anchors, garbage and pollution; too much fresh water used; improper disposal of sewage; and roads and buildings which may disturb or destroy highly valued land or wildlife.)
 4. What are the possible impacts of tourism on local people, especially on quality of life, customs and access to resources? (Tourists may offend local customs; prevent local access to resources; or deplete resources.)
 5. Are there appropriate mitigative measures for the negative impacts of tourism? (These could include mooring buoys for boats on reef-diving trips; guidelines for the behaviour of tourists in public places.)
 6. How can communities be well informed about visitors and the impacts of tourism? (An example is workshops in village communities.)
 7. How can local people develop realistic expectations from tourism? (People may think that tourism will make everyone rich; a workshop could ensure that more accurate information is provided).
 8. How can money from tourism help protect and/or manage the natural environment? (A user-pays system of charges may be adopted.)
 9. How can appropriate activities be encouraged and inappropriate activities discouraged? (Guidelines and an enforcing system can be developed by the various stakeholders in tourism and conservation.)
 10. How should tourism operators and local people establish the appropriate size and type of tourism development? (It is very easy to destroy ecotourism by allowing damaging activities or too many tourists.)
 11. How can preference be given to local businesses and guides? (This can be written into the local development and/or management plans as policy and ensured through regular monitoring.)
 12. Is training available for local people, especially in natural history interpretation? (Local guides with knowledge of local biodiversity are generally highly valued by ecotourists.)
 13. How can monitoring of both the status of natural environment and societies be developed? (Every ecotourism partnership needs to establish a system which is effective for its own needs.)

In almost every conservation initiative there is a potential role for ecotourism; the opportunity to develop a cash flow for both the conservation activities and for local people should be carefully explored. The questions outlined above may help identify the key concerns and possibilities and avoid harm to the natural environment.

What do conservationists resent and fear about the increase in ecotourism?

In Spanish there is a distinction between "*ecologistas*" and "*ecólogos*". The former are militant, often emotional fighters in the name of conservation. On the ecotourism issue, they resent the increasing number of tourists in natural areas because of their effects on the fauna and flora, local people, etc.; they assume that any hotel development will automatically disrupt the landscape and produce dangerous levels of pollution. *Ecologistas* usually have a scientific approach; they would like to see long-term planning and resent improvisation and laissez-faire attitudes. They feel that the arrival of more tourists will only benefit a small sector, often foreigners. They resent the glamour of tourism while the national parks service (or equivalent entity) struggle with few staff and scanty resources to face the tourist avalanche.

What do actors in the ecotourism industry reply to the conservationists?

They reply that ecotourism is a 'no chimney' industry, which provides jobs and wide circulation of dollars "before they get immobilized" (for instance in a bank). They claim that the arrival of tourists actually benefits and enhances protected areas instead of harming them, because of the new value derived. Without ecotourism, many natural areas — particularly forests and swamps — would be replaced by crops or grazing areas. They feel that the increase of ecotourism actually contributes to conservation, better knowledge of fauna and flora and the increase of local training and the production of publications and other diffusion materials. They make financial contributions to conservation and provide jobs as guides to many local biologists. They take credit for what are often new ways of 'developing' natural resources without destroying them, such as white-water rafting, careful design of ground (or aerial) trails, producing publications and training local people.

What do the ecotourists want?

There are many types of ecotourists, such as foreigners and nationals, young adventurers and elderly people, who need a high level of comfort. They basically want to enjoy a pleasant, instructive experience and are willing to pay for it according to their means. They want good guides, environmental 'sensitivity' by all the actors, security, good publications, maps and well-marked roads and fair pricing for the services rendered. They are willing to cope with unfavourable climatic factors but not with false promises about what they will see in their tours. Besides admiring nature and its biodiversity, they are often interested in local people and cultures and want an opportunity to establish contact.

How do you find common ground and a mutually rewarding relationship?

What is needed — and often lacking — is good communication among all actors. The local communities, the ecotourism industry and those claiming to defend the cause of conservation should get together, discuss problems and look for joint efforts and solutions. There are many options to explore, such as:

Ecotourism and conservation: avoiding conflicts and building a mutually profitable relationship

Gerardo Budowski

- training nature guides; this is obvious since guides who are experts in fauna and flora are usually 'natural' conservationists (special emphasis should be placed on training local guides, including language training);
- supporting national conservation efforts. National parks and other protected areas are great attractions to ecotourists; ways can be found to channel ecotourism benefits to support park management ability and proper facilities for visiting ecotourists;
- producing publications and other visual aids;
- organizing conferences, workshops and training activities;
- carrying out research on topics such as ecosystem resilience, attitude of local populations towards tourists, etc.;
- creating a local association for 'responsible ecotourism'; and
- giving awards to the actors of the ecotourist industry who are best fulfilling conservation requirements.

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Conservation can be furthered by programmes that provide compensation and substitution for:

- lost economic values of natural resources in a protected area to which people have been denied access; and
- voluntary agreement on the part of local people not to exploit certain resources (such as forests) that remain in their possession.

The rationale for providing compensation and substitution in either case rests on two main arguments:

- local people should not have to bear major economic sacrifices to protect biodiversity resources of global benefit; and
- compensation or appropriate substitutes will reduce local people's economic need to exploit protected resources.

Compensation usually takes the form of cash payments, goods or services, which are provided in exchange for local people agreeing to relinquish their rights to exploit protected resources. In addition to compensation, other options include providing substitutes for specific resources to which access has been denied. For example, if a protected area was a former source of fuelwood or used for livestock grazing, wood lots and fodder banks outside the protected area might be considered adequate substitutes. Other forms of non-cash compensation and substitution include alternative sources of income to replace those no longer available due to the protected status of an area or a resource. For example, direct employment for local people (e.g., wardens and guides), promotion of small enterprises, new skills training and low-interest loans are all being provided by the WWF Korup and Oban projects in Cameroon and Nigeria, and by the WWF Kikori Project in Papua New Guinea.

The compensation or substitution approach begins by finding the funds to support the programme. Possible funding sources to pay compensation or substitution include:

- allocations from the national government's budget;
- grants by international donor agencies;
- a share of the annual revenues from park entry fees, tourist facilities, sustainable wildlife utilization or sustainable harvesting (this is the case of the Amboseli National Park in Kenya);
- new taxes or fees (e.g., French law permits local governments to impose an additional one per cent tax on all land sales in "scenic areas", to be used to compensate other landowners for agreeing not to develop their properties); and
- fines from corporate polluters (e.g., funds from the Exxon-Valdez oil spill were used to compensate native Alaskan communities on Kodiak Island for giving up certain development rights and transferring land parcels to a national wildlife refuge).

Securing these funds may require significant political lobbying.

Should the amount be based on the value of the subsistence benefits currently being derived, or the prospective commercial value of logging, mining or other economic development activities that are foregone? Will people accept compensation for less than the full commercial value of a resource because they receive intangible (e.g., cultural) benefits from its preservation? A complex process of negotiation is usually required to

4.23

Compensation and substitution programmes

Barry Spergel

Finding funds

Calculating the amounts

reach agreement on what constitutes fair and appropriate compensation. This is even more important with substitution programmes, since only rarely will it be possible to provide people with comparable tracts of unoccupied land. A guiding principle for substitution programmes should be to try to provide land, infrastructure and/or technical assistance that will enable people to earn the same incomes as before. Detailed rules and procedures for doing this have been worked out in some cases (e.g., the Lesotho Highlands Water Project), although in practice such rules may be controversial or complicated to administer.

Determining the beneficiaries

Should compensation be provided to all individuals suffering economic loss as a result of conservation activities? Or should compensation only be paid to those who have legal rights to occupy or use the land and other resources, or to those who enjoy customary or *de facto* rights? Should there be a cutoff point for recognizing a right to compensation, in order to exclude recent or future migrants to an area? If resource rights are held by a group rather than by individuals, should compensation or substitution be offered to the group or to the individual members? Offering compensation to the group rather than individuals may result in elites within the group monopolizing or diverting benefits; offering compensation to individuals, on the other hand, may be socially divisive, culturally inappropriate or result in compensation payments being quickly used up. In each case the answers to these questions will depend on cultural, political and legal factors.

Designing distribution mechanisms

Should compensation payments and non-cash substitution be distributed in one lump sum, or in a series of payments? The answer will partly depend on the source of the funds for compensation; a lump sum grant may be feasible from a government budget or an international donor agency, while a stream of revenues over time may be more practical from entry fees or resource 'rents'. Even where compensation is available in a lump sum, it may be better to invest it to create an endowment or trust fund which will generate a steady stream of interest or investment income over a long period of time. National-level, multi-million dollar biodiversity conservation trust funds have recently been established in almost 20 countries to support a variety of long-term conservation activities. These funds are generally governed by a board of directors composed of NGOs, government agencies, international donors and scientific experts. One of the purposes of these trust funds has been to offer socio-economic benefits and technological assistance to communities living near protected areas. Similar trust funds could be established specifically for the purpose of administering compensation payments over long periods of time to fund social benefits, infrastructure and technical assistance to people adversely affected by the establishment of a protected area.

Addressing adverse consequences

Potential adverse consequences include:

- effects of compensation schemes on existing social, political and economic relationships;
- creation of a sense of welfare dependency as a result of living off of regular cash compensation payments, rather than developing (or being helped to develop) alternative income sources; and

- threats that unless agreed compensation is increased or additional compensation is paid in the future, people will not honour their agreements to conserve biodiversity; and threats by neighbouring groups that they will not conserve biodiversity unless they are paid amounts of compensation comparable to what the first group has been paid.

Ways of dealing with these problems may include:

- distributing compensation as 'rent' paid over time, rather than as a lump sum, so that compensation can be terminated if people fail to conserve biodiversity;
- using compensation to pay for services which benefit the group as a whole but which do not take away individuals' incentives to earn a living, (e.g., improved education and medical care, various forms of technical assistance and improved infrastructure); or using the compensation payments to establish a revolving loan fund (rather than simply giving grants with no strings attached);
- ensuring that the mechanisms for distributing compensation and substitution programmes are participatory and transparent, and that people fully understand that rights to compensation and substitution are in exchange for obligations to conserve biodiversity; and
- focusing compensation on cases where biodiversity resources are of global value, where the threat of their destruction is imminent, and where providing relatively modest amounts of compensation is likely to produce major changes in behaviour that support conservation goals.

In a broad sense, all integrated conservation and development (ICAD) projects can be viewed as providing compensation or substitution to local people for conserving biodiversity. Some examples of compensation and substitution programmes in the narrower sense include:

- Kakadu National Park in Australia, which leases land from aboriginal groups for five-year periods and pays them annual rent;
- North York Moors National Park in the UK, where farmers who own land within the park are given cash grants for managing woodland and maintaining wildlife habitats on their land;
- the BOSCOA Project in Costa Rica, where cash payments are made to farmers on the margins of Corcovado National Park reserve in exchange for putting their forested land under a conservation easement;
- Amboseli National Park in Kenya, where the Maasai were to receive up to 25 per cent of park entry fees, plus an annual "wildlife utilization fee" for leasing out hunting concessions on their communally-owned land adjacent to the park (this project ran into problems because the government banned hunting and failed to provide compensation as agreed);
- the Falealuppo Rainforest Reserve in Western Samoa, where cash was donated to build a village school in exchange for the villagers' agreeing not to sell logging rights to their rainforest for a 50-year period; and
- the American Samoa National Park, where villagers lease their land to the U.S. National Park Service for 50 years in exchange for annual rent payments, but retain certain uses and co-management rights.

In a broad sense, all integrated conservation and development projects can be viewed as providing compensation or substitution to local people for conserving biodiversity.

4.24

Jobs in Conservation

Larry R. Kohler and
Carmen Aalbers

If there are local people living within the area affected by of the conservation initiative or its so-called buffer zone, they should benefit from the initiative and the benefits should exceed the costs incurred by them.

Section 2 of Volume I of *Beyond Fences* stresses the necessity of integrating conservation with the meeting of local needs. In particular, sustainable conservation can and should create local employment and income. If there are local people living within the area affected by of the conservation initiative or its so-called buffer zone, they should benefit from the initiative and the benefits should exceed the costs incurred by them. In order to assure a positive economic and social participation, a number of aspects should be considered by the management of the initiative, from the design stage on, and especially the following.

- a. List and examine all the work opportunities that can be created by the conservation initiative. You might think of employment and incomes generated through:
 - direct employment in the initiative, such as jobs as park wardens, guards, employment in conservation services, biodiversity monitoring, project support services, and so on;
 - ecotourism, including jobs for management, catering, and cleaning required by hotels and restaurants; jobs as tourist guides and sellers of handicrafts, trophies, and other related products, plus the full range of personnel required by transport companies, including rental car facilities and aviation (e.g., maintenance, office staff, drivers, pilots, etc.);
 - exploitation of wildlife made sustainable by the initiative; i.e., work related to support of sustainable hunting and sports fishing, film production, manufacture and sale of handicrafts using skins, bones, etc. as well as jobs in extraction of non-timber forest products and manufacture and sale of related handicrafts;
 - economic exploitation of local products with added value, such as jobs to grow, harvest and process products for local and national consumption and even possible exports which have added value from being associated with the conservation initiative (e.g., bottled water from the 'Pristine Stream', honey from the 'Tiger Reserve', etc.);
 - labour-intensive work in resource management, such as jobs in soil and water conservation, biological pest control, natural fertilizers and soil restoration, etc.;
 - the development of new industries, such as the creation of new informal sectors, and small- and medium-sized enterprises using local resources (e.g., materials, energy, and water resources) made available on a sustainable basis because of the initiative;
 - infrastructure development, including jobs in the construction of hotels, restaurants, observation platforms, local harbours, local airstrips, roads, housing, schools, telephone posts, etc. in and around the initiative, and related jobs for sound resource management (e.g., soil conservation, channels for water);
 - research, including personnel at research stations, laboratories and observation posts involved in identifying and developing new uses (e.g., medicines) of flora and fauna, in collecting and analyzing minerals and other materials, mapping resources, etc.;
 - the financial sector, including bank employees and managers for ecotourism and for the agricultural, and industrial sectors related to the initiative.

- b. Taking into consideration the type of employment and income opportunities identified, establish specific estimates/targets of the percentage of incomes derived from the conservation initiative which should return to the local population in the short, medium, and long term. Attempt to

identify all special fees or taxes, salaries, purchase of goods and services and returns on investments related to the conservation initiative.

c. Estimate how many people will be or are affected by the conservation initiative in the immediate area or within the so-called buffer zone. What can the initiative do to assist local people to take advantage of new jobs? You might consider training, organizational support, credit facilities and awareness raising. What training would be necessary for the local population to be able to more effectively participate in the initiative through employment and income opportunities? What kind of training is of most immediate priority: vocational training (i.e., training related to specific jobs, training on the job), management training; and/or basic education? Should the initiative stimulate and support the organization of the local population so as to be able to use the financial resources returned to the local area to generate new employment and income opportunities? Could the initiative provide credit facilities to the local population so that they could invest in remunerative activities?

d. If some short-term objectives are difficult to realize by employing local workers, and thus require the project to depend on outsiders, identify short-term, medium-term and long-term strategies and programmes required to achieve the optimum income and employment objectives for the local population. What outside advice and support should be included in the project document and strategy for this purpose? Employment specialists, vocational trainers, rural economists and marketing specialists might facilitate the inclusion of employment and economic sustainability aspects into the initiative. Environmental Impact Assessments should include social impacts; in particular an estimate of the positive and negative employment and income opportunities of the initiative. EIA should also identify alternative approaches to provide employment and income opportunities for local people.

e. Find out how the project can hand over responsibility to the local population for an active involvement in realizing specific income and employment targets. Sections 1 and 3 of Volume I of *Beyond Fences* highlight mechanisms to promote employment and income considerations in a conservation initiative.

Box 19: Another view: jobs versus livelihood?

Measures to combat poverty and hardship induced by a protected area scheme in a developing country usually focus on the creation of full or part time jobs in, for example, the tourism and crafts sector. Employment and wages thus become standard forms of compensation for lost livelihoods — the many activities which make up a living. The problem is that for most rural people, and particularly for the weak and vulnerable, employment may only be a subset or a component of livelihood. Informed by reductionist employment thinking, well-meaning job creation strategies substitute for other, more imaginative approaches which might seek to sustain local livelihoods by building on a multiplicity of activities and resources. Culturally specific ways of relating to the world and organizing economic life are thus displaced in favour of the more uniform industrial-urban development model of the North.

From: Ghimire, K. and M. Pimbert, Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas, UNRISD, Geneva, 1996 (in press).

4.25

Economic valuation in conservation

Jeff McNeely, Martha Rojas and Frank Vorhies

To compete for the attention of government decision-makers, policies on biological diversity and natural resources need to demonstrate in economic terms the value of biodiversity to the country's social and economic development. Some have argued that biological resources are in one sense beyond value because they provide the biotic raw materials that underpin every major type of economic endeavour at its most fundamental level. But ample economic justification can be marshalled by those seeking to exploit biological resources, so that the same kinds of reasoning need to be used to support alternative uses of the resources. In order for decision-makers to assess the priority they will give to conservation, they need to have a firm indication of the contribution that biodiversity makes to their national economy.

It is important to note that "conservation" does not mean non-use, but rather wise use, which contributes to sustainable development. Conservation should therefore be seen as a form of economic development. Investments in conservation should be judged in economic terms, which requires a reliable and credible means of measuring the benefits of conserving biodiversity and the costs of losing natural assets.

Because of policy failures and property right failures, the market economy does not capture all of the values of biodiversity. When these resources are valued they are often not given appropriate prices in the marketplace. Also, to the extent that the environment and biological resources are public goods, individuals and industries can often gain benefits for their use without paying for them. This is known as the 'free rider' problem.

Another problem arises because the social benefits of conserving biological resources are often intangible, widely-spread, and not fully reflected in market prices. Thus the benefits of protecting natural areas are in practice seldom fully represented in cost-benefit analysis. In contrast, the benefits of exploiting the resources supported by natural areas are often easily measured. Hence, cost-benefit analyses usually underestimate the net benefits of conservation or, equivalently, overestimate the net benefits of the exploitation alternative.

Those who benefit from exploiting a forest, wetland, or coral reef seldom pay the full social and economic costs of their exploitation. Instead, these costs (to be paid either now or in the future) are transferred to society as a whole, or to individuals and institutions who had gained little benefit from the original exploitation. Such "external costs" are often accidental side-effects of development projects, so the loss is not recognized in either private or social cost-benefit analyses.

In addition, the species, ecosystems, and ecosystem services that are most over-exploited tend to be the ones with the weakest ownership. Many of these are open access or common property resources for which the traditional control mechanisms have failed. When ownership rights are weakly enforced, exploitation is allocated not to those who value the resource most, but rather to those who can pay the most for the exploitation rights or to those with the political power to exploit.

Finally, the interest rates or discount rates used by current economic analysis and the measures of national income tend to be high and thus encourage depletion of biological resources rather than their conservation.

Economic valuation tries to provide proxies to assigning values to biodiversity and biological resources by assessing the benefits of their conservation and the cost of their degradation, so that instruments can be devised to correct the failures described above and reflect real values in decision-making.

Economists have devised a variety of methods for assigning values to natural biological resources. This multiplicity of methods is to be expected, because the benefits derived from a biological resource may be measured for one purpose by methods that may not be appropriate for other objectives. Also, the ways to measure one resource may not be the same for others. The value of a forest in terms of timber, for example, would be measured in quite a different way from the value of the forest for tourism or watershed protection.

For governments to base decisions on allocating scarce resources on the basis of the best available information, a number of different methods are required to quantify the magnitude and value of the positive and negative impacts. In fact, decision-makers should determine total valuation, which requires a wide range of assessment methods. The major approaches are:

- assessing the value of products which are commercially harvested, such as timber, fish, ivory, and medicinal plants;
- assessing the value of nature's products — such as firewood, fodder, and game meat — which are consumed directly, without passing through a market; and
- assessing indirect values of ecosystem functions, such as watershed protection, photosynthesis, regulation of climate, and production of soil.

These approaches are based on the classification of values summarized here. There are other classification schemes, but they are closely related.

The major distinction is between direct values and indirect values of biological resources. **Direct Values** are concerned with the enjoyment or satisfaction received directly by consumers of biological resources. They can be relatively easily observed and measured, often by assigning prices to them. **Indirect Values**, which deal primarily with the functions of ecosystems (here called "environmental resources") do not normally appear in national accounting systems but may far outweigh direct values when they are calculated. Indirect values tend to reflect the value of biodiversity to society at large, rather than to individuals or corporate entities.

In order for decision-makers to assess the priority they will give to conservation, they need to have a firm indication of the contribution that biodiversity makes to their national economy.

Direct Values can in turn be divided into consumptive use values and productive use values. **Consumptive Use Values** are the values placed on nature's products that are consumed directly, without passing through a market, such as recreation or (mostly in developing countries) food, construction material, medicinals, trade goods, and other. Consumptive use value can be assigned a price through such mechanisms as estimating market value if the product were sold on the market instead of being consumed. In Sarawak, Malaysia, for example, a detailed field study found that wild pigs harvested by hunters had a market value of some \$100 million per year.

Productive Use Values are assigned to products which are commercially harvested, and are therefore often the only values of biological

resources reflected in national income accounts. Estimates of such values are usually made at the production end (landed value, harvest value, farm-gate value, etc.) rather than at the retail end, where values are much higher.

The contribution of wild species and ecosystems to the economies of developing countries is usually far greater (in percentage GDP terms) than it is for industrialized countries. Timber from wild forests, for example, is the second leading foreign exchange earner for Indonesia (after petroleum) and, throughout the humid tropics, governments have based their economies on the harvest of wild trees. Non-wood forest products can also be of considerable value. Indonesia, for example, earned some \$200 million in foreign exchange from non-wood forest products in 1982. However, as will be demonstrated by the discussion of indirect values below, the market price is not always an accurate representation of the true economic value of the resource, and does not deal effectively with questions of distribution and equity. It is also apparent that consumers may value resources in ways different from producers.

Direct values often derive from indirect values, because harvested species of plants and animals are supported by the goods and services provided by their environments. Species without consumptive or productive use values may play important roles in the ecosystem, supporting species that are valued for their productive or consumptive use. Indirect values can be divided into non-consumptive use values, option values and existence values.

Non-consumptive Use Values are usually generated by natural functions or services rather than goods. These provide value without being consumed, traded in the marketplace, or reflected in national income accounts. Still, efforts are being developed to evaluate economically the benefits provided by these resources. A non-consumptive use such as organized tourism based on biological resources (such as visits to a national park) can often provide a powerful economic justification for conserving biological resources, particularly when protected areas are a primary attraction for visitors to a country. In Kenya, for example, tourism is a major foreign exchange earner, and a large share of the tourism is based on Kenya's system of protected areas.

Option Values are concerned with the realities that the future is uncertain and extinction is forever. Some authors suggest that society "should prepare for unpredictable events, both biological and socio-economic. The best preparation in the context of wildlife use is to have a safety net of diversity — maintaining as many gene pools as possible, particularly within those wild species that are economically significant or are likely to be". Option values are a means of assigning values to risk aversion in the face of uncertainty.

Nobody can determine today which species will be most valuable tomorrow or how much genetic diversity in wild relatives of domestic plants will be necessary to support agriculture. One outstanding illustration of the possible magnitude involved was the discovery in 1979 of a new species of maize (called *teosinte* by the local people) on a small hillside in Mexico, which was in the midst of being cleared. The species was remarkable in being a perennial grass rather than an annual like other types of maize. *Teosinte* may prove to have a value of billions of dollars annually for its contribution to creating a perennial hybrid of maize.

It can often be shown that a development project will cause the irreversible destruction of some biological resources. An option would be to postpone the development project until the value of these resources is known. Uncertainty about the value of biological diversity will not be resolved by clear-cutting the forest or by constructing a hydroelectric dam, but these projects can still be undertaken at a later date. The value of being able to learn about future benefits that would be precluded by the project — "quasi option value" — is positive provided the information is solely time-dependent.

Existence Values lie at the core of our ethical desire to conserve. Many people, especially in the industrial nations, attach values to the existence of a species or habitat that they have no intention of ever visiting or using. They might hope that their descendants (or future generations in general) may derive some benefit from the existence of these species, or may just find satisfaction that the oceans hold whales, the Himalayas have snow leopards, and the Serengeti has wildebeest. Existence values reflect the sympathy, responsibility, and concern that some people may feel toward species and ecosystems. An accurate cost-benefit analysis of such values is clearly impossible, but the magnitude of these values is suggested by the sizeable voluntary contributions to conservation agencies by people and institutions who do not expect to visit or use the resource they are helping to conserve.

In summary:

consumptive use values + productive use values = **direct values**

non-consumptive use values + option values + existence values = **indirect use values**

direct values + indirect values = **total economic value**

An understanding of the total economic values of biological resources will improve our ability to influence policy-decisions to conserve biodiversity.

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4.26

Incentives and disincentives to conservation

Jeff McNeely, Martha Rojas and Frank Vorhies

Incentives

Developing a comprehensive system of incentives and disincentives, and eliminating perverse incentives, requires a better understanding of biodiversity's total value.

To the extent that resource exploitation is governed by the perceived self-interest of various individuals or groups, behaviour affecting maintenance of biological diversity can best be changed by providing new approaches to conservation which alter people's perceptions of what behaviour is in their self-interest. Since self-interest today is defined by many in economic terms, conservation needs to be promoted through the means of economic incentives.

An incentive for conservation is any inducement which is specifically intended to incite or motivate governments, local people, or international organizations to conserve biological diversity. A disincentive is any inducement or mechanism designed to discourage depleting of biological diversity. Together, incentives and disincentives provide the 'carrot' and the 'stick' for motivating behaviour that will conserve biological resources. A perverse incentive, on the other hand, is one which induces behaviour which depletes biological diversity.

Direct incentives — either in cash or in kind — are applied to achieve specific objectives, such as improving management of a protected area. Indirect incentives do not require a special budget for biodiversity conservation, but rather apply fiscal, service, social, and natural resources policies to specific conservation problems.

Incentives are used to divert land, capital, and labour towards conserving biological resources, and to promote broader participation in work which will benefit these resources. They can smooth the uneven distribution of the costs and benefits of conserving biological resources. They can mitigate anticipated negative impacts on local people by regulations controlling exploitation and compensate people for any extraordinary losses suffered through such controls. They can also reward the local people who conserve biological resources at an economic cost higher than the economics benefits received.

To function effectively, incentives require some degree of regulation, enforcement, and monitoring. They must be used with considerable sensitivity if they are to attain their objectives, and must be able to adapt to changing conditions.

Incentives can be applied at the local, national and international levels. Some incentives are direct (cash or in-kind). Direct cash incentives to conserve biological diversity include, for example, a loan to a farmer to help cover the costs of introducing "integrated pest management" techniques, a subsidy to landowners to manage the land in a certain way (as with the support paid to some farmers in the European Union) or to refrain from changing the present land-use (as with designated Sites of Special Scientific Interest in the UK). Governments can also provide grants for landowners to restore threatened or damaged habitats, as with the countryside Stewardship Scheme in England and Wales.

In-kind direct incentives to conserve biological diversity might include granting to a local community access to a protected area for customary uses compatible with the area's conservation objectives, or providing seedlings to a local forest restoration project or technology transfer between countries. In South Africa, for example, a new national park was recently proclaimed with access rights to the park for local sheep

ranchers. Such access was necessary to earn the support of the local community for creation of the park.

Other incentives to conserve biological diversity are indirect. Fiscal incentives include tax exemptions or deductions targeted at conserving particular habitat types such as wetlands. In Minnesota, for example, wetlands and natural prairie lands are exempt from land tax. Another fiscal measure could be a debt-for-nature swap. The Foundation for the Philippines Environment, for example, was set up with funding made available from a debt-for-nature swap between the US and Philippine governments. This Foundation now has an endowment to fund conservation programmes through local NGOs.

Service-oriented incentives to conserve biological diversity include public education or technical assistance programmes, such as agricultural, forestry or fisheries extension initiatives. Examples of social incentives, designed to improve quality of life, include land tenure reform, community institution building or access to family planning services. The well-known Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe is an example of a community conservation programme based on granting communal landowners sustainable use rights to wild resources.

In contrast, disincentives discourage undesirable behaviour. They are inducements or mechanisms designed to discourage the depletion of biological diversity. As such they are the complementary 'stick' to the 'carrot' offered by incentives. Taxes or other charges are typical delivery mechanisms for disincentives, motivating citizens or businesses to modify environmentally 'unfriendly' behaviour. Fiscal disincentives have often been used in the pollution field (for example through emission or effluent charges) but also are used to discourage any other type of environmental harm, including the loss of biological diversity. Taxes or other charges can, for example, be put on certain types of land uses. Many traditional cultures and communities have developed their own strong and particularly effective mechanisms of disincentives as well, including the use of public opinion and taboos.

Disincentives

Some incentives actually encourage biological diversity's depletion or create obstacles to its conservation. These can be called "perverse" incentives. For example, some countries still pay grants for land-clearance long after it has ceased to benefit the nation. Subsidies on the price of farm products have usually proved particularly damaging to biodiversity, by encouraging destruction of natural habitats (even on land marginally suited for agriculture) and replacement of variable, locally adapted varieties with modern standardized ones. Also, subsidies to fishermen to improve their vessels have often proved disastrous, only giving the fishermen the means to take far too much of the fish stock than can be produced each year, without putting in place suitable control mechanisms. As for species, bounties on killing predatory animals like wolves have greatly increased the demise of such animals and have at times been shown to be unnecessary.

Perverse incentives

Such incentives are very often instituted for perfectly valid political or social reasons, and can even be seen as positive incentives in other sectors, such as employment, agriculture, etc. But by externalizing environmental considerations, they contribute to the inadvertent loss of

biological diversity. In these instances, the system has, in effect, failed to take an integrated approach to incentive and disincentive policies established on behalf of other sectors which have an impact on biodiversity. Through their policies and programmes, bilateral and multilateral development agencies have often created similar situations.

These perverse incentives not only directly cost governments large amounts of money, but they exact a further hidden indirect cost on national economies from the species' overexploitation or ecosystem degradation which they encourage. Therefore, any system of incentives and disincentives requires the identification of perverse incentives, and consideration of the ways and means to eliminate or minimize their negative impacts on biological diversity.

Developing a comprehensive system of incentives and disincentives, and eliminating perverse incentives, requires a better understanding of biodiversity's total value: the sum of consumptive and productive use values as well as its non-consumptive use, option and existence values (see concept file 4.25). The goal should be to identify the maximum benefit derived from the many direct and indirect uses of the components of biological diversity, both within protected areas and outside of them. This, in turn, will give policy-makers the additional information they need to identify the true costs and benefits of particular policy choices.

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In late 1985 the Nepal-Australia Forestry Project began serious attempts to move from establishing plantation forests towards a new emphasis on forest management and utilization. A fundamental goal of the third phase of the project (which commenced in 1986) was the development and testing of socially viable local management systems.

The first substantial attempt to develop a community forestry management plan took place at Chaap al Danda forest, an area of about 100 ha of mixed plantation and natural forest near Chautara, about 40 km from Kathmandu. Chaap al Danda is on a ridge adjoining the main road from Kathmandu to Chautara and falls within the boundaries of three separate *panchayats* (local authority areas).

Although the underlying aim of the exercise was to implement forest management by local people, there was little understanding of what this really meant or how to go about it. The first step was a fairly conventional forest survey, including biomass and productivity estimates for each of the ecologically distinct parts of the forest. The second step was to call a large meeting of the "community". As the forest fell into three separate *panchayats* the meeting was called at a multi-*panchayat* level. Departmental and project staff recognized that forest "users" would not come from every ward of the three *panchayats*, but it was assumed that the users would be identified at the public meeting.

The meeting was attended by a number of local leaders and residents from villages scattered around the forest. A management committee was elected by the public meeting. The intended duties of this committee involved negotiation of the details of the management plan and administration of its provisions after approval. The management plan that was developed contained some technical information, including descriptions of various parts of the forest, biomass estimates and a schedule for pruning and limited stem cutting. The plan also contained a list of user households, listed by ward of residence. As the list of nominated users was quite large, the managing committee organized a harvesting schedule — users from specified wards were asked to come to cut and collect their share of firewood on specified days.

The first round of harvesting went well. Representatives of most nominated user households attended. Departmental and project staff were particularly pleased when committee members complained that too high a price had been set for each headload to be removed; they were told that they had set the price themselves at their meeting and they could change it if they wanted. The reaction was enthusiastic and departmental/project staff were satisfied that a sense of genuine community control had been reinforced. On subsequent harvesting days, however, things began to go wrong. The main problem was that people listed as users did not come to collect their share. In order to find out why this happened an informal survey was carried out. Staff visited each settlement around the forest to ascertain whether the residents knew about the plan, whether they agreed with it and what their wishes were with regard to the management of Chaap al Danda forest.

The result of this informal survey were salutary. It seemed that some people listed as users had never used the particular forest and made no claims to have use-rights. They had apparently been identified as users by ward leaders who felt an obligation to make a claim on behalf of their constituents. And, despite the claims by the organizing committee that all interested people had been informed of the harvesting schedule, many had apparently never even heard of the plan.

4.27

A project or a process?

Don Gilmour and
Bob Fisher

The story of Chaap al Danda

The essential difference between a process and a project approach is the degree of flexibility (both in approach and pre-established objectives) which enables the initiative to adapt to changing situations.

The attempt to develop local management was based on a number of assumptions, some explicit. These included the following assumptions:

- a public meeting would guarantee that all people with potential interests in forest use would attend, present their views without inhibition, and feel bound to follow any decision made;
- a committee elected at such a public meeting would be representative and would be regarded as having delegated power to make decisions on behalf of all users;
- the decisions made by the committee or at the public meeting would represent the considered agreement of the "community".

In fact, many people with legitimate interests in Chaap al Danda failed to attend the meeting (some because they had not heard about it) and the meeting and the elected committee were dominated by politically active people from the bazaar town of Chautara — few people from other settlements were involved.

The approach taken at Chaap al Danda looks very naive in retrospect. Yet, equally naive activities are tried again and again in development projects.

Underlying what happened at Chaap al Danda was a very simplistic and static view of the sociology of forest use. There was no understanding of the processes of extension, negotiation or consensus-building. In fact, the social element of community forestry was reduced to two basic steps — holding a public meeting and forming a committee. The heterogeneous nature of interests within the "community" of users and the importance of local political issues were ignored. It was also assumed that elected representatives would spread necessary information about the management proposal. In reality, in a highly hierarchical society, the control of information is a source of power.

The story of Tukucha

At about the same time as management planning was taking place at Chaap al Danda, a similar exercise was taking place at Tukucha, just outside the Kathmandu Valley. Fortunately, the outcome at Chaap al Danda led to a recognition that something was missing from the formula and efforts at Tukucha were halted while some profound rethinking took place. Advice was sought from a number of people with experience in community development and a new approach was tried, centred around a training course for departmental and project staff.

The training course included a substantial field exercise which took place in Tukucha itself. Staff were encouraged to talk to villagers and to obtain a feel for their needs and interests. The technique of "focus group interviews" became central. This technique has two elements: recognition that information about a community can best be obtained by looking separately at groups of people with common interests (that is, "interest groups" and "stakeholder groups" as discussed elsewhere in *Beyond Fences*); and secondly, that the interaction among people with common interests, meeting in small informal groups, will often lead to a more rapid exchange of information than meeting separately with individuals. Informal communication and rapport building were included in the training programme to improve the ability of staff to conduct focus group interviews.

After this training exercise, efforts at developing a management plan at Tukucha recommenced. This time, however, emphasis was placed on informal visits (rather than a large-scale public meeting) and on obtaining a clear understanding of the diversity of local opinion through identifying various interest groups and holding discussions with them. A shift from informal visits and discussion to more formal meetings took place only after people had become informed of the issues and had time to discuss problems and possible solutions among themselves.

The process took many months but, by using this careful approach, mistakes like those made at Chaap al Danda were avoided. It was discovered that the forest, far from being a single forest as first perceived, was divided into separate sections with separate user groups. In one patch (bordering two areas with separate users) both groups claimed use-rights and disputed the claims of the other group. There were also disputes involving poorer people who initially did not want to see the "community" in control because they felt that their rights were more likely to be protected by the Forest Department. This last dispute was resolved by negotiation between parties. Departmental and project staff facilitated negotiations, but ultimately left settlement of disputes to local initiative.

The lessons learned

The experiences at Chaap al Danda and Tukucha provide a clear illustration of the differences between a 'project' versus a 'process' approach and a number of important lessons can be learned from these experiences. First, the process of obtaining an agreement from a community of stakeholders requires enough time to allow people to discuss issues, negotiate disputes and develop the necessary level of consensus. Community consultation cannot be reduced to one (or a few) public meetings. Second, large meetings or formal surveys are unlikely to provide all the information necessary for developing management plans. Informal discussions are often more effective and have the additional advantage of enabling divergent interests to be considered.

Another crucial lesson is that initiatives that wish to assist community management of natural resources are themselves part of a learning process. Every attempt to work at the community level is a learning experience for the staff involved and time is required for reflection, reorientation and retraining in response to those experiences.

The cases also demonstrate that the effective management of natural resources involves processes of information exchange, the building of rapport and trust between the intervening agency and the various stakeholders, negotiation of different interests and local institution-building. All of these processes require time as well as a willingness and ability to adapt to changing circumstances. To reduce all of these processes to one or two public meetings and to committee formation is a recipe for failure. Meetings will occur, committees will be formed, agreements will be signed simply because villagers like to please officials (and happy officials tend to leave people alone!), but without institution-building and consensus-building, there will be no concrete outcomes in terms of forest management.

Monitoring the effects of interventions and reorienting the approach to address any adverse consequences is an essential aspect of any successful conservation initiative. A problem with taking a static view of the

sociology of community forest management, for example, is that it is easy to overlook the fact that all interventions have the potential to affect local social systems — positively or negatively.

The effective management of natural resources involves processes of information exchange, the building of rapport and trust between the intervening agency and the various stakeholders, negotiation of different interests and local institution-building.

One of the most crucial avenues of influence is the potential to affect the local power structure. Community forestry is concerned with control of resources, i.e., it is a political intervention. Any move to transfer control of resources is likely to lead to attempts by some individuals to manipulate the situation to their own advantage. People with wealth and power can gain disproportionate benefits, and use a changing situation to entrench their own positions. Attempts to set up local arrangements for the management of a conservation initiative may fail because the interests of various groups are not considered. For example, in the case of Tukucha the concerns of the poorer people could have prevented any effective management plan from being conceived or implemented. It was only because a cautious process of intervention was adopted that these concerns were recognized and, by a gradual process of negotiation, dealt with.

The essential difference between a process and a project is the degree of flexibility, (both in approach and pre-established objectives), which enables the initiative to adapt to changing situations. Another substantial difference is the time-frame. For a process, the time-frame is driven more by the local requirements (communities, institutions, culture, seasonal activities, etc.) than by the intervening agency and its funders.

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4.28

Management styles

Aban Kabrai

Good management practice for conservation is no different than good management in general. Whether one is dealing with complex development projects, large institutions, private sector companies or a bank, success depends on the ability to apply resources wisely. A fine balance must be maintained among people, their performance for the objectives agreed and the resources — their input, availability and use — to achieve the purpose agreed upon. When such a balance is struck, people manage resources wisely, and successful initiatives and institutions emerge. This is the essence of good management and it depends on a multiplicity of factors, most of which derive from human values, cultures and norms. How well a manager understands and responds to those will make the difference between a good conservation project or a failure.

Management theory is a proliferating field which is usually thought of as having the greatest relevance to the corporate sector. As the experience of running NGOs and complex development and field projects increasingly shows, the success of projects, institutions and complex development initiatives depends not so much on the quantum of human or financial resources available, but on their effective management. Increasingly, then, the new management theory of the corporate sector is beginning to influence that of conservation and development NGOs. Without attempting to encapsulate the complex debates of current wisdom, there are a few basics that can be adopted as good practices in conservation initiatives, be they field projects or complex institutional programmes.

Take the idea of management seriously. Too many scientists assume that a PhD implicitly gives them the ability to manage people effectively. On the contrary, academic training (and especially the physical sciences as they are taught), tend to foster an isolationist, hierarchical, top-down and directive style and a 'boss knows best' arrogance. Good managers recognize both the necessity of incorporating the vigour that good science provides, and the necessity of putting themselves into listening and learning mode when faced with complex initiatives.

This is equally true of social scientists or people from government backgrounds, who come in with an assumption that management is a simple matter of common sense. Common sense does contribute to good management, but good management is not based on common sense only. It is also based on certain principles and styles, and this has to be recognized as the first step in a learning process.

Good managers are not born, they are trained, either formally through a course, or by emulating a role model or leader figure who they regard as having a successful management style. A great deal depends on where you are coming from and the values, ideas and personality traits you bring to the job in hand. The best managers are secure individuals, confident in themselves and happy in their jobs. They provide leadership by example, as much as by guidance and direction, and they combine a multitude of styles — activist, reflective, theorist, pragmatist — which are brought to bear in varying measure on different occasions.

Management structure must emerge from the needs of a project or programme, and not the other way around. The more innovative and demanding the project, the more flexible and responsive the struc-

As the experience of running NGOs and complex development and field projects increasingly shows, the success of projects, institutions and complex development initiatives depends not so much on the quantum of human or financial resources available, but on their effective management.

tures will need to be. Increasingly, the old models of rigid hierarchical structures derived from bureaucratic models of management are discarded as unworkable in the complex world of conservation, and are being replaced by structures more akin to a web. These have the virtue of being decentralized but connected, of being responsive (if you tweak one strand of a web the whole structure moves), but independent, and of being open and transparent. Such attributes of management are essential when projects demand constant adaptability to changing circumstances, donors change the goal posts, and one is not playing on a level playing field.

What does all this mean in terms of the management of a conservation initiative? Some points to be considered — which all imply an open and confident management style — include the following:

- think through clearly the objectives of the initiative; use a Logic Framework Analysis or ZOPP Planning Exercise, whenever possible; if at the end of the process you find that the initiative is being done for the money (donor pressure) or for political considerations (your partners expect it), then be honest with your planning team from the start;
- choose the best people you can find and try to ensure that systems and resources are in place to tempt them to join you, and stay on; remember that there is no substitute for human competence, and that competence is a priceless resource to be recognized, identified and pursued at all reasonable cost — on it hinges the success or failure of an initiative; good project managers will hire people who they recognize as good or better than themselves, and will see themselves as coordinating a team, not heading it. Good people attract other good people, and this has a multiplier effect;
- recognize that good professionals are demanding and, to deliver their best, they require autonomy, support and feedback in terms of results and effectiveness;
- make sure that the initiative has a clear structure with well thought out job descriptions, clear reporting lines (there can be one direct and multiple additional lines so as to foster sharing, cooperation and teamwork), and measurable indicators of accountability and results; clarity, and openness to question decisions and their rationale are essential;
- be flexible to adapt to changing circumstances and new dimensions; good managers do not personalize circumstances that prove their decision wrong; they learn from mistakes and reorganize structures and styles to respond to the different demands of a project;
- make sure that people, material and information are easily accessible; the more open the systems, the more likely people will 'own' them and feel responsible for the whole rather than their individual piece; this requires ensuring that communication systems are in place and open to all the stakeholders with the initiative;
- as a certain management style pervades an institution (or a team), it becomes part of the organizational culture; if this carries within it the values of openness, respect and collaboration, it in turn will influence members and partners in the initiative; more importantly, it will make the team less dependent on just one individual for direction and decision-making, and on a shared sense of values, of what's right and what you expect of yourself in any circumstance; a "corporate identity" will develop for the team and its partners;

- at the beginning of the initiative, think of the question you must ask yourself at the end of it; i.e., have we made a difference? Is an institution, a community or an ecosystem now stronger and more stable than before? Has capacity been built, have leaders emerged, have ideas taken root, are new initiatives emerging independently? Are the old ideas, the old leaders, even the project heads being challenged by the community that they have helped strengthen through the project? Most importantly, have the stakeholders developed the capacity to take over the management of their resources? If they have, do they share a sense of partnership with the managers of the initiative? If you are able to respond positively to some of these questions, your initiative will have made a difference.

Box 20: Good management in Northern Pakistan

In the Northern Province of Pakistan, the Aga Khan Rural Support Programme (AKRSP) has worked for years to make mountain village communities self-reliant by providing them with credit, infrastructure development, training, education and health services, all managed through the structure of village organizations (VOs).

One day AKRSP received from one of the village communities a request for help to develop their wild animal and plant resources in much the same way as their agriculture was managed. The communities would invest in the conservation of their resources. They would not allow any hunting or poaching of ibex, urial, markhor and snow leopard and medicinal plants, and patrol the range to ensure no one else did. In return the community would expect an economic benefit, through trophy fees for hunting, or investment in infrastructure for ecotourism and a share in the benefits thereof, or access to markets for herbs and medicinal plants. They wished to forge a new social contract.

AKRSP approached IUCN Pakistan, who, in turn, developed a project with the Government of Pakistan which sent it to UNDP for GEF funding. Funding was approved, and work began. The first challenge was to implement the complex design of the project, which had recognized from the start the critical importance of developing partnerships and ensuring that all the partners were represented at various levels of the decision-making process.

The hiring of project personnel began by a process of open advertisement, with preference expressed for local people who spoke the local languages (although this was balanced out by persons from elsewhere if the level of technical experience required was not available locally). Selection took place through an open interview panel process. The project team was chosen to represent a cross sector of disciplines both in the social and physical sciences.

The reporting lines within the project team follow a matrix style but there is a strong emphasis on accountability to the partners in the project, the communities, government and AKRSP. It is clearly recognized that no technical competence will substitute for the success which comes out of community management, ownership and commitment to conservation. Thus the project team focuses on providing the support, facilitation and technical advice necessary to guide the villagers in attaining their objectives. It also uses its technical know-how and access to transliterate traditional knowledge and conservation practice to the

outside world and its markets. (Project reports are written in English but the language of discourse and the plans are in Urdu or another local language.)

The style of management is open, participatory and inclusive. Many communities and NGOs who have heard of the initiative wish to join in. Wherever possible, an attempt is made to include them.

To manage and monitor the project on a regular basis, the project management team meet periodically with a support group drawn from the partners in the project and thematic units (communication, education, business, law, environmental assessment). At these sessions, the project team speak of problems of logistics and management of conceptual issues and of what works and doesn't. Constant modification of the project's management is thus possible, based on ground realities.

Correspondence, reports and literature are widely disseminated and shared with all partners, encouraging a culture of involvement and participation. All reports, both programmatic and financial, are available and circulated to all partners.

There is an attempt to build learning into the project from inception; to allow for this, budget lines exist to document case studies of special relevance to the project for wider dissemination.

Many of the safeguards of good management have been built in, but for another five years no one can be sure whether the project will actually work. Ultimately that will depend not so much on such factors as the climate and its effects on the biology of the ibex, but on whether the project team earns the trust of the communities with whom they work, on whether the communities in turn value the resources enough to invest in them in anticipation of long-term gain, and whether government and politicians can be convinced to deliver on their promises. All this will only be possible with project managers who understand the importance of such principles of management as honesty, openness, sharing, collaboration, delegation, decentralization, negotiation, compromise, flexibility and trust.

For too long successful projects in conservation have depended on physical targets to measure achievement. Physical targets in themselves mean nothing unless they are sustainable and renewable. This, in turn, is not possible without managers who understand the value of sustainability and the factors fostering it. Good management is integral to the sustainability of conservation!

Understanding peoples' knowledge of their environment and learning about their aspirations for the future is a communication task that conservation efforts cannot disregard. For something as vague and long-term as "conservation" to make sense to rural people, it must provide them with economic, social and ecological options. This is especially important because conservation activities and proposals for nature reserves are so often initiated by organizations and policy-makers outside the community. It is therefore not surprising that many conservation programmes often seek to inform and convince rural folk to follow their proposals and accept their conditions. Many well-intentioned communication programmes of this sort turn out to be efforts at manipulation that, not surprisingly, result in little or no participation by rural communities. Conservation efforts can only be sustained by the very communities who derive a livelihood from their environment. They should be both the beneficiaries of and the ultimate decision-makers for a conservation programme.

Dealing with cross-cultural communication and local media focuses more on how to listen than on how to talk. Communication begins by learning to learn about existing knowledge and hopes. Listening requires skill and respect; the best communicators tend to be those who have trained themselves to learn and derive meaning from different media: from the elder's anecdotes and oral history, from the artists' symbols, their songs and poetry, and from traditional theatre and puppetry. Before effort and resources are dedicated to explaining outsiders' proposals, conservation workers must first learn about local perspectives, indigenous knowledge and people's hopes for the future. This task is the essence and starting point for cross-cultural communication to take place in the context of a rehabilitation or conservation programme.

Le griot in Mali, just like *el merolico* in Mexico, is a storyteller who entices villagers to hear their sung message (Chiovolini, 1994). People gather to listen to the message as it conveys meaning; after all, the source and content of the message was gathered from other villagers and, after all, who can refuse to listen to the predicaments and stories of others conveyed through the wit of local language?

No one expects conservation workers to become village jesters. However, many rural development workers who are involved with conservation programmes are increasingly being asked to facilitate local planning and bottom-up development. The trend towards decentralized decision-making and more local government is the major reason for the emphasis on participation. While many development workers are faced with this new role of facilitation, they hardly asked for it, nor have they received relevant training to fulfil such a function. Moreover, even those who have received training work in conditions where bottom-up planning and learning from rural people lead to no professional rewards. Facilitation requires a new professionalism to allow rural workers to gain respect from performing their new role (Pretty and Chambers, 1993).

The field of communication lends a hand to conservation workers by making the task of listening respectable professionally and rewarding. Communication is about bridging understanding. This is done by exchanging messages to create meaning and to enrich the knowledge

4.29

Cross-cultural communication and local media

Ricardo Ramirez

Whose message?

Listen and you may understand

Professionally yours

base of rural communities to help them face change. Achieving this outcome is very rewarding and it represents the major goal of facilitation. Communicating the potential rewards of a conservation initiative cannot lead to a sustained programme if rural communities are not offered an opportunity to value and challenge the outside proposal on the basis of their own know-how and their mechanisms for dealing with change.

Local knowledge, traditional media and social patterns

Puppets in West Africa are an example of traditional media whereby the puppeteers perform for the benefit of their audience. The performance, however, does more than entertain: it conveys messages which may at times challenge the *status quo*. The puppets are often able to express ideas and challenge accepted norms of their society; they are a buffer which allows the young to communicate to the elderly issues which are too delicate to address directly. The young can challenge the old through the puppets. It is the only medium that is socially acceptable to deliver such a message.

The example is important because it demonstrates the close link between local knowledge, traditional media and social patterns to accommodate change, all of which maintain the delicate balance taking place as rural communities strive to face new options. Economic and environmental degradation place great stress on rural communities, and local expression often becomes the buffer and the means to accommodate evolving survival strategies in communities. Conservation efforts cannot take root without an understanding of the close interrelationship between local knowledge and local media which allows for expression to take place in a culturally acceptable manner.

Bridging local and outside knowledge

The challenge of cross-cultural communication is to bridge local and outside knowledge. Communication happens when information from one person's knowledge base is packaged and transferred (communicated) in a form that others may understand and from which they can derive meaning to enrich their (different) knowledge base. The 'packaging' and the 'transfer' of the information can take place in many forms, ranging from traditional media (the spoken word, theatre, songs and art) to simple graphics and illustrations (as used for visualizing information for rapid appraisal), to electronic media (audio recordings, photographic and video images). Traditional media works best among people of the same culture (same knowledge base) as the information tends to be coded according to accepted symbols and perspectives. An example is humour, which, even as an effective tool to enhance communication, loses its value easily across culture: translating jokes between languages is rarely possible. A good facilitator learns to decode traditional media, much in the way a social anthropologist learns to understand a culture. In selected instances, the facilitator seeks to harness the creativity of local artists to convey messages from outside (FAO, 1995a). This approach, however, requires extensive investigation into local perspectives to ensure that the message is understandable and meaningful locally.

Locally-produced media

Local media refers to communication materials produced locally, be they traditional or modern (electronic). Community participation in message production is easiest achieved in the short run through traditional media, as local artists are experts in their media. There are, however, numerous examples of locally-produced media products using modern electronic media (see, for instance, FAO, 1987 and 1989, FAO/Querre, 1991). The electronic dimension provides access to the mass media and to broadcasting opportunities which traditional media have rarely controlled. Providing communities with the access and skill to take control over both traditional and modern media is the key to making communication useful to conservation efforts.

Visualizing information: a common language

Another dimension of learning about local knowledge is the visualization of local knowledge using simple graphics and maps. Rapid rural appraisal (RRA) and participatory rural appraisal (PRA) refer to a number of tools by which a facilitator may assist rural communities to visualize their knowledge and share their understanding of their environment through information presented as drawings, models and maps. The facilitator suggests sequences of techniques to illustrate and organize the information which rural people are willing to share.

Conservation efforts can only be sustained by the very communities who derive a livelihood from their environment. They should be both the beneficiaries and the ultimate decision-makers of a conservation programme.

One could argue that PRA techniques indeed constitute an imposition of media which is sometimes regarded by technicians as too simple, and unsophisticated. Nevertheless, using a media which locals and outsiders may manipulate with the same ease and under the same conditions is an important contribution to dialogue and understanding. A simple diagram becomes a common language. Visualizing communication networks is another useful entry point for the conservation worker. This PRA tool allows a community and a facilitator to map out the networks of information exchange which all stakeholders exploit; it helps recognize source of information and major patterns of communication (FAO, 1995b).

Agriculture and health are two sectors where communication activities have followed top-down models of communication. Agricultural extension has been dominated in many countries by the transfer of technology model with a predominantly one-way flow of information: from researchers, through extension workers, to farmers. Health communication has been greatly influenced by social marketing where research into people's beliefs is used to design messages to modify audiences' behaviour related to immunization, nutrition, and sanitation. Communication in the conservation area has evolved more recently and has been influenced more by the education field. At the basis is the skill of listening to enhance learning about existing knowledge. From this perspective, communication for conservation will play the most effective role when the facilitators are willing to listen before they speak.

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In discussing conservation issues and dilemmas it is common to hear the term "social sustainability" or reference to the "social aspects of sustainability". Although these concepts are used frequently, they are rarely defined in practice. It may be helpful to consider some of the ways in which social sustainability has been defined in order to come up with your own terms and understanding. Clear understanding of social concerns in your initiative can help clarify the initiative's objectives and priorities and provide a more structured basis for assessment and monitoring.

Before discussing some interpretations of social sustainability, it is worth mentioning at least three reasons why the social dimensions of conservation often suffer from lack of careful understanding.

- First, conservation has conventionally dealt with people only as a threat to natural resources. It has not considered the role of people in resource management, the impact of conservation activities on people's well-being, or the need for different groups of people to participate in decisions of the conservation initiative. Some conservation managers therefore continue to question the relevance of people to sustainability of a resource. They may not be aware of the potential positive relationships between people and the resource. Also, the terms related to social phenomena may not yet be part of the vocabulary of conservation managers. A first step in defining social sustainability is therefore recognizing that people play potentially diverse roles in conservation initiatives and that many of these roles can positively contribute to the goals of the initiative.
- Second, there is often confusion as to whether we are talking about the "sustainability of the natural resource", or the "sustainability of some aspect of people's lives". And integrating the two in a single concept is neither immediate nor easy.
- Third, it is not easy to measure many social conditions (e.g., well-being). Seemingly straightforward concepts such as "health" or "income" quickly become controversial when assessed in different places, times and cultural settings. The relative nature of the relevant indicators means that we can more easily measure and compare movement towards a goal rather than achievement of the goal itself. Moreover, as the social sciences often rely on conversations and interviews, the quality of information can be highly variable, subject to the quality of the relationship between the questioner and the person providing answers. A substantial amount of judgement and interpretation may be required on the part of the questioner. While these methodological issues are not unique to the social sciences, they do seem to be more problematic than they are in ecology or resource management. This has discouraged some managers from examining social phenomena because of the difficulty of setting easy-to-measure objectives and because of the difficulty of finding quantitative indicators for assessing progress towards such objectives.

4.30

Social sustainability

Eva Wollenberg and
Carol Colfer

It is important to maintain flexibility in our vision of what social sustainability is and to be open to revising that vision according to the needs of our work.

Understanding these hurdles can make it easier to understand why defining social sustainability can be a trying task. Despite the difficulties, a number of definitions do exist. Three are most frequently encountered:

- social sustainability refers to the maintenance or improvement of people's well-being, often with a focus on the people most dependent on or close to the resource;

- social sustainability refers to the actions of people that affect the sustainability of a natural resource; and
- social sustainability refers to the maintenance of an equitable distribution of benefits across generations (i.e., the Brundtland Commission definition of meeting the demands of the present without compromising the needs of the future).

You may wish to choose one, all, or some combination of these definitions. You may also wish to confront these definitions with the broad understanding of social sustainability offered at the beginning of *Beyond Fences* (page 1, volume 1) and discussed in pages 14 and 15, volume 1:

"...social sustainability depends on addressing the social, economic and cultural needs of the communities affected by a conservation initiative and on assuring the conditions (e.g., finances, technology, political authority and social organization and consensus) to maintain the conservation practices established..."

Taken together, various definitions provide a comprehensive picture of social sustainability, even though not all may be relevant to your purposes. A brief explanation of some aspects introduced in the definitions is given below. For each of them we try to identify some dimensions that could be examined in detail at the field level.

Well-being

The well-being of people living in and near natural resources may depend on:

- security and sufficiency of access to resources — both now and in the future;
- economic opportunity — the resources should maintain or enhance people's livelihood opportunities;
- decision-making opportunity — people have a right to meaningfully participate in decisions affecting their lives;
- justice — there should be fair resolution of conflict and distribution of benefits, rights, responsibilities and incentives;
- heritage and identity — people's rights to their cultural values, behaviour, land use and material goods should be respected, both for the present and as a necessary context for the acculturation of the young; and
- safety and health — employment, residence in, or use of natural resources should not endanger people's safety and health (either physical or mental).

Actions of people

In seeking to understand how people's actions can affect the quality of natural resource management, the work of Ostrom (1994) is relevant. Ostrom refers to the capacity of a group to cooperate effectively as "social capital". By assessing this social capital, or potential for cooperation, and the incentives people face for use of the resources, it is possible to predict the likelihood of good resource management. Building on Ostrom's ideas and those of others on common property resource management, at least eight social conditions can be identified as being necessary for effective resource management by a group:

- clear boundaries of the resources;
- capacity to protect the resources;
- effective decision-making and conflict resolution mechanisms;
- capacity to monitor the quality of the resources;

- organizational efficiency, i.e., people organized in small or nested groups to enable regular contact and communication;
- incentives and benefits for good resource management;
- inputs — people have the necessary labour, technology, information, capital and other inputs necessary for sustainable management; and
- shared value of conservation or commitment to preserving the natural resources.

Inter-generational distribution of benefits focuses on the persistence or improvement of social equity over time. Indicators for assessing inter-generational benefits include:

- the stability of people's well-being;
- the maintenance of "social capital";
- equitable inheritance systems;
- tenure security; and
- values of opportunities available to the younger generation.

Any definition of sustainability is inherently relative and is bound by the limits of the time, place and people where it was defined. What is considered an important aspect of sustainability today may not be important tomorrow. What is considered important to sustainability in a forest village in Africa may not be important to coral reef sustainability in the South Pacific. This relative nature is as much true of ecological sustainability as it is of social sustainability. The definition of sustainability will depend on society's needs, goals and our understanding of the world around us. It is therefore important to maintain flexibility in our vision of what social sustainability is and to be open to revising that vision according to the needs of our work.

References

Ostrom, E., *Neither Market Nor State: Governance of Common-Pool Resources in the Twenty-first Century*, International Food Policy Research Institute, Washington D.C., 1994.

Inter-generational distribution

Section 5

Participatory tools and processes

*“I am worried that women won’t be able to talk at this workshop...
And we came a long way.”*

Villager from Fisherman’s Island, Papua New Guinea, 1995

Section 5 describes a range of tools and processes which can be used for involving communities in conservation initiatives. Many of them can be employed for more than one end, but for ease of presentation they have been grouped according to the purpose for which they are most commonly used.

Most of the participation tools and processes described in this section have a strong element of oral and visual communication; in other words they do not depend on all participants being literate. In addition, they can be adapted to the requirements of particular cultures and combined as needed. The potential number of variations and combinations is as endless as the diversity found in communities and natural environments. This diversity requires those who work with communities to continuously use their imagination, stimulate the imagination of others, and adopt a flexible approach so that they can respond appropriately to different situations as they arise. The tools presented here indicate a range of possibilities. You may think of others or you may wish to try variations of the options described. Some of the strengths and weaknesses of each tool or process are included in the descriptions in order to help you choose.

5.1 Social Communication

- 5.1.1 community and public meetings
- 5.1.2. audio-visual presentations
- 5.1.3 picture stories (flip charts and flannel boards)
- 5.1.4 street or village theatre
- 5.1.5 radio programmes



5.1.1 Community and public meetings

Community and public meetings involve relatively large groups of people coming together to focus on a specific problem or purpose. A skilled facilitator can enhance the value of the meeting by managing the process and encouraging communication among all the participants. If required, more in-depth discussions can be provided for by breaking the meeting into small groups at various stages.

Purpose

Meetings may be held for a wide variety of purposes: e.g. to give and gather information; to discuss issues of relevance to the community; to achieve community agreement on an issue; to help identify problems and solutions; or to plan specific actions in response to evaluation results and recommendations. The results of focus-group interviews and individual interviews can be presented at public meetings; in this way the views of those who are unable or reluctant to speak in a larger public meeting can be given a wider voice (source anonymity being respected as necessary).

Steps in using the tool

- Agree with the relevant people on the topic of the meeting and ask several of them what needs to be accomplished. Make sure that you consult several stakeholders in the process.
- Obtain the approval of the relevant leaders. Be aware of the customs and protocol of the area.
- Arrange a time and place for the meeting, taking into account the activity patterns of those whom you wish to attend, the size of the expected group and potential dislikes for venues (e.g. a church) or required behaviour (e.g. being out of home at night, having to wear shoes, etc.). Let people know the time and place well in advance. As appropriate, make sure that all the expected participants know about the meeting and feel comfortable in participating.
- Check the need for food and accommodation to be provided for all or some of those attending and make appropriate arrangements.
- Plan and prepare hand-outs and other materials (e.g. flip charts, overheads). If electrical equipment is to be used check that power is available, and see if you need extension cords.
- Find a skilled person who is respected in the community to facilitate the meeting.
- With the facilitator or chairperson, plan the meeting process and strategies to encourage discussions.
- At the meeting itself:
 - make the purpose of the meeting clear in the introduction and explain the process or order in which topics will be covered and when refreshments will be served;
 - begin and end more or less at the stated time;
 - start with issues on which it is easy to get agreement or acceptance of differences;
 - allow conflicting opinions to emerge and try either to have these resolved or accepted by the group;
 - at the end of the meeting, have someone (preferably a local leader) summarise the decisions made and identify the next steps;
 - if applicable, confirm the time and place of the next meeting.

Strengths and weaknesses

- + allows for a large group of people to be informed at one time;
- + can provide a forum for a variety of perspectives to be presented and discussed and differences accepted and resolved;
- + provides a way for the staff of the conservation initiative to present themselves to the local people and establish their credibility;
- + because of the open invitation, all who have an interest in the issue can attend, which provides an opportunity to identify stakeholders;
- skilled facilitation is crucial. Without this the meeting may not achieve its purpose, it can be taken off-track by people with their own vested interests, some individuals may take over the meeting, others may not manage to contribute, etc.;
- large public meetings are not suitable for resolving conflicting opinions, nor for obtaining the views of all stakeholders. Differences in status and confidence will affect the degree of participation of different individuals and groups;
- one meeting may not be sufficient to obtain the desired results. The conservation initiative may have to support/organize several meetings before results become apparent.

5.1.2 Audio-visual presentations

Audio-visual presentations can be made with slides or film strips accompanied by live comment or an audio tape, or with video cassettes. Film strips are made by printing slides onto a film (each film can contain over 200 slide images). A film strip projector is used and the accompanying dialogue can be recorded onto a tape or read from a prepared script by the presenter.

Slides are more cost-effective than film strips if the programme needs to be changed to suit different audiences, or if the slides will only be used occasionally. Where the same set of slides need to be shown many times, or several copies will be distributed, or the presentation needs to be carried around to several areas, film strips are more efficient.

The film-strip projector can be powered by a lightweight solar rechargeable battery which enables the images to be shown even in areas where electricity is not available. If making a film strip is not possible, slides can be recorded on a video cassette together with the sound track, which at least makes them easier to transport.

Purpose

Audio-visual presentations can be used to promote ideas, teach techniques or create discussions among the people in an area affected by a conservation initiative. They can also be used to inform decision-makers and regulators about how the local people view the environmental issues confronting them. Audio-visuals can be suited to both small and large audiences by simply adapting the size of the projected image.

Steps in using the tool

- Prepare a script (for example a "story" about a local environmental problem, how and why it is happening and how it could be fixed).
- Plan each photo picture to match the text. Show images that are familiar to the audience and, if appropriate, show images of possible solutions.
- Feature people with whom the audience can identify. If using sound recording, let these people talk about problems and solutions in their own way.
- Before showing the presentation, introduce the topic to the audience; possibly bring up a question that the audio-visual might help the audience to answer. Encourage the audience to make comments throughout the presentation.
- If the audio-visual is not specifically about the local area, make comments and ask questions throughout the presentation to make sure that the local people understand how the situation shown in the presentation relates to their situation.
- After the projection, summarise what has been seen or ask the audience to do this. Encourage the audience to discuss what they saw. Invite them to approach the screen to identify objects, ask questions, give advice, etc.
- Check if people need more time to understand the material included in the presentation. Some groups may need to see the presentation more than once before they feel confident about discussing it openly.
- Audio-visuals can be used for interviews with local people (farmers, community leaders, etc.) where they talk about environmental problems, needs and concerns. Photos or slides can be used to show what they are describing.

Strengths and weaknesses

- + allows people to absorb a relatively large amount of information (through the combination of image and dialogue);
- + the novelty of audio-visuals encourages people to attend meetings;
- + people can immediately relate to the issues described by local images;
- + the slides can cover an extended period so that people can, in one short session, see what happens over time;
- + problems can be contrasted with visible solutions from other areas;
- + film strips can be easily copied, distributed and stored;
- + the sound tapes can be recorded in different languages;
- slide and film strip production require laboratory processing that may not be available in some countries;
- preparation of the presentation takes time and needs some prior experience;
- a comparatively large capital investment may be required;
- equipment requires maintenance and safe storage.

5.1.3 Picture stories (flip charts and flannel boards)

Picture stories can be presented in the form of flannel boards or flip chart drawings or some variation of these. They are illustrations of problems and solutions which can be put in sequence to tell a story and can be altered and added to in response to community feedback.

Flip charts are basically large sheets of cloth or paper with drawings and simple diagrams illustrating particular points. They enable ideas to be presented in a simple, colourful format that creates interest and is easily understood. Flannel boards are picture 'paste ups' which can be attached to the surface in various combinations.

Purpose

Picture stories are used as a support for presentations and discussions. They can also be used to stimulate discussion and community input; people can be asked to add to the drawings on the flip charts or to change the layout and content of the flannel boards to illustrate their own points of view or concerns. The simple, colourful pictures can be very effective in helping participants remember the key messages of a presentation.

Steps in using the tool

- Work out the key messages the conservation initiative wants to communicate.
- Work out how to show each of those messages in picture or simple diagram form.
- If using flip charts, place the sheets in the order you want for the presentation and fix them to something, such as a large piece of wood, that will enable the sheets to be hung up and turned over during the discussion.
- If using flannel boards, make sure extra materials (e.g. figures of people and animals) are available to allow for the preparation of paste-ups of issues and solutions raised by the group.
- Field staff should be trained in how to use the flip charts or flannel boards to stimulate discussion and to help the participants reach decisions.
- Field-test the illustrations with a few of the local people to make sure the intended messages are understandable. Use questions like "What do you see in this picture? What does the scene say to you?" "How might we change this picture to show the message better?"
- During presentations, encourage the audience to join in with questions, answers and points of view. If using flannel boards, participants should be involved in putting the paste-ups on the board and moving them around in response to feedback. With flip charts it is probably better to use sheets of paper rather than cloth if the audience is going to be encouraged to add to the sheets.

Strengths and weaknesses

- + messages can be shown completely in picture form so literacy is not required;
- + equipment is easily transportable;
- + sophisticated technology is not required, and the charts cannot break down, they are ideal for rural situations;
- + equipment is cheap to produce;
- + if smaller versions are made of the charts, these can be photocopied and distributed to participants to take home as a reminder of the discussion and to spread the message;
- + cloth sheets are durable for field conditions, resistant to tearing, heat, dust and rain;
- particular skills are needed to be able to illustrate issues in this way;
- the issues may be too complex to be fully explained in this form;
- format can limit spontaneity and two-way communication unless done in a way which allows the group to interact freely;
- explaining the images with some local people is essential to avoid the risk of mis-communication. (After a malaria education programme, some people felt they did not have to worry about the local mosquitoes "we never had around here mosquitoes as large as those on the chart we saw today!"). On this point, see Fuglesang, 1982.

5.1.4 Street or village theatre

Street or village theatre uses local storytellers, theatre groups, clowns, dancers and puppets to inform people about an issue by telling a story. The presentations use imagery, music, and humour to raise people's awareness of an issue that is affecting them. Local people can be encouraged to join in and play a part in the presentations. The presentations can be filmed or recorded for radio and thus made available to a wider audience.

Purpose

To raise awareness of issues by presenting information and possible solutions in an entertaining way, closely associated with the local culture.

Steps in using the tool

- Write an outline of the message which you would like to convey. Check this with some community members. Review the message on the basis of their comments.
- Meet with local entertainers to discuss how the message could be made into a story and told through a play, dance or some other local form of entertainment.
- Support the production of a show, and have it tested with a small local audience for interest and effectiveness.
- Plan to present the show at some gathering which is going to take place in the area, such as a festival or market day. Some presentations can also be taken to schools.

Strengths and weaknesses

- + an entertaining and non-threatening way of putting across a message;
- + based on local customs, traditions and culture and therefore readily understood and accepted;
- + does not usually require large capital investment;
- + does not usually depend on technology that can break down;
- + can be highly credible and persuasive where folk media has a strong tradition;
- requires skilled crafting of conservation/development messages into the fabric of the folk media;
- may be difficult to organize and requires a close working relationship between conservation workers and folk media artists.

Radio programmes can be a useful tool to inform people in a large area. They can be produced at the local, regional or national level. They are most effective when they are made with audience participation in the local language and take cultural traditions into account. Radio production teams should be multi-disciplinary and mobile so that they can converse with a range of people and record a variety of material in various locations.

Specific programmes can vary from formal documentaries to discussion forums with a range of local actors, from plays and storytelling (see 5.1.4) to talk shows where people can phone in and express their views on the air.

Radio programmes can be used to spread information, to stimulate discussion and debate among the people concerned about the conservation initiative, or to provide a forum where rural communities can communicate their views to others in the region. They can also help to educate and inform decision-makers and regulators, both within and outside of the area, about how the local people view the environmental issues confronting them. Issues raised can be addressed immediately, or subsequent broadcasts can have technical staff and decision-makers answer questions raised by local people.

- Identify a radio station willing to host a programme on the conservation initiative. Establish an agreement with the station, possibly on a regular basis and at a popular listening time.
- Have some staff trained in the techniques of preparing a radio programme, including interviewing.
- If a documentary approach is to be used, prepare a story line but, as much as possible, involve local people in designing the programme.
- For interviewing, select local people who are able to express their ideas and experiences clearly and who can present a range of experiences and perspectives.
- Edit the tapes so that they present a coherent picture of the issues confronting the community and the conservation initiative.

- + can inform many people over a wide area within a short time;
- + can strengthen the sense of community and of shared experience;
- + if aired on a regular basis, radio programmes can be invaluable as a forum for discussion around the conservation initiative;
- + tapes can be copied and distributed to organizations and schools to use as a focus for group discussion;
- relies on people having access to radios or to telephones (for talk shows);
- cost and time involved in preparing documentary programmes are substantial;
- use of recording and editing equipment requires technical knowledge;
- can only be used for raising awareness, not as a substitute for face-to-face discussions with the affected community and other stakeholders.

5.1.5 Radio programmes

Purpose

Steps in using the tool

Strengths and weaknesses

5.2 Information Gathering and Assessment

- 5.2.1 natural group interviews
- 5.2.2 focus group interviews
- 5.2.3 semi-structured interviews with key informants
- 5.2.4 photo appraisal and slide language
- 5.2.5 observational walks and transect diagrams
- 5.2.6 trend analysis
- 5.2.7 land-use mapping
- 5.2.8 historical mapping
- 5.2.9 seasonal calendar
- 5.2.10 gender analysis



Natural group interviews are casual conversations with groups of people met in their natural settings, for example farmers working in their fields, mothers fetching children from school, people queuing for the bus, vendors and customers at the market, patients waiting in a health clinic, and so on. Conducting the interviews is a basic participatory research technique and is especially useful as part of a "participant observation" approach, where the researcher spends time in the community, making direct observations and discussing and checking them with community members.

Natural group interviews are a means to get some broad sense of the local views on some issues. For instance, they may help to discover problems and expectations related to the conservation initiative. They can also identify the common interests leading individuals to cluster in small groups.

- Make a list of natural groups which can be observed in the community concerned.
 - Decide which groups are likely to be concerned with the topics under investigation.
 - Prepare a list of key open-ended questions you would like to explore with the groups.
 - Find an opportunity to engage in conversation with each of the natural groups selected.
 - Introduce the open-ended questions into the conversation, and follow them up with new questions as appropriate.
 - Do not make notes during the interview but be ready to make a summary of the information as soon as possible afterward. It may be appropriate to have someone else with you to mentally record the conversation as well.
-
- + helps to focus participant observation activities;
 - + convenient for the person being interviewed (enables them to have input to the process without having to take time away from their normal tasks);
 - + helps to establish preliminary contacts and personal relationships with local people.
 - + group interaction enriches the quality of the information obtained;
 - training of the interviewer is required. Quality of the data collected depends on the quality of the key and follow-up questions, which in turn depends on the researcher's knowledge and understanding of the local situation;
 - good communication skills are needed to get the most out of this technique;
 - to avoid causing offence, a good understanding of local customs and etiquette is necessary;
 - people may not be willing to share their ideas and opinions with an outsider and answers may therefore not be entirely accurate. Information gathered in this way, as in any interview method, should be verified with information collected using other tools (a process called triangulation).

5.2.1 Natural group interviews

Purpose

Steps in using the tool

Strengths and weaknesses

5.2.2 Focus group interviews

Focus group interviews are semi-structured discussions with a group of people who share a common feature (e.g. women of reproductive age, shareholders in an irrigation system, users of a particular service, etc.) Participants are chosen by means of sampling procedures (e.g. from a cross-section of ages, a variety of land-area ownership, different resource-users, etc.). Depending on local conditions, a focus group can include as few as five and as many as 15 or more individuals. A list of open-ended questions is used to focus the discussion on the issues of concern but, as for natural group interviews, follow-up questions can be developed during the conversation.

Purpose

Focus group interviews were developed in market-research to determine customer's preferences and expectations. Since the 1980s they have been used increasingly for sociological studies and in participatory research, particularly research to identify and describe group perceptions, attitudes and needs.

Steps in using the tool

- Identify a list of key questions to guide the interview. Develop a system for analyzing the information collected; for example a matrix of topics and variables, or just a list of key topics and possible responses (e.g. negative/positive, concerned/not concerned) plus a space for comments.
- Identify the groups in the community concerned about the topic under investigation.
- Decide on the number of focus groups and the number of participants in each group. In a small community two or three groups (e.g. men/women; elders/adults/youth; agriculturalists/herders; wealthy/poor) of five to ten participants each, may be sufficient.
- Conduct a practice (pilot) session with other community members (another community altogether if similar circumstances exist) to check that the questions are relevant and easily understood and that the type of responses can be summarised in the analysis system designed for the purpose.
- Before starting each focus group interview, explain the purpose of the exercise. Pose your questions to the group and be sure that each participant feels comfortable in speaking. Over-talkative participants should be controlled and silent ones stimulated. Limit the duration of the session; a focus group interview should last about one hour.
- Since the interviewer also acts as a group facilitator, another person should record the discussion and jot down the meaning of the interventions as well as the most characteristic quotes. If this is not possible, a tape recorder could be used, provided the group members give their prior permission. Tape recording is particularly helpful for reviewing the information in detail.
- Carefully review and analyze the interview notes or tapes to extract key statements, issues raised and patterns of responses in accordance with the analysis framework designed at the beginning of the process. The framework may need to be amended to accommodate unexpected responses.
- If possible, review the interview summary with the participants for them to check that their comments have been recorded and analyzed correctly.

- + participants (especially vulnerable groups) may feel more free to talk when they are in a group of similar people;
- + group interaction enriches the quality and quantity of information provided.
- + different points of view between different groups in the community can be identified;
- experience in qualitative research procedures is needed to use this tool effectively;
- the facilitator needs to be able to stimulate group interaction during the interview;
- the tool entails some interpretation of participants responses by the person completing the analysis;
- people may be reluctant to share their opinions with an outsider and some responses may not be entirely accurate. Establishing trust in the facilitator and within the group at the beginning of the process is usually needed to collect valid and complete information.

Strengths and weaknesses

5.2.3 Semi-structured interviews with kef informants

Semi-structured interviews involve lists of questions to be addressed to knowledgeable individuals in a relaxed and informal way. Unlike questionnaires with standardized questions and closed-ended answers, semi-structured interviews only include general questions. This leaves the interviewer free to rephrase them as appropriate and to add further inquiries such as "Who?" "Where?" "When?" "Why?" and "How?" based on the respondent's answers and conversation flow.

Purpose

Semi-structured interviews can be used to obtain specific, in-depth, quantitative and qualitative information on specific points of interest. Decision-making systems, gender-related issues, use of natural resources, household economics and many other topics can be effectively explored with this tool. Information can be given as well as received during the interview.

Steps in using the tool

- Design an interview guide and a summary form for the responses (similar to those used for focus-group interviews).
- Identify the key informants to interview. Some selective identification may be needed to ensure all key perspectives and/or fields of knowledge are covered. New informants can be added on the basis of the results of the early interviews.
- Conduct at least one practice interview with other members of the interview team or with other community members to check that the questions are clear and in a logical order.
- Organize a time and place for the interview, convenient to the person being interviewed.
- Before the interview commences, inform the person of the extent to which you can ensure confidentiality (e.g. the information may be generalized and not attributed to any particular individual).
- Make only brief notes during the interviews, filling out the summary form immediately afterwards. A tape recorder can be used, provided the person gives their prior permission.
- Unexpected information may surface during interviews. If more than one person is interviewing, the interviewers should discuss together on a daily basis any new information or problems encountered during interviews, as well as the preliminary results. Adjust the interview guide and summary form, if necessary, in response to these findings.

Strengths and weaknesses

- + enables more specific, in-depth information to be gathered than can usually be achieved in group interviews;
- + much less constrained and more in-depth information obtained than through questionnaires;
- + encourages two-way communication and the development of relationships with key individuals in the community;
- + administered in an atmosphere that makes respondents feel at ease;
- + can be more convenient for the respondent, as interview time can be suited to their specific schedule and take less time than participation in a group process;
- some practice and experience is needed on the part of the interviewer to use this tool appropriately;
- interviewer needs to have good communication and summarizing skills.

Photo appraisal and slide language are a way of using photographic images (pictures or slides) to promote reflection and awareness and/or collect specific information. Local people are trained to use a simple (or disposable) camera to take pictures of significant and good and bad features of their lives and their environment. It is important to recruit a variety of photographers (e.g. men and women, farmers and traders) as each will have a different perspective of what is relevant. The pictures or slides are exhibited and discussed in a group or community meeting.

Photo appraisal and slide language can be used for a variety of purposes such as participatory environmental assessment, gender analysis and appraisals of traditional and new technologies. Whatever their use, these tools entail an interactive approach. Slide language should not be confused with the use of pre-developed audio-visual materials for educational purposes.

- Train several members of the community to use a camera and to compose and select significant images (practice may be needed).
- Discuss with the group the purpose of the session and prepare with them a list of relevant scenes to be photographed. Clarify with the group what each scene is meant to represent.
- If necessary, assist the group in taking pictures. Be sure that, for each image, several alternative shots are taken under different light conditions (this will increase the chances of producing good-quality photos).
- After developing the photos, meet with the group and help them select the images they would like to show. Images should be relevant, easily recognisable by the audience and of good technical quality. A session usually requires 8-12 good photos or slides.
- Start the session by explaining its purpose, and then ask the people who took the images to describe and comment on them. For each image have in mind a few questions to promote discussion if it proves necessary. If slides are used, project the slide long enough for the audience to identify the details and discuss the message. If pictures are used, they should be pinned up (if they are enlarged) or viewed around a table.
- Take notes on the main points of the discussion, possibly on a large flip chart or on a blackboard. Use them when wrapping up the session so that, before its conclusion, a list of the problems elicited by the images and possible solutions are considered.

5.2.4 Photo appraisal and slide language

Purpose

Steps in using the tool

- + photo-appraisal and slide language are a creative and participatory way of identifying environmental/conservation issues and the various perspectives on these in the community concerned;
- + community members identify the messages and the scenes to be used and are encouraged to study and analyze their environment;
- + the combined images are likely to match the perspectives, priorities and values of the community as a whole;
- + an effective way of giving a voice to disadvantaged groups;
- slides are a relatively expensive tool. Cameras, slide film, a slide-projector and often a portable generator are required;
- photo/slide processing facilities are not always readily available;
- it may take some time for the tool to be properly effective. At times, participants may be more attracted by the images *per se* than by the subject matter.

Strengths and weaknesses

5.2.5 Observational walks and transect diagrams

Transects are observational walks across an area or through a village. The walks help identify important aspects of the local environment (biological, physical and social) which may be discussed on the spot. They can also be used to verify, through direct observation and discussions with people met along the way, the information gathered by other means. At the end of the walk the information collected can be summarized in a transect diagram which includes the key environmental features identified, an indication of relevant problems and resources, etc.

Purpose

There are two broad categories of transects: social and land-use. The former can provide information on housing density and types, infrastructures and amenities, cultural and economic activities, etc. The latter focuses on environmental and agricultural features such as cultivated land, forests, hill areas, types of soil and crops, and evidence of environmental degradation. The two can also be combined.

Steps in using the tool

- Decide which issues to focus on and what information needs to be gathered.
- Identify local people to participate in the walk and explain to them the purpose of the exercise (three to five people will be enough to get a cross-section of views while keeping the discussions focused).
- During the walk, take notes on relevant features. Seek clarification from people met along the way. Discuss problems and opportunities.
- After the walk discuss the notes with the participants and together prepare a transect diagram of the area covered. The notes and diagram can be used in feedback meetings with the community at large.

Strengths and weaknesses

- + transect walks are a highly participatory, simple and relaxed tool;
- + they enhance the knowledge of local issues among all participants;
- + they are useful for checking information shown on official maps;
- + can identify features not previously noted (because, for example, local informants assumed the researchers would know about them);
- can be time-consuming;
- good transect diagrams require some graphic skills.

Trend analysis is used as part of an individual or group interview and consists of an in-depth inquiry on specific problems, how they have evolved, how they are likely to evolve in the future, and what actions need to be taken about them. For large areas, such as a region or country, trend-related data are often available, but for small areas, such as a village, it is unlikely that such data exists, especially data covering a long period of time. Thus, the information to show a pattern of change needs to be obtained locally.

The purpose of trend analysis is to assess changes over time. Often, it is used to raise the awareness of people about phenomena that accumulate rather slowly (e.g. soil degradation, population dynamics).

- Decide what topic/subject you wish to assess.
- Help the community to decide on the accurate indicators of the subject. For instance, if the subject is community well-being you could ask the participants what constitutes a good life for them. They may list household income, transport facilities, numbers of livestock, access to services such as education and health care, etc.
- Ask the participants to say where they think they are now in relation to each indicator, where they were 5-10-20 years ago, where they think they will be in 5-10-20 years. Together with them, draw a graph of the trend for each indicator.
- To assess changes in the state of the environment and/or some specific species, you could ask the participants to list the main relevant plants/animals and then, on a horizontal axis, write the periods of time (e.g. 20 years ago, 10 years ago, today, 10 years in the future, etc.). Ask participants to either estimate numbers or the standard of well-being for each of the plants/animals at each of the points of time and record it graphically for each item on the list.
- Ask the participants to discuss the trends identified (e.g. what is happening? why? should something be done about it? what? what would be happening then?)

- + creates an awareness of potentially negative and positive trends in the community, including the environmental impacts of activities;
- + group interaction enriches the quality and quantity of information provided;
- + different points of view existing in the community can be identified;
- + allows a comparison of trends of different indicators and, possibly, an estimate of the relationships between them;
- + cheap to use and can be adapted to the materials available (e.g. if there are no paper and pens, the graph can be drawn on the ground using leaves or stones as symbols and numbers);
- relies on memory and subjective judgements, although group interaction can control that to some extent;
- this is quite a complicated tool and needs the attention and very active participation of local people.

5.2.6 Trend analysis

Purpose

Steps in using this tool

Strengths and weaknesses

5.2.7 Land-use mapping

Land-use mapping can be a lengthy process with multiple benefits for community organizing and conflict resolution (Poole, 1995). It can also be a short exercise as described here. As a short exercise, it consists of representing the geographical distribution of specific features (environmental, demographic, social and economic) in a particular territory as perceived by community members. Participants are asked to draw their own map (on a large sheet of paper, or on the ground), or to plot features on a purchased map or aerial photo. A variety of symbols (e.g. different types of vegetation, alphabetical letters or icons) can be used for specific features. If the map is drawn on the ground, it can be photographed to keep for future reference.

Purpose

Land-use mapping is especially useful for providing a snapshot of the local situation, including property boundaries, the location of key resources, features of particular importance to the community, etc. The map can be a valuable resource for future impact assessment and monitoring exercises. As a snapshot of the land-uses at a particular point in time, it is a source of baseline data.

Steps in using the tool

- In a community or focus group meeting, explain the purpose of the exercise to participants.
- Ask them to decide on the symbols to be used for the different features to be identified.
- Ask a participant to be responsible for drawing or plotting symbols according to the suggestions of the others, or have the participants construct the map together as a group. At times it may be useful to have a drawing already made (e.g. the boundaries of a forest) and to ask people to add to it (e.g. to delist areas in the forest where different communities collect products).
- Promote wide participation by posing questions to individuals as needed. Encourage the group to discuss different perceptions and to reach agreements on conflict points.
- Once the map is finalized, it can serve as the basis for identifying problems, resources and opportunities for action, for developing indicators for impact assessment, trend analysis, gender analysis, etc. It can also be useful as a baseline to monitor changes over time.

Strengths and weaknesses

- + provides a broad overview of the community's perception and use of their territory and the resources within it;
- + encourages communication within the community;
- + helps people to see the links between natural resources and human activities;
- + illiterate people can take part in developing the maps;
- + maps developed by different groups can show surprising differences in perspective and in the importance assigned to given features;
- maps may not be as accurate as desirable. Results of participatory mapping exercises must be complemented by information generated by other participatory tools;
- some cultures may have difficulty understanding graphic representations;
- there may be a reluctance to identify particular features (such as areas of cultural/religious significance) to outsiders.

Historical mapping is based on a series of participatory mapping exercises aimed at portraying changes in a particular resource and/or settlement pattern in the community at different intervals in its history (see Land-use mapping, 5.2.7). Three or four maps are drawn: one showing the situation which currently exists and one showing the situation which existed at some time in the past (say 20 years ago). Other maps are drawn to show what the area will look like if present trends continue and, if appropriate, to show how people would like the area to look in the "ideal future" (say 20 years from now).

5.2.8 Historical mapping

Historical mapping helps to introduce the time dimension in participatory environmental appraisal. It also provides visual evidence of changes which have occurred over time and in this way helps to identify causes of environmental degradation. By projecting the results of these activities into the future, the need for changes in behaviour usually become apparent.

Purpose

- A map of the current situation (environmental, demographic, etc.) is drawn (this is best done on a large sheet of paper) with input from all participants (see the description of land-use mapping).
- With the help of elderly community members and historical photos, if available and appropriate, the same exercise is carried out with respect to the situation that existed when these members were much younger (say 20 or 30 years ago).
- The current and past maps are compared. Participants identify the major changes which have taken place. They then identify the likely causes of these changes and summarise them on a large sheet of paper or board.
- Based on the list of changes and causes, a map is drawn showing the situation which will exist in the community in 20 years if the current trends continue. This can be followed by another "positive" map showing how people would wish their area to look in the "ideal" future (see also the description of guided imagery, 5.3.2).
- Discussion about the future map or maps is then facilitated with the aim of identifying the changes that will be needed to reduce environmental degradation and to achieve the "ideal" future.

Steps in using the tool

- + stimulates discussion on why and how problems arose and how they affect the community (historical mapping is an invaluable tool in raising awareness and concerns);
- + helps to identify mid- or long-term solutions to the problems affecting the community;
- can be quite long and complex — three sessions with the interest group or community may be needed to get through the whole sequence of mapping and discussion;
- sensitive issues from the past may be raised, including conflicts in the community. If this happens the facilitator should make sure that matters are discussed openly and without acrimony. It may be necessary to move on to the next time period and return to the sensitive issue later;
- the analysis is likely to lead to the identification of factors and determinants which are beyond the community's control. Discouragement and frustration can result if ways of addressing these issues are not identified and acted on.

Strengths and weaknesses

5.2.9 Seasonal calendars

Seasonal calendars are drawings or series of symbols illustrating the seasonal changes in various phenomena of environmental nature (such as rainfall) or social nature (such as labour demand or household income).

Purpose

The calendars generate information on seasonal variations in local problems, resources, constraints and opportunities. For instance, they can explore the use and reliance on various resources, the times when the community or specific groups are fully occupied (and therefore constrained in the contributions they can offer to the conservation initiative), drought or flood seasons, hungry periods, cultural events, and so on. Calendars will differ depending on the occupations of the different stakeholders. For this reason it may be best to do this exercise separately with different interest groups.

Steps to using this tool

- Within a focus or community group, begin with a general discussion on the activities undertaken in the community throughout the year. This helps to focus the group on the task in hand. Make a list of all the issues/activities mentioned so they are not forgotten when the participants start to construct their calendar.
- Decide the appropriate format to use; calendars can be drawn in a variety of ways. The format and the symbols for the various items and activities should be selected by the participants. One method which could be suitable for literate communities is to use a large sheet of paper with the months or seasons written along the top and the activities undertaken listed down one side. The participants then fill in the matrix by putting ticks under the months in which each specific activity is undertaken. For illiterate people, symbols can be used to represent the months and activities. For instance, different lengths of sticks can be used to signify the different amounts of rainfall, or the availability of game in the forest. Another method is to draw a large circle with symbols representing the different months around the outside. The circle can then be divided into segments with symbols for different activities placed inside each of the segments.
- Once one or more calendars have been drawn, discuss the results. For information on labour demands, ask the group to estimate the proportion of time each spends on the various activities. These proportions can then be shown in graphic form on the calendar (e.g. portions or a graph square or of a circle segment).

Strengths and weaknesses

- + seasonal calendars help the initiative staff to plan the best time to work with the community;
- + help identify various local indicators for monitoring and topics for interview questions;
- + illustrate the time variations in responsibilities and activities among different groups;
- input can be very subjective and needs to be cross-checked by other tools, e.g. interviews with key informants or observational studies;
- sometimes it is difficult to estimate the seasonal changes in the various phenomena or the amount of time spent on activities — especially where the pattern changes throughout the year depending on product availability (e.g. water and fuel collection). To minimize this problem, ask for information in manageable time segments.

In communities around the world, women as well as men are resource users and managers. Yet, in comparison with men, women tend to have different roles, responsibilities, opportunities and constraints, both within the household and in the community. An analysis of gender is therefore important to understand how resource users and managers relate to various resources and to each other. In some parts of the world, for example, laws and/or customs forbid women to own land, regardless of wealth or social class. This limits their options for independent resource management and land-use innovation. It can also lead to their losses being overlooked when compensation is provided for land acquisition for environmental initiatives.

5.2.10 Gender analysis

Gender analysis in a conservation initiative helps to illustrate the differences in the ways men and women use natural resources, rely on them, and have access to alternatives. It also helps to make explicit the constraints (financial, legal, cultural, etc.) that affect the ability of men and women to respond to, and participate in, a conservation initiative. In this sense, stakeholder analyses, social impact assessments and evaluations should always include a gender dimension.

Purpose

Gender analysis can refer to any topic and be incorporated in all types of tools and processes, including:

- natural group interviews;
- gender-based interviews (natural group, focus and key informant);
- seasonal calendars;
- trend analysis;
- mapping exercises; and
- household interviews (informal discussions)

Steps in using the tool

Examples of questions for gender analysis (which can be asked of key informants, explored in gender-based focus groups or directly observed in the local community) include:

- Who has access to which resources (finance, equipment, land, natural products, etc.)?
- Who uses which natural resources and for what?
- Who carries out which tasks?
- What role do women play in decision-making about resource use?
- What is getting better for women/men?
- What is getting worse for women/men?
- Who is gaining from the conservation initiative?
- Who is worse off since the initiative began and why?
- Are there specific problems/constraints relevant to the initiative that apply specifically to women or men? (Constraints which may apply only to women include: diminished access to information, lack of time to attend meetings, lack of transport, cultural prohibitions, etc.)

Women may be reluctant to attend meetings because of shyness and/or because the men in their families disapprove. In many communities it is necessary to employ female researchers to facilitate meetings with the women. Seeking assistance and advice from women's development officers or other women professionals working in the area may also help to break down the barriers.

Gender analysis can form the basis of gender-based planning, in which women and men present their concerns as separate stakeholders.

Strengths and weaknesses

- + ensures that the knowledge of women is made available in the design and management of a conservation initiative. This is particularly important in communities where the primary responsibility for agriculture and natural resource harvesting lies with women;
- + explicitly acknowledges the importance of the role and contributions of women in the environment;
- + protects women from having to bear unforeseen and unacknowledged costs which may result from the conservation initiative;
- + enables constraints on women's participation to be addressed, to facilitate their participation in the conservation initiative;
- patience and sensitivity are required of the initiative staff if women show reluctance to participate (due to shyness, male opposition, etc.);
- addressing gender differences may be seen as a threat or criticism of the local culture and cause some resentment towards the management of the conservation initiative.

5.3 Planning

- 5.3.1 group brainstorming
- 5.3.2 guided imagery
- 5.3.3 problem and solution mapping
- 5.3.4 nominal group technique
- 5.3.5 ranking exercise



5.3.1 Group brainstorming

Brainstorming is a process by which all members of a discussion group are encouraged to express a view on a particular issue or topic "off the top of their head" (hence the term brainstorming). Views should be kept short and to the point. The process is usually started by an open-ended question — not suggestive but provocative — from the facilitator about a particular issue. Depending on the topic, an appropriate question could be "What do you value and wish to preserve in your environment?" or "Which activities being carried out in this area are not good for the environment?" or "What can be done to respond to the problems you identified about the forest/wetland/soil erosion, etc?"

Purpose

Brainstorming aims to elicit individual views on a given issue, (e.g. the full range of possible actions that could be undertaken) and is usually followed by a discussion (for instance for the group to work out which suggestions are feasible). Encouraging people to express ideas "off the top of their heads" increases the possibility that new ideas, which might not otherwise have been thought of, are put forward for consideration.

Steps in using the tool

- The issue to be discussed is introduced by the facilitator and the key question is written on a blackboard/large sheet of paper, etc.
- Participants call out their ideas at random; these are written down. To avoid interrupting the flow of ideas, no comment is allowed from the other participants at this stage.
- When all the ideas have been recorded, the group discusses the list to decide which should be removed for one reason or another. Duplications are deleted. Differences in opinion are highlighted and discussed until a degree of consensus is achieved. (At this stage it is not important that everyone agrees with every suggestion but rather that no one objects to a specific suggestion being included for future discussion.)
- The final list may be subjected to some form of ranking process (see the description of ranking exercises) or kept for future discussion and planning exercises within the community.

Strengths and weaknesses

- + a properly conducted brainstorming facilitates participation of all group members in building concepts;
- + it helps to demonstrate the range of possibilities and the degree of consensus within the group;
- + it is a good introduction to a more structured and focused planning exercise (such as ranking exercise);
- skills in managing group dynamics are needed by the facilitator to keep the process on track and to maximize participation and consensus;
- the process may hide conflicts existing within the group which inhibit some people from contributing at all or from making certain suggestions which could affect others;
- conflicts between stakeholders may prevent agreement on which ideas should be kept or deleted from the final list.

5.3.2 Guided imagery

Guided imagery is, in essence, a trip into the future. Participants should be familiar with the present state of the environment and society they are imagining in the future. This environment should have clear boundaries so that all participants visualize the same territory.

Purpose

Guided imagery encourages participants to think in terms of the future, unconstrained by what is in place in the present. In other forms of planning exercises, groups may miss a vision of what "could be" by focusing on their immediate interests. Engaging in a deliberate exercise of imagining a world "fit for our children" helps people to overcome this focus on personal and short-term interests.

The facilitator should stress that people may indeed come up with wishful thinking but that this is exactly what the exercise is intended to produce: a vision for the future which may or may not be attainable in the lifetime of the participants, but is desirable for future generations. The specific objectives established in the second phase of the exercise should be, in contrast, attainable and measurable targets.

Steps in using the tool

- In a comfortable setting (not a town hall; possibly sitting under a tree), participants are asked to relax, and close their eyes. They are told they are going on a journey into the future, where their "ideal" community exists, perhaps 50 years from now: one they would want their children to inherit.
- A facilitator reads a prepared text describing a walk through a community or an area, asking them what specific components look like. Questions in the text prompt participants to think of elements in that "ideal" situation. Typical questions might be about their homes, the forest, the coastal area, the agricultural fields, or the river: what do they look like? what are people doing? etc. The facilitator does not suggest what the participants will see. He/she merely sets the stage for the participants to visualize the features in that ideal environment.
- When the walk is complete, the participants open their eyes slowly, reflecting on all they have seen. They are asked to write down the first ten images they recall from their walk.
- The facilitator then goes around the group asking each participant to describe one of the images they have written down. Each is recorded on a flip chart or board. This continues until all the images are recorded.
- The facilitator summarizes the images into a vision statement for the participants to amend, add to, etc. until a consensus is reached.
- The facilitator asks a participant to start mapping the "ideal" community on a flip chart on the basis of the images provided by the various participants; other participants add to this picture and/or draw other pictures.
- The pictures are then discussed and put into categories (e.g. working environment, housing, protected natural areas). These categories form the basis for selecting some action objectives which can be followed up in the present.
- The objectives are considered in the light of the overall vision-statement and participants are asked to volunteer for follow-up activities.

Strengths and weaknesses

- + an effective tool for communities wishing to find a shared vision for their collective future;
- + puts present differences in perspective, diffusing conflicts and permitting participants to see beyond their pressing concerns;
- + an interactive, non-confrontational process;
- + builds cooperative alliances where communities can work together towards common objectives;
- + it is fun;
- conflicts may emerge if people's images are very diverse;
- a great deal relies on the quality of the facilitator and the support materials (written text and questions).

Problem and solution mapping is undertaken in a group situation using a simple map of the relevant features or an aerial photo of the area. People are asked to mark on the map where they think there are problems and how they think those problems can be solved. If problems have been identified in the assessment stage, then people would just be asked to contribute their ideas for solving the problem.

Depending on the problem, they might, for example, draw such things as a new irrigation canal, an area for forest regeneration, a fence to control wild animals, a road realignment, etc. In other cases they may simply draw some zoning suggestions, i.e. for the areas where collection of wild resources is allowed, for areas where housing should be banned, and so on.

Problem and solution mapping enables all participants to contribute their ideas and suggestions. By drawing those on a communal plan, they manage to make them visible to all and usually find a way to integrate them.

- Explain the situation that has to be dealt with (e.g. pollution of a coastal area, land erosion, depletion of a species) in simple and, if possible, non-judgemental terms.
- Explain that the point of the exercise is to find out together what can be done to respond to the problem and stress that everyone must be given a turn at recording their ideas on the map or photo.
- There should be one map or photo for every 10–15 people present who are asked to work as a group.
- Hand out coloured pens to each of the groups and ask them to discuss the problem and draw possible solutions on the map. Be available to help identify areas/features on the map, if required.
- Once everyone has had an opportunity to mark their views on the map, encourage them to look at the maps from the other groups (if there are any) and compare and discuss the different solutions.
- Ask the groups to write their suggestions on a large sheet of paper which everyone can see and to present them to the others. Get people to discuss how effective each proposed solution would be and how it could be undertaken.
- Facilitate consensus on the actions required to address the problem outlined in the opening presentation.
- Get the participants to rank the agreed activities in order of priority (see "ranking exercises" for details).

5.3.3 Problem and solution mapping

Purpose

Steps in using the tool

Strengths and weaknesses

- + drawing features on a map does not rely on literacy or on the ability of people to express themselves orally in a public forum;
- + the method enables people to see the different opinions in their community and to see how compatible these are with their own;
- + it is a very low-tech and simple method which does not require extensive training for field staff and is easy to use in rural areas;
- some of the solutions proposed may be impractical (e.g. for financial reasons) but failure to act on them could cause ill feeling;
- some cultures or individuals may have difficulty with maps;
- the method is not suitable for situations where the solutions are not likely to involve some structural elements (i.e. the problem cannot be solved by zoning regulations or by building, planting or moving something).

5.3.4 Nominal group technique

Nominal group technique (NGT) is a tool to elicit ideas and reach group consensus on one or more key issues or courses of action. The exercise needs a skilled facilitator, who begins the meeting by posing a clear question to the group (e.g. "what are the key problems and opportunities facing our initiative with respect to the topic X?"). Each individual is given time to think and to note down his or her main replies on cards. The cards are then presented, discussed and grouped to represent the collective reflection of the participants.

Purpose

NGT is especially useful for planning and priority-setting. Together with other scoring and ranking techniques, NGT may also be used when individual opinions must be consolidated into a group decision.

Steps in using the tool

- Present the participants with a clear question upon which to reflect. Have the question written on a flip chart or board for everyone to see.
- Give each participant a set of cards (half the size of a letter sheet is usually good; coloured paper adds to the visual appeal) and felt pens. Ask them to write down the answers/issues/actions they think are relevant to answer the question. These should be written as a simple sentence or just a few words (ask them to write large, all-caps letters, to be seen from afar, possibly not more than five words per card). The participants can use as many cards as they like.
- Ask each person to come to the front of the group, and read out and explain what he/she has recorded on the card(s).
- As people finish, ask them to pin or tape their cards on the wall. The first person spreads her/his cards out. Subsequent people are asked to add their cards close to the ones most similar to theirs or, when a totally new item is suggested, start another "cluster" on the wall.
- When all the people have presented their ideas and placed them on the wall, there will be various clusters of items: some with many cards, some with only one or two.
- Ask the participants to consider whether they need to rearrange the cards among the clusters; if they do, they should discuss the moves and agree as a group with the help of the facilitator. The participants may also decide to remove some cards or cluster(s). (Those who originally proposed the items may change their mind once they have heard other ideas).
- Work out together with the participants a title and/or condensed paragraph to summarize all the aspects/ideas noted in each cluster.
- If a rank order is needed among the clusters, follow up with a ranking exercise. More commonly, the large group of participants is broken down into smaller groups, each to discuss in depth one of the various clusters identified. The smaller groups then report on their findings, and a general discussion allows the exercise to be concluded.

Strengths and weaknesses

- + NGT helps participants group their individual opinions as a collective product;
- + everyone is asked and expected to contribute and the technique promotes paying great attention to the ideas of others;
- + the technique is constructive and adds an important visual element to issues and ideas for action;
- + a record of the key ideas is produced during the technique (the cards, summary statements and reports from small groups);
- literacy is needed among all the participants;
- a skilled facilitator is essential;
- a balanced participation of stakeholders is essential.

5.3.5 Ranking exercises

Ranking exercises are group processes in which participants rank a range of pre-identified actions according to a priority that they assign. The technique follows an assessment process in which people have identified a list of problems and opportunities and/or possible actions to be taken in response to those. It is a particularly good follow-up to a brainstorming exercise or SWOL analysis (see 5.5.4).

The ranking exercise should be followed by identifying, with the participants, the processes required to achieve each of the agreed actions, and by allocating responsibilities for the tasks involved.

Purpose

Ranking is a tool for reaching a group consensus on a course of action to be adopted, and for setting priorities. It can be used when individual opinions must be consolidated into a group decision. Ranking can also be used to identify and quantify needs.

Steps in using the tool

- List the items to be prioritized on a board or sheet of paper visible to everyone. Make the items simple; if necessary, use visual images and drawings.
- Make sure that the participants involved in the exercise are representative of the interests at stake.
- Define a simple ranking mechanism. The system used may depend on the number of items. Where there are more than ten items, each participant can be given a specific number of stickers (red dots, stars, etc.) and asked to stick one or more beside each item they consider important, or they can simply allocate five marks among what they consider to be the most important items. If confidentiality is important, give sheets with the list of items to each person for them to record their preferences. Where there are fewer than ten items, or where participants wish to weight their judgement of each item, a numbering system may be more appropriate. In that case, each participant allocates a number to each item according to their priority (e.g. one to five, with five being first priority).
- Explain the ranking system to the participants and ask them to think about their preferences and then to place their stickers or write their numbers against the items listed.
- After each participant has ranked the items, compile the group result by counting the number of dots or marks beside each item or by adding up the numbers recorded against each.
- Rank the priorities according to the group's total score and discuss the results with the group. Identify and explore disagreements if any exist.

Strengths and weaknesses

- + ranking is a flexible technique which can be used in a variety of situations and settings;
- + decisions about what should be done and the order of priority are made by the group as a whole rather than being imposed on them. Ranking through consensus is helpful in increasing group commitment to a programme of action;
- + everyone is able to contribute without having to express themselves in a public forum which can be intimidating for some people (e.g. women and vulnerable groups);
- + ranking exercises are generally found amusing and interesting by participants;
- + relatively large numbers of people (up to about 50) can participate in the exercise;
- choices may be affected by highly subjective factors;
- "block voting" by certain groups can bias the result. If this is a potential problem, the participants may need to be carefully selected to ensure that different interests are fairly represented;
- the course of action eventually decided on may be different to the priorities of the ranking exercise because of factors such as delays in obtaining necessary resources, or because some things can be achieved quickly while others (which may have been given a higher ranking) require more time. To avoid misunderstandings, process considerations should be worked through with the group once the items have been ranked.

5.4 Conflict Management

5.4.1 a process for negotiation/mediation



Conflict is normal. Even within groups that share a common background, individuals differ in the way they view the world and in the things they value and care for. These views are influenced by factors such as gender, ethnicity, socio-economic status, religion and age. Differences are important; they make communities interesting places to live. But when choices have to be made that affect people with diverging views, interests and values, differences can lead to conflict.

There are many reasons why conflicts arise in conservation areas. Sometimes they result from lack of attention to the process of involving local people in planning and decision-making. In other cases, the local residents and resource users have needs in opposition to the needs of the conservation area and/or in conflict with each other.

Sometimes the conflicts can be worked through by having each side explain to the other how they feel about a particular situation or proposal, and why. One or both sides agree to change and the problem goes away. Sometimes the conflict cannot be resolved so easily and more structured processes have to be used. Whichever approach is adopted, it must be appropriate for the context in which it occurs, and must take into account local customs and institutions for dealing with conflicts.

There are three broad categories of approaches to managing conflicts. They differ in the extent to which the parties in conflict control the process and the outcome. These categories are:

Negotiation: where the parties, with or without the assistance of a facilitator, discuss their differences and attempt to reach a joint decision. The facilitator merely guides the process in a non-partisan manner to help the parties clarify and resolve their differences.

Mediation: where the parties agree to allow an independent, neutral third party (usually a person trained in mediation) to control and direct the process of clarifying positions, identifying interests and developing solutions agreeable to all. As with negotiation, this is a voluntary process which the parties can opt out of at any time.

Arbitration: where each side is required to present their case to an independent person who has legal authority to impose a solution. Agreements are enforceable through law.

To avoid focusing on particular stakeholders or positions (either of which can increase conflict and/or result in a deadlock), the best approach to adopt is what is sometimes termed "interest-based" or "principled" negotiation/mediation. This approach requires the parties to acknowledge that, to be sustainable, an agreement must meet as many of their mutual and complimentary interests as possible. The focus should be on mutual cooperation rather than unwilling compromise. This approach encompasses four general principles which can be applied to conflicts in conservation initiatives just about anywhere.

5.4.1 A process for negotiation/ mediation

General principles of negotiation/mediation

Focus on underlying interests. "Interests" are people's fundamental needs and concerns. "Positions" are the proposals that they put forward to try to satisfy those interests. A conflict management effort in which all interests are satisfied is much more likely to result in a lasting and satisfactory resolution than one where the interests of only one side are addressed. Compromise may be the best way to serve everyone's interests in the long run, however, especially when overt conflict is replaced with the stability and predictability of a mutually agreeable solution. For example, in the context of the management of a protected area, allowing some use of the area's resources may ultimately serve the interests of conservation better than keeping the area in strict reserve status, and might also serve the interests of adjacent communities as well. The alternatives — which could include uncontrolled poaching or outright warfare — could be much more damaging.

Address both the procedural and substantive dimensions of the conflict. "Procedural" issues can include a group's need to be included in decision-making when their interests are at stake, to have their opinions heard and to be respected as a social entity. "Substantive" refers to interests that relate to tangible needs, such as availability of firewood, protection from predatory animals or protecting the land from damage caused by over-development.

Include all significantly affected stakeholders in arriving at a solution. Failure to involve all affected stakeholders in the establishment and design of a conservation initiative, in decisions affecting management, or in working out how to resolve conflicts, generally leads to unsustainable "solutions" and to new conflicts arising in the future.

Understand the power that various stakeholders have, and take that into account in the process. Each party's approach to the conflict will depend on their view of the power they have in relation to the other stakeholders. For example, a group that feels powerless to influence an outcome through a bureaucratic process may choose to use illegal activities instead. There are often extreme differences in power between different stakeholders. Those living next to a conservation initiative may be poor and lack a formal education. Despite their lack of power, they should be included in reaching settlements to ensure their needs can be met within the provisions made for the conservation of natural resources.

Conditions for negotiation/mediation

There are a variety of conditions which can affect the success of a negotiation. They should be present before a negotiation process is undertaken. The conditions are:

- All the people or groups who have a stake in the negotiations should be willing to participate.
- Parties should be ready to negotiate. They should be psychologically prepared to talk to each other; they should have adequate information; and an outline of the conflict management process should be prepared and agreed to. This is particularly important when dealing with different racial/ethnic groups, especially those which have a tribal system where speaking rights are subject to tradition and the consensus of other members. The negotiation/mediation process should allow time for the different cultural decision-making time frames to be accommodated, e.g. to select a spokesperson and to decide the approach to be taken.

- Each party should have some means of influencing the attitudes and/or behaviour of the other negotiators if they are to reach an agreement on issues over which they disagree.
- The parties should have some common issues and interests on which they are able to agree for progress to be made.
- The parties should be dependent on each other to have their needs met or interests satisfied. If one party can have their needs met without cooperating with others, there will be little incentive for them to negotiate.
- They should have a willingness to settle their disagreements. If maintaining the conflict is more useful to one or more parties (e.g. to mobilize public opinion in their favour) then negotiations are doomed to failure.
- The outcome of using other means to resolve the problem should be unpredictable. If one party is sure of complete victory for their point of view if they go to court, or directly to the government, they are unlikely to be prepared to negotiate a settlement where only some of their interests will be met.
- All parties should feel some pressure or urgency to reach a decision. Urgency may come from time constraints or potentially negative or positive consequences if settlement is or is not reached.
- The issues should be negotiable. If negotiations appear to have only win/lose settlement possibilities, so that one party's needs will not be met as a result of participation, the parties will be reluctant to enter into the process.
- Participants should have authority to actually make a decision.
- The parties should be willing to compromise even though this may not always be necessary. On some occasions an agreement can be reached which meets the needs of all participants and does not require sacrifice on the part of any.
- The agreement should be feasible and the parties should be able to put it into action.
- Participants should have the interpersonal skills necessary for bargaining as well as the time and resources to engage fully in the process. Inadequate or unequal skills and resources among the parties may hinder settlement and should be addressed before negotiations commence.

The process of negotiation can be viewed as comprising 13 basic steps. These steps can be used as a checklist for anyone called upon to facilitate such a process.

Steps in the negotiation/ mediation exercises

The steps give no indication of the time required to complete them. The actual negotiation/mediation process may take a number of sessions. If the need for more information is identified at any point, the process should be stopped until that information is provided. If the parties reach a point where no progress is being made, they may decide to break the process and either get back together at a later date or enter into an arbitration process instead.

The basic steps are as follows.

1. Prior to the parties' meeting, check that all or most of the conditions listed above are present. This will require meeting with the parties individually to clarify their attitudes and positions.
2. Set a time and place to meet that is agreeable to all parties.

3. At the beginning of the negotiation, ask each party to explain their position clearly: what they want and why. They should not be interrupted except for points of clarification.
4. After all parties have stated their case, identify where there are areas of agreement.
5. Identify any additional information that any of the parties need in order for them to be able to understand the claims made by other parties. If necessary, stop the process until they can be provided with that information.
6. Identify the areas of disagreement.
7. Agree on a common overall goal for the negotiations (e.g., the sustainable use of a resource and the maintenance of livelihood for a particular group or community).
8. Help the parties to compile a list of possible options to meet this goal.
9. List criteria against which each option should be measured (e.g. urgency of need, feasibility, economic returns).
10. Evaluate each option against these criteria.
11. Facilitate an agreement on one or more options that maximize mutual satisfaction among the parties.
12. Decide on the processes, responsibilities and time-frames for any actions required to implement the agreement.
13. Write up any decisions reached and get the parties to sign their agreement.

5.5 Monitoring and evaluation

- 5.5.1 stakeholder accounts
- 5.5.2 community involvement to plan the evaluation
- 5.5.3 community-based environmental assessment
- 5.5.4 strengths, weaknesses, opportunities and limitations (SWOL) analysis



5.5.1 Stakeholder accounts

Stakeholder accounts — verbal presentations based on a set list of questions about key aspects of the conservation initiative — can provide good grassroots perspectives about the initiative's operations and achievements. Field-based staff and stakeholder representatives prepare a presentation for a meeting with the community and the management of the initiative. Visual materials may or may not be used, depending on resources available and the type of issues to be covered. A variety of groups should be given a chance to present to ensure that all the issues are covered in depth and that the interests of all stakeholders are considered. Each presentation should take no longer than 20 minutes.

Purpose

Verbal presentations are a form of story-telling. As such, they can be a natural and non-threatening way of communicating concerns and ideas for some traditional cultures. People listen to the accounts, assess the messages, ask questions to clarify particular points, and then in a group setting (involving both the local people and management of the initiative), decide what changes need to be made and how these can be achieved.

Steps in using the tool

- Together with the local stakeholder representatives (e.g. the Conservation Council if one exists) prepare a list of topics to cover in the presentations. Questions should be open-ended and may differ for field workers and stakeholders. Appropriate questions for stakeholders could be: "What has changed for you since the initiative began? What has changed in the environment? How do you know these changes have occurred? What do you think is working well in the initiative? What is not working so well? Have you had any problems with the initiative staff/management? Are you happy with the way these problems were dealt with? Can you suggest things that would make the initiative work better?" Some of these questions would also be appropriate for the field workers. The field staff may be interested in presenting on topics such as the adequacy of their training, supervision and provision of resources. These may be addressed but they are best dealt with in detail in a separate meeting for staff only.
- Identify which stakeholder representatives and field staff will give the presentations and provide each of them with the list of questions to use as a guide. Stress that they should feel free to raise other matters they feel need to be covered. Allow at least a week for people to prepare their thoughts before the meeting.
- At the evaluation meeting, encourage those present to ask questions after each presentation, and to add to the information presented.
- Note the main points/issues to be addressed on a blackboard/flip chart, etc.
- At the end of the presentations, review the main points, and discuss options/strategies for addressing the issues/problems raised and for building on the successes.
- Before coming to any conclusions, it may be appropriate to follow up the presentations with a field visit to view specific aspects raised in the presentations.

Strengths and weaknesses

- + provides an effective two-way discussion process where local people and staff participate on an equal basis;
- + involving stakeholder representatives in setting the questions, or indicators, on which the success of the initiative will be evaluated, fosters a sense of ownership and responsibility for the outcome, and reinforces the message that they have a vested interest in the initiative;
- + asking field workers to contribute presentations gives them reassurance that the management of the initiative values their opinions and concerns;
- + verbal presentation format allows those who are illiterate to participate on an equal basis;
- + unlike a written report, the process enables immediate clarification of information and feedback on the issues raised;
- some presentations can be highly subjective and biased;
- the process can be time-consuming (a full evaluation meeting could take an entire day, especially if a field visit is included);
- the quality of the facilitation is important to ensure that conflicting opinions are dealt with constructively and that all the issues raised are accurately recorded and considered to the satisfaction of the meeting.

5.5.2 Community involvement to plan the evaluation

Evaluating initiatives provides an opportunity for both outsiders and insiders to reflect on the past in order to make decisions about the future. In a participatory process to design an evaluation, insiders are encouraged and supported by outsiders to take responsibility for and control of planning what is to be evaluated and deciding how the evaluation will be done. Much of the material acquired from the participatory information gathering, assessment and planning exercises can be used in participatory evaluation.

Purpose

Involving the community in developing an evaluation process ensures that all aspects of concern are covered. It also enables the skills and knowledge available within the community to be identified and utilized for information collection and analysis. This reduces reliance on outsiders (e.g. consultants) who may be much more expensive and less informed to do this work.

The results of the evaluation exercise should enable decisions to be reached on whether to change the objectives of the conservation initiative, change the strategy, change activities or continue all or some of these. In a participatory evaluation both specific activities and the objectives of the initiative are considered, with the objective of learning what worked and why, and what was not successful and why it wasn't.

Steps in using the process

These steps can be undertaken with a group of stakeholder representatives (e.g. a Conservation Council) or in a meeting open to everyone.

- Review the objectives and activities of the initiative and the reasons for the evaluation i.e. "what do we want to know?"
- Develop evaluation questions — these can be written on large sheets of paper or a blackboard — and rank them.
- Decide who will do the evaluation (e.g. the whole community in an open meeting, a team representing major stakeholders, or an outside consultant).
- Identify direct and indirect indicators. Direct indicators are facts and information that directly relate to what is being measured (e.g. the number of cattle owned by a family). Indirect indicators provide information on aspects which cannot be easily or accurately measured (e.g. whether a family possesses a radio or a bicycle can, in some communities, be an appropriate indirect indicator of its total wealth).
- Identify the information sources for evaluation questions. If the information is not currently available, decide which information-gathering tool would be appropriate. If a tool has been used before, it may be used again to update the information and show the change that has occurred.
- Identify the skills and time required to obtain the information, including any expertise that may need to be recruited from elsewhere.
- Decide the time-frame for gathering and analyzing information. Timing needs to take into account factors such as seasonal constraints, religious holidays, and field staff availability.
- Decide which people will gather which information. If an outside evaluator is to be employed, designate someone to whom this person will report.
- Decide how the information should be analyzed and presented to the wider community and the staff of the conservation initiative for discussion and drawing conclusions.

Strengths and weaknesses

- + ensures that a broad range of issues are covered in the evaluation;
- + ensures a more comprehensive and better designed evaluation plan;
- + prevents information from the field being filtered by staff to reflect their own interests;
- + involving stakeholders in the evaluation fosters a sense of ownership and responsibility for the outcomes at the local level;
- + fosters the development of evaluation skills within the affected community;
- + builds bridges and strengthens communication between the stakeholders and the conservation initiative;
- stakeholder interests can override conservation interests if there is not someone specifically representing the interests of the conservation initiative;
- the process of developing and participating in an evaluation can be time-consuming; this may limit the number of stakeholders willing or able to take part.

5.5.3 Community-based environmental assessment

Community-based environmental assessment provides a community perspective on the state of the environment, prior to or during a conservation initiative, as part of a monitoring or evaluation exercise. A list of environmental aspects or factors is agreed upon by the community. The state of each factor is determined by allocating a certain value (e.g. excellent, good, poor, disastered, etc.) or number to it. It is not the actual value or number that is important but the way those change over time as recorded by ongoing observations.

Purpose

Community-based environmental assessment provides a framework by which insiders can make observations and judgements about the state of certain environmental factors.

Steps in using the process

- In a meeting with concerned community members, discuss the purpose of the assessment and how it can be carried out.
- Decide what is to be measured (e.g. well-being of the community, well-being of a particular natural area) and define what indicators will be used (e.g. abundance of specific species in the area, pollution, soil erosion, migration, morbidity and mortality, wealth, literacy, access to clean water, and so on).
- Write up the values to be used and what each represents (e.g. 5 = very good; 1 = very bad).
- Draw up a list of all the items to be evaluated. If the group is small (less than ten) work through the list together to reach a consensus on what value should be attributed to each item at the present time. If the group is larger, divide into smaller groups, with each group having the same list of items to evaluate. Then bring the groups together to negotiate a common list of allocated values. Record and store the results and decide when the exercise will be repeated (e.g. after six months or one year).
- At the agreed time, repeat the exercise of assigning a value to the items to be assessed. Discuss the reasons for the values attributed and the causes of changes since the previous exercise (if relevant).
- Identify the actions which need to be taken in response to the analysis and who should take responsibility for each task.

Strengths and weaknesses

- + enhances local knowledge of environmental issues;
- + creates an awareness of the potentially negative and positive environmental impacts of activities;
- + fosters the development of evaluation skills among participants;
- this is quite a complicated tool and a clear explanation is required to make sure it is well-understood before assessment begins;
- some value allocations may be highly subjective, although discussing the reasons for the allocations can help reduce and clarify this;
- it may be difficult to reach consensus on "values" where there is significant disparities between the costs and benefits experienced by different stakeholders in relation to the relevant item.

Strengths, weaknesses, opportunities and limitations (SWOL) analysis is a structured brainstorming process to elicit group perceptions of a specific aspect of, for instance, a community, environment or project. The aspect is analyzed in terms of the positive factors (strengths), negative factors (weaknesses), possible improvements (opportunities) and constraints (limitations).

SWOL analysis can be useful for evaluating activities carried out in a conservation initiative. It can be focused on specific aspects of the initiative, such as services provided by external agencies or activities being undertaken by a local community. It can also be used by specific interests (or stakeholders) to clarify their views on a proposal before meeting with other interest groups.

- A number of specific aspects/topics to be evaluated are identified and listed one below the other on a blackboard or sheet of paper.
- A four-column matrix is drawn on the side of the first column, and the four categories are explained to participants. To this end it may be helpful to phrase the four categories as questions e.g.. "What are the good things about this particular service/activity, what has worked well?" (S); "What are the things that have not worked well?" (W); "What chances do we have to make things better?" (O) and "What things might work against us to stop us achieving the opportunities?" (L).
- For each aspect to be evaluated, listed on the first column, the group identifies the strengths, weaknesses, opportunities and limitations, which are recorded in the relevant columns on the side.
- There are two ways to approach this exercise. You can go through all the strengths and then all the weaknesses for all the aspects to be evaluated; or you can go through the four categories for each item before moving onto the next item. A small test of the process use may help you decide which approach will work best in each instance.
- Where there are different opinions about an issue, the facilitator should help the group to reach a consensus. Some points may need to be discussed at length. Comments are recorded on the matrix only after agreement has been reached.

5.5.4 SWOL analysis

Purpose

Steps in using the tool

Strengths and weaknesses

- + the technique allows the different sides (positive and negative) of specific aspects to be identified and assessed for importance and therefore helps to set the basis for negotiations and trade-offs;
- + it can be a means to build a consensus within a disparate group;
- + SWOL encourages group creativity and helps to link the perception of how things are with the realistic expectations of how they could be, and to weigh the costs and benefits;
- a skilled facilitator is required for this process to be effective;
- sensitive subjects may arise. If this happens, the facilitator may choose to change the topic and return to the sensitive matter later;
- conflicting opinions can be difficult to accommodate, which may make some people hostile to the process;
- some individuals may try to dominate the discussion;
- summarizing discussions into short statements requires a facilitator with good listening and interpreting skills. Check with participants that they agree with the way views are recorded.

Other tools that can be used for evaluation and monitoring include:

- radio programmes;
- natural group interviews;
- focus group interviews;
- semi-structured interviews with key informants;
- photo appraisal/slide language;
- observational walks and transect diagrams;
- trend analysis; and
- gender analysis

These tools are described under the previous subheadings of this section.

5.6

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Section 6

Examples from the field



“...Training local fishermen to monitor the quality and quantity of marine life in the coral reef has been relatively easy. What we need now are economic alternatives to dynamite fishing. We need options for the fishermen to earn a good living in a non-destructive way.”

Marine biologist, Tanga, Tanzania, 1996

The following examples from the field have been collected from published literature and internal IUCN reports, as well as from submissions from field workers, consultants working in conservation, and staff of the institutional partners who supported the development of this publication. We thank all who submitted material or who consented to the use of extracts from their publications.

Where material has been extracted from publications, the source is cited at the end of the example, with full references provided at the end of Volume I. Examples with no source indicated have been submitted by individual contributors and are based on their personal knowledge and / or experience in the field. All those who submitted material for this section are listed under "Contributors" at the back of Volume 2.

The examples refer to conservation initiatives that either applied or missed out on one of the Options for Action included in Sections 1-3 in Volume I. They illustrate specific experiences and lessons learned in particular contexts. The examples are grouped according to the option to which they refer. Each option provides a cross-reference to the relevant examples.

1a. Inventory identifies all actors to an agreement

Madagascar

In 1994 ORIMPAKA, an NGO member of COMODE (Malagasy NGOs Council for Development and Environment) and CSIR, a South African NGO, agreed to jointly carry out a study about how best to manage the Special Reserve of Manombo, in the southeast of Madagascar.

Prior to undertaking any activity, the project team identified the actual/potential actors that could be involved in the reserve conservation. These organizations were then contacted and interviewed for their opinions and advice on the project.

The project team classified the actors as follows:

Local community

- elders
- women
- children
- political chiefs
- religious chiefs
- intellectuals (doctors, teachers, etc.)
- social and traditional chiefs
- associations (e.g., artistic groups)

Technical actors

- local NGOs
- governmental organizations
- religious organizations
- local environment committee
- local governmental services

Project team

- Water and Forest Direction (DEF)
- National Association for Protected Areas Management (ANGAP)
- ORIMPAKA
- CSIR

1b. Survey of migratory users

Guatemala

The chicle tappers of the Péten exemplify the complex links that can exist between local resource users and large commercial networks. In addition to traditional local tappers, groups of tappers from outside the region (Verapaz) converge on the Péten during the tapping season. The outside tappers are contracted through a series of intermediaries, who in turn are linked to the main exporters of chicle gum. Such chains of contractors and subcontractors, most of whom operate from outside the Péten, have a considerable impact on the resource. Most of the chicle stands are located on public or communal lands, and local tappers have few means to prevent exploitation from outsiders. At any given time an inventory of the stakeholders affecting the resource would provide only a partial account of their range, number and links. Seasonal variations have to be taken into account.

6.1 Inventory of actual/potential stakeholders

See option 1.4.1, Volume 1

1c. From mistakes we learn

Nepal

The first substantial attempt to develop a community forestry management plan took place at Chaap al Danda forest, an area of about 100 ha approximately 40 km from Kathmandu. Although the underlying aim of the exercise was to implement forest management by local people, there was little understanding of what this really meant or how to go about it. The first step was a fairly conventional forest survey, including biomass and productivity estimates for each of the ecologically distinct parts of the forest. The second step was to call a large meeting of the "community". This meeting was attended by a number of local leaders and residents from a number of the villages scattered around the forest. A management committee was elected for the purpose of negotiating the details of the management plan and the administration of its provisions. The plan included a list of user households listed by area of residence.

Since the list of nominated users was quite large, the managing committee organized a harvesting schedule; users from specified wards were asked to cut and collect their share of the firewood on specified days. The first round of harvesting went well but on subsequent harvesting days things began to go wrong. The main problem was that people listed as users did not come to collect their share. In order to find out why this happened, an informal survey was carried out among residents of each village. The results were salutary. It was found that some people listed as users had never used that particular forest and made no claims of user rights. They had apparently been identified as users by ward leaders who felt obliged to make a claim on behalf of their constituents. In other cases, people had apparently never heard of the plan despite claims by the organizing committee that all interested people had been informed of the harvesting schedule. In fact many people with legitimate interests failed to attend the meetings — sometimes because they had not heard about it — and the meeting and the elected committee were dominated by the politically active people from the bazaar town of Chautata. Few people from other settlements were involved.

Underlying these events was a very simplistic and static view of the sociology of forest use. The social element of community forestry was reduced to two basic steps: holding a public meeting and forming a committee. The diverse interests within a "community" of users and the importance of local political issues were ignored. It was assumed that the elected representatives would spread the information as necessary but, in reality, the control of information is often used as a lever of power in society.

Abridged from: Gilmour and Fisher, 1991.

2a. An analysis by household

Nepal

The Annapurna Conservation Area Project is a vast initiative covering some 7,600 square km. The project focuses on natural resource conservation, sustainable rural development, sustainable tourism, and conservation education. A variety of surveys and other research studies were undertaken to provide information to the management of the initiative. One of these studies was a stakeholder analysis of the eight Village Development Committee areas. Three researchers were employed and given one week of training. The data collected covered each household and documented the number of occupants, livestock owned, vegetables and fruit trees grown, the main problems faced and each household's priorities for development programmes.

From: Lama and Lipp, 1991.

2b. The case of Tukucha

Nepal

At about the same time as management planning was taking place at Chaap al Danda (see 1c above), a similar exercise was taking place at Tukucha, just outside the Kathmandu valley. Fortunately, the outcome at Chaap al Danda led to a recognition that something was missing from the original process, and efforts at Tukucha were halted while some profound rethinking took place. Advice was sought from a number of people with experience in community development and a new approach was tried. Staff were encouraged to talk to villagers and to get a feel for their needs and interests. The notion of focus group meetings became central. This technique has two key elements: the first being the understanding that information about a community can best be obtained by looking separately at groups of people with common interests; and the second being the understanding that interaction between people with common interests, meeting in small informal groups, will often lead to a more rapid exchange of information than separate meetings with individuals. At Tukucha, emphasis was placed on informal visits (rather than large-scale public meetings) and on obtaining a clear picture of the diversity of local opinions by identifying various interest groups and holding discussions with them.

The process took many months but avoided mistakes such as those made at Chaap al Danda. It was discovered that the forest, far from being the single entity that was first perceived, was divided into separate sections with separate user groups. In one patch (bordering two areas with separate user groups), each group claimed use-rights and disputed the claims of the other group. There were also disputes involving poorer people who initially did not want to see the "community" in control because they felt that their rights were more likely to be protected by the forest department. This last dispute was resolved by negotiation between the parties within the community.

Abridged from: Gilmour and Fisher, 1991.

6.2 Stakeholder analysis

See option 1.4.2, Volume 1

2c. Study identifies broad spectrum of actual and potential park users

India

The Indian Institute of Public Administration has been carrying out studies of the interaction between human populations and natural resources/wildlife in and around three of India's national parks: Sariska in Rajasthan, Great Himalayan in Himachal Pradesh, and Rajaji in Uttar Pradesh. One of the major focal points of the study has been the identification of groups and individuals using the parks for various purposes and products: residence, agriculture, collection of timber and non-timber forest products, grazing/fodder, herbs, tourism, pilgrimage, passage, and others. This has helped to identify the actual and potential stakeholders in these areas.

6.3 Information campaign

See option 1.4.3, Volume 1

3a. Turtles vs. tourism

Greek Isles

In the Greek Isles, particularly on the island of Zakynthos, tourism-based activities have become a threat to the survival of the endangered loggerhead sea turtles. The Sea Turtle Protection Society of Greece (STPS) has developed an extensive public education programme in an attempt to gain local understanding and support for the protection of the sea turtles, for the establishment of a national park in Zakynthos, and to reduce the level of conflict between the interests of turtles and people. In addition, they have sought to raise awareness among tourists about the need to safeguard the turtles and their nesting grounds. The comprehensive education, information dissemination and advocacy campaign involves the following: distribution of information leaflets to tourists via tourist agencies explaining the protected zones designated for turtles and describing ways that tourists can ensure the turtles' survival; presentations of slide shows in local hotels that raise awareness of the issues and explain precautions to take; establishment of information kiosks; and the solicitation of signatures for a petition to pressure the government to establish a national park in Zakynthos. In these various efforts, STPS has gained the cooperation of local hotels, hotel owners, wildlife researchers and tourists, many of whom had previously opposed protection measures. These efforts have helped spread a conservation ethic among local businesses, community leaders and visitors.

Abridged from: Kemp, 1993.

3b. Focusing on communities

Costa Rica

Several NGOs in Costa Rica, particularly the Fundacion Neotropica, which runs the BOSCOA project in the Osa Peninsula, have carried out local information campaigns concerning their conservation initiatives. The orientation of these campaigns has evolved over time from a strictly conservationist perspective to one which focuses on local communities and participation. This evolution is due to several factors, including donor preferences and new government incentives for local participation and sustainable resource use.

3c. Spreading the message widely

Madagascar

The Mananara-Nord National Park was classified as a biosphere reserve in 1989. Prior to implementing a conservation initiative, the Mananara Biosphere Reserve Project set up an information campaign inside as well as outside the project area. The campaign aimed to inform people about the project's objectives and management approach, about the way in which the community could become involved, and the corresponding benefits. The campaign was conducted at different levels: village, municipality, department and province, as well as national and international. At the village level people were informed through meetings in the 28 villages located around the reserve. Meetings and involvement in planning workshops were used to inform municipalities and departments. Posters, films, articles in the local newspapers and reports about the reserve were used for a wide distribution of information (from local to international level) about the project and its achievements.

3d. Information campaign to promote stakeholder rights

Pakistan

For more than a decade the farmers at the far end of the Rahuki irrigation canal in Hyderabad district were denied their legal irrigation water entitlements. The Bhattai Welfare Association (a local community-based organization) had frequent contact with the farmers during its community work. Their staff informed the farmers through regular community meetings about rights and irrigation entitlements. The irrigation department officials tried to discredit the organization but the effective information campaign conducted by the association successfully countered these negative tactics and exposed the corruption among the irrigation officials. The campaign provided a very effective incentive for the farmers to organize.

3e. Lack of information fosters false rumours

Cameroon

In 1995, ECOFAC's Dja Project in the Campo area was trying to combat false rumours that were undermining its forestry project. Local people had been told through the local newspapers that the World Bank was intending to hire guards to protect the forest and prevent local people from hunting. They were also told that the World Bank wanted to remove the forest company from the area and would not provide alternative jobs for the local people. The project was therefore seen as a very bad initiative, one that worked against the interests of the local communities. A strong information campaign has become necessary to counteract this perception and to encourage local people to become involved in the conservation initiative.

This experience illustrates the importance of starting an information campaign as early as possible; in fact, well before the project gets underway. If information is only provided after false rumours have circulated, it may be too late. Also, special care in providing factual and correct information should be taken if the project has connections with the government. In several countries, people are used to government information campaigns being a mechanism to dispel the truth, not provide it.

3f. A mobile information service

Nepal

A 'mobile camp' is a structured activity within the conservation education and extension programme of the Annapurna Conservation Area Project (ACAP). Its aim is to bring about a general awareness of different conservation issues. There are two distinct varieties of mobile camps. Special camps are run on an annual basis in the agricultural slack period. They involve a full staff team from many disciplines: forestry, alternative energy, tourism, community development, women's development and conservation. Extension camps are directed specifically at one of the issues covered by the special camps, as and where the need arises.

6.4 Public relations service

See option 1.4.4, Volume 1

4a. Centre promotes two-way information sharing

Nepal

The Annapurna Conservation Area Project (ACAP) has seven field offices where most (90 per cent) of the staff are based. These offices are accessible to the local people. They come with proposals for community development and training activities, they have meetings and discussions, and they offer suggestions. Primary planning for conservation initiatives and implementation is carried out through these field offices. The local community is involved at every level, from initial planning through to the evaluation stage.

4b. Coping with distance

Australia

The Kalannie-Goodlands Land Conservation District (established under the Landcare programme) covers an area of 300,000 hectares in west Australia. About ten per cent of the area is affected by obvious land degradation. Farmers in the area decided to approach their problems collectively to realize the benefits of scale, simplify group administration and organize more effective field days and seminars.

Communication between the members has been a major concern of the group. A committee consisting of representatives from each of the seven sub-catchment areas meets twice a month. In addition, a part-time coordinator is employed to keep members up to date with group activities. This is done through phone calls, meetings and a regular newsletter. In addition, committee members spread throughout the area have responsibility for a specific group activity or project such as tree planting, newsletter production, organizing field days, etc.

Abridged from Campbell and Siepen, 1994.

4c. Watch the language!

Tanzania

As part of the planning process for the Mafia Island Marine Park, a workshop was held with village representatives, tourist developers and operators, government staff, scientists and NGOs to share their visions and concerns. The entire proceedings were conducted in both English and the local language (Kiswahili) so that all participants could contribute to the proceedings and hear the views of others. Subsequently, a

review of the project found that all the written materials distributed for public information — including the background report for the workshop, the subsequent management plan and the implementation documents — were only available in English. And, although an agreement was reached at the workshop that the workshop proceedings would be published in Kiswahili, this was not done. As a result, many local people had no access to the written information explaining the reasons for the park and its operations.

The effect of this has not been as detrimental as it might have been, however. Because of the low literacy rate in the communities affected by the park, a strong emphasis was placed on community meetings and other forms of social communication as a way of raising community awareness about the park. Since the review, a staff member with responsibility for translating documents into the local language has been appointed to the park management team.

4d. Gathering information from the stakeholders

Australia

Initial planning for the Great Barrier Marine Park included requests for interested parties to send suggestions for area zoning to the Great Barrier Reef Authority. Simple and amusing response forms were widely distributed throughout various communities to assist people in putting together their ideas. The response forms were distributed not just to those living inside the boundaries of the park, but also to those with an interest in the park, such as tourist operators. People could either send the forms back or bring them in, and could also respond verbally, either by telephone or in person. A draft zoning plan was produced on the basis of the responses of the stakeholders and other social actors, and on the information obtained from the authority's own scientists and other sources. This was then discussed and refined with various groups and individuals until agreements covering the various interests were reached.

From: Kelleher, 1995.

5a. Song competition focuses on the environment

Madagascar

The Hiragasy (Malagasy song) is a popular theatre that is well appreciated in the Malagasy Highlands east of Madagascar. The Hiragasy theatre troupe participates in all traditional ceremonies and celebrations. The troupe sings songs related to the Malagasy way of life and the songs incorporate messages about good morals and behaviour. When there is a Hiragasy show people come from remote villages to enjoy the singing, dancing and discourse.

In 1995, the World Wide Fund for Nature (WWF), together with the Art and Culture Ministry, organized a Hiragasy competition. All the famous Malagasy troupes participated in this show, which took place over a period of two months. A requirement of entering the competition was that each troupe had to include a theme on the environment in its performance. Many people attended the competition; others heard it broadcast on radio and television.

6.5 Environmental discussion sessions

See option 1.4.5, Volume 1

5b. Seminars for schools and village groups

Brazil

A conservation project in Brazil covers several hundred hectares of the unique coastal Atlantic forests in the state of Parana. Prior to project design, stakeholder workshops were held involving the active participation of local villagers, state forestry officials and private farms. An NGO conducted bimonthly environmental education and awareness seminars for schools and village groups and established a field unit linked to university research stations to provide extension services on more sustainable agricultural and fishing practices.

5c. Sometimes shock tactics are the best

Australia

A Watertable Watch group adopted a unique way to get the message to fellow farmers about the severity of the area's salinity problem. After an unusually wet period, some group members hired a plane and took aerial photos of the 192 square km covered by their group. They then held a public meeting and showed everyone where their farms were in the photographs. According to one of the organizers: "Some of the farmers had a bit of a shock. Especially in the hall with all these pictures of waterlogged paddocks hanging there with their names on them. It's got a lot of [farmers] interested. You see a lot of them coming on bus trips now having a look at other areas. It's hit a raw nerve".

Abridged from Campbell and Sieper, 1994.

5d. Home visits to inform and build rapport

Nepal

Home visits and discussion meetings are important components of the Annapurna Conservation Area Project's Conservation Education and Extension (CE) programme. These meetings aim to clarify the project's activities and approaches, and to build rapport and mutual trust with the potential stakeholders. The field-based CE staff regularly visit the homes of potential stakeholders to discuss various issues regarding conservation initiatives. Then they hold discussion meetings to which all the potential stakeholders are invited. CE staff are frequently supported by technical staff (forest rangers, health workers, women's development assistance, etc.) who help them provide extra information and technical know-how. There are frequent home visits and discussion meetings during the initial phase of a project.

5e. Raun Isi Theatre Company

Papua New Guinea (PNG)

Community theatre is a powerful and well-received form of communication in rural areas of PNG. Raun Isi Theatre Group is funded by the PNG government with some small contributions from overseas donors such as Greenlight Trust, UK. The group is based in Wewak, on the north coast of PNG, and gives performances throughout its province based on environment and development messages. Using a range of traditional theatre, playback theatre, discussion and awareness methods, Raun Isi aims to inform communities faced with resource-use decisions and help them obtain their rights.

Raun Isi has taken a number of expeditions into more remote areas to inform communities about issues relating to logging arrangements being negotiated. This has resulted in some communities obtaining better representation, negotiating less destructive and more generous deals with companies or deciding to develop alternative income sources that have less impact on their forests.

5f. Children as the key agents for change Nepal

In 1972 the Shivapuri Watershed — used for hundreds of years by the local people as a source of many of their livelihood resources — was declared a protected area. In the early 1980s, people were evicted from their farmlands to protect the Kathmandu water supply. Today about 3,000 people remain within the boundaries of the area and about 30,000 people live just outside of it. Walls were built and armed soldiers stopped local people gaining access to the reserve. Under this protection, there was a great improvement in both the flora and fauna of the area and in the quality and quantity of water for Kathmandu. Creating the reserve was very disruptive to the local communities, however.

In 1985, the UN Food and Agricultural Organization (FAO) initiated a project to assist these people. The project aims to introduce alternative income generating activities, fuel efficient technologies, sanitation programmes and electrification to the local communities. Once the watershed environment has been fully restored, the objective is to allow the local communities to manage it and harvest from it on the basis of local management plans agreed by the villagers.

The project also aims to empower local communities through the transfer of skills, technologies and information related to conservation and sound resource management. Given the large population to be served, the project has recruited the services of local school children as key agents for communication and change. Local youth are provided with information about various technologies by experts employed by the project. These young people transfer the skills and information to local school children. The children are then given the responsibility of teaching their parents, schoolmates and other members of the community. At the end of the process, everyone is brought together into a village workshop to draw up and implement a local plan aimed at primary environmental care.

From: Chitrakar, 1993.

5g. Caiypsos for conservation St. Vincent

On the Caribbean island of St. Vincent a local organized group near a forest reserve mobilized the community to take action to resolve issues affecting their daily lives, including using the reserve's limited resources in a sustainable manner. The group, the JEMS Progressive Community Organization, used local cultural forms such as caiypsos, folk songs, drumming, role play and dances to communicate their conservation message to community members. The result has been a number of self-help development projects that address community needs, a continuing adult education programme and several watchdog committees to monitor resource use in the reserve. The active involvement of the community has led to effective village resource management in the forest reserve.

From: Barzetti, 1993.

6.6 Promoting internal discussion within each stakeholder group

See option 1.4.6, Volume 1

6a. Wait until the people are ready Madagascar

For the Ankarafantsika Natural Integral Reserve Project, a UNESCO/UNDP project team attended meetings held by the villagers who lived in or near the reserve. During these meetings, villagers discussed their social, economic and administrative problems. The project team took part in the discussions as inhabitants of the village. It was only after the villagers had finished with their own problems that the team suggested discussing the project. By that time contact and trust had been established so that everyone felt comfortable expressing their opinions.

6b. NGOs prepare people for participation Botswana

At the First Regional Conference on Development Programmes for Africa's San Populations, held in 1992, the Government of Botswana was criticized for allegedly hand-picking Basarwa participants who spoke only favourably about the government. In 1993, wishing to avoid similar criticism, the government requested the assistance of NGOs to ensure that the indigenous Basarwa peoples could mobilize and participate effectively on their own terms. The Ad Hoc Committee of NGOs (AHCONGOs) and government officers involved in the Remote Area Development Programme (RADP) worked together to help the Basarwa peoples prepare for the Second Regional Conference, held in 1993. The role of the NGOs was important in overcoming the Basarwas' suspicions about the government's intentions.

6c. Open meetings for householders Nepal

As part of the Annapurna Conservation Area Project, open meetings are held at the village level and at least one member from every household must attend. These meetings are semi-structured and aim to provide an open forum where specific matters may be discussed and agreed upon, such as local rules for the harvesting of fuelwood and other forest products. Meetings often include agendas identifying and prioritizing the community's concerns.

6d. Building a common focus Colombia

In the region of Sierra Nevada, a private foundation (the Fundacion Pro-Sierra Nevada de Santa Marta) has taken the lead in a broad conservation and sustainable development strategy. In addition to working closely with several local communities, including both traditional inhabitants and recent settlers, the project is working with various municipalities and members of the economic sector to develop a consensus of direction, and to ensure that the work of the project is integrated with other activities in the region. To date, 11 workshops have been held with various municipalities in order to define their institutional and regional needs. After two years of talks, a formal Association of Municipalities was formed, with the aim of developing policies to protect the environment. This was the first time that the municipalities had included environmental issues in their planning programmes.

Water supply has been a major problem in the Sierra Nevada since the 1950s, when vegetation began to be cleared at an alarming rate. The protection of water sources is a primary focus of the foundation's work. Meetings are held with those members of the economic sector who use large amounts of water, such as land-owners engaged in large-scale agriculture, coal companies, the tourism sector and various industries, represented by the Chamber of Commerce. By means of these meetings, common policies are being developed to manage the region's water resource in a sustainable way.

6e. A video as a catalyst for conservation

Australia

Assisted by funding from the National Landcare Program, Community Aid Abroad, the One Billion Trees Programme and corporate sponsorship, the Tangentyere Council developed a public awareness and education campaign including television commercials and a video called "Aboriginal Landcare, Let's Go!" The video is used in workshops throughout the Tangentyere lands. It shows how people can be involved in Landcare and the various methods for improving the environment in rural areas. It details the various initiatives and successful methods undertaken by the local governments in the area to improve living conditions and land management practices.

The Landcare workshops are intended to assist people living in these communities to identify the land management problems that they face and to devise appropriate ways of tackling them. The emphasis is on 'two-way learning', with local and traditional knowledge given equal value to the knowledge and skills of the workshop facilitators. The goal of the workshops is to develop a spirit of community ownership of problems and solutions, and local commitment to implementing solutions. The video is a catalyst to discuss local issues, problems and solutions among specific stakeholder communities.

Abridged from Campbell and Sieper, 1994.

6f. Community-based assessment for joint management of coastal resources

Tanzania

As part of the Tanga Coastal Zone Conservation and Development Programme, a joint management process is now (1995) being promoted for the coastal resources belonging to several districts bordering the Tanzanian coast. This approach is seen as a constructive way to overcome a number of local conflicts and difficulties and to tap into a wide range of knowledge and skills relevant to the resources being protected. The reasons put forward in support of joint management are:

- the government has very limited financial resources to undertake management;
- government has a perceived poor record of law enforcement regarding resource management;
- there is a history of cultural misunderstandings between government extension workers and coastal villagers;
- coastal villagers have a good understanding of the resources on which they depend;
- the extent of traditional management practices is unknown but could prove useful in promoting sustainable use;

- coastal villagers are largely dependent upon the continuation of resource supplies for their own livelihood, with limited alternatives to the continued use of coastal resources;
- existing planning already takes a bottom-up approach.

No encompassing agreement has yet been developed, but various stakeholders have met on several occasions. Extension agents are now located in "pilot communities" to help develop an understanding and effective expression of both the benefits the people need to secure for themselves, and the responsibilities they are ready to assume in a joint management regime. It is important that each "stakeholder community" goes through this process.

From: Shurcliff et al., 1995.

6.7 Helping stakeholders organize

See option 1.4.7, Volume 1

7a. NGOs help fishers to protect their livelihood The Philippines

A generation ago fishing was a part-time occupation in most of the Philippines. Now commercial fishing trawlers are having a major impact on the coastal fisheries. This effect is compounded by landless people descending on the coast in search of a livelihood.

Community Education and Research for Development (CERD) was set up in 1980 by a group of students and teachers from the University of the Philippines who had a background in community development and wanted to put their knowledge into practise. They decided to get involved with the municipal fishers, who were one of the poorest and most neglected groups in the country.

Since 1979, the fishers had been organizing to protect their interests through Samahang Mangangawil (SM79), the Hook and Line Fishers' organization. Throughout the 1980s, SM79 achieved a great deal with little help from the outside world. When CERD, in conjunction with Oxfam, offered assistance, SM79's activities — and those of other small fishing groups in the Philippines — were given a significant boost.

CERD carried out research for SM79 into indigenous fishing technologies, environmental problems facing the fishermen and issues associated with overfishing. It also made links with church organizations to provide leadership training to fishers' organizations and, at the national level, helped various groups to work out a strategy to counter such problems as overfishing, dynamite-fishing and coastal pollution. Environmental awareness training programmes helped to research and fund (through Oxfam) the building of artificial reefs to attract and encourage the regeneration of fish supplies. In addition, a range of technical advice on protecting coastal resources and managing fish stocks was offered. CERD also helped the fishers to recognize the importance of existing law in asserting their rights to coastal resources.

At the end of the 1980s, Oxfam helped to establish an organization which brought together local fishers' associations from across the country. The umbrella organization that was formed, the National Coalition for Aquatic Reform (NACFAR), succeeded in ensuring that the interests of small fisher groups are represented at the highest political levels. One of the pillars of NACFAR's programme is the Fisheries Code, aimed at legislative change that will bring more authority and responsibility for coastal resources to the communities that use them.

Abridged from Pye-Smith et al., 1994.

7b. Women participate "through the back door"

Bolivia

Is organization support needed? Before concluding that yes, it is, it is important to understand the ways of non-formal local organizations. In the Mizque communities of Bolivia's Cochabamba, most NGOs and government organizations have direct communication links with peasants' trade unions. This is considered a big step toward people's participation, since trade unions (*sindicatos*) are the most common and legitimate organization of peasants in the area. Yet, to be a member of a *sindicato*, you have to be a man, a landowner, and have completed military service. Hence women do not participate in meetings of *sindicatos*.

While it is the men who actively participate in the meetings, women usually listen in as they peel potatoes or knit. If an outsider suggests the community should carry out a particular activity, the men will ask questions of the outsider to get more information but will avoid coming to an agreement until they have had time to consult with their women. In this way the women's viewpoint can have a strong impact on decisions.

7c. Landowners organize against logging threat

Papua New Guinea (PNG)

In 1991, despite being recommended as a potential World Heritage site for PNG, the Hunstein Range near the upper Sepik River was also proposed for PNG's largest logging operation. The traditional communities who owned the forests in the area had little knowledge of the proposal. Their approval signatures had been forged; some older men had been paid to sign a contract they could not read.

With support from a local community group, the East Sepik Council of Women (ESCOW), the Hunstein people decided to challenge the logging proposal. In late 1991 a conference of village representatives was held to discuss options. The communities agreed to establish two land-owner associations to represent the two main ethnic groups in the range in negotiations, and to help to plan further actions. These associations, along with ESCOW, have coordinated an additional four land-owner conferences and have sponsored legal action which stopped the logging proposal. They have also played an important function in developing sustainable enterprises such as ecotourism, portable sawmills and artefact sales.

7d. Learning from the Grameen Bank about local

organizing

Bangladesh

The Grameen Bank Project (GBP) began as an NGO working in coordination with the Bangladesh Bank. It was based on the belief that lack of financial capital is the major constraint to the poor. The extremely high payback rate (99 per cent) of the bank's small loans encouraged other local banks to start lending to the poor. In 1979 these banks united under the auspices of the government's Bangladesh Bank to promote expansion of services to various districts in the country. The banks were assisted by donors such as the International Fund for Agricultural Development (IFAD), UNICEF and the Ford Foundation.

By 1986 the Grameen Bank was serving 4,300 villages, with plans to greatly increase the number of branches.

Typical borrowers are rural people owning no more than half an acre of cultivable land; family assets must not exceed the market value of one acre of medium-quality land in the area. The loan guarantee mechanism, used in place of collateral, involves forming groups of five people with similar economic and social status. When someone in the group borrows, the others undersign the guarantee. A secondary guarantee is that items purchased through the loan remain the property of the bank until the loan is repaid in full. Close and competent loan supervision and servicing are other important features underlying the success of GBP. Weekly loan supervision meetings, with obligatory attendance, are held where the borrowers live and work, not at the branch office.

Before eligible borrowers receive their loans, they go through an intensive one- to two-week training about the basic aims of the loans, and about the bank's rules and procedures. It takes approximately one month for a loan to be approved. Recipients need only submit a simple plan showing how the resulting economic activity will allow loan repayments. The interest rate is 16 per cent per year. By comparison, the money-lenders, to whom the poor had previously been forced to turn, generally charge an interest rate of ten per cent per month, and sometimes charge as much as ten per cent per day.

To combat dependence on money-lending, the bank also promotes group savings or group funds. Individual members can borrow from the group fund for consumption and investment purposes with the consent of the group. Group members are also required to contribute to an emergency fund consisting of a quarter of the total interest charged. This fund is for the development of health, life and asset insurance for group members. Savings generated by the groups has allowed members to survive natural disasters and personal emergencies without diverting capital from their enterprises. The bank's grassroots focus has given many people, particularly women, opportunities for leadership roles that they never had before.

Although the experience of the Grameen Bank is not directly related to conservation initiatives, its simple and powerful mechanisms can be effectively applied to support a variety of local organizations. In particular, stakeholder groups could borrow for primary environmental care projects with links to a main conservation initiative, such as a protected area.

Abridged from Ashe and Cosslett, 1989.

7e. Protecting the Miskito Coast Nicaragua

Miskito Indian community leaders, with support from national and international entities, organized seminars and workshops for 70 representatives from 23 coastal communities with populations between 15,000 and 20,000. After much discussion and consultation within the communities, the Miskito people formed a new NGO called Mikupia to manage a newly-created protected area. A commission was created to oversee the development of a management plan. The commission was made up of four national government representatives plus a regional

government representative, a Mikupia representative and two people from Miskito communities. In addition, an international NGO is coordinating scientific research within the biologically rich area.

From: Barzetti, 1993.

8a. NGO working to bring local people and officials together

India

The Bhimashankar Sanctuary in the Western Ghats of southwest India contains important evergreen forest habitat. It is also home to several small Mahadev Koli tribal settlements. The sanctuary was created without any consultation with the tribal people, or adequate appreciation of their rights and needs. This led to conflicts between local people and the sanctuary authorities. Local NGOs, such as Ekjoot Sanghatana, helped to organize the people and articulate their demands.

Seeing that the situation was not improving, and recognizing that both conservation and the needs of local people are important goals, various agencies attempted to build bridges between the authorities and the tribal people. The forest department organized a meeting with local NGOs, and proposed an eco-development scheme for several villages. Local NGOs pressured the forest officials to have decentralized meetings with the tribal people; they also organized some meetings between local groups and senior officials. Conservation groups studied the impact of human activities on the area's biodiversity, and recommended the possible conservation involvement of local people.

In 1994, at a national workshop that explored protected area management issues, forest officials and NGO representatives made presentations on possible participatory management approaches. Subsequent to this, a group of villagers from other protected areas plus conservationists and activists toured the sanctuary, holding meetings with tribal people and officials in an effort to resolve the conflicts.

As of mid-1995, no major breakthrough in cooperation had yet been achieved, but there is now a much greater mutual appreciation of the viewpoints, strengths, and constraints of the official agencies and local people. Forest officials increasingly accept the need to fulfil tribal needs and aspirations, while the local people are reconciled to the need to have a protected area. There are still differences over the methods by which a mix of conservation and resource use can be achieved, but continued attempts to build bridges will undoubtedly help to resolve them.

8b. Stakeholders come together to establish ground rules for park

Pakistan

In 1994 the Government of Pakistan asked the World Conservation Union (IUCN) to help convene a workshop to discuss a draft proposal for the creation of the Central Karakoram National Park and its nomination as a World Heritage Site. The workshop was held in Skardu. Representatives from five Pakistani government departments attended, along with local residents, tour operators and various NGOs. The

6.8 Meetings and workshops to build bridges among stakeholders

See option 1.4.8, Volume 1

workshop lasted two days and participants discussed in detail issues related to the creation of the World Heritage Site, its management, and the consequences for local people. Presentations were made on the socio-economic issues related to the whole region. These included such issues as the need to recognize traditional land rights and not disturb human settlements (e.g., by making allowance for subsistence agriculture), and the need to resolve conflicts among local people. Management and environmental issues were also discussed and agreements reached among the parties. The need to pay special attention to the defining of boundaries for the park and its buffer zone was highlighted. The workshop ended with a proposed action plan which included a formal planning process involving a multi-agency team as well as related interest groups. The action plan was accepted by the Government of Pakistan.

6.9 Visits to similar initiatives with strong participatory components

See option 1.4.9, Volume 1

9a. Viewing new technique convinces villagers Pakistan

Absan Wan (Sindh Province) is a small village which has lost one third of its land due to canal water seepage. In a similar small village called Tando Soomro, a community-based organization convinced a farmer, who also had a problem with canal seepage, to plant acacia trees to intercept the seepage. The plantation is now mature and the seepage of water has effectively been stopped.

The community organization members of Absan Wan planned an integrated drainage programme with engineering as well as biological components. They were provided with funding to visit the farmer in Tando Soomro. The visit proved very effective in making the farmers from Absan Wan understand the technical viability of using forestry plantations to control drainage.

9b. Value of new techniques and working together proven by example

Madagascar

In 1989, two Rural Forestry Support Projects managed by ORIMPAKA (an NGO member of COMODE, Malagasy NGOs's Council for Development and Environment), were introduced to the residents of Andramasina and Sobotsy Ambohitromby. In order to show the villagers what could be achieved, the Reforestation Committee organized a study visit to two areas where similar projects were underway. These were managed by IREDEC, another member of COMODE. The visits lasted for two days in each area; villagers learned of new techniques (e.g., in rice cultivation) and met with other rural organizations to discuss their strategies for economic survival. Through these discussions the villagers learned the importance of working together. On their return they told other villagers what they had seen, and several of them immediately took action to put the new techniques into practice.

9c. Leaders undertake a journey to learn and to establish networks

India

In early 1995, several NGOs, local community representatives and conservationists undertook a journey through approximately 15 protected areas of India. The journey was called the Jungle Jivan Bachao (the Save Forest Life Journey). The aim was to understand the problems and prospects of people living in and around these areas; to initiate dialogue among community representatives of various areas; to initiate dialogue between communities and wildlife officials; and to provide the participants with an occasion to learn from the mistakes and successes of conservation attempts in various regions.

Among the highlights was the extensive dialogue between villagers from Sariska Tiger Reserve in western India and their counterparts from other protected areas. The Sariska dwellers were able to recount their successful struggle against destructive mining in the reserve, and their attempts to protect forests near their villages. This inspired other communities to pledge that they would also make similar attempts.

The follow-up to the journey included more detailed exchanges among community representatives and NGOs, continuing networking, and lobbying at the national level for policy measures that guarantee greater local participation in conservation initiatives.

9d. Learning by visits to projects and countries

Zimbabwe

The District Councils participating in the CAMPFIRE programme formed an association to lobby for their programme and facilitate information exchange. Called the CAMPFIRE Association, this body organized very successful visits by members of participating communities to each other's wildlife management projects. The visits have largely been intended for information exchange, although they also included a problem-solving component.

The CAMPFIRE Association also facilitated visits to the CAMPFIRE Programme by community representatives, private sector representatives (safari and tour operators), local government officials and other people from South Africa, Kenya, Tanzania, Zambia, Botswana, and Namibia. These regional visits have specifically focused on the impacts of different policy and legal environments on the devolution of authority over natural resources to local communities. In turn, representatives of communities and other stakeholders in the CAMPFIRE Programme visited other initiatives in the region and benefited greatly from them.

6.10 Strengthening local institutions for resource management

See option 1.4.9, Volume 1

10a. Traditional land tenure systems preferred by locals Senegal

During a PRA exercise in Samaba Diallo, a community within the biosphere reserve of Samba Dia, it was found that the official government land tenure institution (*communauté rurale*), was used only as a last resort when all traditional channels had failed. In land tenure and natural resource management, a local traditional institution called the Council of Wise Men was called upon to allocate land, settle land tenure disputes and resolve conflicts.

Introducing new institutions is viable only when there is a need for them. In most cases, it is wiser to identify existing institutions and their roles and responsibilities, and try to support and build upon them. Such an approach is certainly easier and probably more sustainable.

10b. Training for traditional forest managers Nepal

The Conservation and Development Committees of the Annapurna Conservation Area Project provide various forms of training to strengthen traditional forest management committees. Training is provided in leadership, administration and financial management. The project also provides financial support during the start-up phase of new forestry projects, as well as legal advice on resource management. Project staff also organize visits to projects being run by other forest management committees to facilitate information exchange.

10c. Developing institutions to facilitate devolution Zimbabwe

The Zimbabwe Trust is an NGO involved in the CAMPFIRE Programme. As a member of the collaborative group that coordinates all CAMPFIRE activities, Zimbabwe Trust's mandate is to develop and implement an institution-building initiative for local communities participating in the CAMPFIRE Programme. To achieve this objective, the trust put in place a structure comprised of highly qualified personnel to help local authorities and communities develop institutions to manage communal wildlife resources. An Institutions Development Programme has been developed for each local authority.

The Zimbabwe Trust system is based on the employment of managers for each area. The area managers oversee the implementation of the CAMPFIRE programme and, in particular, develop mechanisms for effective local participation in the programme. In addition, Zimbabwe Trust employs Institutions Officers and seconds them to local authorities in the areas. These officers are responsible for developing local institutions, designing and providing training programmes for them, and monitoring and evaluating their performance.

As a result of the trust's efforts, many communities in the CAMPFIRE Programme developed wildlife committees that contribute effective management and decision-making. Plans are underway to devolve authority over communal wildlife resources from district councils to these committees. The sole reason that this has not yet occurred is that the legal status of the committees remains ambiguous. Zimbabwe Trust anticipates that when this legal problem is resolved these local institutions will effectively be in charge of their communal wildlife.

10d. Training locals to help locals

Uganda

Uganda National Parks (UNP) with support from CARE's Development Through Conservation Project is training local community leaders in writing project proposals and monitoring and evaluating projects to help local communities utilise funds from their share of park revenues. The funds are provided by UNP and comprise up to ten per cent of the revenue from gorilla-watching tourism in the Bwindi Impenetrable National Park. It is expected that the projects, which are based in and run from the communities, will assist a great deal in building effective community capacities and support for conservation.

10e. Government and company inputs support local conservation efforts

Australia

The Molyullah Tatong Landcare Group in northeast Victoria planted more than 10,000 trees in one year as part of an ambitious 14-km wildlife corridor network. The plantings are part of the group's plan to protect a 16-hectare ironbark stand which is the home of the Regent honey-eater, one of Australia's endangered bird species. The trees are also helping to control salinity and will provide an alternative source of income to farmers in the future.

The group's activities are co-funded by government and group members and are also sponsored by local companies. Technical advice is provided by both the Department of Conservation and Natural Resources and the Department of Agriculture. The group runs a demonstration block and information shed to display various tree species and planting techniques. In 1991, it was host to 14 busloads of farmers from as far afield as western Australia. The group holds an annual bush dance, the 'Tree-Prickers Hop' to round off days in the nursery preparing tree seedlings for planting. A part-time coordinator is paid with funds raised by selling the trees grown from local seed to local farmers.

Abridged from Campbell and Sieper, 1994.

11a. Committee to oversee implementation and assess potential impacts

Madagascar

In the Natural Integral Reserve Project, a programming committee called Ankarafantisika was set up to discuss quarterly and annual programmes proposed by the project's technical team. The committee meets every quarter; its principal functions are to oversee the project implementation, mobilize technical and administrative support (as required for the project), organize an impact assessment process (to identify and rectify adverse effects) and ensure that the welfare of local people is protected. The committee is chaired by the president of the local province. The members include the presidents of all the local municipalities and villages in the project area, representatives of local government sectors (agriculture, health, education, population and forestry), representatives of the family planning association, Mahajanga University and FIFABE (a wet rice cultivation society), local project staff, and the principal technical coordinator of the local branch of a UNESCO environmental project.

6.11 Conservation Councils

See option 1.4.11, Volume 1

11b. Balancing representation with effectiveness Costa Rica

A broad-based council for regional development was created during the second phase of the Tortuguero Conservation Area Project, which was funded by the European Union. Members of the council were selected on the basis of extensive surveys, appraisals and workshops with local populations. At one stage, the council comprised 25 members, ranging from community groups, business interests, municipal authorities, government officials and conservation initiative staff.

While the composition of the council reflected the extremely wide range of interests and the different stakeholders operating in the Tortuguero region, it became clear that it was unworkable both in practical and political terms. Members had their own agenda and priorities, and there was no clear policy to guide the council's internal process. As a result of the ineffectiveness of the broad-based council, a smaller council was formed, grouping only those stakeholders with the greatest interest, involvement and importance in the region. This smaller group worked much more effectively. This experience goes to prove that involving everyone is not a guarantee for being effective.

11c. Wetland management authorities Zambia

The WWF-Zambia Wetlands Project in the Kafue Flats aims to link the management of the floodplain wetlands with human socio-economic development at the community and district levels. The Kafue Flats core project area comprises two national parks and a game management area and covers an area of approximately 6,000 square km. Developing a community development infrastructure has been a painstaking process, even though it was part of an existing framework of socio-political organization. Community Development Units (CDUs) were formed in the chiefdoms making up the project area. In most cases the chiefs were elected as chairs. In some cases, extension workers and other officers serving the chiefdoms' communities were elected or co-opted onto the CDUs as members or observers.

Two Wetlands Management Authorities (WMA) were established under the principal district councils to provide an interface between traditional and contemporary authority in the project area. The chairs of these authorities are the district governors of the principal districts. Chiefs, CDU chairs, MPs and ward chairs from the project area are automatically members of the authorities. Other members are elected from CDU members. The majority of elected CDU and WMA members are local people. Because the authorities operate under the auspices of the district councils, they have natural links with district, provincial, and thus central government infrastructures.

While technical research and management of natural resources remains the responsibility of the various professional agencies, the CDUs and WMAs provide a mechanism for local communities to actively negotiate with national interests for their fair share of the benefits of sustainable management of natural resources. Meanwhile, the WMAs make decisions regarding the use of information and the funds and resources available for special programmes, within the framework of existing legislation and management plans.

Abridged from Jeffery, 1993.

11d. Committees for the Blue Mountain

Jamaica

An example of a growing partnership can be found in the planning of the Blue Mountain/John Crow Mountain National (Pilot) Park in Jamaica. Park staff have established Local Advisory Committees (LACs) that participate at every development stage. The LACs are made up of enthusiastic volunteers from the park's surrounding communities and are well organized. They are effecting positive change in the park as well as addressing their own concerns. Park staff is working with the LACs on the first draft of a management plan that includes training community members in tourism, agroforestry, and alternative energy sources that do not destroy the park's resources.

From: Barzetti, 1993.

12a. Retired judge achieves a breakthrough

India

Rajaji National Park in northern India represents the entire range of conflicts which can occur in a protected area in a developing country. Creation of the park has denied or restricted access to the area's resources to thousands of rural families, and has created legal and administrative problems for the migratory grazers who use the area. Commercial, industrial and military activities surrounding the park continue to compromise its ecological integrity; elephants have been restricted to small forest areas and become ecologically and socially destructive. Various agencies involved, including the forest department, local NGOs, community representatives, urban conservationists, and others, have hardened their positions in the face of the ongoing conflict, with none of them showing any spirit of compromise.

To achieve a breakthrough, the Indian People's Tribunal on Environment and Human Rights (IPT), a network of NGOs and individuals, asked a retired senior judge to investigate the issue. He toured the area, met with all the concerned parties, held joint meetings, and wrote a report that recommended a judicious mix of conservation and resource-use activities. He advocated the creation of an inter-agency management committee which would consist of representatives of all the parties, and which would set the direction for the management of the park. The IPT's initiative has been welcomed by all the parties to the conflict, and it is hoped that the report will form the basis of a resolution in the near future.

12b. Leaders of stretcher societies as mediators

Uganda

In the community adjacent to the Bwindi Impenetrable National Park, it was found that the stretcher (local ambulance) organization was the most respected and acceptable body for dealing with conflicts. Therefore most of the petty infringements in the park (stealing poles, etc.) are dealt with by the leaders (elders) of the stretcher societies. This has proved very effective.

6.12 Institution for conflict management

See option 1.4.12, Volume 1

12c. Conflict management needs power to deal with all parties

In a country which shall not be named for obvious reasons, conflicts emerged between government employees and local people who are trying to protect endangered species. These conflicts demonstrate the need for a conflict management system powerful enough to deal with people of high rank who currently enjoy a degree of immunity from prosecution. In this case government employees were hiring poachers to hunt protected animals in the reserve. Their superiors and some local politicians were also syphoning off project funding for their own use. Local people feel powerless to deal with the situation because the cooperation of the government employees and politicians is needed for their conservation project to continue and succeed.

12d. Replacing chiefs with councils may create rather than manage conflict

Burkina Faso

Under the Gestion des Terroirs (land management) programme begun in 1986, village councils were established to manage local natural resources. One intention of the councils was that decisions should no longer be made by one person (the chief), but by a collective, thus airing conflicting points of view. Traditionally, the chief made decisions after having heard the opinions of his group of elders and, in the case of a conflict, of the parties involved. Now, conflicting parties were supposed to reach an agreement without referring to a higher authority.

The legitimacy of the chief was based on his standing and knowledge of village lands and people. From the standpoint of the Gestion des Terroirs programme, the legitimacy of the councils is based primarily on their effectiveness and second, on their democratic structure. These, however, are not reasons by which legitimate authority has been traditionally established in Burkinabè villages. For hundreds of years the chiefs avoided village conflicts and resolved controversies over land, marriage obligations, etc. Replacing chiefs with democratic institutions ended up releasing, rather than restraining, conflicts. The lack of a higher authority put an additional strain on the parties in conflict. The experience demonstrates the need to take existing institutions seriously, and to adapt conflict management systems accordingly.

Abridged from: Engberg-Pedersen, 1995.

6.13 Training and incentives for staff and recruitment to fill gaps in skills

See option 1.4.13, Volume 1

13a. Community consultation part of training for field staff

Madagascar

In the Mananara Biosphere Reserve Project, technical training for field workers is carried out at project headquarters on a monthly basis. Training is provided in rapid rural appraisal (RRA) and social communication methods as well as in forestry administration, rice cultivation, market gardening, pesticide use, family planning, and bee-keeping. Other training programmes have been run by other organizations outside Mananara in such aspects as valley management, fishery cooperatives, nursery forestry and Intensive Rice Cultivation System (SRI). The national director of the project has received training overseas in Integrated Rural Development and participatory rural appraisal (PRA).

13b. National parks staff learn from each other

Uganda

In 1994 park wardens from the Bwindi Impenetrable National Park (BINP), Mgahinga Gorilla National Park (MGNP), the US Peace Corps, the Development Through Conservation Project (DTC) and project staff visited Lake Mburo National Park to look at the community conservation programme being implemented around the park. The aim of the visit was to facilitate the exchange of ideas concerning community conservation efforts among the staff of the three national parks, to examine successes and failures of project initiatives in the areas adjacent to protected areas, and to learn from the experiences of counterparts about community participation in the management of protected area conservation.

13c. Trainaig for officials and NGOs to facilitate fieldwork

India

The Indian Institute of Public Administration (IPA) coordinates fieldwork by training state forestry officials and community-based NGOs in participatory rural appraisal (PRA) techniques and assisting in data gathering and analysis. Such fieldwork was undertaken for the preparation of action plans for eight national parks. Workshops at each site identified community needs, existing tenure and use rights and activities that would be compatible with biodiversity conservation goals.

13d. Role models as catalysts of change

Nepal

The Forestry Department in Nepal, which has long been active in implementing community forestry programmes, has found that field staff cannot be expected to adopt a new style of operating without a great deal of help and encouragement. In many cases their previous work patterns were dominated by duty statements that emphasized licensing and policing activities — roles that brought them into conflict with villagers and resulted in suspicion and antagonism on both sides. Even with the best of intentions, it takes time and hard work to break down the barriers so that mutual trust and respect can emerge.

Just telling people that they should be different and adopt a people-centred approach is not sufficient and, in itself, is likely to have little effect. Field staff must reorient themselves if they are to adopt a totally different world view of how their job should be approached and carried out. This can be achieved by some people, particularly the younger staff. But it may be more difficult for older staff, for whom a radical change from a policing role to a truly consultative role may be difficult. Contributing to this difficulty is the fact that, in some areas, the field staff are exposed to graft and corruption. Some staff may, in fact, have a strong vested interest in doing nothing to upset the status quo.

Reorientation training can best be done by providing field staff with hands-on experience in a village setting. Problem-solving methods are useful to teach the skills needed to collect information and analyze village situations. As with all training programmes, follow-up is essential. Trainees who have been through a radical reorientation cannot be expected to work effectively if they have no support from their colleagues and particularly, from their superiors.

A degree of conflict is inevitable, but an effective role model can help the re-orientated staff to institutionalize the new behavioural norms into the culture of their organization. The role model can provide the support and guidance necessary to build confidence in the staff. This catalyst may be an outside person, who could be project sponsored. He or she needs to be someone who inspires confidence and who has a thorough understanding of the process necessary to implement a community based project.

Abridged from: Gilmour and Fisher, 1991.

6.14 Promoting an effective legal basis for participation

See option 1.4.14, Volume 1

14a. Responsibility and authority stimulate community interest

Bolivia

Until 1993, Bolivian municipalities received very small budgets; smaller communities received even less. As a consequence, municipal governments couldn't invest in public services and rural people were not interested in elections for their local authorities. In 1993 a law named "Popular Participation" was passed which put municipalities in charge not only of urban areas but also the rural hinterland. Funds were provided to enable the municipalities to undertake their new responsibilities. It was also decided that a Vigilance Council, elected directly by the people, would examine all investments decided by the municipal governments. Managerial training and other facilities were provided to council members. As a consequence, more investments are being made in rural areas and the local inhabitants are more interested in municipal politics.

14b. Legislation encourages participation in conservation management

India

In 1994, the Indian Institute of Public Administration organized a national workshop to explore issues and opportunities relating to joint management of protected areas in the country. The institute now services a network of organizations and individuals who are interested in the subject. Proposed legislation on biodiversity, currently being drafted by the Indian Ministry of Environment and Forests, will explicitly encourage peoples' participation in the management of conservation areas. Considerable public debate is being generated, both at the local level (in the case of protected areas where conflicts are intense) and at the national level in the media and decision-making forums.

14c. Draft guidelines recognize rights to participate

Uganda

In 1995, the Ugandan Ministry of Tourism, Wildlife and Antiquities promoted the drafting of new policy guidelines for the conservation of natural resources in all protected areas of the country. The draft policy guidelines recognize the customary rights of local communities to participate in the management of protected areas and share in their benefits. A workshop sponsored by Uganda National Parks and assisted by IUCN further specified the requirements to implement the new policy in practice, i.e., to develop collaborative management agreements among various stakeholders in specific park areas in Uganda.

14d. Legislation accommodates traditional structures... up to a point

Niger

Since 1989 the Government of Niger has been working with IUCN and other environmental organizations to draft new laws for the management of natural resources. The new legislation merges all previous laws relating to land, forests, fisheries and wildlife. Previously, each of these sectors was controlled by separate and sometimes contradictory legislation, which was largely based on French law and often inappropriate and in conflict with customary laws. IUCN served as a member of the Review Committee, which comprised representatives of international organizations and government. The organization also provided funding towards a multi-disciplinary executive group — comprising lawyers, ecologists and sociologists — to service the Review Committee. The group was chaired by a sociologist with a wide knowledge of environmental issues.

The new law provides for a decentralized system to manage natural resources: a system which recognizes the rights of local communities and traditional chiefs. In keeping with the traditional system, chiefs are effectively incorporated into the administrative and decision-making process as officers of the state.

A framework for the Rural Code was adopted by the government in 1992. Since then, the executive group has been developing regulations to cover each of the different natural resource sectors. The code provides for only one type of local association for both conservation and income-generation purposes: the cooperative. Such a provision is not popular with local communities, who have bad experiences with 'imposed' cooperatives. This leaves them without an effective, legally-recognized institution under which to unite to manage their local resources. The IUCN office in Niger is contributing to solve this problem by developing and recommending appropriate changes in the code.

15a. Joining forces to save the koala

Australia

In New South Wales (NSW) a group called Bearcare was instituted by a local community to protect and enhance koala habitat. At the same time, through the protection of remnant vegetation and the replanting of koala food trees, the group is helping to restore the hydrological balance needed to prevent further increases in soil salinity. The group has now undertaken a joint project with the NSW National Parks and Wildlife Service and the Department of Conservation and Land Management. The government departments provide funding and expertise as well as rangers to give talks in schools about the dangers facing the koala. Primary schools have joined the project and are raising funds to buy seedlings of koala food trees, which they plant to link pockets of vegetation used by koalas. The Bearcare group has produced a resource plan of the area which can be used by community groups and land users, including government agencies. This will integrate nature conservation with other aspects of resource management; for example, by including koala habitat species in shelter belts, wood lots and mine site rehabilitation plantings.

Abridged from Campbell and Sieper, 1994.

6.15 Assisting local communities to develop their own conserva- tion initiatives

See option 1.4.15, Volume 1

15b. Support comes in many forms: ANAI and ASACODE Costa Rica

One group that has benefited from the services provided by the Asociación ANAI is the San Miguel Association for Conservation and Development (ASACODE). ASACODE was founded in 1988 by a group of mainly immigrant peasant (campesino) families to promote sustainable forestry. The organization planned and developed a number of initiatives, including a Native Species Project. This involved a 70-hectare mix of virgin rainforest and secondary growth, and was acquired with financial help from ANAI and IUCN. The project includes a nursery, with trees grown for research, local use and educational purposes. It also includes an ambitious ecotourism initiative. Most interestingly, ASACODE families are now succeeding in extracting timber from their land in a sustainable and highly profitable way. They cut selectively and complete the first processing of the trees in the forest before transporting them. They also use water buffaloes instead of tractors (which require opening highly damaging roads).

The most empowering element of the process is that the people process the timber themselves, using a small sawmill, and therefore keep all the proceeds from the sale of the timber. This helps to make limited extraction of timber both profitable and sustainable. ANAI has not only helped ASACODE with grants and loans, it has also provided technical, scientific and administrative expertise and brought the villagers of San Miguel into contact with others in Talamanca who are trying to use the forests sustainably. In addition, ANAI has paid for several forest biologists to give training courses to ASACODE members. Importantly, it was ASACODE that chose what to do, and how to do it.

Abridged from Pye-Smith et al., 1994.

15c. Technology transfer between indigenous communities

Panama

The Kuna people have occupied their traditional lands in Kuna Yala, northeastern Panama since prehispanic times. In 1925 they successfully fought for an autonomous system for their area. This was formally recognized in 1953 through a law which defined the limits and administrative system for the Comarca territory. The establishment of the Comarca did not stop the pressure of colonization on those lands, however. In 1983 the Association of Kuna Employees (AEK) submitted to the General Kuna Congress a programme for the establishment of a totally protected area in the Comarca. This was approved, and the Ecological Programme for the Management of Wild Areas in Kuna Yala (PEMASKY) was asked for assistance.

PEMASKY is an initiative of Panama's Kuna people. Its objectives include achieving sound ecological management of the Kuna territories. PEMASKY produced a set of rules entitled "Research Program: Scientific Monitoring and Cooperation" to control the number of expatriates coming into the area and to ensure that the Kuna people acquired the skills needed to manage their natural resources. One rule stated: "All researchers should seek to employ Kuna co-researchers, assistants, guides, and informants, with the objective of achieving a transfer of knowledge and technologies". As a result of this approach, several Kuna professionals are now skilled in survey and mapping techniques.

PEMASKY developed a management plan for the Runa Yala, which was revised in 1991 to incorporate the area in the Panama Tropical Forest Action Plan. When the Yanomani people of Brazil and Venezuela obtained rights to their lands in 1990, they asked PEMASKY to assist them in defining the boundaries of their territories and preparing their management plans.

15d. City joins country to save me land

Australia

The Warrenbayne Boho Land Protection Group involves 150 landholders in the foothills of the Strathbogie Ranges northeast of Melbourne. The group was formed after the local government convened a meeting in 1982, when a few landholders began talking about the spread of salinity on their properties. More than 100 people turned up. The landholders realized that the time had come to stop blaming others or waiting for someone else to fix the problem. They would have to take responsibility themselves. Since then the Landcare Group has planted over 150,000 trees, fenced 20 km of remnant vegetation and planted 600 hectares of perennial pasture. The group has prepared a wildlife corridor plan for the whole area and initiated a status report on its rivers and streams.

Several thousand of the trees the group plants every year are grown in Melbourne back yards. Farmers gather the seed from local trees. Their city friends for the "Tree Project" grow the seeds, and return the one-year-old seedlings to the farmers to plant. Often, they also come to help plant them. The Landcare Group hosts 2,000-3,000 visitors every year, who often help with planting trees. These visitors range from unemployed Melbourne youths, to school children, to international experts. Because the group adopted a positive, self-help approach, it has received a high level of support from government, tertiary institutions, corporate and philanthropic bodies and many others.

Abridged from Campbell and Siepen, 1994.

15e. Restoring nature in the midst of warfare

Guatemala

Families exiled by the Guatemalan army in the early 1980s are returning to their homes and confronting the devastation caused by the civil war and the colonization schemes imposed on their lands. Many are forming organizations with the people who remained on the land to restore the previous ethnic systems of land management. The Huista's Cultural Coordination (Coordinadora Cultural de los Huista) is one such organization. It has a conservation branch called Alternatives for Environmental Development (APDA). The initiative to establish APDA came from the local Huista-Jakaltekos group of Maya people who live in the Huehuetenango area in the Western Highlands of Guatemala. The branch is undertaking multiple communal activities, including restoration of the hill country, research into wild and domesticated varieties of corn, and running a herbarium, tree nursery and several traditional gardens.

15f. Hunstein Range conservation area establishment Papua New Guinea (PNG)

The people of the Hunstein Range in the upper Sepik River region are taking advantage of PNG's innovative conservation laws to establish a conservation area that reflects their customary management practices and development aspirations. They are being assisted in this by WWF and the East Sepik Council of Women.

Using PRA and other methods, Hunstein clans are analyzing their resource use and values and developing a set of rules for land management that includes customary restrictions on species use, bans on entry to certain areas and requirements to respect spirit areas and ancestral grounds. The communities are integrating these customary rules with aspirations for sustainable development. Tools have included land mapping, discussion of history and trends, brainstorming on values, recording of custom stories and species inventories.

This information is being integrated into a proposal for a conservation area based on community management rules. To date the project has involved 19 clans, who collectively own 300,000 ha of tropical rainforest and wetlands.

15g. Conservation is better than mining Venezuela

A Venezuelan NGO called BIOMA helped four biological reserve communities to resolve socio-economic problems while addressing conservation goals. BIOMA initiated contact via talks, slide shows, guided hikes and other activities, and then worked with the local communities near the reserves to improve agricultural production, nutrition and sanitation conditions. The partnership has worked so well that the communities near one reserve stopped the development of an open graphite mine and those at three other reserves turned over their lands to BIOMA to protect them in perpetuity, an action virtually unheard of in Latin America.

From: Barzetti, 1993.

6.16 Participatory appraisal and planning

See option 1.4.16, Volume 1

16a. Creating the desire for change by viewing past and future Madagascar

The Terre Tany Project in Beforona was concerned with moderating the practice of slash-and-burn rice cultivation (tavy) in Madagascar. To educate the local community about the impacts of this practice, the project team gathered local people, discussed with them the story of their village and asked them to draw four maps of the area.

In the first map, people showed how their village and surrounding landscape looked about 20 years ago. In the second map, they drew the current situation in their village and surroundings. The project staff then asked them to identify the differences between these two maps and the causes of those differences. They all agreed that the forest had diminished in size and that the main cause was slash-and-burn cultivation practices.

The project staff then asked them to draw a third map, imagining how their environment would appear in 20 years if nothing was done to halt the disappearance of the forest. In the fourth map the people imagined what the village and surrounds would be like in 15-20 years if the conservation initiative was implemented. This map provided the basis for a participatory planning exercise.

16b. Students foster community planning

Uganda

After many years of civil war and raiding by hostile tribes, peace finally returned to the Pallisa district in 1989, and with it the chance for the local Iteso people to rebuild their shattered lives. In the village of Kapuwai, the people organized themselves into a group which they called the Pallisa Community Development Trust (PACODET). The core of PACODET was a group of local students who decided to use their knowledge to improve the community's standard of living. They were supported by some individuals and a small grant from the European Development Fund (EDF). As their ability to make improvements was demonstrated, they were joined by other villagers. Activities were funded by an annual subscription fee and funds quickly began to accumulate. Initially the group focused on primary health care projects dealing with measles, malaria and other diseases that were decimating the community. Then they turned their attention to the natural environment.

To raise awareness of the environmental issues confronting the community, the group organized a series of walks through the outlying areas and made a thorough assessment of the state of the natural resources. The PACODET committee then called a public meeting to discuss Pallisa's environmental problems. The meeting was attended by more than 100 villagers. These people were split into smaller groups to spend several hours discussing a specific topic based on the issues identified during the walk. Topics included pesticide use and misuse, decreasing soil fertility, population issues, and encroachment of swamps and forests. Some days later the meeting reconvened to draw up an Action Plan. Ignorance was identified as a major problem. Consequently the Action Plan was mostly devoted to the gathering of information about such things as training opportunities, funding sources and a variety of technologies. Plans were then made to undertake the mapping of the resources in the area, carry out a survey of agricultural practices and find out who was cutting trees and encroaching on the swamps.

Over subsequent months PACODET became more structured, with various subcommittees to take charge of specific interests. Each subcommittee was headed by a man and a woman. As they gathered information and sought assistance from various NGOs and agencies in Uganda, the people became more confident, not just in their dealings with officialdom but also in discussing matters among themselves and with their families. To address their strongly felt need for information, they are building a library/community centre which, in the words of one of the organization's leaders, will become "an inspiring place; we'll use the space in front of it for community meetings; we'll have drama and music, so even the illiterate will gain from it". The people of Kapuwai have come a long way since their region was plundered by civil war and raids!

Abridged from Pye-Smith et al., 1994.

16c. Planning includes identifying measures for monitoring

Pakistan

The Pabbin Sharif Project in Hyderabad, supported by Oxfam, involved the rehabilitation of water courses and mango orchards. The need was identified by the community and the initiative was designed through a participatory process. During this process suitable indicators were identified to be used for ongoing monitoring and evaluation.

16d. Farmers test possible solutions

The Philippines

Understanding problems and searching for solutions are more successful when local people probe in depth the causes of problems. Such diagnosis by villagers can also uncover constraints they perceive in working towards solutions. Villagers' diagnosis of problems is therefore a key step to increasing their involvement in project planning and implementation.

When farmers in the Eastern Visayas region of the Philippines were actively consulted in the classification of soils and crop sequences, they identified for themselves possible solutions for controlling the grass weed *Imperata*, including experimental testing on their own farms. They also undertook on-farm demonstrations of cultivations of different varieties of legumes. Farmers were more enthusiastic about experimenting with initiatives that lay within their own capacity than with high-input solutions.

As part of the planning process, farmers were asked to list all the factors they connected in any way with the particular agricultural problems the project sought to address. These were then analyzed in the farmers' group and constraints to solutions were identified.

Abridged from FAO, 1987.

16e. Women present their views in photos

Kenya

A large tract of Kenya's semi-arid land, inhabited by Maasai pastoralists, is included in the Elangata Wuas Ecosystem Management Programme. The programme aims at adopting new approaches to the sustainable use of natural resources. In an effort to both increase the ability of women to discuss the issues which are important to them, and to gain insight into their actual problems, the programme decided in 1993 to use a new evaluation technique, which came to be known as photo-appraisal.

During this exercise, small groups of women were asked to discuss the good things and the bad things in their lives, and to take photographs that showed these things. Each group of four women received a disposable camera. After the films had been processed, two sets of prints were made: one for the group and one for the programme. Each group explained to the extension worker why they had taken the particular photos. Then the groups were brought together to discuss the results among themselves. The photos were mounted and the women recorded their comments beside them. The group that, in everybody's view, had best captured the good and bad things, received a small prize. The

discussion went from groups of four to groups of 20 women. The women were given prints to take home, which were shown to all visitors. There too, many discussions ensued.

Finally, the best photos were used by the programme in meetings with other women and men. Exhibitions of the photos have since been held in Kenya, Germany, and other countries. Many viewers have been amazed at the quality of the photographs, which were taken by women who held a camera for the first time in their lives. The photographers, who came from a storyteller's culture, understood the possibilities of the new medium merely by looking through the viewfinder and completed the stories told by the photographs with their own comments.

From: Vreede, 1995.

16f. Community support can come...but must be nurtured

Mafia Island, Tanzania

Although creating marine parks within Tanzania was first suggested in 1968, none were established until 1995, with the adoption of legislation declaring Mafia Island a marine park. In 1975 seven relatively small areas had been designated marine reserves, but these were established without prior consultation with local people, who remained ignorant of their exact location. Any attempt to enforce regulations led to conflicts and local resentment. This, coupled with a lack of financial resources and poor legal infrastructure, led to the collapse of the reserves.

In addition to the lack of consultation, local resentment can be attributed to the fact that the reserves removed the right of access to many traditional fishing grounds; the loss of these areas resulted in a loss of livelihood with little or no alternative income from other sources.

Fortunately, it was recognized at an early stage that, for a marine park around Mafia Island to be successful, the local communities had to be involved from the pre-planning phase to the development of a strategy for the implementation and operation of the park management.

With WWF support, a planning exercise with a strong focus on community involvement began in 1991. The process was undertaken in three stages. The first stage involved establishing communication between the proponents of the park and the local resource users through informal discussions about the area and about the needs, hopes and fears of local communities. The second stage brought more formal meetings among village councils, community members and the steering committee. When community members asked "What will the park do for me?" the following reply was given: "What would you want the park to do for you?".

The third stage of the process involved a workshop which brought together local, regional and national governments and NGOs and representatives of the local communities. During the course of the workshop working groups were formed to discuss various aspects of the proposal. Local community members assisted in formulating the zone types, their location and the activities to be allowed. They also identified issues that needed to be addressed to meet community needs. One of the management goals agreed to was the involvement of marine park users, especially Mafia residents, in the planning, development and

management of the park. It was also agreed to give priority of resource use and economic opportunities (e.g., for tourist businesses) to Mafia residents.

Unfortunately, at the end of this very successful process there was a gap of years during which there was no follow-up with the community. The gap was caused mainly by delays in passing the necessary legislation and in subsequent organizing activities. Legislation is now in place but there is concern that the long break between consultation and implementation may have undermined the trust, communication and support developed with the community during the planning phase.

Abridged from: Horrill, 1995.

16g. Evaluating microprojects

Madagascar

The VITA-APAM Project is an integrated conservation and development initiative which combines a special reserve area in Anasibe and a national park in Mantadia. In 1993, Volunteers in Technical Assistance (VITA) was chosen as the implementing organization. The project is funded by United States Agency for International Development (USAID).

Before the project team undertook any activities, they carried out a participatory appraisal exercise in the 13 villages located in the peripheral zone of the park. From these exercises, a community plan was jointly developed by the villagers and the team members. This plan is now used by the local people to identify and develop appropriate micro-project activity linked to conservation in the protected area. Each Village Development Committee (VDC) submits its proposals for micro-projects to the management of the conservation initiative for approval. Proposals are evaluated in terms of technical validity, public utility and ecological importance. Decisions on allocations are made in consultation with the VDCs.

16h. Government staff trained to undertake PRA for coastal management

Tanzania

The Tanga Coastal Zone Conservation and Development Programme in Tanzania aims to establish integrated management of the region's coastal natural resources. There are 45 villages in the area covered by the programme. Many of the communities along the coastal strip rely on fishing for both subsistence and commercial uses. Mangroves and other wooded areas supply building materials and fuel, and are also cleared for other land uses. Reefs are mined for lime and coral rock. Subsistence agriculture and sisal plantations are important land uses.

An assessment of the possible impact on stakeholders was undertaken as part of preliminary information gathering to establish integrated coastal zone management. To carry out the assessment, 12 government staff from a number of different departments were trained in participatory techniques and data analysis. The information obtained included the following:

- the identity of the stakeholders and their long- and short-term goals;
- resource use patterns and degree of dependency on coastal resources;
- traditional management and tenure systems that could be used to strengthen management;
- relevant knowledge, attitudes and practices of the stakeholders;
- social, economic and cultural factors that could limit or facilitate alternative uses; and
- strategies and indicators for monitoring social and economic changes in the local environment.

To gather this information, the surveyors used formal meetings, semi-structured interviews, transect mapping with villagers, ranking of enterprises and focus group discussions.

Training government staff to do the survey was preferred to using an independent consultant. It took more time but had the advantage of involving government staff with villagers in a positive, interactive way. The information was used to identify the issues to be discussed at a regional workshop.

Abridged from: Shurcliff et al., 1995.

17a. "Pact" defines roles and obligations

Madagascar

For the Ankarafantsika Project (funded and managed by UNESCO) a series of meetings was held among all the stakeholders to discuss their various interests and requirements. The meetings concluded with a pact being signed by the UNESCO project management, the Fokonolona (villagers) and the local forestry agency. The pact clearly defines the roles and obligations of each of the parties in the conservation initiative. The project managers ensure that the necessary technical and financial support is provided. Villagers are to provide the labour and local material requirements, inform the forestry company about forestry offences, and assist the company with controlling the flow of forest products. The forestry company is to provide patrols and enforcement.

17b. From conflict to agreement

Pakistan

In the Pamirs of North Pakistan clashes between local people and government officials emerged following the establishment of the Khunjerab National Park. Initially, the management plan excluded any uses of the park resources besides tourism and wildlife protection. Tremendous local opposition to the park arose when it became apparent that traditional grazing and hunting lands were included within the park boundaries and access to these lands was to be denied to villagers. Compensation for lost grazing rights had been promised but never delivered. Consequently, illegal grazing and poaching in the park became very common; this resulted in a decline of wildlife.

As a result of the escalating conflict, the government recognized it could not impose a "conservation only" park model on the local communities. A negotiator was brought into the area, and eventually an agreement

6.17 Collaborative management agreement

See option 1.4.17, Volume 1

was reached with the villagers, which formed the basis of a new management plan. In the new plan, controlled grazing would be allowed, villagers would be involved in patrolling the park, 80 percent of the new park jobs would go to the local people and, once wildlife stocks increased, the government would consider allowing limited hunting for a fee, with 70 percent of the proceeds going to local people.

Abridged from: Slavin in Kempf, 1993.

17c. Conflict ends in joint agreement

South Africa

In the Richtersveld area of the Republic of South Africa, the government had been under increasing pressure to establish a national park to protect the area's unique mountainous desert region. Negotiations took place involving the various government departments concerned. Just as a contractual agreement for the park's establishment was about to be ratified, the community of Richtersveld applied for an injunction to prevent it. Their action was a response to inadequate communication between park advocates and the affected parties regarding respective goals and interests. Community members wanted more direct involvement in park planning and decision-making; they felt that they had been misrepresented by the Northern Richtersveld Management Board in the governmental negotiations.

Subsequently, another set of negotiations was conducted involving broader public and community interests. These meetings were facilitated by two botanists who were regarded by all parties as impartial. As a result of these negotiations, community interests were integrated into the park protection goals in the form of a Collaborative Management Plan. In the initial government plan, the responsibility for park management would have been designated to the National Parks Board. In the subsequent negotiations, however, a Management Plan Committee was formed, consisting of four parks board members and four elected community representatives. As a result of the negotiations, all parties signed a Richtersveld National Parks contract. This created the park and established the conditions under which it should be managed.

Abridged from Robinson and Fowkes in Lewis, 1995.

17d. Step-by-step agreements to manage conflicting interests

Colombia

The Sierra Nevada de Santa Marta, declared a biosphere reserve by UNESCO, is an isolated mountain range rising from the coast of the Caribbean, with an impressive variety of animal and vegetal species. For centuries, the indigenous inhabitants used resources in ways that were well balanced with the biological capacity for regeneration. These traditional management systems are now in peril, however, because of external pressures, in particular from new migrants who view the Sierra as a refuge and an area where the forest can be clear-cut to obtain land to cultivate. Migrants started using natural resources indiscriminately and introduced a variety of non-endemic species, with consequent ecological disturbances such as soil erosion, changes in the hydrological system, changes in local habitats, etc. The most profitable crops cultivated by the migrants include marijuana and coca, which prompted authorities to spread great quantities of herbicides throughout the area.

Among the most acute social problems is the lack of effective mechanisms to regulate and enforce the management and use of natural resources. Water has been a particularly crucial issue, as the Sierra Nevada's 36 rivers are a water factory for a million and a half people on the mountain and in surrounding areas. Agri-businesses in the plains are also entirely dependent on that water. The stakeholders in the natural resources of the area include four distinct indigenous communities, peasant communities, business people, local municipalities and several armed groups (guerrilla, paramilitary and military). The interests and values of the various parties are in open conflict, and there is a widespread tendency to deal with controversies by violent means.

For a long time, both the environment and people suffered, without much hope of the problems being solved. To redress the situation the Fundacion pro Sierra Nevada de Santa Marta was established. It promoted a strategy for the conservation of local resources that allowed local people to extract lasting benefits from them. The strategy began with an integrated general diagnosis of the problems in the area. It now includes the participatory development of specific agreements through a process of collective analysis and planning. In substance, a collaborative management regime is being developed. The strategy involves strengthening local capacities and awareness via information campaigns, training courses and workshops.

The strategy is coordinated by an executive committee with representation from both governmental and non-governmental bodies. So far, several planning workshops have taken place involving a variety of stakeholders. In the process, valuable limited agreements have been reached, including a national agreement to allow the indigenous communities a corridor of access to the sea, and an agreement to preserve particular areas of forest. Importantly, a great attitudinal change had been achieved, and now people who traditionally have shown reluctance to participate — such as local businessmen and government administrators — have agreed to sit together with representatives of various interests and factions in the local communities and discuss opportunities for sustainable management of the local resources.

17e. Management agreement with bamboo basket-makers

India

During initial meetings to establish a joint management system for the forest area in Godam — which includes large areas of bamboo — it became apparent that there was considerable conflict between the Bhanjda bamboo basket-makers of Godam and the Haryana Forest Department (HFD). The meetings were spread over five days, during which villagers and HFD field staff discussed and analyzed issues with a support team.

The Bhanjdas are landless and are completely dependent on availability of freshly-cut bamboo to make baskets. Most members of the community are illiterate and have no skills other than basket-making, but since there is a good demand for baskets, they did not see any reason for changing their traditional vocation. The HFD was issuing permits to the Bhanjda families to cut a specific amount of bamboo at certain times of the year but the department's field staff felt the basket makers were violating the conditions. The Bhanjdas disputed this.

During the five-day exercise a general pattern developed: the field staff listened silently to the Bhanjdas in the village, but on returning to their office contradicted most of the Bhanjdas' claims. They insisted that the local people were dishonest. It was clear that the day-to-day conflict between HFD staff and the Bhanjdas had created such a strong barrier that the staff could not step outside their traditional roles to look at the situation from the Bhanjdas' point of view. The Hill Resource Management Society support team, which was charged with establishing a joint management process (see also 46b), repeatedly returned to the village to cross-check the claims and counter-claims of both sides with members of the village community. The team insisted that the HFD staff contradict the Bhanjdas' claims in their presence in the village itself instead of coming up with new allegations when they were back in the town.

At the end of the exercise, at a well-attended village meeting, the head HFD field officer himself read out the tentative basis of a Joint Management Agreement between a Management Society of the Bhanjdas and the forest department. The potential agreement immediately created a feeling of optimism among the Bhanjdas and guarded expectation among the HFD staff. The Bhanjda women took an active part in all the discussions and promised to transform the condition of the bamboo forest within three years if HFD honoured its commitments. Seeing the change in the Bhanjdas, the attitudes of the field staff also began to change. Now they are the ones who put pressure on the Hill Resource Management Society support team, hoping to ensure an early follow-up of the commitments made on behalf of the HFD. They have understood that maintaining the changed relationship is dependent on both sides honouring the commitments. The Godam HRMS was formally constituted and registered in early 1990.

Abridged from Sarin, 1993.

17f. Marine park compromise protects local fishing and reserve Madagascar

The Biosphere Reserve of Mananara Nord includes a 1000-hectare marine park around the Antafana Islands. The international reserve rules forbid any fishing and hunting activities within this protected area. Riverside residents, who were fishing in this area for many years before the project arrived, initially persisted, however, in carrying on their usual fishing activities.

After analyzing the situation and holding discussions with the residents, the project offered them the right to fish some species such as lobsters, turtles and holothuria within the protected area, but only on Tuesdays and Fridays. In return, riverside residents agreed to control non-resident fishermen and prevent them from operating within the protected area.

17g. Municipalities in the driver's seat Brazil

An interesting variation on the co-management theme can be found in the partnership between the municipal and federal governments in Brazil's Sao Paulo province. Although most conservation areas in the

country are managed by either federal or provincial governments, in 1991 the Brazilian government approved a new initiative by the provincial government of Sao Paulo to create protected areas in most of its 583 municipalities. The local communities select the areas to be conserved as part of their cultural and natural patrimony and they actively participate in the project from conception to implementation. Each municipality decides how and where to manage its natural areas and there is no single model on how any of them should be structured; each area reflects the needs and aspirations of the local population.

From: Barzetti, 1993.

18a. Board marries conservation ethic with indigenous traditions Australia

The legally recognized owners of much of Kakadu National Park are the local aboriginal people — bearers of one of the longest continuous cultural traditions on earth. Management arrangements for Kakadu attempt to recognize this cultural heritage and successfully marry a conservation ethic with the traditions and aspirations of the region's aboriginal owners. The presence of a residential aboriginal population in the park was one reason for its nomination as a World Heritage Site in 1992.

Farsightedly, the *National Parks and Wildlife Conservation Act 1975*, under which the Kakadu National Park was established, specifically required that parks on aboriginal land establish management boards which include aboriginal representation, and which establish a process for resolving disagreements. This early recognition through legislation of the potential for cooperation with aboriginal people in achieving conservation objectives played an important part in the development of the national park.

The Kakadu Board of Management, established under the *Act*, was created in 1989. Its membership comprises ten aboriginal nominees (selected by the traditional owners), the director and regional representatives of national parks and wildlife, an ecologist and a person with expertise in tourism. The aboriginal members are representative of the people in the region, and of the major language groups.

The first task of the Kakadu board was to devise a new management plan for the park. As part of the process of developing the plan, an aboriginal consultative committee was established, with representatives of all the communities and groups in the park. The task of this committee was to consult and advise on all aspects of the plan. Park staff and the board provided discussion papers and drafts of the plan to the committee, and the board took due notice of the committee's views. The board was both adviser to the drafters and final arbiter of the contents. Its ongoing role is to make decisions consistent with the management plan, monitor park management and advise on future development. The board meets four times a year to fulfil this responsibility.

While the board provides the formal and ongoing expression of co-management, the backbone of the success of the process is embedded in the opportunities provided for directly involving aboriginal people in

6.18 Collaborative management institutions

See option 1.4.18, Volume 1

day-to-day decision-making and liaison in informal ways. These include local meetings; the employment of aboriginal cultural advisors; working contact with the traditional owners; and the employment of increasing numbers of young aboriginal people in all areas of park management.

Abridged from Hill and Press in Western et al., 1994.

18b. Representation and control create sense of ownership Zimbabwe

The Nyaminyami District Council of the Zambezi Valley, Zimbabwe, created the Nyaminyami Wildlife Management Trust (NWMT) to manage its wildlife resources under the CAMPFIRE Programme. With representatives from government, the safari industry, the tourism industry, the academic community and NGOs, the NWMT was intended to represent all groups with an interest in the management of local wildlife resources.

The NWMT was set up as a sub-committee of the District Council with its own constitution. The NWMT set up a Board of Management comprising the representatives of all the interest groups detailed above. The board is responsible for developing and implementing the CAMPFIRE Programme in Nyaminyami. The board holds regular meetings to make specific decisions. These are forwarded to the District Council which, as the body officially in charge, ratifies and implements them.

One of the positive effects brought by the board has been the development of a very transparent conservation initiative. In addition, all the represented stakeholders developed a sense of proprietorship over the programme. Although the programme experienced some serious problems, the board proved to be capable of handling these problems in a very satisfactory manner.

18c. Fraser River Management Board links decision-makers Canada

The Fraser River Action Plan (FRAP) is jointly run and funded by two government agencies: Environment Canada and Fisheries and Oceans. A key vehicle for linking the people who live, work and play around the basin into the action plan is its Management Board, which is a formal partnership arrangement among the federal, provincial, and local governments. First Nation and community stakeholder representatives are also members of the Board.

The plan's links with various levels of government have been found to be useful and educational both for the departments and the initiative. The understanding and acceptance of socio-economic links to the environment are weak in a number of federal departments and the action plan has been influencing them to change the way they will act in the future. Environment Canada's understanding of other government department programmes, perspectives and priorities has also been found lacking and will likely improve.

From: Environment Canada, 1995.

18d. Parochialism hinders agreement

Senegal

The Management Committee of the Djoudi National Park is comprised of the park manager, the director of the Djoudi Biological Station, three representatives from each village in the park periphery (the chief, a women's representative and a youth group representative), a delegate from the rural council, an agent of the forest department, a member of the association of hotel owners of St. Louis (who use the Djoudi waterways), and the manager of the hotel in Djoudi. This is a new institution and the first meeting has shown that decision-making will be a slow process. Members could not come to an agreement on the choice of an entrepreneur to build a village craft shop at the entrance to the park; each village wanted their own entrepreneur to be selected.

18e. Decision-making, policing of rules and community development managed at village level

Nepal

In the Annapurna Conservation Area Project (ACAP), Conservation and Development Committees (CDCs) are the main institutions responsible for policy and programme formulation related to resource use and conservation. All major decisions on resource utilization in the area are made by the CDCs in consultation with local community members. The responsibilities given to the CDCs include the collection of royalties for harvesting timber or bamboo. They are also responsible for planning, deciding on, executing and managing community development programmes such as drinking water facilities, trail and bridge repair, construction and renovation of schools, establishment and management of health posts, etc.

CDCs are formed at the Village Development Committee (VDC) level, which is a local electoral area. There is one CDC for each VDC and a total of 15 members in each CDC. Of the 15, 11 are democratically elected by the local people. There are three members nominated by the ACAP as follows: one woman, one from a socially disadvantaged group and one active social worker. The chair of the VDC also automatically becomes a member of the CDC.

CDCs meet every month and members discuss and decide matters relating to forest use and conservation, such as setting quotas for timber and fuelwood for each household, opening and closing forest areas for fuelwood collection, deciding on plantation sites, management of natural forest areas, control of hunting and poaching, control of collection of non-timber forest products (such as medicinal plants, bamboo, etc.) and other community programmes.

In all the areas where they have been formed, CDCs have been key in policing the ban on hunting, patrolling forests for illegal felling and poaching, and enforcing a no-fuelwood policy. One of the project's CDCs has been awarded the prestigious J. Paul Getty Award.

18f. The Manu Management Style

Peru

Indigenous peoples, together with other local communities in the area, have designed their own management style for Manu National Park in Peru. They formed a support committee composed of 44 representatives of native peoples, NGOs, government institutions and park authorities. This committee is the administrative authority for the park and will eventually make the final decisions concerning education, science and development activities, including native people's use of park resources.

From: Barzetti, 1993.

6.19 Devolving the initiative to local institutions

See option 1.4.19, Volume 1

19a. Steps toward devolution of forest resources

Cameroon

The contiguous Kilum and Ijim Mountain forests constitute a significant portion of the last remnants of the Cameroon mountain forest. The flora and fauna are unique. Over 200,000 people depend on the Kilum/Ijim forests for a wide variety of products, including firewood, building and craft materials, honey, medicinal plants, carving wood, pasture, wild vegetables and bushmeat. The forests play a crucial role in regulating water supplies. Along with adjoining Lake Oku, they also hold great cultural significance for the local people.

Cameroon has recently adopted new forestry legislation which provides for community management of forest resources. The Kilum area presented a promising test case, with a community already practising forest use under an indigenous management system, and existing international projects (managed by Birdlife International) that could support the full devolution of power and responsibility to local people. In preparation for a formal designation of the forest as a "Community Forest" under the management of various user groups, the following procedures were undertaken:

- analysis of the composition of relevant user groups;
- analysis of the traditional rules and systems of management;
- definition of the boundaries for various forest user groups;
- development of a procedure to negotiate a management plan for the user groups and implement it; and
- development of monitoring systems covering the welfare of both the forest ecosystem and the user groups.

19b. Wildlife management delegated to district councils

Zimbabwe

Zimbabwe's *Parks and Wildlife Act* maintains the status of wildlife populations as state property but permits landowners to make use of wildlife within the constraints of sound conservation practices. In this context, landowners are named an "appropriate authority" for wildlife management. A clause of the *Act* also empowers the Ministry of Natural Resources to give appropriate authority status to those district councils which can demonstrate their ability to manage and conserve wildlife for the benefit of local communities. Such councils can make their own arrangements for the sustainable use of wildlife (e.g., they can lease hunting concessions, enter into commercial joint ventures, etc.) and can receive and distribute any proceeds without channelling them through the national treasury. The *Act* falls short of attributing appropriate

authority status to less senior administrative units (wards or villages) but clears the way for communities to begin exercising some control over the benefits generated from wildlife. By 1990, there were 1.5 million people benefiting from the devolution of authority for the management of wildlife in their districts.

19c. Villagers become forest managers

Tanzania

In East Africa and most other parts of the continent, the protection and conservation of forests has been — in theory — the exclusive preserve of governments and local authorities. In practice this approach has proved impossible to implement. That is because of conflicts with the local communities, who have traditionally exploited the very forest resources which governments seek to protect. Tanzania is now trying out a new approach whereby local communities are given full responsibility for management and ownership of the forests. This is the first time in Africa that local communities are formally recognized by a state as guardians of their indigenous forests. As well as giving full authority over resources, the programme enables local communities to reap the benefits of conservation. District forest wardens, with the support of the Tanzanian director of forestry, offer villagers the chance to completely own the portion of forest that falls within their administrative boundaries. This is conditional on the locals stopping encroachment on the forest, undertaking restoration work to bring the forest to its former condition, and regulating the use of resources to sustainable levels.

Three villages in the Babati district are participating in this initiative. So fast was their response that, within a few weeks of the offer, the villages had demarcated their Village Forest Reserves (VFRs) in the Duru-Haitemba Forest. Planning for the rules and management of the reserves took place at the village and sub-village levels. Extension workers and village leaders met with villagers. Informal 'task forces' — with village contact persons, temporary sub-village committees and other informal groups such as women's groups — were formed for the planning process.

Reports from Tanzania say that in the VFRs forest clearing for cultivation, charcoal-burning, felling and bark stripping has stopped. Grazing of livestock has been limited to certain designated areas and times. The forests are patrolled throughout the day with such success that official patrols are no longer necessary.

The local district council of Babati, together with the villagers, has drafted legislation in the form of a village bylaw to secure the new land use. It was expected that the entire 90-square-km stretch of the Duru-Haitemba Forest would be completely under the conservation management of local communities by the end of 1995. Other regions are seeking to follow suit.

From: Wily, 1995.

19d. Partial devolution is unclear incentive

Nepal

Community forestry in Nepal is implemented by the Department of Forests. As part of the process, users have been helped in preparing working plans to manage their forest and have been encouraged to form

registered and constitution-bound entities known as Forest User Groups (FUGs) to legally assume the rights and responsibilities of forest management. Despite occasional and inaccurate perceptions that the FUGs 'own' the forests, both the governing Department of Forests and the forest users themselves are abundantly clear that what they receive through the process is the "right to manage and use to their own benefit" the forests and their products. While there is no evidence that the department would reclaim the forests, many FUGs fear that, in the words of a spokesman for 33 of the groups: "If we do well and make a good forest again, government may take it away, and if we do badly and ruin our forest, government may also take it away". One field worker in the Nepal-UK Community Forestry Project said: "People in forest user groups tell me that they don't know why government is getting them to do its job of management for it. They say if the government gave them back the forest properly it would be better".

Many abhor the idea that community forests would be excluded from the category of national forest or that the state would surrender its ownership, supervision and control over community forests. 'Letting go' is difficult for governments at the best of times; more so for foresters who have traditionally considered the local forest-users as a problem rather than as a solution.

Abridged from Wily, 1994.

6.20 Participatory monitoring and evaluation of conservation initiatives

See option 1.4.20, Volume 1

20a. Villagers assist in identifying staff training needs Tanzania

The Tanga Coastal Zone Integrated Management Programme decided to address the training need for field workers by facilitating the villagers' active participation. The services of extension officers from various government departments, including Fisheries, Community Development, Forestry and Agriculture, were co-opted for the programme. Each district has a number of these officers stationed at various villages. To use them successfully it was recognized that they needed to be reoriented from their current duties and retrained. A training needs assessment was prepared by an expert team from the Department of Community Development. The assessment was completed by asking both villagers and government staff what the role of extension workers should be, and how effective they considered the present staff to be in fulfilling this role.

The team found that extension staff generally do not understand coastal fishing communities or hold them in high regard. They tend to be paternalistic when dealing with villagers. Often villagers are not even aware that there is an extension officer in their village. The extension staff generally receive little support or supervision in their work stations. Their role is not well defined and it is therefore difficult to carry out their work programmes.

The training programme now in place for the extension officers working in the Tanga Coastal Programme is designed to overcome some of these problems. Its overall aim is to have a set of extension officers who, through participatory processes, can assist local user groups to identify their own resource issues, formulate action plans and obtain input and technical advice from various sources, as needed.

From: Shurcliff et al., 1995.

20b. Lack of follow-up undermines community support

Pakistan

In 1993, in a village near Peshawar, a participatory evaluation exercise was conducted in connection with the Kabul River clean-up proposal. The proposal was carried out under the framework of the Sarhad Provincial Conservation Strategy. There has been no follow-up to the findings and recommendations made at the meeting. The village people are unlikely to participate in another planning process that is unconnected to any practical action or follow-up.

20c. University provides expertise for participatory evaluation

Zimbabwe

The Centre for Applied Social Sciences (CASS) is a member of the CAMPFIRE Collaborative Group (CCG). CCG is a national group of the stakeholders in the CAMPFIRE Programme that was set up to direct and review implementation of the programme at all levels. The specific mandate of CASS is to carry out applied monitoring and evaluation research of the CAMPFIRE Programme. To achieve this, CASS secured funding to employ researchers for specific aspects of the programme. The evaluation research has been invaluable in the development of the programme. In particular, CASS has contributed to developing appropriate local institutions for the management of wildlife resources, and a policy framework for the devolution of authority over wildlife to local communities. They also helped to establish a forum for debate among stakeholders in the programme, and to disseminate relevant information on the programme to interested parties. CASS research is participatory, involving local communities and other stakeholders in identifying issues to be probed, and in designing the study and the actual process itself.

21a. A multi-use forest

Bolivia

In Chorojo (Cochabamba, Bolivia), the indigenous community owns a forest of *Polylepis* trees, locally named *quenua*. Food is grown in the forest, and animals graze there. Without specific management rules, the combination of these activities could easily destroy the forest. Yet the forest is in a reasonable condition due to the traditional management practices adopted by the local people. Agricultural plots are small and located in the spaces between the trees, so they co-exist in a sylvic-agricultural arrangement. Grazing is allowed only during certain periods of the year, especially after harvesting, when animals can eat stubble and grass growing near the trees. In addition, community authorities enforce clear rules on the cutting of trees: only people who are going to marry are allowed to cut trees, which are considered excellent for making charcoal and *chicha* (a maize-based beverage). These practices and rules need to be understood and incorporated into any local conservation initiative.

6.21 Review of indigenous/ customary systems of resource management

See option 2.4.1, Volume 1

21b. Maintaining ecological balance in land-use The Philippines

In a study of indigenous cooperative mechanisms and traditional land-use practices among several communities in the Philippines, the International Labour Office (ILO) found that the land-use management adopted by the Ifugaos (the indigenous people of the cordillera) has greatly helped maintain the ecological balance of their overall farming system. Sites for rain-fed agriculture (*uma*) are carefully selected to minimise the risk of erosion. Cropping for two to four years is followed by a fallow system of five to six years, when soil fertility is restored.

The community uses wood lots of second growth forest (*muyung*) to arrest soil erosion and preserve a sustainable supply of irrigation water to the adjoining fields (*payoh*). Coffee is planted in the *muyung* as an additional source of income. Fallen coffee leaves decay and help enrich soil fertility. During timber harvesting, the Ifugaos leave the smaller trees and seedlings for future tree crops. A variety of tree species is planted to enrich the system and to provide wood fuel and timber for house construction. Each tree that is felled is replaced by planting two or more trees. The planting of supplementary tree species is proof of the Ifugaos's desire to keep their forests and farming system sustainable and foster biodiversity.

Tribal laws protect the natural resources. Penalties against *muyung* violators are decided by a council of elders. The use of the forest is limited to the members of the community. The value of the forest is ingrained in the minds of the Ifugaos; hence they take from it no more than they need.

The Ifugaos system is an excellent example of communal management of land and resources. No local conservation initiative could afford to ignore it. Yet, many of its features are not at all apparent to the unaware observer.

Abridged from: ILO, 1995a.

21c. Protecting the ancestors' clothes Madagascar

During a study of the slash-and-burn rice cultivation known as *tavy* on the eastern coast of Madagascar, a particular traditional practice among the Betsimisaraka peasants was observed. Every household owned a plot that they farmed according to family needs. But there was also a large community area, access to which was decided by the customary chief (*Tangalamena*). This area is called *sembotrano*, which means "ancestor's clothes". The Betsimisaraka peasants believe that land represents their ancestors and that vegetation is their clothes. Clearing forest in the *sembotrano* area therefore means undressing the ancestors. This is why *tavy* in this area is practised only by permission of the chief.

When the community decides, by examining some fertility indicator plants, that *tavy* is practicable, the chief initiates a ritual to implore the ancestors' favour and blessing. A zebu is then killed and the chief declares that *tavy* can proceed for that season. The chief allocates portions of the land to every household for them to work during that season. After the harvest, another ritual ceremony is necessary to

thank the ancestors. The land is subsequently closed to further use for six to ten years, depending on soil fertility. Anyone who infringes this rule is sanctioned by the entire community and must kill a zebu to be forgiven.

22a. Mapping the watershed Madagascar

The IMAMBA-IVAKAKA Project was initiated in 1990 as a pilot project to provide technical and methodological information for the protection of the agricultural area of Alaotra, the rice granary of Madagascar. To facilitate the Rural Spaces Management Programme, the project divided the area into basic units called Bassin Versant Elementaire (BVE). Each BVE includes low ground and hillside areas and comprises about 100 hectares.

A meeting at project headquarters to clarify land ownership boundaries brought together all the households that claimed possession over rice paddies within each BVE. A map of the general area, drawn from aerial photos, was shown to the farmers. All the farmers identified their own plots on this map. They then went to the fields together to confirm the boundaries they had drawn on the map. Once conflicts were sorted out, the boundaries were fixed and a common basic map was drawn up. The project prepared a fair copy of the map, to be kept by a representative of the farmer's group.

Today the map is used and updated whenever required. It has been used, for example, in processing land registration and in establishing the area of the project's management plan.

22b. Participatory mapping identifies ownership and resources Bulgaria

As part of a participatory rural appraisal (PRA) exercise undertaken by WWF and the Bulgarian Society for the Conservation of the Rhodopi Mountains, a participatory mapping exercise was undertaken with the people in the village of Ostritza. People were asked to identify their land ownership and resource claims. The common areas identified as being used by the community included forests, water sources, pasture land (some three to four km from the village), and sources of fuel, edible mushrooms and strawberries.

People drew a map showing natural resources, roads, other important landmarks, a natural water source and village boundaries. The project team was careful not to ask leading questions and let the people drawing the map indicate the natural resources in a descriptive, open-ended manner. The people identified forest lands, pasture lands and home gardens in the village and on the slopes near the pasture, as well as areas where the forest had been degraded and denuded. The map can now be used as a basis for problem analysis and resource monitoring in the village.

Abridged from: Bodurov et al., 1995.

6.22 Participatory review of customary claims to land and natural resources

See option 2.4.2, Volume 1

22c. Seeing the whole using aerial photos

Australia

The Landcare group in Kalannie, west Australia, began their planning by doing a reconnaissance survey of their district and buying aerial photographs (at a scale of 1:25,000); 98 percent of the local landowners bought their own aerial photograph. Details of the natural landscape, agricultural systems, land units and existing and potential land management problems were mapped and prioritized for planning. Sites were identified and representative soil cores were sampled to provide detailed descriptions of soils. After these surveys, three workshops were held covering:

- identification of land units, their ownership status and their significance in the landscape;
- mapping land management hazards; and
- developing sustainable agricultural systems for each property and catchment.

The workshops were organized so people didn't feel pressured but instead used the time to get to know each other better and gain a broad overview of the group area. The aerial photos were joined together to form a complete picture. Then people had to prioritize their concerns and sort out what could be done to improve the situation. As a result of the workshops, farmers — particularly the younger ones — are now more interested in the causes and cures of land degradation.

Abridged from Campbell and Siepen, 1994.

6.23 Review of national policies and laws affecting resource management

See option 2.4.3, Volume 1

23a. Give participation a chance!

India

An exercise is currently underway in India to review the various policies and laws relating to conservation and local people. In 1988, a new National Forest Policy advocated that, since forest-dwellers are dependent on forests for their livelihood:

- their rights and concessions should be fully protected;
- their domestic requirements of fuelwood, fodder, minor forest products and construction timber should be given first priority; and
- all agencies responsible for forest management should assist these people to protect, regenerate, and develop the forests.

Some of these directions were repeated in the National Conservation Strategy of the National Forest Policy (1988) and in the Policy Statement on Environment and Development (1992).

As part of the review it has become apparent that the acts governing natural resources, including the *Forest Act* of 1927 and the *Wildlife (Protection) Act* of 1972, have very little scope for people's participation in forest management; they primarily contain measures to regulate and restrict people's access to resources. This anomaly is being pointed out by many tribal movements and NGOs, and conservationists are arguing for greater sensitivity to local needs and for greater participation of local people in conservation initiatives. Proposals towards joint management of protected areas are finding increasing support within the country.

23b. Administrative procedures hinder conservation

Ethiopia

In 1991 the final report on the research-action phase of the ILO project concerned with women fuelwood carriers in Addis Ababa illustrated the impact that administrative procedures can have on conservation. A programme to restore and develop the forest resources around the city is being undermined by hundreds of women who are forced by economic circumstances to risk beatings and theft from the forest guards in order to chop wood from the trees for sale in the city. The project, meant to help develop alternative sources of income, found that the ability to help the women and thereby safeguard the forests was severely hampered by the city's legislative and administrative practices. Project staff found that even though legislation in Ethiopia gives full rights to any citizen to acquire land, the bureaucratic red tape involved is beyond the capacity of groups such as the Women Fuelwood Carriers (WFCs).

Acquiring land for future WFC activity was essential for the development of small-scale industries and businesses, and so, on behalf of the women, project staff applied to the government for land. After exhaustive justifications were presented and an initial positive response obtained, the actual procedure of acquiring the land was found to be "an endless and frustrating task". Over several months, project staff and women's group members spent days attempting to legally acquire the land. One year later, the project had not managed to obtain any of the required lots. The project team reported an urgent need to streamline procedures and to make them more transparent. They felt that delays and uncertainty caused by the existing administrative practices were the single biggest obstacle to a larger-scale shift of women from fuelwood carrying to other income-generating activities. Since 1994, the project has been able to establish much closer liaison with the government authorities; this has greatly facilitated the acquisition of land.

From: Haile, 1995.

23c. Sustainable use requires judicial recognition for communities

Niger

The ron-palm forests of Dallol Mauri represent the largest stand of this very valuable palm species remaining in Niger. There are 58 rural communities within or adjacent to the forests, the total population of which is about 42,000 people. Various groups make extensive use of the palm for different purposes, including animal fodder, drink, fuel, building materials and fishing utensils. Human pressure on the extraction and use of the palm resource is high and poses a serious risk to the sustainability of the stand. There is also considerable potential for local conflicts over the various uses for the palm.

Since 1979, the government of Niger has paid a great deal of attention to the conservation of the Dallol Mauri palm forests. With the support of Swiss bilateral aid, a land-use plan was developed and implemented from 1981 to 1991. The final assessment of the programme concluded that the technical conditions necessary for the conservation of the forest had been clearly identified and several stands of palms had been successfully reconstituted. The local communities had so far a very limited involvement in the programme, however, despite the ron-palm's crucial importance to their economy.

The current challenge — of which the governmental services for rural development, the district civil administration, the villages and chiefs, the Swiss aid agency and international support agencies such as IUCN are all aware — is to achieve a regime of sustainable extraction of various palm products through a clear and fair distribution of rights, priorities of access and responsibilities. This can be arranged by a variety of interventions, including planting stands on degraded areas and introducing new cultivars, but most of all by appropriate regulations within the scope of the national legislation, the Code Rural.

In this sense, it becomes problematic that community organizations (or even communities and villages) are not recognized by the code as legal entities. It is therefore difficult to involve them substantively in legal agreements on a sustainable use of the resources. This legislative vacuum in the regulation of access and use of resources between individual property and district administration has been identified as one of the first areas to tackle. Currently the code is being reviewed and proposals for its amendment are being made to the appropriate authorities.

Abridged from: IUCN Social Policy Group, 1995.

23d. Conservation legislation accommodates traditional practices New Zealand

Half of New Zealand's remaining privately-held original forests are owned by the Maori, the country's indigenous people. Yet, until recently, none of the existing ownership laws accommodated Maori cultural practices, such as multiple land ownership, nor did they fully provide for the retention of tribal ownership and control (*tino rangatiratanga*). For many Maori, anxious to retain ownership over all remaining tribal land, the maintenance of *tino rangatiratanga* is an essential prerequisite to protecting natural resources.

Special legislation has recently been introduced to enable the Maori people to obtain conservation covenants for lands in multiple ownership without compromising Maori ownership and control. The scheme is known as *Nga Whenua Ranui*. Under this scheme the *tino rangatiratanga* of the owners is fully recognized and respected, as are traditional Maori uses of the forest. For example, covenants can provide for timber extraction for traditional purposes (such as wood carving and the construction of traditional buildings), for the gathering of medicinal plants and weaving materials and even for the hunting of certain animal species. The covenants can be made subject to renewal after a certain period (e.g., 25 years) so that tribes do not have to commit their descendents to binding land-use decisions and risk alienating subsequent generations from their land.

The *Nga Whenua Ranui* scheme also provides for landowners to set up income-generating activities that will give them the economic independence to protect their forests from logging. Such activities include low-impact tourism, including guided walks through the forests and boat trips along the rivers.

A fund provides financial assistance to land-owners for land taxes, fencing and pest control; it also provides advice regarding protection mechanisms and future management. Applications for forest protection

under the scheme and for the necessary financial assistance are assessed by a committee comprising four Maori and one *Pakeha* (non-Maori New Zealander), who is included for her ecological skills. The committee takes into consideration spiritual, cultural and ecological values when assessing the applications and then passes its recommendations to the Minister of Conservation for approval.

Abridged from Gould and Lees in Kempf, 1993.

24a. Assess before banning!

India

At the Keoladeo Ghana (Bharatpur) National Park in western India — a semi-artificial wetland famous for its bird diversity — grazing by buffalo was abruptly stopped in 1982, based on the unsubstantiated perception that it was causing damage to the birds. Local graziers, unable to find adequate fodder outside the park, tried to force their way in, prompting a showdown with police in which seven villagers were killed.

A detailed ecological study later showed that the grazing actually helped to maintain the wetland character of the area, and that in the years following the ban on grazing, the habitat was changing into grassland. Such an assessment prior to the declaration of the area as a national park would have helped to avoid the conflict altogether.

Research is underway in the Biligiri Rangaswamy Temple Sanctuary in the southern hills of Karnataka to assess the ecological impacts of non-timber forest product collection by the Soliga people. Preliminary results suggest that there is little irreversible damage to biodiversity, that some of the traditional activities can be integrated with the conservation objectives of the area, and that the local people not only do not need to be moved out of the sanctuary, but can become an important part of its management.

24b. Trees, cattle and fines

Tanzania

In Babati, planting trees has become a way to assert and guard private tenure rights. Planted trees can be assigned a value as perennial crops which make them instrumental in defining compensation when land is reallocated or traded. Tree ownership is used as a substitute for land ownership, which Tanzanian law prohibits in accordance with the indigenous Babati culture. If farmers plant trees on a field they can regard the land as their property provided they can prove that the trees are theirs. If the trees are destroyed the farmers are entitled to compensation. If the government expropriates the land, it must pay compensation for the trees.

In the village of Mamire, stream bank erosion in the settlement area and gully erosion on the hill above are causing both farm and grazing lands to be lost. The Forest, Trees and People Project was engaged in land-use planning by bringing up land-use issues in village meetings and by offering support to local attempts to improve land-use and erosion control. Village leaders and council members, FTP staff, local government planners, and forestry and agricultural officers participated in a series of meetings and site visits. FTP proposed that grazing

6.24 Assessment of local uses of natural resources

See option 2.4.4, Volume 1

be prohibited, leaving the areas to recover by natural regeneration. The villagers simply suggested that trees be planted there. About 50 ha were set aside as a rehabilitation area; this included a gully area and an adjacent area of forest with overgrazed undergrowth. Trees were planted in the non-forested area, and in those places natural regeneration of grass and indigenous trees and shrubs resulted in rapid recovery. However, cattle were not successfully kept off the areas where there was no reforestation. The cattle continued to graze and the land degradation continued. The village government had correctly predicted that only an area planted with trees would be respected as "no-grazing". In fact, cattle can damage trees and the herders can be fined for the destruction. No trees means no risk of fines! Being aware of use patterns and implicit rules such as these is a great asset for a conservation initiative.

Abridged from: Johansson and Westman, 1992.

24c. Living in harmony with a World Heritage Site Thailand

One of the few remaining refuges where the forest-dwelling Karen people have been able to maintain their traditional lifestyle is inside the Thung Yai Naresuan Sanctuary in Thailand. Within the sanctuary there are six villages, which are home to a population of 1,100 Karen people. Government officials from the Royal Forest Department, along with some conservationists and academics, have been in favour of removal of the villages to preserve the forest ecosystem. The relationship between the Karen people and most outsiders has been marked by mutual mistrust and misunderstanding. The debate for the resettlement of the Karen intensified when Thung Yai was declared a World Heritage Site.

Studies were undertaken to document and better understand the impacts of the Karen's cultural and subsistence practices on their environment. It was found that the Karen people have a resource management system which ensures that cultivation practices do not deplete the soils. The documentation of such environmentally sound practices counteracted the Thai government's perception that the Karen are destructive slash-and-burn agriculturalists. As a result of these findings, the Karen people have been allowed to remain in Thung Yai (for an update, see example 55b).

Abridged from: Hulse and Thongmak in Kemf, 1993.

24d. Comprehensive survey of local uses: past, present and future Tanzania

The Tanga Coastal Zone Conservation and Development Programme, being implemented by the Tanga Regional Council with assistance from IUCN, aims to establish integrated management of the region's coastal natural resources. As part of the planning phase, a comprehensive resource-use survey was undertaken using a variety of methods including semi-structured and focus-group interviews, mapping and transect exercises. From these processes, data was collected on past and current use patterns, the resources being used, their location and the quantities being collected.

Transect diagrams undertaken with community representatives identified the location of natural resources, and places where people farmed and carried out other resource-use activities. Fishermen participated in the mapping of their fishing areas, noting those areas that were good for finding particular kinds of fish. Interviews provided supplementary information on resource uses, such as where the women collected firewood and water.

Focus-groups of elderly people and fishermen discussed the traditional tenure and management systems that once operated in the area, changes in access to different resources, and the factors contributing to the breakdown of traditional systems. Focus-groups of major users of resource (fisheries, mangroves and forests) discussed current knowledge, attitudes and practices, their perception of the sustainability of the present use of resources and the impacts of different enterprises on the environment.

Representatives of different stakeholders were selected for semi-structured interviews which covered, among other matters, methods of resource harvesting, rates of consumption and waste disposal, perceived impacts on the environment, conflicts and cooperation with other resource users and potential for further expansion of resource exploitation.

As part of the assessment, key informants identified ways by which villagers could monitor changes and progress towards a more sustainable use of resources, both in the short and long term.

Abridged from: Shurcliff et al., 1995.

24e. A community game to identify forest resources Papua New Guinea (PNG)

The "Non-Timber Forest Product Game" was developed by WWF's South Pacific Programme as a method of undertaking a rapid inventory of forest plants and uses. In one village alone on the north coast of PNG, 76 plants with over 114 uses were identified in the space of two hours using the game. Groups of ten or more villagers are formed, including a mix of knowledgeable adults and children. The groups are asked to walk into an area of forest and find as many useful plants as possible. They are also asked to break off a number of leaves as well as fruit and flowers, if these are available, to assist in identification. When the players return, each person lays their plants individually on a cleared area of ground. Duplicates are placed on top of each other. The person with the most plants is judged the winner. The group then works through the line of plants calling out the names and the uses or other desired characteristics and these are recorded.

In PNG this game has been employed for a number of purposes, in addition to compiling an inventory of plants and uses. Communities have adopted it to remind their children of the many uses of the forest. It has also provided a means to work with outsiders in identifying possible forest products for cash generation.

24f. Bamboo harvesting in a national reserve Uganda

The Mount Elgon Conservation and Development Project is being implemented in Mount Elgon National Forest Park by Uganda's Department of Environmental Protection, with assistance from IUCN. The project was initiated in 1987 with the aims of ensuring biodiversity conservation and safeguarding the water sources associated with the forest, while meeting the needs of the surrounding communities. In the first years, the natural resources took precedence, as the project sought to regain control over the reserve which had suffered from high levels of agricultural encroachment. The area was heavily patrolled and those visiting the forest were subjected to harassment (sometimes violent) from the forest guards. Recently, however, there has been recognition from all involved parties that the original strategy was ineffective. In the future the project will focus on addressing the issues of sustainable use and management of the resources.

Although it was appreciated that bamboo (which is located within the reserve) is one of the most important resources to the communities neighbouring the park, virtually no information was available regarding the extent and impacts of its utilization. An extensive study on bamboo utilization was therefore commissioned as the first component of a local resource use assessment. Participatory studies in several villages were conducted over a period of three months in 1993. The study clearly showed that bamboo is probably the most important resource to the people neighbouring the forest. The most common uses are consumption (shoots) and house and granary construction, basketry and crop-staking (stems). It was also found that bamboo shoots are a most appreciated traditional dish, essential for circumcision ceremonies and weddings.

The study made clear that, with the exception of a few plots which had been particularly heavily harvested, the areas from which bamboo was collected (approximately half of the total bamboo area) were well within the sustainable yield estimates and were more than able to supply the adjacent communities with their bamboo needs. In fact, the results suggested that the current levels of harvesting may be beneficial to the bamboo groves.

The study also found that both the degree and the nature of utilization varied considerably between villages. In light of this fact, it recommended that a high degree of flexibility should be built into the management plan and that strategies be included in the plan to avoid localized over-exploitation.

Abridged from Scott, 1994.

25a. SIA highlights need for a comprehensive solution Ethiopia

The city of Addis Ababa requires large amounts of fuelwood to satisfy its energy needs. The World Bank and the Africa Development Fund, among others, are funding large tree-planting projects to address the shortage of wood. In doing so, they have directly and indirectly affected the lives of the population located in the project areas. Farmers were relocated and a significant number of women and their families, who depended on carrying fuelwood to the city, were left without any alternative plans for their livelihood. Women and children backloading branch-wood into town supply about one-third of the city's requirements. In spite of the extremely arduous work, they have very low incomes and belong to the most disadvantaged section of society. For want of alternative livelihoods, the women contribute to the depletion of the peri-urban forests of Addis Ababa. Guarding and harassment have been ineffective in dissuading the women from pursuing their illegal activity.

As part of trying to find a solution that would protect the forests while addressing the needs of the women, a social impact assessment of the fuelwood supply system to Addis Ababa was undertaken by the International Labour Organization (ILO) in collaboration with the National Urban Planning Institute. The study was undertaken using action research methodologies (i.e., the women themselves participated in the gathering and analysis of the information) in addition to social science research methodology. Primary and secondary data were collected using structured and non-structured questionnaires, observations, person-to-person interactions, formal and informal interviews, role-play skits, group discussions, puzzle assembling, archive research, photo and tape recordings. The questionnaires for collecting data on time budget and household expenditure were completed by the women participants and/or their children. To do this the women were trained on how to keep records of their time-use and household expenditure. When the mothers were illiterate, their children helped to complete the records. Other questionnaires were filled out by the project staff. The resulting data was processed both manually and using the computer facilities of the National Urban Planning Institute.

The study covered four main stages: selecting research sites; selecting a sample of the fuelwood-gathering women to participate in the study; training local women to assist with gathering information and facilitating group discussions; and identifying, defining, and analyzing problems and mitigation methods. The group spent 12 months working through these steps with the bulk of the time being spent on the fourth stage.

The study results made clear that the women were conscious of the present overuse of the resource as well as the need for forest conservation but they continued to extract fuelwood as the only means they had to feed their families. Two-thirds of the women were found to depend entirely on fuelwood-carrying for their livelihood. Migration contributed substantially to filling the ranks of the fuelwood carriers — usually triggered by war, famine or just a search for a better life.

The SIA found that the majority of the women had previously supported themselves by doing handicrafts and small retail trading, so

6.25 Social impact assessment (SIA)

See option 2.4.5, Volume 1

they did have skills on which to establish another source of income. Most had given up these activities because of a lack of raw material or high prices. This information helped in identifying strategies required to establish alternative income sources. A major outcome of the SIA was the evidence that providing alternative employment was not sufficient, that some lasting solution on the forestry side was also required. Unless the carriers were integrated into forestry management and harvesting in an orderly and legal fashion, forest degradation would continue because new carriers would take the place of those transferred to other jobs.

Mitigation measures proposed by the women fuelwood carriers all aimed at finding an alternative occupation. As a follow-up to the SIA, project staff assisted in examining the viability of the proposals, and in training and in obtaining equipment and acquiring land. They also undertook negotiations with the World Bank, the Africa Development Fund and others for accommodating employment for the women into the forest management and harvesting regimes.

From: Haile, 1995.

25b. PRA tools to assess social impacts

Nepal

For the Annapurna Conservation Area Project (ACAP), a social impact assessment was undertaken in four districts into which the project intended to expand. Ten staff undertook the work using participatory rural appraisal (PEA) techniques. Data was collected on socio-economic status, women's role in development, community development needs, and forestry and traditional agricultural practices. The data was then analyzed to assess the impacts — both positive and negative — that the project would likely have on the various groups and practices.

From: Lama and Lipp, 1994.

25c. The World Bank recognizes the value of social analysis

In 1994, to support the incorporation of systematic participation and social analysis (SA) into its operational work, the World Bank introduced SA guidelines, recruited technical specialists and created specialized systems and structures in each of its four regional technical departments. The Bank also undertook a review of the outcomes of SAs being undertaken as part of Bank-funded projects. The review found, among other things, that SAs were being used to establish participatory approaches and that their findings were incorporated into project design and used to help reach the poor and to support monitoring and evaluation. SAs were also found to build local capacity, with local institutions participating in information collection and analysis.

The review also found that SAs were not being done as soon as they could have been. Few were undertaken prior to the Initial Executive Project Summary (IEPS). Task managers reported that it was vital to have SA activities underway at the pre-IEPS stage in order to influence project design. Early results can help resolve conflict, identify needs for capacity-building, and illuminate social issues that need to be addressed in project preparation. It was also found that systematic dissemination of SA findings required more attention. Many task manag-

ers recognized that findings should be discussed with the people affected to ensure that conclusions and recommendations are appropriate. SA designers generally allotted too much time to data collection and too little time to analysis of findings and stakeholders discussions of the results and their implications. The importance of early planning of dissemination strategies was highlighted.

From: McPhail and Jacobs, 1995.

26a. Government and communities plan together Uganda

The Mgahinga Gorilla National Park (MGNP) in southwest Uganda, borders Rwanda and Zaire and covers about 33 square km. It is the home of the Mountain gorilla, one of the rarest mammal species still existing in the wild in Africa. In 1994 Uganda National Parks — the agency in charge — organized a series of workshops with the local people to draw up a management plan for the protected area. A prior meeting had identified the stakeholders and other key people who should be involved. They were invited to attend the workshops, which lasted four days. The participants included representatives of government departments, local government politicians, management and staff of the National Park, and research staff from the Institute of Tropical Forest Conservation and Institute of Ecology.

26b. Regional workshop of stakeholders sets the pace for coastal zone plan Tanzania

In 1994, the Tanga regional authority requested assistance from IUCN's East Africa Office to establish an integrated coastal zone management plan. As part of the process, a region-wide workshop was held to decide on the priority issues that needed to be dealt with in the plan. There were over 100 participants including villagers (about 50 per cent), elected district councillors, business and other non-government people and government officers. Villagers were selected to attend during small workshops held in villages prior to the regional workshop. These village meetings also provided feedback to a socio-economic baseline study and discussed how the villagers' points of view could best be represented at the regional workshop.

At the workshop, a long list of the issues identified through the participatory assessment exercises (see example 16h) was presented. This was facilitated by trained government staff. There was an all-women's group to ensure that they had an opportunity to put forward their views, as well as groups for different interests (e.g., fishermen, business people) different districts and mixed groups. The groups discussed and identified their top two priority issues. They looked at the causes of the problems and identified short- and long-term actions to deal with them. The findings of each group were then presented to the full workshop, debated and a common set of recommendations was drawn up.

Action plans were developed to ensure that all recommendations were followed, beginning with testing in pilot villages. The results of these trials will form the basis of the integrated management plan for the coastal zone.

From Shurcliff, et al., 1995.

6.26 Open meetings among stake- holders

See option 2.4.6, Volume 1

26c. Stakeholders decide allocation of water

Pakistan

Irrigation officials and CBO organizers meet with farmers of different areas of the Rahuki irrigation project in Hyderabad every Friday. These different stakeholders discuss operational as well as strategic issues to manage the water resource equitably and judiciously among the farmers.

26d. It takes time to build bridges

Colombia

In the region of Sierra Nevada, in an area torn by strife for many years, a broad conservation and sustainable development strategy has been developed and implemented. For the project to succeed, the many stakeholder groups needed to overcome their hostility towards each other. This has been achieved through a long and careful process of building relationships among them. In fact, it has taken 18 years from the time when the ecological and archaeological value of the area was recognized (by the establishment of a national park), to the development of a set of community-based, coordinated action plans for each of the 13 sub-regions.

The stakeholders included three indigenous groups; various rural communities (*campesinos*) largely composed of migrants escaping from environmental degradation or warfare in their own regions; guerrilla and para-military groups and local authorities. The project began with a small project team working with one of the indigenous groups. After four years it was decided to expand the work to include the whole region. In 1984 a private foundation (the Fundación Pro-Sierra Nevada de Santa Marta) was established to fund and manage this work. Funding came largely from the private sector including petroleum companies. The second phase of the project began in 1985. Meetings were held with each of the different sectors in the three main cities of the region to explain what the foundation wanted to do.

A team that included several scientists was then put together to undertake a comprehensive information-gathering exercise. The team prepared documentation on various aspects of the area including its history, infrastructure, institutions and ecology. Over the next two years the project team visited all the villages in the region to share this information with them. The information (much of it previously unknown to the local people) proved to be an extremely useful tool in starting to establish links between the various stakeholders.

With these tentative links, the project team decided to embark on a series of three-day meetings among the stakeholders to identify priorities for action. Three meetings were held, all in the town of Santa Marta. Leaders from each of the communities within the region attended. After these meetings (where the stakeholders spent the day together, ate and shared the accommodation facilities), a consensus was reached on issues for which the people wanted training. These were: sustainable development and environment; cultural identity; fundamental rights; conflict resolution; participatory planning, and leadership.

The desired training was then organized; it took place in a workshop setting. There were three workshops in all and each lasted for four days. Two topics were covered in each. High-level officials attended along with guerrilla leaders.

Finally, one more meeting was held to bring together all the participants and diagnose the needs of their own communities. From this an action plan was developed based on the priorities and diagnoses of each settlement in the region. The plan identifies areas of tasks and responsibility, the laws relevant to these tasks and the training requirements for each of them.

Through this process of meetings, workshops, training courses and development of an action plan, stakeholders who for many years had existed in a state of hostility towards each other realized that they had many things in common and that many of the problems in their communities were shared by others in the region.

27a. Conservation days celebrated with competitions and special projects Nepal

The Annapurna Conservation Area Project (ACAP) organizes and encourages the celebration of special days such as World Environment Day, Earth Day, World Tourism Day, Women's Day, and ACAP's Annual Conservation Day in order to create conservation awareness and to encourage participation in the project. The Conservation and Development Committees, Mother's groups and Lodge Management Committees play a significant role in mobilizing the local people in environmental activities to draw attention to these special days. Clean-up campaigns, tree plantings, exhibitions and sports events are organized. Cultural programmes, such as song competitions and traditional dress shows, also take place. School participation includes art and essay competitions. Quiz contests on environmental issues are organized. On these occasions local people are awarded prizes for their contribution to conservation efforts.

27b. Annual celebration of community efforts Madagascar

Every year ORIMPAKA (a local NGO), organizes a fair on the occasion of the end of the reforestation campaign in Andramasina, in order to encourage, motivate and reward the efforts of the participating villages. Local artists are invited to perform to give life to the event.

At the end of the annual reforestation period, the Village Reforestation Committee and the ORIMPAKA team evaluate everyone's efforts and attribute scores to three activities: preparing nurseries, preparing the reforestation plots and planting seeds. Summing up the individual points, the village points are calculated. The results of the evaluation are displayed during the fair and are officially announced at the end of an encouragement speech. Afterwards, prizes are distributed. Every prize-winning villager receives a tool, such as a spade or a shovel. The best village receives a support fund that will be used to implement a micro-project proposed by the villagers themselves.

6.27 Special events and 'ideas fairs'

See option 2.4.7, Volume 1

27c. Special event used to demonstrate participatory techniques Solomon Islands

After four years of community planning and enterprise development assisted by WWF, the communities of Michi village in Marovo Lagoon decided to demonstrate their achievements to the world in a Conservation Open Day held in August 1995. This open day was also intended to interest neighbouring communities and decision-makers in starting their own participatory planning for conservation.

During the open day, the people of Michi gave practical demonstrations of such techniques as community timelines, stakeholder analysis, monitoring of *bêche-de-mer* harvest and land mapping. Various community activity groups — such as those who manage the guest house, the theatre group and the youth guiding team — illustrated their activities to the visitors. Demonstrations of the actual activities and methods were given rather than explained in lectures.

Those attending the event included people from neighbouring communities, provincial and national politicians, government officers, and NGO representatives. The open day resulted in a clear change in political support for conservation activities as well as much more interest in replicating the work of Michi village.

27d. Agricultural prizes demonstrate success Peru

In the mountain area of Cajamarca, an integrated environmental project involving conservation of soil resources, agriculture and the promotion of biodiversity is being managed by a number of institutions. The project is being undertaken in extremely challenging conditions involving very poor communities and small land-holdings on difficult terrain. People work communally, forming small work groups which move from one family plot to another (a process called *minga*). The project is based around the promotion of environmentally sound agricultural practices and improved management of watersheds.

To maintain morale and promote sound environmental practices, the project organizes fairs in conjunction with existing celebrations. At these fairs, prizes are given to the best products grown by using environmentally sound techniques. Very often, these products represent wonderful achievements for the maintenance of local biodiversity in food crops. They require, for instance, great skill in crop maintenance and selection and in associated soil preservation, appropriate irrigation and biological pest control. The winning producers explain to their fellow farmers the techniques used to achieve the quality of the product. The prizes given are agricultural implements. In this way, the environmentally successful farmers are rewarded in two ways — through the social prestige of being acknowledged as a leading farmer, and through practical goods, which they can use to improve their family's and their community's standard of living. The agricultural implements are highly treasured in these poor farming communities.

27e. Awards foster national unity in conservation

Australia

The National Landcare Australia Awards are held at Parliament House in Canberra every other year. They usually highlight the achievements of groups, individuals, schools, businesses, researchers, media and local government in the presence of the Governor General and the Prime Minister. These privately sponsored awards provide national recognition for outstanding efforts, and an opportunity for the winners from each state to get together with like-minded people from other states, extending the conservation network and fostering the feeling of belonging to a national movement which goes well beyond parochial concerns.

Abridged from Campbell and Siepen, 1994.

28a. *Campesino a Campesino* project

Nicaragua

The *Campesino a Campesino* project began in Nicaragua as a local initiative to provide alternative access to technical assistance for a country faced with an economic embargo. The project started in the rural communities of Santa Lucia and has since spread to the rest of Nicaragua and parts of Central America. The project is entirely run by farmers (*campesinos*), and provides a mechanism for exchanging technical and personal experiences among agriculturalists. For instance, the use of green mulching techniques as a means to retain soil fertility has been made possible at a large scale through simple visits to successful farmers by others interested in experimenting with agricultural improvements. The entire process has been run without any input from government agencies or agricultural extension officers and its success lies precisely in its ability to promote changes in land management and soil and forest conservation, through a purely horizontal exchange of experience. *Campesino a Campesino* has succeeded where official agricultural programmes have failed.

28b. Inspiration brings quick action

Tanzania

Study tours can be expensive because of transport requirements but the review of the Forest, Trees and People project (FTP) found them to be the most efficient extension tool FTP had at its disposal. Visits to other farmers within the district sometimes produced immediate results. The Sigino village leaders studied bylaws in Mamire, and developed such laws further. Some Mamire farmers went to Sigino to study home tree nurseries and started their own the next day. Sigino farmers went to Dareda and learned more about stall feeding from one farmer in one day than they possibly could have learned as participants in any training programme. The project found that study tours strengthen confidence in local solutions developed by the community. It was also important that the project extension recognized local efforts and acknowledged that the academic 'experts' cannot possibly replace the farmers' practical knowledge, hard-won through trial and error.

Abridged from: Johansson and Westman, 1992.

6.28 Visits to successful conservation/ development Initiatives

See option 2.4.8, Volume 1

28c. Two models provide inspiration for new ventures

Nepal

The Annapurna Conservation Area Project includes a Conservation Education and Extension Programme (CEEP). CEEP has organized a variety of study tours both inside and outside the ACAP for local leaders and representatives of various local groups. Two areas have been the focus of the study tours: Ghandruk village, where the project has been functioning for seven years; and Royal Chitwan National Park.

In the winter of 1993-94, several members of Conservation Development Committees (CDCs) from three villages visited ACAP's headquarters in Ghandruk to learn more about integrating conservation and development activities and to see how the local people managed their natural resources and implement environmentally sound small-scale activities. The villages spoke with Ghandruk CDC members and with women's groups and others, and observed how they go about formulating and practising their conservation roles and responsibilities.

Similarly, CDC members and local and religious leaders from Ghandruk and other areas visited the national park to compare its protected management system with their own. They had meetings with park officials, officials from the Conservation and Research Training Centre, and people living around the periphery of the park. In addition several study tours for women's groups involved in the project were undertaken, both inside and outside the project area.

28d. Learning about process and business ventures

Uganda

In 1994 seven beekeepers and the chairmen of the three Forest Societies in the pilot parishes around Bwindi National Park were invited by park project staff to visit a similar project in western Uganda. After the four-day visit, the group leaders reported that they had found the experience well worthwhile. In particular, they realized they were not the only people meeting the costs of conservation in national parks; and that collaborative management is being practised elsewhere with a great promise of success. Consequently they felt determined to put more effort into their own project. They also learned that improvements to beekeeping and honey production and better storage for plant medicines were essential if honey and medicine production were to be viable economic undertakings.

28e. From Congo to Zimbabwe

The Conkouati reserve, in Congo, has faced a considerable number of difficulties since its inception. On the one hand the support of the government for the initiative was never clear, nor free of red tape, personal jealousies and conflicts, and bureaucratic requirements. In addition, from the beginning the local people appeared at best uninterested, and at worst hostile to all attempts to set up a conservation project in their environment. The IUCN-assisted initiative supporting the establishment of the reserve had to look for all sorts of ingenious ideas to unblock the situation. A very successful one was the appointment of a person from a local ethnic group as programme director. This enormously improved the relationship with local communities. Another success was the organized visit of four community members to CAMP-

FIRE initiatives in Zimbabwe. The visits took place in 1994 and were highly appreciated. The programme staff of Conkouati stress that the visits need to be followed by local meetings in which the 'travellers' report on their experience and discuss the lessons learned with the community at large.

29a. Sanctuary officials need convincing

India

In the Biligiri Rangaswamy Temple Sanctuary in the south Indian state of Karnataka, local NGOs and agencies are examining local resource uses and knowledge, and their impact on biodiversity. The use of non-timber forest products by the Soliga — a resident indigenous population — is being studied and these people are being encouraged to continue sustainable practices and modify unsustainable ones. They are being organized into cooperatives to help market their products, and are being given training in various income-generating activities.

The agencies working in the area are acutely conscious of the need to ensure that all resource uses which are continued, or started anew, are in harmony with the conservation objectives of the sanctuary. Officials managing the sanctuary are not yet convinced, however, of the need to integrate a collaboration with the local indigenous people into their management strategy.

29b. Agricultural training builds upon traditional customs

Nepal

The working rules of the Conservation and Development Committees (CDCs) of the Annapurna Conservation Area Project (ACAP) are prepared by committee members together with local stakeholders and facilitated by the ACAP staff. In preparing the rules, the traditional norms and values of the area are reviewed and incorporated as appropriate.

Various training programmes to build upon traditional knowledge of resource management are also provided to the members of the CDCs. The goal of the programmes is to revive traditional capabilities and integrate them with new technologies for managing resources. Agriculture demonstration farms are established at different project sites to motivate people about sustainable agricultural development. "Vegetable demonstration plots" are a major attraction for local people. The project encourages organic farming, which is simply an improvement on the traditional system. The people are encouraged through demonstrations, for instance about composting from livestock manure. Even traditional pesticides extracted from local herbs are being tried out in the area with the help of the local experts. The use of successful pesticides is encouraged. The local people are using many revived traditional practices and are very proud of them.

29c. To learn you must be able to communicate

Tanzania

A review of the Forest, Trees and People project in Babati District found that the local people had a wealth of knowledge about the local trees and that the hunters, beekeepers, shifting cultivators and

6.29 Building upon local knowledge and skills in resource management

See option 2.4.9, Volume 1

pastoralists all had different perspectives on nature and local vegetation. The shifting cultivators knew much about the interactions of trees and crops and about tree regeneration. Pastoralists knew about fodder plants and poisonous plants. The residents of the area used hundreds of wild plants for food and medicine. The local knowledge was used to some extent for the regeneration and propagation of indigenous trees; the design of agro-forestry systems using indigenous trees; the establishment of community forest reserves and a study of forest products that could be commercialized. Unfortunately, the review also found that the local knowledge was less accessible than that it might have been. Many of the foresters could not talk to local people about the trees, since they didn't know the traditional names for the trees and the villagers didn't know the scientific ones. The review noted that a participatory approach to development must always seek a foundation in the indigenous culture and, for this to be successful in forestry projects, lists of botanical names should be translated into the local languages.

Abridged from: Johansson and Westman, 1992.

29d. Value of traditional knowledge recognized in fees

Canada

The Northern River Basins Study, funded by government through its Environment Canada department, recognizes that the role of native peoples and the respect for their way of life and spiritual needs are critical to achieving the sustainable management objectives for the northern basins. In other words, conventional scientists need to integrate traditional knowledge in their approach to conservation. To do so without diminishing the independent value of different knowledge systems has been a challenging task.

In the case of the Northern River Basins, the partnership with indigenous peoples was made possible, in part, by paying stipends and fees for service. Indeed, the consultative process for traditional knowledge is now based on a fee-for-service practice, just as for work by other consultants.

From: Environment Canada, 1995.

29e. *Campesinos* and biologists collaborate to save the rainforests

Costa Rica

Costa Rica has the highest rate of deforestation in Central America and one of the highest in the world. This is a sad state of affairs for Costa Rica's wildlife and an impending disaster for many of the country's *campesinos*, the peasant farmers who are trying to make a living in or beside forested land. An organization called Asociación ANAI was founded in 1973 by Bill McLarney, an American biologist, with the specific goal of helping the *campesinos* to save the tropical forest in Talamanca. ANAI supports small concrete activities and projects. Initially the projects were heavily subsidized, then ANAI switched to giving loans at favourable terms.

ANAI supported a variety of educational ventures, including running educational farms where *campesinos* can observe and discuss the management of a variety of crops. In 1987, it helped establish a re-

gional association, APTA, to coordinate the buying, processing and marketing of agricultural and forestry produce. ANAI also set up a programme to train 'barefoot agronomists', most of whom are Indians living and working in Indian communities, to act as an unofficial agricultural extension service.

Abridged from Pye-Smith et al., 1994.

30a. Local involvement in planning merges livelihood and conservation Zimbabwe

Masoka is a ward of about 150 households that developed a successful wildlife management programme under the CAMPFIRE initiative. The ward recently developed a land-use plan that greatly improved land use and revenues from wildlife management. Land-use planning in Zimbabwe is normally undertaken by a department of the Ministry of Agriculture, without any local participation. Although such plans have been prepared for most wards in the country, they have proved difficult and, in some cases, impossible to implement because of local opposition. With the help of the Centre for Applied Social Sciences (CASS) of the University of Zimbabwe, the WWF Multi-Species Animal Production Systems Research Unit (Zimbabwe), the Guruve District Council and a local safari operator, Masoka ward developed its own land-use and wildlife management plan. The plan centres around erecting an electric game fence around households and existing and future arable land, setting aside land for livestock grazing and wildlife, and developing measures for the maintenance of the fence.

The fence was erected with donor funds and members of the ward were trained in its maintenance. Since the fence was set up, destruction of crops and livestock by wildlife has been greatly reduced. This has significantly increased local agricultural production and, moreover, reduced the number of valuable wild animals killed to protect crops. Instead, a limited number of animals can be killed by tourist hunters and the revenues for each trophy go to the local ward. This substantially improves the ward's revenues. In addition, the fence created employment for local people to maintain and repair it. Without the participation of local people in planning land use and the siting of the fence, it is doubtful that the plan would have achieved similar successes.

30b. Planning covers resource use and management systems Uganda

Participatory appraisal exercises have been promoted by Uganda National Park (UNP) and Development Through Conservation staff at the village level in three pilot parishes adjacent to the Bwindi Impenetrable National Park. PRA tools were used to enable the local community members and project staff to arrive at "needs-driven" community activities rather than top-down project interventions. In the first parish the exercise took a period of nine months; each of the others took six months. The exercise was conducted in the form of three-day workshops which covered the following tasks:

6.30 Participatory planning exercises to integrate local needs

See option 2.4.10, Volume 1

- identifying general problems faced by the community;
- selecting the problems that are park-related, such as crop raiding by animals from the park, the need to collect medicinal plants from the park, etc.;
- identifying and negotiating for the resources that can only be harvested from the park;
- planning for the quantities of resources to be harvested, who is to harvest and when, what regulations have to be observed, which community structures will oversee the use of resources, which monitoring and evaluation procedures will be set in place;
- drawing up of a Memorandum of Understanding between UNP and the local community, summarizing the agreements reached.

30c. Synergy produces impressive results

Zimbabwe

The Tree Nursery Groups of Mutoko are a good example of what cooperation and joint planning among the farmer community, local NGOs and government staff can achieve. The Mutoko Agricultural Development Project (ADP) aims to address the serious deforestation and ecological degradation of Mutoko Communal Land, a former homeland. The project includes a strong participatory planning element which has two key aspects. First, rather than trying to 'sell' a new technology to local farmers and policy-makers, farmers and institutions are contacted (and at times even contracted) from the very beginning to sit down, discuss problems and suggest technologies that could be adopted to solve them. The project has showed that this ensures the full support and commitment of the participants. Also, rather than experimenting from scratch with new technologies, the staff, farmers and extension officers can identify interesting innovations which have been tested by farmers and NGOs in other parts of Zimbabwe.

In 1988 ADP facilitated better cooperation between peasant farmers and the Zimbabwean Forestry Commission with the aim of addressing the serious deforestation in Mutoko. A group of 50 farmer representatives and agricultural and forest extension staff were taken on a 'look and learn' visit to the Shurugwi Rural Reforestation Project, where trees are raised by the local villagers. The idea was taken back to Mutoko, where nine of the 30 farmer representatives found groups in their village who were prepared to establish tree nurseries. By June 1990, the nine nursery groups had produced and planted over 38,000 trees. Only 7,000 of these were planted in group woodlots; the rest were shared among the members. The tree sharing provides an economic incentive and is ecologically interesting. Plantings in the villages have become a linking element in the landscape and an important part of the farming system, where they serve multiple functions: erosion control, animal fodder, windbreaks and soil improvement. Participatory planning is continued throughout the implementation phase with farmer representatives, district forest officers and agricultural extension staff who meet regularly to plan new activities and agree on the practical organization of the nurseries and planting operations.

Abridged from: Madondo, 1991.

30d. Farmers and park managers find mutual benefits in changing farm practices

Australia

The most serious concern for the future of the Great Barrier Reef Marine Park is deterioration in water quality caused by increases in suspended sediments, nitrogen and phosphorus emanating from the mainland. Park management's objective has been to limit land-based sources of pollution to levels which do not cause significant changes in the reef's ecosystem. The most important strategy in achieving this objective has been involving farmer organizations in cooperative research projects which address this question, and working with them to develop methods of reducing the loss of soil and nutrients from farmland. The commonality of interest of the farmers who wish to reduce expenditure on fertilizer and reduce soil erosion and of the people and organizations who wish to protect the quality of the reef's waters has been deliberately identified and used as a means of achieving cooperation. The park authority has found that if cooperation is achieved in carrying out research into a problem, then that cooperation is likely to extend into defining and applying ways of taking care of it.

The research has shown that most of the increase in nutrients comes from grazing land. However, the highest contribution per unit area of farmland comes from sugar cane farming. The levels of erosion and nutrient loss from sugar cropping can be substantially reduced by changes in farming practice. These changes have been voluntarily adopted by most sugar farmers on irrigated land on Queensland's coast.

From: Kelleher, 1995.

30e. Pre-appraisal dialogues: key to success

Pakistan

The Kalam Integrated Development Project (KIDP) is an area development project working with the villagers of Swat Kohistan in the North West Frontier Province of Pakistan. KIDP began in 1981 as a forestry project which then extended its activities to agriculture and village development. The Village Development component of the project is working with the rural population to strengthen collective local initiatives and organizational structures. A central element of the work is support for villagers to plan their own communal activities. KIDP staff members form an interdisciplinary team, which, together with the local people, assesses the needs, constraints and opportunities of different groups within each community and encourages the villagers to prepare a viable Village Action Plan.

Through this process, the project team has found that the main factor determining the success of the planning meetings is the pre-appraisal dialogue. This enables the villagers to be informed well in advance about the principles and objectives of the exercise. These dialogues are used to explain that the planning meeting is only the first step in a longer and systematic process of village planning and development. The project team has also learned that these pre-appraisal dialogues need to specifically involve female villagers (sometimes in separate sessions), because village men usually neither inform their female relatives about the purpose of the planning meeting nor involve them in deciding whether or not to take part in the exercise.

Another important lesson which the team gained from their village experience is that no matter how the participatory planning exercise is carried out, the presence of outsiders working with villagers and discussing their needs and priorities will create expectations for outside assistance on the part of the community. By conducting frank, in-depth, pre-appraisal dialogues and involving villagers as team members, they found that these expectations can be kept to a reasonable level.

Abridged from: Thompson et al., 1994.

6.31 Zoning to separate incompatible land uses

See option 2.4.11, Volume 1

31a. Zones to provide a safe haven for indigenous people

Brazil and Venezuela

The survival of the Yanomani people and their habitat in Brazil and Venezuela has been increasingly in danger. In Brazil, in particular, the encroachment of gold miners into their territory caused disastrous impacts on local health, the socio-cultural fabric of communities and the natural environment. Road construction and mining operations caused significant deforestation, game population displacement, soil erosion, mercury contamination and other forms of pollution in the Yanomani territory. In addition, previously alien forms of social problems, including poverty, alcoholism and prostitution, are becoming common. Epidemic diseases introduced into the area by miners had a devastating impact on the populations in the villages. In 1993, a massacre of Yanomani villagers (reportedly at the hands of disgruntled miners) was made known around the world.

In order to preserve the Yanomani's culture and land tenure system as well as the integrity of their natural environment, UNESCO's Man and Biosphere Programme has proposed a Biosphere Reserve based on three concentric zones: a central core area which is strictly protected; a buffer zone in which research, educational and recreational activities are allowed; and transitional areas designated for sustainable economic development. The zoning was decided through consultation among scientists, park managers and local populations. In the proposal, the Yanomani would occupy the core and non-Yanomani people would be prohibited from entering it. The buffer zone would be used in part for assistance programmes to the Yanomani. Regulated, small-scale mining would be allowed in the transitional zone with rotation of mining fields and progressive restoration. Royalties would be paid to the Yanomani by the mining companies for the temporary use of their land. The programmes would be monitored by an outside organization in collaboration with scientists familiar with the Yanomani and their ecosystems.

Abridged from: Sponsel in Lewis, 1995.

31b. Sustainable use protected through zoning

Uganda

The Mount Elgon Conservation and Development Project is being implemented in Mount Elgon National Forest Park by Uganda's Department of Environmental Protection with assistance from IUCN. Within the park are the bamboo plantations that are an essential resource for the surrounding villagers. As part of the management strategy for the forest park, a zone system is to be introduced. Certain areas will be designated "strict protection zones". These will include a

considerable area of bamboo, both as a safeguard against possible future over-exploitation in the remaining areas, and as a control for the bamboo monitoring programme. "Community use zones" will include the rest of the bamboo stands (about 50 per cent of the total) and, within this area, controlled harvesting will be officially authorized.

A researcher who conducted a study about the zoning system emphasized the importance of the community use zone being useful to the people, and not simply degraded land that was not valuable enough to be included within a high protection zone. She also stressed that it is meaningless to allocate areas for use which are not preferred and pre-utilized by the community, and that it is much easier to control a "no-use" zone which is originally under minimal utilization pressure. The researcher emphasized that the zones should not be defined before there was a clear understanding of use patterns. The user maps undertaken as part of the socio-economic survey provided important information for the zoning, as they show the trails most commonly used for bamboo harvesting and the preferred areas of collection.

Abridged from: Scott, 1994.

31c. Combining biodiversity with human enjoyment

Australia

The Great Barrier Reef is the largest marine park in the world. Biologically it supports one of the most diverse ecosystems known. The unique environment of the reef and its size and diversity have been recognized worldwide; in 1981 the reef became a World Heritage Site. It is not a national park, but a multiple-use protected area. Zoning is one of the fundamental mechanisms to separate and provide for widely diverse and sometimes conflicting activities. Levels of protection within the park vary from an almost complete absence of restriction to zones within which almost no human activities are permitted. The only activities prohibited throughout the park are oil exploration, mining, littering, spear-fishing with scuba and the taking of large specimens of certain species of fish. There are three main categories of zones: Preservation or Scientific Research; Marine National Park; and General Use. The zones are complemented by generally smaller areas that give special protection from time to time to animal breeding or nesting sites, to allow an appreciation of nature free from fishing or collecting, or to carry out scientific research. There are also "no-structures" sub-zones to ensure that portions of the reef close to urban centres and therefore subject to heavy human use do not become dotted with permanent or semi-permanent buildings.

Through this zoning system, which is subject to review every five years, a large marine ecosystem has been able to provide for use, appreciation and enjoyment while protecting a range of specific areas and organisms: a balance between human need and environmental protection has been struck!

From: Kelleher and Craik, n.d.

31d. Zoning supported: but it's not what you think!

Burkina Faso

The Gestion des Terroirs programme is implementing a system of zoning to separate areas used for agriculture, grazing, wood collection, fallow, etc. There is increasing support from villagers who claim that the zoning helps to avoid grazing animals in the fields. But the original inhabitants, concerned about land scarcity, see the zoning as an opportunity to control the number of plots and to halt further immigration. Under the traditional land distribution system, the chief automatically granted newcomers land if they agreed to obey the customs and rules in the village. This system was coming under increasing pressure due to the recent increase in the volume of immigration. Zoning was therefore welcomed in the villages.

The project offered at the right moment an arrangement that suited the interests of the most powerful people in the villages. A halt to immigration has occurred, although when pressed many believe that there is sufficient space for more people. The real opposition to immigration is that the original ethnic group feels their monopoly on decision-making at the village level is being threatened by the increasingly large number of immigrants. Thus, the reason why zoning works is tied to the struggle for power rather than a recognized need to protect natural resources.

Abridged from: Engberg-Pedersen, 1995.

6.32 Primary environmental care (PEC) projects

See option 2.4.12, Volume 1

32a. A perfect PEC example

Costa Rica

In the region of Talamanca in the last decade a group of 12 immigrant peasant families created a small association called ASACODE. The association is involved in a variety of activities, but one in particular represents a perfect PEC example. The families own some forest land and wish to obtain economic benefits from its timber. One way would be to sell the trees to a large company, which would come, open up a road and harvest in a destructive and usually inefficient way. The families would get little and would inherit a patch of severely degraded land. The alternative chosen by ASACODE has been to harvest the timber themselves in a highly selective way, followed by replanting. They process the timber locally and carry it away by water buffalo (so they do not damage the soil or other trees). Importantly, they fully process the timber themselves before selling it, thus maximising their revenues from the timber. The PEC components (community organizing, protection of the environment and meeting of local needs) are all satisfied!

32b. Conservation action grants

Madagascar

PACT/GMU (a local NGO) is mandated by the United States Agency for International Development (USAID) to manage two types of grants: the Protected Area Development Grant (PADGS) and the Conservation Action Grants (CAGS). The second type of grant is used to fund community-initiated activities that link conservation and development in the buffer zones adjacent to any of Madagascar's 50 protected sites.

The types of activities which can be funded (when linked to conserva-

tion) include:

- income generation schemes;
- health services;
- rehabilitation of bridges, roads and improved market access;
- school rehabilitation and construction;
- small credit schemes; and
- ecotourism activities.

CAGs may be allocated to village, women's or youth associations, as well as to local and regional councils and NGOs. The identification and management of these activities is delegated to local communities while a field monitor hired by PACT/GMU assists in designing, executing and monitoring them.

32c. Different projects for different groups

Tanzania

Several PEC initiatives were established in the village of Siginos as part of the Forest, Trees and People (FTP) project. Most of the households became involved in the activities, and all villagers benefited to at least some extent. The projects included:

- six communal forestry projects covering areas of between 30-40 hectares — these areas were put under the control of the women's committees who developed them to increase fuelwood production;
- a group of women learning how to make fuel-saving clay stoves;
- sub-village leaders being put in charge of protecting water sources; and
- a group of professional tractor drivers being trained in contour ploughing.

Following the latter initiative, the drivers did virtually all the ploughing in the Sigino area as well as in a few neighbouring villages. The training had an instant impact. Practically all the farmland was contour-ploughed by the following season. This was an achievement of outstanding importance in controlling soil erosion and improving agricultural production in the village.

By the time the FTP project was terminated, Sigino villagers were active and experienced in requesting many kinds of support. Villagers compared their problems with those in other villages, and land-use issues were much debated.

Abridged from: Johansson and Westman, 1992.

32d. Saving the ducks provides protein and jobs

El Salvador

In the 1970s the biological importance of Laguna El Jocotal attracted the attention of the National Parks and Wildlife Service. In particular, El Jocotal supports a large diversity of plants and animals and is the most important area of freshwater in El Salvador. As such, it provides a vital resting place for migratory birds from North America. The National Parks Service took over responsibility for Laguna El Jocotal in 1976. At the time, the area was used by a tourist company as a hunting reserve catering for foreign hunters. With the establishment of a wildlife refuge, hunting and the cutting of trees were forbidden.

The Wildlife Service established a small team of wildlife guards who were responsible for the protection of the lagoon and its resources. The guards were recruited from among the local population; many had worked in the past as guides for foreign hunters. As a result of the guards being hired, the incidence of illegal hunting declined significantly. Surveys carried out by the Wildlife Service confirmed the importance of the wildlife resources of the lagoon and their critical condition. In particular, years of hunting had almost totally wiped out the populations of tree-nesting ducks. In addition, their nesting sites had been almost totally lost as the tree cover declined.

A decision was made to establish a pilot project to provide nesting boxes for tree-nesting ducks. At the end of the 1970s an analysis of the preliminary results revealed that a huge number of eggs were being laid — so many that the females could not cover them all and many were lost. Accordingly it was decided to offer the eggs to the local community for consumption. Duck eggs and meat have traditionally been a food source. By providing eggs, the project sought to increase protein consumption in the desperately poor communities of El Jocotal. It was felt that this direct benefit would increase support for the conservation of the lagoon by local people.

Between 1981 and 1985, 300 new nest boxes were established and, from these, more than 30,000 eggs were harvested and 12,000 chicks hatched. More than 80 people from the local community were contracted to carry out the work, including the harvesting of eggs and maintaining the nest boxes. Several of these people have now built and erected nest boxes around their own homes. Overall the project has contributed to a substantial increase in the local awareness of the importance of the lagoon and the benefits that can be obtained from it, as well as to an increase in local support for protecting the lagoon from the external pressures it faces.

In this project, linking local benefits with a conservation initiative is well established. In order to make it a better PEC initiative, however, the local organizing and empowerment around the management of the Laguna should be improved.

Abridged from Benitez in Davis, 1993.

32e. Trees for drainage and timber

Pakistan

Ahsan Wan village in Sindh province lost one third of its land due to land degradation caused by seepage from a canal. Community discussions promoted by Oxfam resulted in a comprehensive community initiative to reclaim the lands by engineering and biological means of drainage. The initiative also involved a community forestry programme to absorb the drainage between the canal and the land. By using the trees, the community does not have to pay for mechanical or tubewell drainage and, in addition, it obtains supplementary income from the sale of timber. Thus, this is an 'exemplary' PEC project: it is beneficial for the local environment, beneficial for the local people (income!) and it is planned and managed by a local group.

32f. When participation succeeds...

India

In the Indian state of Haryana, north of New Delhi, are the Shivalik hills: a natural ecosystem of luxuriant vegetation of broad-leafed and coniferous species. Unfortunately, since the middle of the last century, the hills have suffered the effects of wrong policies and unchecked exploitation of resources, in particular timber and grass. Watershed erosion became so persistent and severe that the topography of the region was profoundly affected. Deep gullies carved the denuded hills while the downstream lakes and reservoirs slowly filled up with fertile silt and sediments.

The Haryana Forest Department attempted to stop this destructive process by constructing check dams, palisades and silt detention structures. It even erected barbed wire fences along the boundary of the areas to be protected and reforested: all attempts were frustrated. As soon as the stones and wooden posts used to build the check dams and palisades were in place, the local villagers removed them for their own domestic use. Within a few days of the setting of a fence, passages were opened to allow the goats and cattle access to what was left of the hills' pasture. It was a battle with no end and no winners. People and foresters fought one another while the environment got increasingly degraded and the people got increasingly poorer.

The people of the Sukhomajri village were major contributors to and victims of this state of affairs. In the late 1970s, after the latest baffled attempt at fencing a severely degraded area, a concerned forestry officer went to talk directly with them and pleaded that they stop grazing and foraging the watershed. The villagers replied that they were prepared to do so, but only if alternative means of survival could be found for them, since they were totally dependent on the hills' fodder and fuel.

The solution was to capitalize on an unused resource: rainwater. Previously, rainwater was left to run downstream with its load of fertile soil. With some outside support, the people of Sukhomajri built a small earth dam above a gully head, thus collecting rainwater that could be used for irrigation. This brought a dramatic increase in local crop yields and provided a strong incentive to maintain the supply by protecting the watershed. The impounded water was distributed equally, irrespective of land ownership, meaning that some could make use of it and others could sell it: everybody shared in the common interest. Slowly but steadily the number of goats raised locally decreased, and the number of stall-fed buffaloes and the local milk production increased.

A village society was formed and was soon assigned responsibility for forest protection by the Forest Department. The society provided for contour trenches to improve the moisture regime in the hills, and planted local tree species and much *bhabbar* grass. The grass provided excellent fodder, which was hand collected and sold following the society's own rules and equally benefiting all village households. Soon another check dam was built in the area of Sukhomajri; by the early 1980s the Haryana Forest Department had become the leading implementing agency in building dams, providing communities with grass leases and helping organize management societies in a variety of villages in the Shivalik hills. The barbed wire fences could be permanently removed: people's participation had successfully replaced them with much more effective 'social fencing'.

From: Borrini, 1993.

6.33 Jobs for local people

See option 2.4.13, Volume 1

33a. Jobs essential to offset impact on local economy India

In the Keoladeo Ghana (Bharatpur) National Park in western India, famous for its immense bird diversity, an attempt has been made to provide jobs to local people living around the park. A few positions in the park management are held by local people; local youth are employed as nature guides after undertaking training courses provided by the management. Others are employed as cycle rickshaw-pullers, ferrying tourists into the park. Now the authorities are offering them some crash courses to improve their bird identification skills so that they can supplement their earnings by guiding.

A common complaint from villagers is that many of the rickshaw-pulling jobs have been cornered by residents of Bharatpur town. The park authorities are trying to redress this imbalance. Training of village youth has been stepped up in the last few years. Local NGOs are active in trying to identify ways in which villagers could be given greater benefits from the park. This is critical, for the park has witnessed one of the bloodiest conflicts in the history of Indian conservation. In the early 1980s, seven villagers were killed while protesting an arbitrary ban on buffalo grazing imposed by park authorities. The ban has severely affected the local animal husbandry economy, and alternatives are urgently needed if villagers' support for the park is to be regained.

33b. Employment plus community facilities Uganda

Project staff helped a local community living near the Bwindi National Park headquarters to establish a camping ground for tourists at the entrance to the gorilla tourism zone. The Buhoma Community Camp was opened in 1993. As well as providing employment for the local people, the venture brings benefits to the wider community. Profits from the use of the facilities are being used to help local people (e.g., women's groups) and to build a school and dispensary.

33c. Djoudj people pay a high price for national park Senegal

The Djoudj National Park operation provides an example of a national park opening up job creation opportunities which can help to compensate a community for loss of livelihood. It is also an example of a private operator profiting from a national park for many years while the livelihood needs of the local people, who had paid a high price for the park, were neither acknowledged nor consulted.

To many observers the ecotourism potential of the Djoudj National Bird Park is under-utilized. One of the reasons for this is a conflict between the operator of the Djoudj Hotel and hotel operators on the mainland. The government of Senegal has granted a monopoly concession to the Djoudj Hotel operator, who now requires hotel owners from nearby Saint Louis to use the boat and other services of the Djoudj Hotel when they bring visitors to Djoudj. These services are charged out at such a high rate that hotel owners in Saint Louis are boycotting Djoudj and advising their tourists to visit alternative sites in the region. In the meantime, the local people of Djoudj, who lost a great deal as a result of

the conservation initiative, receive no benefits at all. They were expelled from the park, which was their traditional land, and their rice fields are being destroyed by birds and wild pigs. Yet, they are not involved in the management of the site and receive no portion of the fees collected by the private hotel operator from those tourists who still come to the bird park.

It is now proposed that villagers be involved in the initiative and derive benefits from it. Projects being considered are the transporting of tourists through the Djoudj waterways, and encouraging tourists to visit the periphery of the park to view cultural activities and purchase traditional crafts.

33d. Permits for forest exploitation create jobs

Mali

In 1990, the ILO and the Forest and Water Department of Mali, with financial support from the Norwegian government and UNDP, initiated a project in the Kita District of the Republic of Mali, which had three interrelated objectives:

- to improve incomes and employment for the rural population;
- to strengthen the organizational capacities of the population to enable them to take more responsibility for the management of local natural resources; and
- to improve the productive capacity of the cleared land in order to reduce pressure on the forests.

The rural population was gradually introduced to forest management and exploitation, initially under the complete control of the forestry office which contracted them for labour-intensive forestry works. Then, in 1991, the project introduced a system of contracts by means of which village associations could buy a permit to cut and collect wood in the classified or protected forest area, provided they agreed to respect the instructions specified in the contract. Thus, people gained access to the forest resources. This resulted in an increase in rural incomes and employment and, at the same time, protected the preservation of the forest's regenerative capacity. The economic interest encouraged the rural population to accept responsibilities in forest protection. The permits provided for a levy on the wood extracted, which contributed to the development of forest management and local community development funds. In this way the benefits of sustained forest utilization spread to the wider community.

By the end of 1995, 34 village associations had taken up permits. Together the associations debate common problems and interests, such as developing a common price system and hiring private forest technicians. In the areas surrounding the forests, the project helps agricultural producers to increase their productivity and thus reduce their need to clear forest land. More than 300 compost heaps have been introduced. Women's associations engage in agro-forestry, apiculture and commercial shea-butter-nut processing through the use of a revolving fund provided by the project. In these ways, additional jobs have been created.

From: ILO, 1995b.

6.34 Local distribu- tion of revenues from the conser- vation initiative

See option 2.4.14, Volume 1

34a. Revenue sharing for community projects

Uganda

Up to ten per cent of the revenue from entrance fees, guide fees, camping and gorilla-tracking in Bwindi National Park goes to support community development projects in the 21 parishes surrounding the park. Each of the local communities elects a committee which has responsibility for deciding which project proposal submitted by the local residents should be forwarded to the Park Management Advisory Committee (PMAC) for funding. The PMAC comprises the chairs of each parish committee plus women's representatives and district administrators. NGOs also attend as non-voting members. The applications from each parish are assessed in terms of viability, budget and compliance with environmental objectives. The PMAC then allocates the funds to the parishes whose projects have been approved.

34b. Wildlife revenue supports households and funds facilities

Zimbabwe

The Masoka Community of the Zambezi Valley, Zimbabwe, has a large wildlife population that supports a vibrant safari industry. Every year since implementing the CAMPFIRE initiative, the Masoka community has been able to distribute significant revenues from wildlife utilization to individual households and community development projects. Revenues have been used to support 140 households as well to develop and maintain the local school, health clinic, anti-poaching unit, drought relief fund, game fence, football club and women's club.

Revenue from the initiative has come to constitute a significant source of household income in the community and has enabled the development of education and health facilities at a time when government reduced its spending for such services. Masoka is located in a very marginal ecosystem where a good agricultural season comes about once every five years. By providing input to the drought relief fund, the initiative has enhanced the food security of the community.

34c. Fines and fees provide community funds

Nepal

The Conservation and Development Committees (CDCs) of ACAP are legally empowered to make decisions regarding sustainable utilization of timber, fuelwood and non-timber forest products. They are authorized to issue permits for the harvesting of timber or non-timber forest products (e.g., medicinal plants, bamboo, etc.) and to charge a fee. Committees can also fine people for illegal hunting, fishing, felling of trees and collection of non-timber forest products. All the revenues collected from these activities are kept in the CDC fund to be used for conservation and development activities.

In addition, ACAP is authorized by the government of Nepal to collect an entry fee of US\$13 per tourist trekking in the Annapurna region. A considerable portion of the revenue collected from the tourists is utilized in conservation initiatives in the region and a certain amount is deposited in an endowment fund. This fund is used for the establishment of community plantations, forest management, trail/bridge/school repairs and maintenance, improvements to drinking water, construc -

tion and maintenance of health clinics, etc. The entry fees are also the major source of funding for ACAP conservation initiatives in the region.

34d. Revenue distribution requires effective structures and processes Zambia

The Administrative Management Design Programme for Game Management Areas (ADMADE) was set up to address problems of elephant management and protection. By involving local communities ADMADE contributed to the development of a strategy for reducing the rampant poaching of wildlife in and around Zambia's National Parks and Game Management Areas (GMAs). The strategy aimed to achieve this by managing wildlife through a partnership with local communities. Two of the programme's central features are the Wildlife Management Authorities (WMAs) established in each area, and the Wildlife Conservation Revolving Fund (WCRF) established by a directive of the Ministry of Finance to recycle revenue from wildlife utilization.

All earnings generated from wildlife management within the areas are paid into the Wildlife Conservation Revolving Fund. This fund provides the money to sustain wildlife management in GMAs and the neighbouring national park; the balance is allocated quarterly to the GMAs in proportion to the income that each one generated. These funds are used for community development projects. Decisions regarding their allocation are made by the local WMA. The WMA has to account to the fund for all expenditures in the quarter, prior to the release of further funds.

The ability of some communities to benefit from the scheme is severely limited by the poverty of their wildlife resource and the ban on elephant trophy hunting. In 1994, 54 per cent of the fund was earned by the top five GMAs and 83 per cent was earned by the top ten (of 34 GMAs). Capital investment in non-consumptive tourism and the commercial use of veld products as part of the ADMADE programme could substantially increase the benefits available to the other participating communities.

Apart from the disparities in community revenues there have been problems with the fund's administrative structures. Until recently the fund experienced substantial management problems, which caused major delays in financial distributions and raised concerns about its sustainability. These problems appear to have been largely resolved with the appointment of a professional accountant as fund manager. The key constraint to disbursement now seems to lie with the WMAs, which are struggling with their management and reporting obligations.

From: Steiner and Rihoy, 1995.

34e. Clans take turns at running businesses Papua New Guinea (PNG)

Rural economic ventures in PNG are often troubled by the problem of sharing benefits among the many independent clans in a village. This problem has been neatly addressed in two villages in different parts of the country.

Wagu village in the Hunstein Range has set up a house-stay arrangement where tourists are lodged with a family during their visit to the

village. In order to distribute the income fairly, the community has decided to allocate tourists on a rotating basis through the village families so that each family and clan has the opportunity to host a stay and to benefit from the income.

At Lae, on the east coast of PNG, the Village Development Trust (VDT) provides training for village-based portable sawmill owners. Many of these mills are owned on a village basis and the VDT helps its clients to develop a system where each clan in the village takes turns managing the mill. A clan will operate a mill for a month, taking all profits and costs, and then pass management on to the next clan. Although the system initially required a fairly large training investment, it ensures fair income distribution, spreads skills through the community and provides the basis for further enterprise development.

34f. Integrating conservation with tourism and community development

Nepal

The Annapurna Conservation Area Project (ACAP) devised a management strategy to integrate tourism, resource conservation and community development for the benefit of both the local communities and international visitors. This was an innovative and bold approach and was tried for the first time in Nepal's protected areas. The approach emphasized three main principles:

- **People's participation:** the project considers the local people as the main beneficiaries and involves them in planning, decision-making and implementing processes. It delegates the responsibility of managing the conservation initiatives to them.
- **Matchmakers:** ACAP staff call themselves *lamis* or 'matchmakers', e.g., facilitators who bring outside resources to meet the needs of the local people. ACAP staff act as catalysts to motivate, mobilize and encourage the local people to take action.
- **Sustainability:** to sustain the project, the Government of Nepal has allowed ACAP to collect fees from the international trekkers visiting the Annapurna region. These funds are used to finance programmes and projects that will benefit the community. The project focuses on programmes that the local people themselves are capable of managing and controlling.

6.35 Compensation and substitution programmes

See option 2.4.15, Volume 1

35a. Apiculture in Andranomalaza

Madagascar

Andranomalaza is a village in the peripheral zone of Zahamena Integral Natural Reserve in Madagascar. In addition to the slash-and-burn rice cultivation (*tavy*) which provides the largest part of their income, the people also collect wild honey in the reserve's forest, which they sell for supplementary cash.

In 1993, agents of the Dette Nature Project (established to support the Waters and Forests Department) decided that the honey-collecting technique used by the villagers induced forest fire, and suspected the villagers of conducting other undesirable activities in the reserve while they were collecting honey. They ordered the villagers to stop collecting honey in the reserve. The villagers replied; "We are already not allowed to practice *tavy* in the reserve, now you tell us not to collect honey. All

you tell us are forbidding orders. Are there not some activities we may undertake?". After some discussion it was jointly decided that the villagers would stop collecting honey in the reserve and, in return, project staff would help them to develop beekeeping techniques outside the reserve. A contract to this effect has been signed between the project and the villagers.

35b. Replacement land as compensation

Nepal

One of the major activities of the Annapurna Conservation Area Project (ACAP) is to increase the green cover either by managing the natural forest area or by carrying out community plantation in the fallow community or public land. Indigenous, fast-growing tree seedlings are planted in these areas. Traditionally, however, these lands were used by local people for livestock grazing. Once the area is designated as plantation, access to free grazing of livestock is lost. In such cases, the CDC usually designates another appropriate area for grazing or gives priority to harvest grasses as compensation to those who are directly affected by the initiatives. The ACAP does not encourage financial compensation.

Fuelwood is the major source of energy for cooking and heating both for the local people and for the more than 45,000 trekking tourists who come into the region every year. To minimize the growing pressure on the forest resources, the project is focusing on alternative energy programmes and introducing various appropriate technologies. One of the technologies adopted is micro-hydro technology which has been successfully implemented in a few critical areas. During the construction of one of the micro-hydro sites, a patch of private land had to be used for construction of the power house. The local construction committee decided to compensate the landowner by providing another piece of land of the same quality and size. He was quite happy with the decision. After the decision, however, a few other people politicized the issue and started demanding compensation even though they had experienced no serious losses. This unnecessarily delayed the programme by two months. The situation was resolved by the local people after a series of village meetings.

35c. Trust fund and jobs

South Africa

The Richtersveld National Park plan provides for the establishment of a community trust whereby the parks board deposits a set fee per hectare per year and channels the net profits from its nursery. The residents of Northern Richtersveld can use the funds for local projects. In addition they are to be given preference as employees in the park.

35d. Bamboo shoots and trust funds

Uganda

The bamboo stands within the Bwindi and Mgahinga national parks are not large enough to meet the demands of local communities at a sustainable rate. Because of this, farmers in the adjacent parishes were provided with bamboo rhizomes for on-farm planting. Over a period of 18 months over 2,000 bamboo rhizomes were distributed to local farmers by the park management, a gesture very much appreciated by the local communities.

A much more economically significant initiative, but one that is slower to take off, is a trust fund for both the Bwindi and Mgahinga National Parks, established with the interest accruing from a donation made by the Global Environment Trust Fund. So far about \$4 million has been granted to these national parks; 60 per cent of the interest is earmarked to community development activities in the larger communities around Bwindi and Mgahinga.

35e. Birds or fish? Support for local industry helps both Mauritania

The Banc D'Arguin National Park, a coastal park of ornithological importance in Mauritania, is home to the Imraguen people, a small native population of fishermen. The park has been designated a World Heritage Site and is listed under the Ramsar Convention. From the 1980s on, however, conflicts became common between the requirements of the park and those of the local and outsider fishing industry. It has been particularly difficult for the park management to deal with breaches of park rules because of public perception that large areas of the park are desperately needed for development, and that the birds are less important than the economic needs of local people.

The International Foundation of the Banc D'Arguin (FIBA), was formed to find ways to improve the protection of the park. FIBA focused its attention on the plight of the Imraguen people, who face increasing poverty and are losing their traditional fishing skills. A strategy was launched to integrate park conservation with sustainable development for the Imraguen people. It was determined that in order to preserve Mauritania's fishing economy, it would be necessary to save the Banc D'Arguin Park and that, to save the park, the Imraguen people's traditional lifestyle would have to be maintained.

Today, the Imraguen people have been given exclusive rights of exploitation to the fishery resource, based on an assessment that their many generations of able stewardship in the area rendered them best suited to sustainably manage it. Additional projects focused on raising the value of fishing products and providing more effective commercial outlets. Old drying pens, traditionally used by women, have been rebuilt. Other projects are planned for improving education, health, and water supply facilities.

Abridged from: Campredon et al., in Lewis, 1995.

6.36 Financial feasibility studies

See option 2.4.18, Volume 1

36a. Feasibility study shows need to adapt proposal Bolivia

The community of Pajchanti, Bolivia, decided to manage a portion of its native forest. Following a participatory appraisal exercise, it was decided to fence one small part of the forest, to replant another, to install several trial plantings and to implement carpentry training. An economic feasibility study was then carried out which showed that the resulting costs would be much higher than the returns. Other investments would have to be made in more profitable activities for the community to gain a profit. Corrective measures were then introduced involving more communities, more extensive afforestation for commercial purposes with more rapid-growing trees, as well as improvements to the carpentry proposal.

36b. Check out the market!

Pakistan

A project for biodiversity conservation through community participation is being implemented in Northern Pakistan. The project works through the concept of "conservation through use". It was decided to initiate an ibex hunting venture to fund the conservation project, since there was a large number of ibex in the area. The project failed after much effort had been invested. As it turned out, there were large numbers of ibex but there was no market for hunting them. No economic feasibility study was undertaken as part of the preparation for this venture.

36c. The price of a bright idea

Tanzania

Beekeeping has been practised in Babati for centuries. It is an interesting subject for the Forest, Trees and People (FTP) project since the production of honey is a powerful reason for conserving forests. Honey production does not involve competition for other land use, nor does it cause deforestation or a decline in fertility. The only ecological hazard involved, which is serious enough, is forest fires caused when honey is harvested from nests in hollow trees, and when the log hives are smoked during harvesting. Increasing production and new methods eliminating this fire hazard would be important achievements in agreement with the general goals of FTP.

A plan of action for a small-scale pilot programme on improved beekeeping was formulated in cooperation with the District Beekeeping Officer. Beekeepers in four villages were approached. They welcomed the idea of participating in a pilot programme to learn more about modern beekeeping. Each participant got three frame hives from the project. Although the hives were privately owned, each group was asked to set up a joint apiary in order to facilitate group extension, demonstrations and evaluation. It was agreed that the participants would pay the project for the production cost of the hives in cash or in part of the harvest. When the hives had been paid for, the beekeepers could place them wherever they wanted. It was estimated that it would take about two seasons to pay for the hives. Project income would be used for a revolving fund to buy more modern hives which would be distributed to other persons interested in switching to modern beekeeping.

The programme began with workshops in which the basics of modern beekeeping were discussed. The beehives were painted and apiary sites were prepared. A study tour was made to a commercial apiary. The participants were very active and interested in exchanging ideas and experiences with the beekeeping staff and with each other. The work in the village apiaries started with keen participation and genuine commitment.

The programme ended in failure, however. The technology proved inappropriate for ordinary Babati villagers. The initial investment costs were too high; bee-veils, smokers and protective clothes had to be made by specialists in Babati town, at too high a cost. The hives had to be painted regularly to prevent them from rotting. Centrifuges were needed for harvesting if the advantages of frame-hives were to be utilized, but were unavailable in Tanzania. Instead of hanging the hives on trees in the traditional way, they were placed on stands to facilitate

inspection, which made them vulnerable to honey badgers, termites and black ants. In retrospect it is obvious that if a cost-benefit analysis had been undertaken this technology could not have been justified. The investments simply didn't pay off, and the new technologies were neither sustainable nor replicable without the continuing support of FTP or similar projects.

Abridged from: Johansson and Westman, 1992.

6.37 Linking benefits with efforts in conservation

See option 2.4.17, Volume 1

37a. Ownership rewards replanting Madagascar

ORIMPAKA (a Malagashi NGO), in collaboration with several government departments, is implementing a scheme to reward peasants involved in a reforestation project in an effort to encourage them to take part. It is proposed that each village (*fokontany*) will receive a certificate confirming it as the legal authority over the reforested lands in the territory. In addition, all the peasants will be given ownership of the plots they have replanted. The number of plots which a peasant may reforest is limited to five, to maintain a degree of equity in the allocation of public property. It is considered that if there is no limit to the number of plots, rich people may hire labourers to reforest many more plots, which they would then own.

37b. "Producer communities" funded from wildlife Zimbabwe

CAMPFIRE is developing the concept of "producer communities" in wildlife management programmes. A producer community is defined as one with jurisdiction over the land on which wildlife is found. The objective is to ensure that those communities which best conserve the wildlife habitat in the area will benefit from the revenues from the utilization — hunting, photography or viewing — of the wildlife in that habitat. It is assumed that, although wild animals wander between areas, they are more likely to be found in areas which have the best conserved habitat. In assessing the hunting potential in each area, a safari operator will look at the status of the habitat. The community in whose land area the animal is 'utilized' will get the full value of that use; e.g., for an elephant trophy, the community would receive Z\$80,000.

37c. For the people and for the project Mauritania

A number of community-based projects were initiated as part of the approach taken by the International Foundation of the Banc D'Arguin (FIBA) to protect the Banc D'Arguin National Park: a coastal park of ornithological importance and home to the Imraguen people. The initiatives include programmes for training marine carpenters, repairing deteriorating boats (*lanches*) and constructing new *lanches* to gradually replace the Imraguen's existing fleet. The new *lanches* are based on a traditional design but involve better construction techniques and materials. The fishermen who benefit from these projects are asked in return to contribute to the surveillance of the park and to donate some of their time and use of their boats for tourist and research activities.

Abridged from: Campredon et al., in Lewis, 1995.

38a. Pooling programme funds to increase effectiveness India

Cooperation between various government agencies which are active in and around conservation areas is generally rare in India. Indeed, their goals and programmes are often contradictory, such as when the tribal welfare department promotes goat-rearing while the forest officials try to discourage grazing.

A refreshing example of the reverse is the eco-development effort at Melghat Tiger Reserve in the west Indian state of Maharashtra. In the late 1980s, the District Collector, a keen naturalist, decided to review the programmes of all the agencies under his jurisdiction. He found that the total funding for the area within and around the tiger reserve was far greater than what was available to the reserve authorities, but that much of the funding was going into unrelated or contradictory rural development activities. He pooled the resources in a fund which was used for biomass regeneration, alternative energy sources, live-stock care and enhancement, employment in conservation-related activities, health care, and other activities. The integrated activities reduced local people's dependence on the reserve forests, while providing them with a stake in conservation.

The process worked successfully for three to four years but the model did not become official policy for the state government. The transfer of the collector meant that the situation is regressing to one where agencies pull in separate directions. There is an urgent need to prescribe and give incentives to the creation of mutual support between the programmes of all agencies.

38b. A national strategy to support local initiatives Australia

Landcare is an innovative, participatory and large-scale land conservation programme. It is a partnership of government, farmers, conservationists and community groups and involves more than one third of Australia's farming community through local voluntary groups. A Landcare group starts with a local community recognizing it has a land management problem. A local organization is then formed to respond to the problem and links are quickly made with various support agencies. Agencies that form part of the National Landcare Programme (NLP) include the Save the Bush and One Billion Trees programmes administered by the Australian Nature Conservation Agency, and the community component of the Natural Resources Management Strategy for the Murray-Darling Basin Commission. The NLP assists community groups with their activities, provides a strategic framework for funding integrated projects within the states of Australia and funds national initiatives for integrated land and water management.

Abridged from Campbell and Siepen, 1994.

38c. Joint project and government staff committee avoids duplication Madagascar

The PNUD/UNESCO/MAG Biosphere Reserve Project in Mananara-Nord has various government representatives on the programme planning committee. Before the project proposes a specific initiative to

6.38 Supportive links with relevant services and programmes

See option 2.4.18, Volume 1

the committee, the person responsible for the activity involved (health, education, agriculture, forestry, breeding, fishing, etc.) has to make sure that he or she has researched the public services operating in the relevant areas so that activities can be coordinated. In Mananara-Nord, in fact, each project activity has been expanded or adjusted to support specific government sectors in such areas as child vaccination, family planning, agricultural techniques, reforestation, and literacy campaigns.

38d. Lack of coordination makes projects vulnerable to deteriorating economy

Nicaragua

The Heroes y Martires de Veracruz Management Plan was prepared in 1986-87 by the Nicaraguan Institute of Natural Resources and Environment (IRENA) and IUCN to address the high level of degradation of natural resources in the most productive part of the country. In the 1950s this area consisted of small farms devoted to annual crops and patches of forest. This situation changed dramatically with the introduction of cotton and large mechanized farms. Every tree was eliminated and pesticide use increased dramatically. Small farmers were displaced to the slopes of the Los Maribios range, which were quickly deforested. Within 20 years, erosion was rampant, fishing areas were contaminated, and many roads and towns were destroyed by floods. A wave of migrants left for other parts of the country to search for new lands.

Three major projects were started in 1988 and 1989: two of them on the mountain slopes (Pikin Guerrero, an IUCN-IRENA project; and Los Maribios, a FAO-IRENA project); and the third in the coastal area (OLAFO, a CATIE-IRENA project). Unfortunately, while these projects are doing well, they have become uncoordinated, reducing the impact they could have had as parts of a coherent strategy. The situation has been worsened by IRENA's reduced resources. IRENA has been weakened by Nicaragua's economic crisis, and is now unable to coordinate the projects or implement the rest of the management plan.

From: IUCN, 1993.

38e. Working together for mutual benefits

Canada

The Atlantic Coastal Action Program (ACAP) was established to restore coastal environments so that they could sustain coastal communities. Atlantic communities face a multitude of issues that threaten traditional livelihoods and, in some cases, the existence of the communities themselves. To tackle the environmental problems, ACAP sites used strategic, rational, and well-designed project proposals to develop partnerships with departments and funding agencies. Departments are using community multi-stakeholder organizations, formed for the programme, to deliver their own services. The ACAP organizations have developed a reputation for completing ambitious initiatives successfully by integrating the agendas and resources of many partners. They combine resources to enable partners to carry out activities that would not be possible otherwise. They add their own resources to projects in the form of volunteer time, local skills, and other valuable in-kind support. They also facilitate partnerships within each commu-

nity and between communities and various levels of government. The partnership groups that ACAP works with include federal and provincial government departments, municipalities, universities, First Nations, industries, NGOs and individuals with specialist skills.

From: Environment Canada, 1995.

38f. Organized community programme attracts other projects Kenya

In 1990, the Centre for Biodiversity at the National Museums of Kenya along with the people of Elangata Wuas group ranch (a large stretch of land owned by the community and communally used for grazing livestock), established a joint programme of community-based sustainable resource management. The Kenya Wildlife Service joined the programme to facilitate the planned experiments in sustainable wildlife utilization. In 1992, the Ford Foundation and the International Development Research Centre (IDRC) provided funding for a core initiative that put an emphasis on research, community mobilization, training and experiments with alternative modes of sustainable land-use options.

The very presence of a well-organized community and trained staff makes it possible for donors to come in with their own specific inputs. Other donors have become involved in the construction of surface dams for the storage of rain water, the conservation of wild dogs, life education to schoolgirls, and the development of ecotourism. Involving various donors and projects is important because the programme is very open-ended. In discussions with the community, new ideas constantly come up, new projects are designed and new donors found. The programme is seen by those involved as more of a development process than a development project.

To the Centre for Biodiversity, the programme offers important research and training opportunities. Methodologies are developed, for instance, which can be used in other parts of Kenya and in neighbouring countries. These methodologies range from pastoralist ostrich husbandry, sustainable firewood harvesting and game-bird shooting to empowering local people to make rational decisions on the appropriate balance between freedom to exploit renewable resources, and the responsibility to preserve them.

The programme also trains local staff members in such matters as basic taxonomy and land degradation assessment. These staff members in turn provide environmental education to primary schools and assist scientists in the field. Through the involvement of local people, indigenous knowledge is being merged with modern science to provide appropriate and sustainable land-use techniques.

Abridged from: Vreede, 1995.

6.39 Monitoring land tenure and land values in sensi- tive areas

See option 2.4.19, Volume 1

6.40 Incentives to conservation accountability

See option 2.4.20, Volume 1

39a. Government and conservation share GIS system Belize

The Land Information System of Belize is a national-level cadastral survey that is operative and fully automated. Through a project funded by the British Aid Agency, all the land registries, property boundaries, land-use categories and zoning were included in a Geographical Information System (GIS) closely linked to the agriculture and finance ministries. The system is extremely useful for land tax collection, fiscal control and land-use planning at a national level. Once the information is digitized and stored it can be regularly updated, redefined and transformed into maps and other planning tools available for, among other things, management of lands near conservation initiatives.

40a. Royalties conditional on environmental responsibility Pakistan

The successful regeneration of the coniferous forests on Pakistan's mountains depends on protection from grazing, at least for a few years. These forests are frequented by nomads who pay local people for the use. This practice adds to the local livestock pressure on the forests. The local people also collect royalties from timber sales. Previously these royalties were unconditional. Now, as part of the Kalam Integrated Development Project, consideration is being given to linking volumes of timber being cut and royalties to the cooperation of local people in controlling grazing practices. In addition, it is proposed that people will only be paid a royalty if they agree to invest part of it in forest regeneration.

40b. Stewardship contracts reward those who use resources sustainably

The Philippines

The underlying philosophy of the Central Visayas Regional Project, funded by the World Bank, is that community-based resource management is the best way to manage natural resources and protect the environment. Tenure of and responsibility for natural resources is the major incentive for rural people to protect and manage resources in a sustainable way, and it offers a measure of control over potentially harmful outside influences.

The project provides security of tenure over primary resources on government owned land through Stewardship Contracts, community timber utilization permits, timber concessions to smallholders, reforestation contracts, marine reserves and fish rearing sanctuaries, and licences for access to specific resources. The Stewardship Contracts provide for a 25-year lease on government land conditional upon the resources being managed in a sustainable way. Mangrove planters were allocated stewardship contracts that gave them exclusive rights to manage and use the resources of the mangrove in a sustainable way. While the provision of wood from mangrove plantations could not be realized for a number of years, immediate benefits were apparent in the decreased rate of shoreline erosion and an increase in crab and shrimp catches within a few months of replanting. Within a year 1,354 contracts had been awarded for the mangrove areas. Contracts were also awarded for forested areas (a total of 465 within a year of introducing

the scheme). Farmers who provided voluntary labour for the reforestation of the hill country were eligible to apply.

Abridged from Villacorta and van Wetten in Davis, 1993.

40c. Fishing quotas made conditional on compliance with regulations **United States**

The Community Development Quota (CDQ) programme has been introduced in Alaskan communities bordering the Bering Sea that have a high proportion of aboriginal residents. The CDQ programme was conceived against the background of a highly developed fishing industry operating adjacent to poor coastal communities. In 1989, 25 percent of the people in these communities were found to live below the poverty level. Job opportunities are few and infrastructure is sub-standard relative to what most United States citizens take for granted.

The programme allows local communities to fish for pollock after the normal open-access season is closed. This gives the CDQ organizations the potential to supply the market when supplies may be low and values high. Profits from CDQ fishing operations are used by each CDQ organization to achieve the goals of its development plan. All the organizations are using their CDQ funds for training, education, job creation and infrastructure development.

The CDQ is available to community organizations that have an approved Community Development Plan and can demonstrate an ability to manage a fishing operation and comply with the regulations. Monitoring the fish-harvesting operation is a cooperative effort involving the plan's management organization and departments of the State of Alaska. A key factor is compliance with quota allocations. A daily monitoring of catch is carried out and failure to comply results in suspension or termination of the agreement.

A total of 55 communities have been granted a CDQ allocation. Each organization has contracted with an established seafood company to provide harvesting and processing of their allocation. This provides a basis for joint venture investments and transferring skills to community participants.

From: Ginter, 1995.

40d. Blackmail or incentive? **Papua New Guinea (PNG)**

External incentives for conservation can sometimes set conservation back rather than help it. The people of the Porgera Valley in central PNG own significant areas of high biodiversity rainforest. When they heard that funds were available for conservation of forests, they approached the local conservation agency and threatened to burn their forest down if they were not given a financial 'incentive' to retain it!

6.41 Biodiversity monitoring and surveillance by local people

See option 2.4.21, Volume 1

41a. Democratizing technology to fight a major problem Australia

Many of the Landcare groups in Australia are battling a major problem with soil salinity, a condition that is difficult to detect in the developing stages. Several of the groups have adopted simple low-cost monitoring technologies to track responses to corrective measures. These are managed by local farmers, school students and local residents and the results are reported to a central data collection point. The information is returned to the communities, which interpret it and use it as a basis for action.

For example, the members of the Mary's Mount Landcare group in New South Wales have set up a network of piezometers (observation wells) which are monitored every month to build a database of groundwater levels and water quality information. Watertable Watch has developed a system to monitor rising groundwater. An auger hole is dug and lined with slotted plastic pipe (a basic piezometer), into which is placed a light rod with a float at the bottom and a flag at the top. The rod is painted red at the bottom, orange in the middle and green at the top. As water tables rise, first the green part of the rod appears, then the orange and the red, signalling danger to irrigators. Watertable Watch has also encouraged the involvement of children in the monitoring process to great effect. They have installed test wells on farms which are read every month. Much of the reading is done by the farmer's children. According to one of the organizers: "Once you put the information into a graph form, the children start to see it. They can understand the changes. It's really a family thing — it gives them some enthusiasm and some ambition to get out there and do something around the farm".

The inter-state programme Saltwatch involves more than 900 schools and 50 Landcare groups in gathering and analyzing tens of thousands of water samples from creeks, rivers, irrigation canals and bores in Victoria, South Australia, New South Wales, Queensland and the Capital Territory. Each school or community analyzes its data and sends it to a central agency for processing. They receive a computer-generated overlay map of water quality in the district which may be displayed in the school, local store or hall, thus ensuring that the whole community 'owns' the problem. Data is stored on school computers as well as in government agencies, and groups are encouraged to look at trends over time within their catchment.

Another group, Streamwatch, involves schools within the Sydney Water Board area in investigating water quality using nine basic tests. These are used to generate a water quality index, so that water quality can be compared across networks of water catchments. Schools are provided with water testing equipment, and with training for teachers in the use of the kits and in computer networking.

Abridged from Campbell and Siepen, 1994.

41b. Restocking sea cucumber Solomon Islands

In Marovo Lagoon in the western Solomon Islands, sea cucumbers (*bêche-de-mer*) are a significant source of income and a traditional food. Recent over-harvesting to sell to Korean and Japanese buyers left the area almost barren of this previously common species. To overcome the

problem, local communities worked with WWF scientists to regulate fishing practices and ensure sustainability. A traditional taboo area was declared over one part of the lagoon, banning all exploitation of *bêche-de-mer*, and limits were set on catches in other areas.

A participatory monitoring system was established by the communities to observe the changes that resulted from the new management regime. Fishermen and women kept a record of sea cucumber catches and the time necessary to gather them on a regular basis. They periodically conducted transect and lagoon floor plot counts of sea cucumbers. This monitoring has shown a significant increase in *bêche-de-mer* populations in the lagoon over the past two years and reinforced the value of new practices for the communities.

41c. Citizens monitor the Atlantic Coast

Canada

The Atlantic Coastal Action Program (ACAP) aims to restore coastal environments so that they can sustain coastal communities. The purpose of the programme has evolved from an environmental management initiative to an integrated coastal zone management initiative. To many community stakeholders, ACAP is seen as an economic prosperity initiative. The concerns driving most stakeholders are the restoration of shellfish and sport fisheries, the retention of topsoil, and the responsible pursuit of aquaculture and ecotourism opportunities.

Community stakeholders are actively involved in monitoring resources. Citizens identify the ecosystem indicators they would like to monitor at the community level. These include environmental (chemical and biological) indicators as well as socio-economic ones. With the assistance and guidance of specialists, community volunteers are presently monitoring water quality and carrying out "nest box" surveys in many areas of Atlantic Canada. Credible information gathered by citizens is helping scientists and citizens understand their environments and the impact of human behaviour and make informed decisions based on that information.

Abridged from: Environment Canada, 1995.

41d. Trail groups to monitor resource extraction

Uganda

Some of the communities at the border of Mount Elgon National Park are entering into partnership agreements with the park authorities to monitor local use and prevent the undue exploitation of park resources. People are allowed to extract bamboo for subsistence and traditional uses, but are not allowed to harvest other products, such as timber, or to hunt game. Some trail surveillance groups have been formed to survey extraction of resources along a particular trail.

41e. Monitoring the Rwenzori Mountains

Uganda

For the past two years, WWF US has provided training and technical assistance to the Uganda Rwenzori project in developing and implementing a monitoring and evaluation system, starting with clarification of the project's objectives. The project is designed "to assist Rwenzori

Mountains National Park and surrounding communities to conserve the natural resources of the area, in particular the biodiversity and its value as a watershed". Over 180,000 people live on the park's borders. In February 1996, a local consultant facilitated a workshop on participatory baseline data collection for 18 project and park staff who worked directly with communities. Much of the workshop focused on simplifying terms and concepts for use at the community level (e.g., using "measuring successes and failures" in place of "evaluation", "sign" in place of "indicator", etc.). As part of the training, extension staff began the actual participatory baseline data collection exercises on resource use and attitudes towards the park. Data was collected in order to monitor progress on the project's objectives of reducing pressure on park resources and improving park-community relations. Indicators included types and levels of resource use, sites where they were obtained, and interest in alternative technologies and the objectives of the park.

6.42 Integrating conservation initiatives with local empowerment in welfare, health and population dynamics

See option 2.4.22, Volume 1

42a. Need for family planning identified in environmental management plans Uganda

CAEE began working in the Bwindi and Mgahinga National Parks areas in 1986 with a programme to encourage people to plant trees. In 1988, a Development Through Conservation (DTC) project was started in conjunction with WWF. The project was intended to assist the communities bordering the two parks to sustainably manage their natural resources and to help Uganda National Parks (UNP) conserve the forests and their biodiversity.

In 1992, partly in response to a desire for family planning assistance expressed by community members and relayed through DTC staff, CARE initiated a region-wide family planning programme funded by USAID's Population and Family Planning Expansion Program. The Community Reproductive Health Project (CREHP) works with district health teams to train clinic personnel in the delivery of family planning services in 74 regional health units. In 1994, CREHP began selecting and training community volunteers to provide family planning counselling and referral in their communities and to distribute contraceptives.

There are strong links between the two regional CARE projects. Population densities surrounding the parks are among the highest in Africa. Land shortage due to overpopulation, as reported in numerous community surveys, is one of the most pressing problems for people of the area. Furthermore, there are serious doubts that the conservation efforts of the DTC programme will be sustainable if the local population continues to grow at its current rate of between two and three per cent per year. The desire for family planning among local populations is strong, due mostly to the difficulty of adequately providing for today's children and the pervasive lack of male support in households.

Since both programmes require intensive community-based approaches, there is a prime opportunity to integrate them at the community level. In response, DTC is trying a new extension approach called Community-Based Environmental Management (CBEM). Community members analyze their environmental problems and develop solutions as part of an environmental management plan. If family planning is identified as

a solution to problems caused by high population densities and land shortage, CREHP is introduced to assist the community in selecting and monitoring a family planning volunteer who lives and works in their community and is supervised by the local health centre. This integrated approach looks very promising.

Abridged from: Lindblade, 1995.

42b. Counting people counts

Indonesia/Thailand

Two experiences of attempting to rescue a population of gibbons in a protected area call attention to the importance of knowing something about the people in the vicinity. In a protected area in Indonesia a grim future is foreseen for the small population of gibbons it supports. The area is surrounded by villages that use parts of the protected area for rice growing. All of the villages have large numbers of children and moderate-to-high rates of total fertility (the number of children a woman bears in her reproductive life). Three to five children per family are not uncommon in these communities. In 20 years the villages will have scores of young people coming into the labour market needing land or jobs. The gibbons' habitat is very likely to be further encroached upon, and the likelihood of sustaining the population is much in doubt.

In the hilly forests separating Thailand's great central plain from the dry plateau of the northeast, another protected area contains a population of gibbons whose protection is the aim of the government and of local wildlife organizations. This area is also surrounded by farming villages, but rather than expanding, there is a clear possibility that they will get smaller. They will not be excluded or driven out by fencing the protected area; other processes are at work. The villagers have been part of the Thai national family planning programme that has produced one of the most rapid declines in fertility ever known. Most families have only two children. More land will not be needed for these children. There is already enough for the future subsistence in the area — in fact, more than enough, as many of the young people are migrating to Bangkok for work. In this area, a positive future for the gibbon population is more probable.

43a. Staff and consultants identify need for monitoring of programme

Haryana, India

After reviewing the Hill Resource Management Society programme (HRMS) in 1989, officers of the Haryana Forest Department, together with a consulting team, agreed that the programme needed to be systematically integrated within the policies and procedures of the forest department. Over the next year, a team composed of departmental officers and outside resource persons (supported by the Ford Foundation and the Tata Energy Research Institute) began working intensively with field staff in five regions. One reason the programme had encountered difficulty in expanding was the lack of attention it received due to the heavy workloads of departmental officers. It was agreed that the programme needed regular monitoring by senior officers working together with their subordinates.

6.43 Staff review of internal mam- agement issues

See option 3.4.1, Volume 1

An informal working group was then established, meeting every four to eight weeks to oversee the development of the programme and the work of the HRMS support unit. The working group was comprised of senior staff and the consulting team. The meetings of the working group evolved in a relatively informal way. Many people attended just because they were involved in the programme. After each meeting, minutes were distributed reviewing issues discussed and decisions made. At each subsequent meeting, the decisions of the previous meeting were reviewed to see if action had been taken. The working group slowly became an integral part of the department's operations.

Abridged from Gupta in Dhar et. al., n.d.

6.44 Regular staff meetings to communicate and evaluate ongoing work

See option 3.4.2, Volume 1

44a. Three-day meetings for staff to review progress

Madagascar

The Biosphere Reserve Project in Mananara-Nord holds a three-day staff meeting every month. On the first day the technical committee (which includes the National Director, the Technical Coordinator and all the technical staff) discuss what they have achieved during the month in relation to what they had planned to achieve. The committee also tries to resolve any problems within the project. On the second day each section has a briefing from the relevant field agents. On the last day, all the project staff gather for a general briefing. The National Director and/or the Technical Coordinator give an overview of the project, then each section gives a brief review of their team's activities. Following that, the meeting is opened up to general discussion.

44b. Staff meetings to review programme and resolve field problems

Nepal

Within the Annapurna Conservation Area Project there are two forms of regular staff meetings: weekly and quarterly. Programme Committee meetings are held monthly to discuss and review programmes, progress and problems. Disagreements are aired and development issues discussed before decisions are reached, based on what is acceptable to the majority.

The quarterly meetings last for three days and involve all the regional field staff and officers from headquarters. Their purpose is to discuss and review programmes and resolve any specific field problems.

6.45 On-the-job capacity building

See option 3.4.3, Volume 1

45a. Training widens horizons for staff and local conservation

Nepal

On-the-job training and opportunities for professional enhancement are two of the priorities of the Annapurna Conservation Area Project. A wide range of appropriate short-term or long-term training programmes have been offered to staff at various levels. Project staff are sent to in-country training for appropriate skill development, leadership, training of trainers, communication and resource management. Some of the senior staff are sent abroad (e.g., to the Philippines, Thailand, Greece, Scotland and the United States) for training in administration and financial management, community forestry, agriculture technology, conservation education, wildlife management, etc.

This emphasis has brought important returns, and there are a number of success stories to attest to that. For instance, a villager from the project area joined the project in 1986. He was illiterate and came from a socially disadvantaged group. He joined the project as a porter to transport various construction and office materials from the nearest city centre, which was seven to nine hours walking distance. He served the project well in that post for three years. The internal staff evaluation team in 1989 recommended that his job title be changed according to his request and that he be provided with training. The project sent him for a two-week course in forest and agriculture nursery management at the Lumle Agriculture Research and Training Centre. Then he was transferred to a new field station with new job responsibilities as an agro—forestry nursery foreman. Within one year he made significant progress in this field. To enhance his knowledge further, he was sent on different agriculture-related training programmes. He also took a six-month literacy course in the village, which allowed him to read and write the basic Nepali alphabet. Thus he was able to keep nursery records by himself. On his own initiative, he also experimented with agricultural trials of different indigenous technologies, like preparation of herbal pesticides, manure tea (special organic liquid fertilizer from livestock waste), etc., with great success.

In appreciation of his extraordinary technical skill and innovative ideas, he was sent to the American Farm School in Greece in 1993 for a ten-week farming technique training course. Even though he could not speak or write English or Greek, he was able to perform as one of the best trainees in the practical session. This kind of opportunity not only motivated him, but also other staff working with him.

45b. Local staff share their training with others

Pakistan

Social forestry is becoming increasingly popular in Pakistan, especially in the North West Frontier Province (NWFP). A major reason for this is the opportunities for on-the-job training and reorientation provided by earlier participatory forestry projects such as those in Kalam, Peshawar and Malakand-Dir. Graduates of these projects have spread to other areas and have assisted in setting up similar projects there. Gradually a critical mass has been created which is working towards institutionalizing social forestry in NWFP.

45c. Only the managers get the training

Madagascar

Some local staff working with the Integrated Conservation and Development Project in Madagascar reported: "In the four years we have worked with the project we have never obtained any training although a budget was allocated for staff training in the project documentation. It is always the National Director and the Conservator (both government employees) who receive training both in Madagascar and overseas! We think the reason for this is the short duration of our contracts. Although we have worked for the project for four years, we must renew our contract every six months".

45d. Adapting practices in response to community changes Madagascar

The Dette Nature Project was initiated in 1989 to revamp Madagascar's Waters and Forests Department, which was struggling because of scarce funding and personnel. The project hired 350 Nature Project Agents (APNs) to work in 17 Waters and Forests Conservancies.

Initially, the agents were provided with only basic training to raise their awareness about environmental protection and offences against the state forest. In 1991, in response to a report prepared by the APNs regarding the interests of local people, it was decided to fund a number of Integrated Small Development Projects (PPDIs). To facilitate the implementation of these PPDIs, decision-making and fund management were highly decentralized. In addition, APN staff were given more in-depth training so that they could be employed by the government when the project was terminated.

In 1994, the project managers became aware that the activities being conducted within the PPDIs did not always correspond to the real needs of the peasants, so they decided to adopt participatory rural appraisal (PRA) techniques to identify the priorities of the local people. Every APN was thus provided with training in PRA techniques. In the future, no PPDI will be implemented unless it has first been identified through a process of PRA.

The changes in the project's strategies and activities since its establishment six years ago highlight the importance of increasing the capacities of the staff to meet the challenges of complex operations.

45e. Training provided to enhance local employability Nepal

Employing local people can be made easier and more rewarding if coupled with on-the-job training. The Annapurna Conservation Area Project (ACAP) has a staff of more than 200 located in various field stations within the 7,600-sq.-km project area. Of these, over 65 per cent are local staff: 19 per cent of them are women. ACAP has a policy to give preferential employment to local people to make the project more people-orientated and sustainable. The local people are assisted by ACAP to attend different training programmes on topics such as poultry-raising, basic electricity, tour guiding, lodge management, carpentry and entrepreneurial skills and development.

6.46 Decentralizing decision-making within the conservation initiative

See option 3.4.4, Volume 1

46a. Decentralization works but there is still a role for a central office The Philippines

The Central Visayas Regional project in the Philippines, funded by the World Bank, was set up to improve the natural resource base in six critical areas of the region. Specific project management was undertaken by 11 Site Management Units (SMUs), each coordinated by their respective Provincial Resource Management Offices. One of the projects's main objectives was to create a committee structure within the communities, which could encourage widespread grassroots partici-

pation in environmental management. Project activities at the grass-roots level were organized by the SMUs. Constraints were soon identified by both the community members and the SMU. For instance, it was the SMU's responsibility to resolve difficulties impeding the project through cooperation with a range of government agencies. Although this bottom-up approach was very successful, some problems could be solved only at a higher level, through the direct intervention of the project's Central Office. This was particularly true in cases of political conflict and corruption.

Abridged from Villacorta and van Wetten in Davis, 1993.

46b. Staff shortage addressed through devolution

India

Since the late 1970s, the Haryana Forest Department (HFD) has become increasingly involved in participatory forestry management. The department undertook a highly successful community involvement exercise in Sukhomajri. It resulted in the control of land degradation through community involvement in the provision of dams and irrigation schemes. These measures facilitated the use of non-eroded areas for agriculture and helped restore the severely eroded hill country. This success encouraged the forest department to expand its dam construction activities to 39 communities between 1983 and 1988. Since the forest department had limited capacity to assist the communities in organizing, only 20 per cent of these communities were able to establish management societies and irrigation facilities similar to those established in Sukhomajri.

To address this problem it was decided to establish the Hill Resource Management Societies (HRMS) programme to increase the department's capacity to work with the existing village societies. This was achieved through the establishment of a Joint Management Planning Team comprising social scientists, community organizers and employees of the forest department. The team was charged with facilitating the selection of dam sites and the allocation of grass leases, motivating the villagers to take up responsibility for watershed management and improving interactions between the department and the HRMS. The team also trains territorial staff in community participation procedures and drafting joint management policies, and helps draft joint management agreements with communities in their respective territories.

Abridged from Dhar et al., n.d.

46c. Donor funding and bureaucracy impede decentralization

Burkina Faso

The Gestion des Terroirs programme in Burkina Faso started in 1986 with the aim of creating local village councils to take charge of natural resource management. These councils are supposed to work with government officers to reverse the trend toward land degradation and secure the sustainable uses of natural resources. Decentralization is also on their agenda, but implementation is slow. The bureaucratic culture does not facilitate the delegation of certain functions. Hence, village councils established under the programme are often overruled or undermined by forestry departments agents and other government officers.

The economic crisis makes it impossible for the state to initiate almost any new activity without the support of a donor agency. This makes decentralization very difficult, since it is futile to delegate authority to lower levels without the concomitant transfer of financial resources. Consequently, the resource management programme is implemented differently in various locations. This is due not to environmental or socio-economic conditions, but to donor preferences. The state is not in a position to influence the implementation to any great extent.

Abridged from: Engberg-Pedersen, 1995.

6.47 Reviewing the initiative for timing and flexibility

See option 3.4.5, Volume 1

47a. Institutional arrangements to suit different situations Ecuador

A new government unit (INEFAN) was established in Ecuador to manage biodiversity conservation projects in eight high-priority national parks. Once the government structure and enabling legislation for boundary demarcation and tourism control were in place, the review of various existing projects began with the involvement of several NGOs and the private sector. New institutional arrangements proposed for the different parks included NGO management; private sector investment in sustainable forest management; joint NGO/village management; and local community management (with some state support) in a reserve occupied by indigenous peoples.

47b. Community management of wildlife, incorporating gender issues Cosiguina, Nicaragua

One year after settling in a natural reserve on the Cosiguina peninsula in Nicaragua, a community of 28 families established a cooperative organization called Omar Baca. The National University of Leon, the Ministry of Natural Resources and Environment and IUCN-ORMA worked with this cooperative to undertake a project on management of iguanas and *garrobos* (small alligators). Initially, only men from the community participated in the project, although women and children played important roles in many of the activities surrounding the management of the wildlife (construction of enclosures, reproduction, and cultivation of food for the animals). Over time, the women began demanding opportunities to participate in the project, to receive training and have responsibility within the cooperative. During the review process, the importance of including the women was recognized by the project, and in the second phase they were given equal opportunity and access to resources. Using the profits from their activities the women were even able to set up a rotating fund to provide credit for further production. The men of the community appreciated the women's work and the standard of living of the entire family increased.

6.48 Hiring staff from the local area

See option 3.4.6, Volume 1

48a. You can't teach what local people can contribute Tanzania

Having no professional extension workers posted to the villages, the Forest, Trees and People Project (FTP) in Tanzania transferred most local project tasks and responsibilities to village contact persons (CPs) selected by the village governments and trained in FTP seminars and workshops. The CPs worked as extension agents and performed some of

the tasks professional extension workers or village government committees would have otherwise done. They were not permanently employed by the project, but received allowances from it for activities outside their villages. They were also employed as labourers for tasks such as monitoring and research assistance. Occasionally they received compensation from the village for working on communal projects, such as nurseries; in addition, they were exempted from other communal work. The FTP found that employing local people as CPs provided many advantages. These included:

- continuity of work. The CPs were farmers who lived in the villages and had no intention of leaving; this meant that the knowledge they acquired stayed with them in the village.
- an intimate knowledge of local conditions. The CPs knew all the villagers by name and were familiar with the areas, the history of the community and its land uses.
- commitment to the village rather than to the region as a whole. This reassured the villagers that the project would not compromise local interests for those of the wider area.

Abridged from: Johansson, 1992.

48b. Everybody wins when locals are employed

Peru

The Department of Forestry Management at the National Agrarian University in Peru selected the El Angolo Hunting Reserve, within the Northwest Biosphere Reserve, as the site most suitable for its wildlife study programme. The employment agreement reached with the local community created a win/win situation. Local ranchers and their employees were incorporated into the programme to serve as guides, wildlife consultants and field camp assistants. The university benefited from the arrangement by being able to integrate local knowledge of wildlife behaviour into its research projects. Local people benefited from the wages paid and were given an opportunity to influence the choice and design of studies at the research field site.

48c. Keep the skills in the community!

Bolivia

FUPAGEMA is a grassroots NGO based in Independencia, Bolivia. It was founded by people born in Independencia, who are called *palquenos*. FUPAGEMA has a policy of hiring only people born in Independencia and the surrounding area. This ensures that employees speak the local language (*quechua*), that they are familiar with local production (e.g., Andean tubers), that they are accustomed to long travel on bad roads, and that they share the local customs and habits. As a result, training is easier and when people retire they are still *palquenos*; the skills and knowledge they have acquired are retained within the community.

48d. Locals fill the project office across all divisions

Madagascar

The Biosphere Reserve project in Mananara-Nord has created some 60 permanent jobs at the local level. At the head of the project are the National Director (a government employee) and the technical coordinator. Then there are those responsible for each section: conservation;

agriculture; animal breeding; fishing; infrastructure; health; education; handicrafts; administration; and sociology. Most of these responsibilities are held by natives of Mananara. Many local people are employed within each of these groups. In addition to this, the field agents hire local people for odd jobs (such as luggage carriers) whenever required.

48e. Value of national staff unrecognized in status and pay Colombia

It is generally recognized that local people need to be involved in a conservation initiative because their local knowledge can be a great asset. Yet their recruitment must not be token, i.e., being done for image purposes or limited only to the less prestigious jobs.

Some years ago a European agency donated funds to the Colombian government to implement a sustainable development project in the Amazon region. The relevant needs, priorities and proposal were investigated and compiled over a one-year period by Colombian agents, together with a representative of the European agency.

Unfortunately, the final version of the project did not reflect the major concerns expressed in the initial report; all but one of the appointments to the management team were expatriates and all the local field offices were headed by expatriates. Colombian professionals were hired only for field work and had no input in running the project. Expatriates earned as much as three times what was paid to the nationals and were provided with significant benefits not made available to the national staff. Most of the local staff had university degrees and at least five years experience but they felt they were discriminated against on the basis of not having international experience. Local staff were frequently chastised for taking initiatives, talking with the local authorities, etc.

48f. Recruiting locals up to a point? Uganda

In 1993 the Uganda National Park and the management of the CARE-supported Development Through Conservation Project realized the importance of maintaining links between park management and local communities at the grassroots level. They sought to do this by appointing Community Conservation Rangers (CCRs) in the Bwindi and Mgahinga national parks. By 1995, eight of the planned 15 CCRs had been hired to work in the 25 parishes adjacent to the national parks.

CCRs are recruited from within the communities on the recommendation of the local administrative leadership. The rangers live within the villages and are trained to facilitate community programmes such as:

- multiple use (resource harvesting) activities;
- conservation education programmes; and
- assisting local communities to write project proposals for funds accruing from the tourism revenue-sharing scheme.

While educational standards may limit the fields in which locals can be employed, it is important to ensure that the value of local knowledge of natural resources is recognized in the appointment criteria. A number of indigenous Batwa communities are found in the surroundings of Bwindi. These people know a great deal about the forest but have never

gone to school. Potentially, their traditional knowledge about the forest has enormous importance for conservation, but project managers require a set number of years of formal schooling as a minimum qualification. Currently, there is only one ranger employed from the Batwa communities.

49a. Learning by listening: dropping in on local meetings Uganda

In the parishes adjacent to the Bwindi National Park, where a multiple-use programme is being tried out, park and project staff are given a schedule of the various village meetings for the upcoming period. They are invited to attend any of these meetings, whether or not issues relating to the park are to be discussed. The staff take advantage of this offer as it helps them maintain contacts with the local communities and gives them a better understanding of the way the communities operate, the networks and hierarchies within the villages, the issues each community is dealing with and their priorities and values. The process also works the other way. Local communities are invited to some project management meetings to hear about the latest developments affecting the park.

49b. Local history tellers create a hornet's nest Senegal

In Senegal it is generally accepted that staff must attend a protocol meeting on their arrival when visiting a project area. Sometimes, after an introduction on the objectives of the visit and a welcoming speech by the chief of the village, a brief historical profile of the community is presented by the elders and chief. This has been a successful way of opening up communication between the project staff and the community members, who are generally proud to tell the story of the community which they know so well.

A curious event took place on one such occasion in a village called Doumga Rindiaw. After a presentation on the historic profile by one elder, so much disagreement arose within the group, expressed mainly in non-verbal ways (particularly on the part of the women) that the meeting had to be stopped. The elders decided that the history should be told by the Imam (religious leader), since he is the authority who keeps the records. The Imam was away from the village at the time, however, and the project team was unable to get the official version of the history of the community. Later, the team learned unofficially that at one time the village chief had been a woman, but this could never be said to outsiders!

50a. Cultural practices limit effectiveness of project Zimbabwe

The Mutoko Agricultural Development Project (ADP) is situated in a former homeland in Zimbabwe. The area is dry, sandy, overpopulated and overstocked; there is serious ecological degradation as a result. The government is helping farmers rehabilitate the land through various government institutions. The ADP's general objective is to improve agricultural production through better collaboration between the farmer

6.49 Staff visits to the field operations

See option 3.4.7, Volume 1

6.50 Cultural presentations for the staff of the initiative

See option 3.4.8, Volume 1

community and specialist government institutions. Sometimes these institutions have difficulties reaching and mobilizing farmer households, partly because of their approach, partly because their services are not tailored to the farmers' needs or abilities. The same applies to private companies (fertilizer, chemicals, etc.) and to some local NGOs. It has been found, for example, that many poorer farmers do not feel comfortable attending the agricultural training sessions since the advice focuses on mechanization and fertilizers which they cannot afford.

In addition to these difficulties with the distribution of information, communication is hampered by the project structure. The main channel of communication between the management and the field is the Project Implementation Team (PIT). This provides a forum for project staff to meet with the farmer representatives and the extension workers to discuss results, problems and plans. The farmer representatives are volunteers and are elected by the village. Because of the hierarchical nature of the Mutoko society, however, the farmers' representatives tend to be sponsored by resource-rich male farmers. This means that the information being fed back to the project team about farmer's preferences and proposals are biased in favour of wealthier individuals. By structuring the project in this way the project team has limited its access to other groups in the community; as a result, several aspects of the project encountered unnecessary setbacks due to misinformation or biased responses.

As an example, the farmers' representatives reported to the PIT that the idea of using soil improvement plants (from the bean family) in crop rotations was of no interest to the farmers. In reality the local women were very supportive of this idea, because they valued the beans as food and realized that intercropping to increase fertility was a great advantage, especially for those with small tracts of land. Most farmer representatives had enough land and considered the beans to be 'poor people's food' so they never reported that the women supported the idea.

The project staff believe that their work would be more effective if women and resource-poor male farmers were represented on the decision-making body, but they do not know how to achieve this. Culturally, women are not allowed to hold a leadership position or even to speak in public. Had the staff possessed a better understanding of the local culture in which they were to operate, they could have designed their communication and consultation processes to be more effective.

Abridged from: Vannoppen, n.d.

50b. Facing existing structures and traditions

Burkina Faso

The Gestion des Terroirs (land management) national programme, which started in Burkina Faso in 1986, established village councils to reverse the trend towards degradation of natural resources. The programme encouraged broad representation in the councils to take into account the fact that various social groups utilize natural resources in different ways. Unfortunately, the councils never worked as intended, largely because existing local institutions for decision-making and resource management were overlooked. They were overlooked for reasons that many would approve: the institutions were not democratic and ignored significant differences in interests and power between local leaders and non-leaders.

Decisions on village affairs were traditionally made in a centralized manner, and the legitimacy of a decision had to do with the gender, age and family background of the person who made it. In the new system, the village council was legitimate in the eyes of the state and the donors because it was 'representative', but in several cases villagers did not respect or value the individual members. In fact, the representative nature of the resource management councils was not at all appreciated. Many villages felt no need for such a structure. In a typical village there are two institutions for decision-making: the chieftainship and the village working groups established by national policy to manage village affairs. Neither are democratic. There are no traditions for open discussion of village affairs, for criticism of decisions made by leaders, for public election of leaders, etc. Non-leaders do not consider themselves in a position to make any proposal regarding village affairs. They do not even seem to have opinions on these matters because, as some villagers argued, it would be offensive towards village leaders if they did. Though the project has not insisted on any strict form of representation, the idea, for example, that women should participate in council meetings was locally perceived as ludicrous.

Underlying the Gestion des Terroirs programme is the concept that having a representative in the council will safeguard the interests of each social group represented. This is far from being the case, as groups can be marginalized even when present. Also, stakeholder groups selected on the basis of their use of resources cannot be assumed to be homogeneous. There is a wide diversity of interests among the farmers, for example, according to their wealth and social standing. In addition, different social groups are not equally influential when decisions are made. None of these issues can be ignored by any conservation initiative that wishes to operate in rural Burkina Faso.

Abridged from: Engberg-Pedersen, 1995.

51a. Saving the trees for the Netlangw earth spirits

Tanzania

The staff of the Forests, Trees and People Project in Babati, Tanzania, discovered and used important ecological insights inherent in local knowledge and practices. In the traditional Gorowa religion, there is a belief in earth spirits called "Netlangw" that dwell underground and are connected to trees and bodies of water. A typical site for the Netlangw would be under large trees where a spring emerges. Netlangw are offended if trees are destroyed where they dwell and may move away in protest, taking their water with them. Thus, protecting the trees ensures that Netlangw stays and the water source is thereby secured. The project staff found that in some areas, protecting the forests so as not to disturb the spirits was more effective than protecting forests for ecological reasons.

Abridged from: Johansson and Westman, 1992.

51b. Tapping indigenous knowledge for resource management

Australia

Government departments are seeking the knowledge and skills of the aboriginal people living in the Tjuwanpa homelands for two separate ends: a programme to control bush fire and development of trails for

6.51 Integrating local culture and traditions with the conservation initiative

See option 3.4.9, Volume 1

tourism in a national park. In 1988 the Alice Springs Regional Bushfire Council realized that it had to do something to control the risk of bush fires. They sought the views of the Tjuwanpa people about the situation. It was agreed to use fire as a management tool in the traditional way. A fire programme was developed which took into account the needs of native flora and fauna as well as the aboriginal communities.

An employment scheme for aboriginal people in cultural resource management is in progress, funded by the government and administered by a state department. Through this scheme, people from the Tjuwanpa homelands are contracted to assist in land management and prevention of land degradation in the adjoining national park. Their work in developing trails to keep people away from more sensitive sites will reduce the impact of the thousands of visitors that come to the park each year.

Abridged from: Campbell and Siepen, 1994.

51c. Management plans include improvements to local practice India

Workshops were held with local communities to draw up action plans for eight of India's national parks. The workshops sought to identify community needs, existing tenure and use-rights, and existing activities which were compatible with biodiversity conservation goals. After the workshop a number of livelihood-supporting activities were initiated, consistent with environmental and resource conservation. These included regulating systems for the harvest of non-timber forest products, extension services to improve water supplies and biological approaches to control soil erosion. Most of these activities built upon local customs and practices.

51d. Traditional forest management integrated into conservation initiative Nepal

The Sagarmatha National Park in Nepal is a traditional home of the Sherpas, an ethnic group whose subsistence depends on agriculture, pastoralism and the use of forest products. Prior to the establishment of the park, the Sherpas practised a system of forest management regulated by local communities. This *shingi nawa* system involved the appointment of forest guards among the villagers on a rotational basis. Guards were given the power to enforce community rules for managing common property resources. The rules included respect for boundaries of protected forest areas, wood collection zones, and dates for agricultural activities. Forest guards had the authority to fine violators. The guards were farmers themselves, who assumed the *shingi nawa* responsibility seriously and were respected by the rest of the community.

With the establishment of the national park, a different set of regulations and enforcement system was imposed on the Sherpa community. A contingent of army and civil staff was brought in from outside to enforce park rules. A series of efforts was made by park officials to develop dialogue with the local villages and to integrate the needs of local people into the planning and management of the park, but the Sherpas remained disapproving and suspicious of the park establishment.

It has been estimated that the forest depletion rate doubled in the early stages of park establishment from that of the preceding two decades. This was largely attributed to resentment of park rules, resulting in local people cutting down more firewood and timber than they needed in places where park staff could not properly regulate such activity.

After this disastrous experiment, the traditional *shingi nawa* was informally restored in the area, giving greater control and responsibility over park resources back to the local community. Improvements in the relationship between the local people and the park administration were noted. There was increased cooperation and coordination on park protection measures. The informal and unofficial status of the *shingi nawa* system remains vulnerable to interference from park administrators, however.

From: Serpa in Lewis, 1995.

51e. Conservation is our business!

Panama

Some communities in Latin America and the Caribbean have taken the initiative in deciding whether or not they want to participate in projects introduced from outside of their culture. For example, the Kuna people of Panama have rejected many development projects presented by the national government and western organizations in favour of creating sustainable models of development and conservation based on their own culture and beliefs. Although they have been criticized by national economists and politicians for not allowing 'real development' on their lands, (i.e., not allowing landless colonists to 'develop' their territory), the Kuna response has been that they are developing their land, in their own way and sustainably so. In addition, the Kuna are working with six international bodies and at least five national organizations on a number of projects they have developed and are managing jointly.

From: Barzetti, 1993.

52a. Conflict avoided in special meeting with stakeholders

The Philippines

The El Nido Marine Reserve in the Philippines is one of the protected areas assisted under the Debt-for-Nature Swap programme. The Department of Environment and Natural Resources (DENR) determined that it would be necessary to expand the area of the former marine turtle sanctuary to include critical watersheds in order to ensure the long-term conservation of the reserve. A scientific study was conducted to determine where to relocate the reserve's boundaries. Regulations were developed to guide the management of the area, including lists of permitted and prohibited activities.

Project management staff launched several information campaigns and dialogues with the local community regarding the proposed expansions and related regulations. Unfortunately the local people responded negatively and, through the initiative of local government officials, developed a set of resolutions in opposition to the reserve plan. In fact, friction began to develop between the staff and local communities from the time the original marine reserve was gazetted. This could be attributed to the failure of the reserve staff to adequately inform the public at

6.52 Extraordinary staff and stakeholder meetings

See option 3.4.10, Volume 1

the initial stages about the reserve's objectives, activities and regulations. The decision to expand the reserve resulted in a further deterioration of relationships between the reserve management and local government officials and the public.

In an attempt to rectify the situation, the reserve management decided to consult with the local people and with top-level officials from government agencies. In this face-to-face meeting, management discussed the rationale for the proposed expansion and clarified issues on proposed rules and regulations. Local people were given the opportunity to express their views and reactions to the proposal. An NGO representative acted as a facilitator; this proved critical in reassuring the local communities about the fairness of the process. Following the consultation, the reserve management issued an administrative order setting out the revised rules which the local people had helped to develop.

Abridged from: Penafiel in Lewis, 1995.

52b. Exclusion of stakeholders rectified through special meeting

India

After the development of Haryana's Joint Forest Management system in 1989, several agreements made with single villages had to be modified to remove conflict generated by the unintended exclusion of other user groups. In 1991, for example, eight years after Lohgarh's Hill Resource Management Society entered into an agreement for joint management, leaders of an adjoining village protested their exclusion from the agreement. They claimed that their village had exclusive rights over one part of the area that had been included in the agreement with the Lohgarh community. A joint meeting of the two villages was called and the residents of Lohgarh accepted and confirmed the claim. Consequently, the JFM support team facilitated a renegotiation of the agreement by organizing a number of joint meetings of the two villages. Subsequent problems related to lease pricing were similarly resolved through an open and consultative process of discussion between the two villages.

From: Sarin, 1993.

6.53 Ongoing communication programme

See option 3.4.11, Volume 1

53a. Our human yellow pages

Australia

The Community Landcare Facilitator employed by the local government in Kaniva, Victoria, has adopted a variety of innovative mechanisms to keep local farmers informed about activities associated with the initiative. With community support she conducts an ongoing communication programme including:

- a regular column in the local paper;
- a window in the local bakery for displays concerning farming issues;
- talks to community meetings in the region, promoting awareness of land degradation and its implications;
- networking with school teachers, landholders and groups providing information and advice;
- organizing bus trips so that people can see what others are doing;
- organizing displays at agricultural show days; and
- facilitating farm planning workshops for Landcare group members.

Initially she was not well-known in the community but after one year that began to change. Farmers began to ring her with all sorts of queries. She sought answers by contacting experts in the field. She has now become the farmer's link to the outside world and local farmers speak of her with great respect and fondness. One described her as "Our Human Yellow Pages".

Abridged from: Campbell, 1994.

53b. Building public awareness

India

Corbett National Park is a critical forest and grassland habitat in northern India harbouring several endangered species. Various authorities have recently stepped up their communications and awareness programmes there. In the park itself, a well-stocked library, regular film shows and trained guides help to orient visitors. Park awareness programmes include elephant and jeep rides. A series of bird-watching camps are being organized with participants from distant cities as well as nearby towns and villages. A full-fledged bird research and awareness programme is being planned. A regular newsletter is produced, one of the few of its kind for protected areas in India; it is produced in both Hindi and English. Recently, several government and independent institutions have been involved in an exercise to determine research needs for the park. A workshop to discuss this was held in 1994.

53c. Board members and scientists maintain links with community

Canada

The Northern River Basins Study (NRBS) has been established to investigate the state of the rivers in northern Canada, the cumulative effect of development and to make recommendations on future resource management actions. A 25-member board representing all the stakeholder groups has been established to manage the overall operations. Through public meetings every six to eight weeks, the board listens to the concerns of the general public and communicates the results of investigations. Involving the scientists in community functions has gone a long way to improve people's trust of the decision-makers. The annual Science Forum, where scientists from the study are available to talk with the public, has been favourably received. The NRBS is also involved in trade fairs and educational institutions across the basins. It gives presentations in schools on current problems, the results of the studies and on what people can do to improve their environment.

From: Environment Canada, 1995.

54a. Monitoring change in local communities

Asia-Pacific

The Biodiversity Support Program's (BSP) Biodiversity Conservation Network (BCN) works with 20 projects across the Asia-Pacific Region to implement and evaluate enterprise-oriented approaches to community-based conservation. A major feature of each project is the fact that community members and project staff are responsible for monitoring the ecological, economic, and social impacts of the project activities. To this end, BSP/BCN has designed an adaptive management process that

6.54 Monitoring change in local communities

See option 3.4.12, Volume 1

enables projects to first determine the key variables for monitoring by developing a conceptual model of the project. Teams next devise a management plan for project implementation and a monitoring plan for collecting data to assess indicators for each of these variables. The BSP/BCN approach has a number of advantages in that it:

- provides a means to integrate biological, socioeconomic, and enterprise monitoring components with one another and within the overall project;
- enables people to teach themselves since it focuses on the process of developing a plan rather than the content of the plan;
- provides a way for community members and project teams to discuss and understand the project; and
- empowers local participants — as one participant at a workshop on the monitoring approach said: "In the past, the foreigners used to come in and tell us what things to do without telling us why these things are important. Now we feel like we can develop an understanding of why we are taking all these steps".

From: BCN, 1995

6.55 Networking with local leaders and opinion-makers

See option 3.4.13, Volume 1

55a. Field stations provide staff to maintain links Nepal

Conservation education and extension workers and village-level motivators are the main staff in the Annapurna Conservation Area Project (ACAP) in Nepal, with responsibility for maintaining public relations with the local stakeholders. One of their major responsibilities is networking with local leaders to keep them informed of ACAP activities. They also mobilize the local people, increase their awareness of environmental and health issues and assist as facilitators in different conservation initiatives. All the ACAP field stations have at least one extension staff person and five or six village-level motivators.

55b. Stakeholder politics among the Karen Thailand

The Wildlife Fund Thailand (WFT) project staff at Thung Yai Naresan Wildlife Sanctuary has devoted considerable attention to their role vis-a-vis powerful local government and non-government stakeholders. The Thung Yai project was designed to provide information requested by the Royal Forest Department (RFD) to justify its provisional decision allowing the Karen to remain in their ancestral lands in the forests of the area (see example 24c). The project's goal is to strengthen local peoples' ability to maintain their forests in partnership with the government. WFT hopes to reverse the present policy trend of moving local populations out of protected areas, and to provide a model of how local communities can participate in genuine long-term conservation activities. Project staff include several Thai nationals, American Peace Corps volunteers, and eight local Karen people.

The project includes participatory land-use planning and ecological research; historical and demographic research; efforts to improve cooperation between parties involved in reserve management activities; enhanced information exchange; and development of an appropriate Thai process for addressing the larger policy questions regarding the role of people living in the protected areas and buffer zones of Thailand. Reaching these objectives required the team to work closely with

stakeholders who were suspicious of one another, as well as those who were simultaneously friend and enemy in different arenas of interest.

The project staff has invested several years in learning about and cultivating a good working relationship with all stakeholders — including local, provincial and national RFD staff; the formal local government and the traditional (elder-based) local government; the local Karen Buddhist leaders; representatives of other government agencies actively working in the area (agriculture, tourism, energy, etc); interested professors at major universities and Southeast Asian regional training centres; and district and provincial government officials. To achieve this, they researched the political history of the area through informal discussions with the full range of stakeholders. They found that the Karen had been strong supporters of the monarchy (a positive element in government eyes) but had harboured communist students during the 1970s (resulting in positive organizing benefits, but raising questions about their loyalty to government). This historical information was used to choose politically viable options for working with communities.

In addition to maintaining good relations with stakeholders, the project was also careful to maintain an appropriate distance from the Karen Free State (a resistance movement across the border in Burma) while at the same time providing the Burmese Karen with information about the project's activities in Thung Yai and allowing them to participate in provincial seminar activities as observers. Likewise, WFT maintained an observer status with the powerful local lords who operate outside the law (including military officers involved in illegal logging business). They were also careful to maintain respectful relations with the border police, and to avoid confronting schoolteachers who introduced illegal cattle into the reserve. The team understood that direct confrontation with problematic stakeholders would not be productive, so they used political analysis to develop a strategy for working with all stakeholders in a positive way. They worked hard to maintain the neutral position necessary to deal with the full range of stakeholders. They were careful not to become allied with local factions in Karen villages and sub-district government, or with factions within the RFD.

After the following incident, WFT project staff were further reminded of the sensitivities of balancing stakeholders interests and of the importance of listening to political guidance from local villagers and local staff. A new member of the project staff wanted to develop a programme to support traditional Karen values and ecological wisdom. With the assistance of an outsider specialist consultant, he put together plans for a major meeting of Karen elders to initiate a new regional elders council organization. The Karen communities were very enthusiastic about this initiative, but the local Karen project staff and the outside consultant both cautioned the new staff person to be sure to keep the sub-district government informed about the meeting so that they would not feel threatened that an elders council (a traditional structure) might challenge their authority. The staff person disregarded the advice and did not inform sub-district government. As a consequence, when the elders meeting occurred without his knowledge, the sub-district head (also Karen) felt the project was actively seeking to undermine his authority. He threatened to have the project team thrown out of Thung Yai. WFT fired the staff person and was able to regain the sub-district government's confidence based on their past good relationship. But the cultural support initiative of the elders council was weakened by this unfortunate political mistake.

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Contributors

Institutional partners

International Union for the Conservation of Nature (IUCN),
Social Policy Group

Biodiversity Support Program (BSP), a USAID-funded consortium of
the WWF, the Nature Conservancy and the World Resources Institute

The World Bank, Social Policy and Resettlement Division

PVO-NGO/NRMS Project (managed by World Learning, CARE and
WWF)

World Wildlife Fund, United States (WWF-US), Social Science and
Economic Programme

Center for International Forestry Research (CIFOR)

Intercooperation, Switzerland

Project coordinating committee

Janis Alcorn, Director, Asia and Pacific, BSP

Grazia Borrini-Feyerabend, Head, Social Policy Group, IUCN

Michael Brown, Director, PVO-NGO/NRMS Project

Gloria Davis, Chief, Social Policy and Resettlement Division,
The World Bank

John Krijnen, Intercooperation

Patricia Larson, Director, Social Science and Economic Programme,
WWF-US

Eva Wollenberg, Senior Scientist, CIFOR

Consultants and interns

Dianne Buchan, New Zealand

Roger Ebner, Switzerland

Sally Jeanrenaud, Switzerland

Peter-John Meynell, UK

Paul Sochaczewski, Switzerland

Patrizio Warren, Italy

Layout, graphic work and publishing support

Appi s.à r.l., Switzerland

Dhunmai Cowasjee, IUCN Pakistan

Patricia Halladay, Canada

Saneeya Hussein, IUCN Pakistan

Ajmal Malik, Intercooperation Pakistan

Fabrizio Prati, Switzerland

Morag White, IUCN

Computer support

Dan Hinckley, IUCN

Fayez Mikhail, IUCN

Secretariat Support

Susan Broomfield, Social Policy Group, IUCN

James-Christopher Miller, BSP

Nathalie Pannetier, Social Policy Group, IUCN

Participants of start-up workshop at IUCN

Carmen Aalbers, International Labour Office

Solon Barraclough, United Nations Research Institute for Social Development

Jill Blockhus, Forestry Conservation Programme, IUCN

Grazia Borrini-Feyerabend, Social Policy Group, IUCN

Montserrat Carbonell, RAMSAR Bureau

Hin Keong Chen, Asia and Pacific Affairs, IUCN

Charles Crothers, University of Kent, Australia

Peter Crowley, International Save the Children Alliance

Khrisna Ghimire, United Nations Research Institute for Social Development

Donald Gilmour, Forest Conservation Programme, IUCN

Paddy Gresham, Environmental Assessment Services, IUCN

Meghan Golay, Social Policy Group, IUCN

Peter Hislair, Africa Desk, IUCN

Mark Hufty, Institut Universitaire d'Etudes du Développement, Geneva

Sally Jeanrenaud, Consultant, Switzerland

John Krijnen, Intercooperation, Switzerland

Kevin Lyonette, Director Government Aid Agencies Relations, WWF International

Gayl Ness, Social Policy Group, IUCN

Raewyn Peart, University of Kent, Australia

Maria Petrone-Halle, Medecins sans Frontieres, Switzerland

Pedro Rosabal, Protected Areas Programme, IUCN

Per Rydèn, Acting Assistant Director General, IUCN

Patrizio Warren, Consultant, Italy

Contributors of case study material/comments

Carmen Aalbers, International Labour Organization

H. R. Akanda, Local Government Engineering Department, Dhaka, Bangladesh

Janis Alcorn, BSP

Kirsten Ewers Andersen, Project RAMBOLL, Denmark

Ivannia Ayales, Consultant, Costa Rica

Siddharta Bajracharya, Annapurna Conservation Area Project, Nepal

Demba Baldé, Senegal Office, IUCN

Tom Barton, Consultant, Uganda

Katrina Brandon, Consultant, USA

Michael Brown, PVO-NGO/NRMS Project

John Butler, WWF US
 Gabriel Campbell, The Mountain Institute, USA
 Paul Chatterton, South Pacific Program, WWF
 Carol Colfer, Consultant, CIFOR
 Maria (Chona) Cruz, Social Policy and Resettlement Division,
 The World Bank
 Dulan de Silva, Pakistan Office, IUCN
 Carole Donaldson, Landcare, New Zealand
 Charles Doumenge, Central Africa Office, IUCN
 Eduardo Fernandez, Social Policy Group, IUCN
 Gonzalo Flores, PROBONA, Bolivia
 Pascal Girot, University of San José, Costa Rica
 Markus Gottsbacher, International Labour Organization
 Peter Hlaisaire, Regional Support Group, IUCN
 Hartmut Holzknecht, Research School of Pacific and Asian Studies,
 Australia
 Ashish Kothari, Indian Institute of Public Administration, India
 John Krijnen, Intercooperation
 Patricia Larson, WWF-US
 Juan Mayr, Fundacion Pro-Sierra Nevada de Santa Marta, Colombia
 Jeffrey McNeely, Biodiversity Program, IUCN
 Katherine McPhail, Social Policy and Resettlement Division,
 The World Bank
 Alice Mogwe, DITSHWANELO, Botswana
 James Murombedzi, Center for Applied Social Sciences,
 University of Zimbabwe
 Marshall Murphree, Centre for Applied Social Sciences,
 University of Zimbabwe
 Jackson Mutebi, CARE, Uganda
 Samuel-Alain Nguiffo, Centre pour l'Environnement et le
 Développement, Cameroon
 Aijaz Nizamani, Pakistan Office, IUCN
 Antonio Perez, Consultant, Spain
 Pauline Peters, Yale University, USA
 Adrian Phillips, Commission on National Parks and Protected Areas,
 IUCN
 Lynelle Preston, The Mountain Institute
 Esther Prieto, Centro de Estudios Humanitarios, Paraguay
 Muhammad Rafiq, Pakistan Office, IUCN
 Jean-Richard Rakotondrasoloarimanana, COMODE, Madagascar
 Elizabeth Reichel, Universidad de los Andes, Colombia
 Catherine Roffet, Consultant, France
 Per Ryden, acting Asst. Director General Conservation Policy, IUCN
 Lea Scherl, Consultant, Nairobi
 Maria Cristina Serje de la Ossa, ECOFONDO, Colombia
 Evelyn Silva, Fundación Ecotopica, Costa Rica

Peter Valentine, James Cook University, Australia
Michael Vardon, Wildlife Management International, Australia
Katherine Warner, RECOFTC, Thailand
Grahame Webb, Wildlife Management International, Australia
Eva Wollenberg, CIFOR

Contributors of Concept Files

Anil Agarwal, Director, Centre for Science and Environment, India
Janis Alcorn, Director, Asia and Pacific, BSP
Grazia Borrini-Feyerabend, Head, Social Policy Group, IUCN
Michael Brown, Director, PVO-NGO/NRMS Project
Gerardo Budowski, Professor, University of Peace, Costa Rica
Michael Cernea, Senior Advisor for Social Policy and Sociology, The World Bank
Carol Colfer, CIFOR
Alex de Sherbinin, Social Policy Group, IUCN
Bob Fisher, Senior Lecturer in Development Studies, University of West Sydney, Australia
Donald Gilmour, Head of Forest Conservation, IUCN
Pascal Girot, Professor, University of Costa Rica
Roy Hagen, Shapeaurouge, Minnesota (USA)
Narpat Jodha, National Resource Management Specialist, Social Policy and Resettlement Division, The World Bank
Aban Marker Kabraji, Country Representative, Pakistan Office, IUCN
Ashish Kothari, Senior Lecturer, Indian Institute of Public Administration, India
Larry Kohler, Focal Point for Environment and Social Development, ILO
Connie Lewis, Associate Director, The Keystone Centre, Colorado (USA)
Rowan Martin, Chair, IUCN Africa Sustainable Use Initiative, Zimbabwe
Jeffrey McNeely, Chief Scientist and Head of Biodiversity Conservation Group, IUCN
Marshall Murphree, Director, Centre for Applied Social Sciences, University of Zimbabwe
Gayl Ness, Social Policy Group, IUCN
Elinor Ostrom, Co-director, Workshop on Political Theory and Policy Analysis, Indiana University, (USA)
Mark Poffenberger, Asia Forest Network
Yves Renard, Executive Director, Caribbean Natural Resources Institute
Ricardo Ramirez, Coordinator, Information and Communication, ILEIA, The Netherlands
Martha Rojas, Biodiversity Conservation Group, IUCN
Dianne Russell, Biodiversity Conservation Network, The Philippines
Paul Sochaczewski, Consultant, Switzerland

Barry Spergel, Legal Advisor for Conservation Finance, WWF-US
 Peter Valentine, Senior Lecturer Tropical Environment Studies, James
 Cook University, Australia
 Frank Vorhies, Biodiversity Conservation Group, IUCN
 Anoja Wickramasinghe, University of Peradeniya, Sri Lanka
 Eva Wollenberg, Senior Scientist, CIFOR
 Barbara Wyckoff-Baird, WWF, Namibia

Contributors of supplementary material and advice

Lorena Aguilar Revelo, IUCN-ORMA, Costa Rica
 Yati Bun, FSP, Papua New Guinea
 Daniele Cassin, EDEX, Italy
 Christian Châtelain, Conkouati Project, IUCN Congo
 Moreno Chiovoloni, Consultant, Rome
 Marcus Colchester, World Rainforest Movement, England
 Lafcadio Cortesi, Greenpeace, USA
 Sandy Davis, Social Policy and Resettlement Division, The World Bank
 Nelson Dias, Guinea-Bissau Office, IUCN
 Biksham Gujja, WWF, Switzerland
 Ursula Hiltbrunner, Membership Unit, IUCN
 Henk Hoefsloot, Mount Elgon Project, IUCN Uganda
 Chris Horill, IUCN Tanga Project, Tanzania
 Ruud Jansen, Botswana Office, IUCN
 Elizabeth Kemf, WWF International
 Nancy MacPherson, Environmental Strategy Group, IUCN
 Rob Monro, Zimtrust, Zimbabwe
 Michel Pimbert, WWF Switzerland
 Gert Polet, Nigeria Office, IUCN
 Tom Price, Nigeria Office, IUCN
 Charlie Pye-Smith, Journalist, United Kingdom
 Jorge Rodriguez, Consejo Centroamericano de Bosques y Area
 Protegidas, Costa Rica
 Alberto Salas, IUCN-ORMA, Costa Rica
 Richard Sandbrook, IIED, UK
 Neena Singh, Centre for Science and the Environment, India
 Vivienne Solis, IUCN-ORMA Costa Rica
 Achim Steiner, Washington Office, IUCN
 Mario Tapia, University of Lima, Peru
 Ibrahim Thiaw, Regional Support Group, IUCN
 Cécile Thiery, Information Management Group, IUCN
 Jim Thorsell, World Heritage Programme, IUCN

Beyond Fences is designed to help professionals involved in conservation initiatives to identify the social concerns that are relevant for their work, assess options for action and implement them.

Volume 1 is a companion to a process of planning, evaluating or re-designing a conservation initiative — an experience of 'learning by doing' expected to involve a series of meetings and field-based activities.

Volume 2 is a reference book to be consulted, as needed, at various stages in the same process.

