

CHAPTER 1

Reconciling Conservation Goals and Livelihood Needs: New Forest Management Perspectives in the 21st Century

Mirjam A.F. Ros-Tonen, Fred Zaal and Ton Dietz¹

The State of the World's Forests 2003, published by the Food and Agriculture Organisation (FAO, 2003), paints a rather gloomy picture of the prospects of achieving sustainable forest management in Africa in the foreseeable future. Growing population numbers and large proportions of the rural population suffering from food insecurity and energy scarcity mean that more and more people are falling back on forest and wildlife resources in order to survive. At the same time, deforestation rates are increasing rapidly due to the transformation of forest into farmland (for both commercial plantations and shifting cultivation), logging, fuelwood collection, heavy livestock grazing and increasing urbanisation and industrialisation (UNEP, 2000). Drought, civil wars and bush fires also contribute to forest degradation (*ibid.*), as well as the over-harvesting of non-timber forest products (NTFPs) and the bushmeat trade (UNEP, 2002). As a result, tropical forests in sub-Saharan Africa are rapidly shrinking. The FAO's latest Global Forest Resources Assessment of 2000 estimates that Africa's forest area had reduced from 700 million hectares in 1990 (23.5 per cent of the total

¹ Amsterdam Institute for Metropolitan and International Development Studies (AMIDSt), Nieuwe Prinsengracht 130, 1018 VZ Amsterdam, The Netherlands. E-mail: m.a.f.ros-tonen@uva.nl; a.f.m.zaal@uva.nl and a.j.dietz@uva.nl.

Table 1.1

Deforestation according to the FAO Global Forest Resources Assessment 2000 – World regions and top ten countries in Africa in relative and absolute terms

Region/country	Total land area (x 1,000 ha)	Total forest in 1990 (x 1,000 ha)	Total forest in 2000 (x 1,000 ha)	Area forested in 2000 (%)	Forest cover change 1990-2000	
					Annual change (x 1,000 ha)	Annual change rate (%)
World	13,063,900	3,963,429	3,869,455	29.6	-9,391	-0.22
Asia	3,084,746	551,448	547,793	17.8	-364	-0.07
Oceania	849,096	201,271	197,623	23.3	-365	-0.18
Europe	2,259,957	1,030,475	1,039,251	46.0	881	0.08
N. and Central America	2,136,966	555,002	549,304	25.7	-570	-0.10
South America	1,754,741	922,731	885,618	50.5	-3,711	-0.41
Africa	2,978,394	702,502	649,866	21.8	-5,262	-0.78
<i>Top ten in absolute terms (largest area of annual forest loss between 1990-2000)</i>						
Sudan	237,600	71,216	61,627	25.9	-959	-1.4
Zambia	74,339	39,755	31,246	42.0	-851	-2.4
DRC ^a	226,705	140,531	135,207	59.6	-532	-0.4
Nigeria	91,077	17,501	13,517	14.8	-398	-2.6
Zimbabwe	38,685	22,239	19,040	49.2	-320	-1.5
Côte d'Ivoire	31,800	9,766	7,117	22.4	-265	-3.1
Cameroon	46,540	26,076	23,858	51.3	-222	-0.9
Angola	124,670	70,998	69,756	56.0	-124	-0.2
Ghana	22,754	7,535	6,335	27.8	-120	-1.7
Botswana	56,673	13,611	12,427	21.9	-118	-0.9
<i>Top ten in relative terms (largest annual rate of forest loss between 1990-2000)</i>						
Burundi	2,568	241	94	3.7	-15	-9.0
Comoros	186	12	8	4.3	n.s.	-4.3
Rwanda	2,466	457	307	12.4	-15	-3.9
Niger	126,670	1,945	1,328	1.0	-62	-3.7
Togo	5,439	719	510	9.4	-21	-3.4
Côte d'Ivoire	31,800	9,766	7,117	22.4	-265	-3.1
Sierra Leone	7,162	1,416	1,055	14.7	-36	-2.9
Mauritania	102,522	415	317	0.3	-10	-2.7
Nigeria	91,077	17,501	13,517	14.8	-398	-2.6
Malawi	9,409	3,269	2,562	27.2	-71	-2.4
Zambia	74,339	39,755	31,246	42.0	-851	-2.4

^a DRC = Democratic Republic of the Congo.

Source: FAO, 2001.

land area) to 650 million hectares in 2000 (21.8 per cent of the total land area) (FAO, 2001). The countries that contributed the lion's share (about 60 per cent) to this forest loss were Sudan (9.6 million hectares), Zambia (8.5 million hectares),

the Democratic Republic of the Congo (5.3 million hectares), Nigeria (4.0 million hectares) and Zimbabwe (3.2 million hectares) (Table 1.1).

For Africa as a whole, the figures imply a net annual forest loss of -5.3 million hectares or -0.78 per cent per year between 1990 and 2000. However, several countries lost a lot more in relative terms. Those with the highest annual deforestation rates between 1990 and 2000 were Burundi (-9.0 per cent), Comoros (-4.3 per cent), Rwanda (-3.9 per cent), Niger (-3.7 per cent), Togo (-3.4 per cent) and Côte d'Ivoire (-3.1 per cent). In contrast to earlier decades, deforestation figures for Africa are now much higher than those for other tropical regions in the same period (-364,000 hectares or -0.1 per cent in Asia and -3.7 million hectares or -0.4 per cent in South America) (Table 1.1).²

Among the topical issues in the current forest debate are the role of forests in poverty alleviation, their contribution to biological diversity, carbon sequestration and other environmental services, and the role of science in bringing about sustainable forest management (*c.f.* FAO, 2003). These central themes, which are also addressed in this book, are also key to reconciling global environmental values with local livelihood needs – a challenge that seems to be greater in Africa than elsewhere. In most African countries, conservation efforts have developed into a predominantly protectionist or even ecological fundamentalist tradition, in which a weakly developed civil society hardly plays a role. Particularly in biodiversity hotspot areas this has often resulted (and is still resulting) in exclusion of the rural poor from conservation and management efforts and loss of access to resources that they used prior to the establishment of conservation areas.

² The FAO figures should be interpreted with some caution since its definition of forests – land with a tree canopy cover of more than 10 per cent and an area of more than 0.5 ha – has changed in comparison with previous assessments. The 2000 assessment uses a threshold of 10 per cent canopy cover as compared to 20 per cent canopy cover in previous assessments and includes types of tree plantations, such as rubber tree plantations, which were not previously included in the definition. The FAO's Forest Resources Assessment has not only been criticised for the artificial increase in the area of forest cover, but also for including monoculture tree plantations and for not considering logging as deforestation (WRM, 2001; see also Kessler's contribution to this volume).

The question that runs as a common thread through this book is whether globalisation (of environmental concerns and efforts to bring about sustainable and pro-poor forest management) and the concurrent trend towards localisation (decentralisation of power and shifts in forest governance) generate new perspectives on how deforestation in Africa can be curbed. Both processes changed the type of actors involved in forest management, creating new partnerships for the protection and co-management of forest and wildlife resources. These partnerships include international donors, governments at various levels, national and international non-governmental organisations (NGOs), private sector actors, research organisations, community-based organisations and local populations. Such multi-scale and multi-sector partnerships in forest management often aim and have the potential to link global conservation objectives with local livelihood needs, thus creating synergy. However, will these new partnerships be able to overcome the problems of power imbalances and conflicting interests and create the conditions for democratic and pro-poor forest management?

Before presenting cases and lessons learned from various countries, this chapter will first introduce some general notions and trends, paying attention to management and conservation approaches that aim to reconcile conservation goals with rural livelihood needs. Since the integration of livelihood concerns into the forest management and conservation discourse is of particular relevance to this book, we then highlight some key concepts related to livelihood strategies. Finally, we note that globalisation and trends towards more localised forest governance have altered the context in which conservation and forest management are taking shape. This raises new questions about stakeholders and the linkages between them that will be addressed in this book.

1.1 A changing perception of forest management

The notion that sustainable forest management encompasses ecological, economic and social aspects is a relatively recent one. When German foresters launched the

concept of forest management as the ‘*Nachhaltigkeitsprinzip*’ in 1804 (Wiersum, 1999: 40) it was long taken to deal with sustained timber yields only. The primary driving force behind the forest management concept was the need to provide strategic industries with secure supplies of timber (Colchester *et al.*, 2003). Colonial forestry acknowledged the need to maintain the forest’s ecological characteristics (Wiersum, 1999), but this was generally interpreted in rather narrow terms of maintaining heterogeneity of ages and species, the capacity for natural regeneration, the forest’s hydrological functions in a watershed and soil protection through continuous forest cover (Schmidt, 1987). The function of forests as a productive and cultural asset for forest-dwelling people was neglected until late into the 1970s (and in practice sometimes well into the 1990s), while the preservation of biodiversity and wildlife was considered the task of conservation agencies and international environmental NGOs.

Conservation, too, has been characterised for a long time by a neglect of human needs and interests, to an extent that can be labelled as ‘ecototalitarian’ (Dietz, 1996: 13). Particularly in Africa, conservation has been dominated by an authoritarian approach. Biodiversity and wildlife were protected in national parks and nature reserves, supported by effective patrols and penalties for unauthorised access. Environmental education and awareness-raising relating to such conservation efforts focused on instilling respect for law enforcement. Permission to use forest resources under a strictly protectionist regime could only be acquired from an official government body with an unambiguous conservation objective. Because it restricts access and sanctions non-compliance with strict rules for use, this approach has also been labelled a ‘fines and fences’ approach (Hughes and Flintan, 2001) or ‘fortress conservation’ (Hulme and Murphee, 1999).

The Brundtland Report *Our Common Future* (WCED, 1987a) has provoked a change in the prevailing forest management and conservation narratives (Campbell and Vainio-Mattila, 2003). By promoting ‘a type of development that integrates production with resource conservation and enhancement, and that links

both to the provision of an adequate livelihood base and equitable access to resources' (WCED, 1987a: 39-40) it was made clear that forest resource management and conservation could no longer overlook peoples' needs and their rights to a stable livelihood base. Since then the notion of sustainability as a three-tiered concept encompassing ecological, economic and social aspects has gained wider acceptance. This was further strengthened at the UN Conference on the Environment and Development (UNCED) in Rio de Janeiro in 1992 where the international community reached a consensus on how to manage the world's forests. The 'Forest Principles'³ adopted at UNCED, as well as Chapter 11 on Combating Deforestation in Agenda 21 recognise the cultural and spiritual value of forests, the participation of interested parties, the vital role of forests in maintaining ecological processes and balance, the need for biodiversity conservation, the protection of indigenous rights and the rights of forest dwellers to have an economic stake in forest use (UNCED, 1992). In addition, the forest-related aspects of the UN Convention on Biological Diversity and the UN Framework Convention on Climate Change, also adopted at UNCED, acknowledge that forests should also be managed on the basis of their role in biodiversity conservation and climate change. Many definitions of sustainable forest management have been circulating since then, sharing the following features:

- It is now being recognised that forests can be managed to different ends – not only for sustained timber production, but also for the preservation of nature and wildlife, for traditional uses or protecting the habitat of indigenous peoples (Wyatt Smith, 1987; Poore, 1989).
- All definitions share the conception that sustainable management should be ecologically sound, economically viable, socially acceptable and technically feasible (Upton and Bass, 1995; Jonkers and Foahom, 2003).

³ The Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Forest Types.

As noted by Foahom and Jonkers in Chapter 12 of this book, the concept of sustainable forest management is now a dynamic one, aimed at finding a balance between various land-use options. Conservation and sustainable use are now – in policy papers at least – being conceived as compatible.⁴

1.2 Approaches aimed at reconciling conservation and development

In both forestry and conservation circles it is now generally accepted that any effort to conserve the forest or manage it sustainably is impossible without the active participation of local populations and consideration for their livelihood needs (Borrini-Feyerabend *et al.*, 2000). In forestry circles, many see the FAO VIIIth Forestry Congress held in 1978 under the title ‘Forestry for People’ as a turning point in this respect (Colchester *et al.*, 2003). Social or community forestry was launched as an approach to forest management aimed at increasing community participation in the development and management of forest resources and providing the rural poor with fuel, food and other products to meet basic needs (FAO, 1978; Arnold, 1991; Wiersum, 1999). Initially focusing on tree planting and with attention shifting later to participatory and cooperative management schemes (Colchester *et al.*, 2003), social forestry became an important supplement to the industrial, timber-oriented approach to forest management. Little effort was made, however, to integrate both approaches.

By contrast, in conservation thinking several approaches have been proposed to enhance ‘participation’ in conservation efforts and combine conservation and development objectives. We briefly review the principal ones below.

1.2.1 Transition zone management

The transition zone concept was introduced in 1979 by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in its Man and

⁴ Protection of endemic and/or threatened species may be incompatible with human interference, but in such cases strict protection is now usually combined with buffer zone management (see Section 1.2.1).

Biosphere programme. The idea was to create a network of biosphere reserves, where the functions of conservation, development and logistic support for research would be integrated. This is done by creating a core zone that is legally protected; a buffer zone for research, education, training, tourism and recreation; and a transition or multiple-use zone where stakeholders work together to manage and sustainably use natural resources for the benefit of local communities.⁵

1.2.2 Integrated Conservation and Development Projects (ICDPs)

The World Wildlife Fund (WWF) introduced ICDPs in 1985, as part of its Wildlands and Human Needs Programme that encompassed twenty such projects. Today there are an estimated 300 ICDPs world-wide, whose common feature is that they aim to integrate biodiversity conservation with (participatory) rural development, usually with external donor support (Hughes and Flintan, 2001). ICDPs are usually linked to a national park with a view to improving the relationship between the protected area and its neighbours. Unlike the buffer/transition zone concept, it does not necessarily focus on the margins of the protected area (*ibid.*). Chapter 6 (Kaisa Korhonen, this volume) provides an example of an ICDP in Madagascar.

1.2.3 Community-based conservation

Community-based conservation aims at conserving wildlife and/or biodiversity while providing incentives to local people, for instance by promoting eco-tourism. It differs from the two foregoing approaches in emphasising people's participation in the planning process rather than focusing on the mechanisms of parks, reserves or land-use zoning (Campbell and Vainio-Mattila, 2003). This approach therefore pays specific attention to the devolution of natural resource management to local communities (Goldman, 2001). Community-based conservation now dominates the policies of the World Conservation Union

⁵ URL: <http://www.unesco.org/mab/nutshell.htm>.

(IUCN), the World Wide Fund for Nature (WWF) and Conservation International (Campbell and Vainio-Mattila, 2003).

1.2.4 Participatory resource management

This concept appears under various names, such as co-management or participatory, collaborative, joint, mixed, multi-party and round-table management (Borrini-Feyerabend *et al.*, 2000). It is not always easy to distinguish from community-based conservation because it is often part of it and shares the same ideals of social justice and democracy in natural resource management (Leach, Mearns and Scoones, 1999). According to Campbell and Vainio-Mattila (2003) the difference is that community-based conservation focuses on biodiversity and wildlife, while participatory natural resource management usually deals with resources like forests and water. Borrini-Feuerabend *et al.* (2000: 1) describe the concept as:

‘a pluralist approach to managing natural resources, incorporating a variety of partners in a variety of roles, generally to the end goals of environmental conservation, sustainable use of natural resources and the equitable sharing of resource-related benefits and responsibilities’.

The Bonga Forest Conservation and Development Project in Ethiopia, described by Yihenew Zewdie in Chapter 4 of this book, is an example of a participatory forest management scheme.

1.2.5 Adaptive or negotiated management

Originally proposed by Holling (1978), adaptive management was launched as an alternative to community-based management that would be more able to deal with socially differentiated communities, multiple actors and dynamic ecological and institutional environments (Leach, Means and Scoones, 1999). Due to the unpredictability of social and ecological processes, the need was felt for a gradual decision-making process in resource management, based on negotiations, accumulated experiences, social learning and monitoring (Wiersum and de

Hoogh, 2002). Stakeholder and entitlement analyses like those presented in Chapter 11 (Njogu, this volume) are important tools in adaptive management. The same applies to the mediation or negotiation procedure to help various stakeholders reach consensus about possible land-use scenarios, as presented in the Chapters 9 (van den Berg and Biesbrouck) and 12 (Foahom and Jonkers).

1.2.6 Strategies based on the commercial exploitation of NTFPs

Since the early 1990s, several authors and organisations proposed that the commercial extraction of NTFPs from natural forests could simultaneously serve the goals of biodiversity conservation and poverty alleviation (*e.g.* Nepstad and Schwartzman, 1992; Panayotou and Ashton, 1992; Plotkin and Famolare 1992). Proponents of the ‘NTFP strategy’ highlighted the important benefits of NTFP exploitation for local communities, such as goods (food, fodder, fuel, medicine, construction material and smallwood for tools and handicrafts), income and employment. At the same time, the harvesting of NTFPs seemed to be possible without major damage to the forest and its environmental services and biological diversity. More recent publications seem to have tempered the early optimism about this strategy (*e.g.* Ros-Tonen, 2000; see also Demmer and Overman (2001) for a case in Latin America) and more balanced views about the conditions under which it is feasible have been put forward (Arnold and Pérez, 1998; Sheil and Wunder, 2002; Ros-Tonen and Wiersum, 2005). The NTFP approach to reconciling conservation and development objectives has been developed mainly for tropical rain forest areas, but Wiersum and Shackleton make it clear in Chapter 3 that the approach is also relevant (and maybe even more so) for the drier woodlands and savannahs that prevail in southern and eastern Africa.

1.3 Livelihood strategies in vulnerable environments: concepts and practice

Despite attempts to reconcile conservation goals and livelihood needs, the cases

in this book make it clear that the resource management practice is one in which power conflicts and exclusion from access rights are still commonplace. Effective integration of a livelihood perspective in conservation and sustainable management efforts requires insight into the livelihood strategies of people in vulnerable environments and the way access to resources is organised. The Sustainable Livelihood analytical framework plays a crucial role in this respect.

The development of the Sustainable Livelihood concept is very much linked to a group of scholars (*e.g.* Chambers and Conway, 1992; Scoones, 1998; Carney, 1998; Bebbington, 1999; Ellis, 2000) linked to various UK-based institutes⁶ that are related through cooperative projects and funding by the UK Department for International Development (DFID). In turn, this group influenced the work of DFID to a considerable degree. The Sustainable Livelihood Approach marked a departure from earlier neo-liberal and market-related policies. The new approach was seen as an opportunity to work through a more people-centred, pro-poor and participatory approach, with activities, projects and programmes that were building on the possibilities, assets, views and preferences of the poor themselves. As such, the Sustainable Livelihood concept was the outcome of a longer preference in the work of its main advocates, such as Robert Chambers and Gordon Conway (1992). They had been promoting a participatory and truly empowering approach to development for years and, with the adoption of the Sustainable Livelihood Approach by DFID, this idea was now being incorporated into mainstream development thinking. The idea of participation was closely linked to new ideas of defining poverty and marginalisation. If the poor were to participate in development planning, they would not only be actively involved in the implementation of donor-funded activities, but also in the design and selection of these activities and, eventually, in the selection of development goals

⁶ Principally the Institute of Development Studies (IDS) of the University of Sussex, the Overseas Development Institute (ODI), the International Institute for Environment and Development (IIED) and the School of Development Studies of the University of East Anglia.

(Chambers, 1995). It was considered to be morally just to make the poor responsible for their own development.

The Sustainable Livelihood concept, departing as it did from local needs, aspirations and assets, fitted in well with the earlier focus on sustainability. If the poor were to use their own assets, they would clearly depend on the sustainable use of these assets which were almost exclusively natural resources. When the International Institute for Economic Development (IIED) published its book on 'The greening of Aid: Sustainable Livelihoods in Practice' in 1988, it had not yet developed the concept as it was used later, but it had certainly merged the thinking on environmental sustainability with that on rural agricultural livelihoods of the poor (Conroy and Litvinoff, 1988). The Brundtland Commission Report *Our Common Future* (WCED, 1987a) provided the forceful message that future possibilities were compromised by inappropriate resource use in the present world. The publication 'Food 2000: Global Policies for Sustainable Development' further described this link, coining 'sustainable livelihood' as the integrating concept which linked livelihoods with food security, basic needs, sustainable agricultural practices and poverty alleviation (WCED, 1987b).

The definition of sustainable livelihood that is most widely used is the one presented by DFID (1999), adapting the definition given by Chambers and Conway (1992: 6):

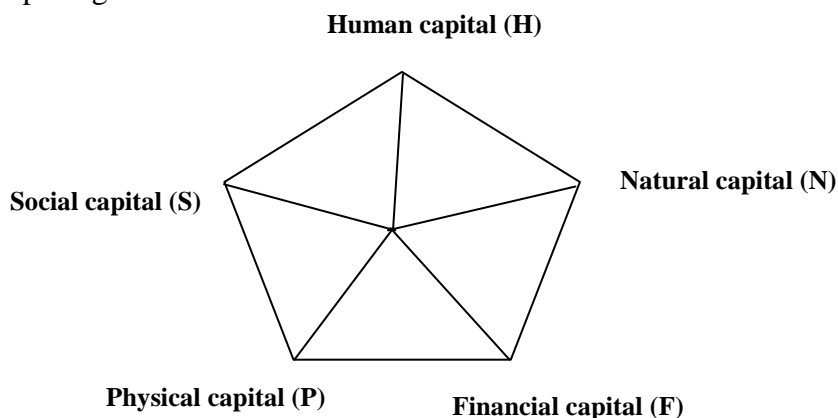
'A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base' (DFID, 1999: 1).

Actors (an individual, household or community) will strive to improve their own health, educational level, status and general well-being by combining various assets or capitals. The result will be a higher degree of freedom and control over the environment. The assets or capitals are generally listed as:

- *Human capital*: skills, knowledge, information, ability to work and health;
- *Natural capital*: land, water, vegetation and wildlife;
- *Physical capital*: basic infrastructure and tools and equipment needed to produce food and commodities. Basic infrastructure includes affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information (communications);
- *Financial capital*: savings, credits and liquid assets (livestock, jewels) that are readily convertible to goods, remittances and pensions;
- *Social capital*: the social resources upon which people draw in pursuit of their livelihood objectives, such as relationships with family members, connectedness to wider institutions and organisations, membership of more formalised groups, relationships of trust, reciprocity and exchanges and informal safety nets.

These capitals are at the core of the DFID Sustainable Livelihood Framework (DFID, 1999) and appear prominently in other publications as well. Usually a pentagon is used to illustrate the relative importance of the capitals (Figure 1.1).

Figure 1.1
The asset pentagon



Source: DFID, 1999.

Since the 1990s, the ‘sustainable livelihood’ perspective has become a paradigm in its own right in social science approaches that aim to understand ‘development’

and ‘poverty’ (e.g. www.livelihoods.org; see also Kaag *et al.*, 2004). This paradigm is based on a number of core principles (DFID, 1999) which state that any development intervention should be:

- *People-centred*: based on poor peoples’ priorities and on a proper understanding of differences between groups of people.
- *Empowering*: aimed at a more powerful position in society for those presently deprived, so that they can make their voice heard. This means that interventions should be participatory and responsive in all stages, seeking processes and mechanisms to listen and respond to the poor.
- *Holistic*: based on the recognition that the lives of people are complex and multi-faceted and on the need to understand the full range of capitals, capabilities, actors, livelihood strategies and the interrelationships between them.
- *Sustainable*: which includes economic, institutional, social and environmental sustainability.
- *Building on people’s strengths* (rather than needs).
- *Multi-level*: attempting to bridge the gap between macro policies and institutions and micro-level livelihood activities and strategies.
- *Conducted in partnership*: with public and private actors through transparent arrangements.
- *Dynamic and flexible*: based on the recognition that livelihood strategies are dynamic and require long-term commitments.

For a better understanding of ‘environment and development’ issues the sustainable livelihood approach merged with the entitlement approach that was developed by Sen (e.g. 1981), but applied to natural resource management by Dietz (1996), Leach, Mearns and Scoones (1999) and many others (see also Njogu, this volume).

A range of analyses of people’s livelihood pathways or trajectories have made it clear that there are fluid and combined ways of generating assets and income (in

kind and in cash) for investment and consumptive purposes. As a result, concepts like ‘diversification’ and ‘multi-spatial livelihoods’ (Ellis, 2000; de Bruijn, van Dijk and Foeken, 2001; Maxwell, Urey and Ashley, 2001) have gained prominence. Individuals combine various livelihood options from their own (subsistence) food, water, energy, tools and shelter, via commercial forms of agriculture, sylviculture, horticulture and livestock production, to various non-agricultural forms of production and service provision. The latter implies income and goods from wage labour, (migrant) remittances and other gifts and a variety of forms of rent, interest, theft and appropriation (see also Wiersum and Shackleton, this volume). Individual people partially or completely combine efforts to achieve this in various forms of economic networks, of which family-based households (in its various cultural specificities) are important, as well as in a host of other forms of micro-level cooperative arrangements.

People’s access to resources differs and people have different capabilities to maintain or develop their endowments.⁷ In vulnerable environments, risks can be considerable and exposure to risks may undermine the capabilities of large segments of the population to maintain the quantity and quality of their endowments. In stressful situations people have to cope with idiosyncratic (individual) risks or shocks and with covariate (collective) risks or shocks and many societies have developed various insurance or social security strategies to prepare for risks, coping strategies to deal with shocks and recovery mechanisms to regain strength. Poor people or households have a different portfolio of insurance, coping and recovery mechanisms compared to rich people or households, with women often having different ones compared to men and older people different ones compared to younger people (van der Geest and Dietz, 2004). In situations of (perceived) rapid environmental change people’s adaptation abilities differ as well. This includes their ability to mobilise support

⁷ Endowments refer to the rights and resources that social actors have, while entitlements are the set of utilities derived from environmental goods and services over which social actors have legitimate effective command (Leach, Means and Scoones, 1999).

from both public action and civil society (see Davies and Hossain, 1997) and from economic network partners elsewhere (*e.g.* through migrant remittances or the direct and indirect support networks of ex-patria communities and/or donor agencies).

In livelihood and vulnerability analytic frameworks the inclusion of forest products and access to forest resources has gained prominence. Scientific interest in the culturally, socially and politically diverse institutions of rights to forest-based resources and physical and economic access to forest and woodlands has increased (see Part III of this volume). Often, forestry or NTFP research focuses on the specific forestry elements in the livelihood and entitlement portfolio and lacks the analytical tools for a holistic and dynamic picture. Bringing together the perspectives of forestry and livelihood researchers, this book aims to move a step forward towards developing a more comprehensive understanding of forest-based livelihoods. This combination of approaches is most prominent in the way Wiersum and Shackleton look at the relative importance of forest resources in livelihood diversification in southern Africa (Chapter 3 of this volume). They use an image that is often employed in the analysis of recent trends in southern Africa (*e.g.* Tellegen, 1997): a bifurcation of diversification out of necessity (and related to poverty and impoverishment) and diversification that makes use of opportunities (related to accumulation of wealth and improvement of well-being). However, elsewhere in this book attempts are also made to assess empirically the relative importance of forest-based elements of livelihoods, based on research in Ethiopia (Chapter 4), northern Kenya (Chapter 7) and Mali (Chapter 8).

1.4 Globalisation and localisation: new changes and challenges

As Nwonwu illustrates in the next chapter, there are grounds for fearing that globalisation is a threat to tropical forests and the livelihoods of forest-dependent people. The opening up of markets boosts international demand for legally and illegally logged hardwood and other commodities, provoking excessive

exploitation. The same globalisation process also gives an impulse to sustainable forest management by stimulating new multi-scale and multi-stakeholder partnerships for conservation and sustainable management.

Simultaneously, several localisation trends bring new actors into the conservation arena (see Chapter 15 for a more extensive review). In Chapter 8 Hautdidier and Gautier illustrate this for decentralised forest management in Mali and Ole Siloma and Zaal in Chapter 10 for the emergence of new governance forms in forest management in Kenya. These local actors are increasingly connected with international actors, such as environmental NGOs and research organisations lending support to sustainable forest use (see Part IV). As a result, forest management is no longer in the exclusive hands of a single entity – whether government, private, NGO or local community. New forums for stakeholder negotiations, partnerships and alliances for the conservation and sustainable management of forests are being formed at global and regional level. The cases described in this book provide examples of various partnerships between international donors, government agencies, national and international NGOs, private sector actors, research organisations, communities and community-based organisations, for the protection and co-management of forest resources in Africa. The cases illustrate that environmental protection and natural resource management are increasingly becoming the product of joint actions between players at multiple scales to an extent that was unimaginable in a world without internet and e-mail.

These processes not only changed the actors involved in conservation and natural resource management, but are also raising new questions about the stakeholders involved and linkages between actors at multiple scales. This requires a rigorous analysis of stakeholder and actors (see Chapter 11 of this book by James Njogu and Chapter 13 by Jan Joost Kessler) and demands mediation models which can be used to achieve a consensus between stakeholders with diverging interests in forest management planning (see Chapter 9 of this book by

van den Berg and Biesbrouck and Chapter 12 by Foahom and Jonkers). It also gives rise to new forms of governance, involving traditional leaders, formal government structures, non-governmental bodies, private sector actors and external donors and sometimes a merger of these forms (Chapter 10 by Ole Siloma and Zaal). These public-private partnerships are not restricted to forestry and conservation, but have become a dominant form of post-etatist organisation (Baud and Post, 2002).

The question to be answered in this book concerns the conditions under which the new alliances and partnerships will be able to link global conservation objectives with local livelihood needs and overcome existing power imbalances and inequalities in access to natural resources. Will they be able to put into effect sustainable forest management – understood as being deliberate efforts to maintain the forests' ecological values, production services and their role as a source of livelihood for the rural poor? If so, what role can scientists play in this process?

1.5 About this book

The papers assembled in this book bring together experiences and lessons learnt from forest and woodland conservation and management efforts in Mali, Cameroon and other countries of the Congo Basin, Southern Africa, Uganda, Kenya, Madagascar and Ethiopia. They are arranged into four thematic parts. The first part introduces the book theme and highlights various aspects of forest use in relation to conservation. Chapter 2 focuses on timber exploitation, while Chapter 3 deals with non-timber forest products.

In Chapter 2, Francis Nwonwu illustrates the two sides of globalisation for the Congo Basin: on the one hand provoking excessive exploitation with disastrous effects for forests and people while, on the other hand, facilitating sub-regional, trans-national and cross-border alliances promoting sustainable forest management. Nwonwu argues that such initiatives can be successful only in combination with measures to involve and delineate roles and rights of *all*

stakeholders, combat corruption, stimulate compliance with sustainable forest management standards and impose sanctions on offending companies.

In Chapter 3, Freerk Wiersum and Charlie Shackleton show that NTFPs play an important role in rural people's livelihood diversification strategies. Triggered by integration in external commercial and rural-urban networks, NTFP exploitation can function either as a proactive adaptive strategy to benefit from promising markets, or as a coping strategy to compensate for a lack of other opportunities. The authors argue that there is a complex interplay between livelihood dynamics, diversified landscapes and the farmers' role in shaping them. Community-based forest conservation schemes based on NTFP exploitation can be successful only if this interrelationship is taken into account.

The chapters in Part II provide examples of how conservation goals and forest-based livelihood needs may conflict and illustrate some attempts to reconcile the two. Chapter 4 by Yihenew Zewdie deals with the Bonga Forest Conservation and Development Project in Southeast Ethiopia, where multi-scale actors aim to reconcile conservation goals and livelihood aspirations. They do so by promoting the sustainable use and marketing of wild forest coffee as an integral part of people's farming strategy.

In Chapter 5, Grace Nangendo and co-authors illustrate the consequences of depriving people living adjacent to the Budongo Forest Reserve in Northwest Uganda of their rights to access the woodlands. Hunters are no longer allowed to light fires in the nature reserve. This not only prejudices their livelihoods but also leads to a less dynamic and less diversified landscape.

Chapter 6 shifts the focus to East Africa (Madagascar). Here, Kaisa Korhonen raises the issue of who should be regarded as 'local people' and 'local stakeholders' in Integrated Conservation and Development Projects (ICDP). This touches upon the issue of social justice, *i.e.* the fair sharing of conservation-related costs, restrictions and benefits. In Ranomafana National Park in Madagascar, beneficiaries of the development component of the ICDP appear not

always to be the people whose livelihoods are affected and restricted by conservation.

Chapter 7, which forms a bridge between the case studies in Part II and the chapters dealing with forest governance issues in Part III, is about Kenya, where forest management policy and regulations are based on numerous ill-coordinated legislations, byelaws, government agencies and NGOs. Wario Roba Adano and Karen Witsenburg argue that this causes legal processes to weaken rather than strengthening conservation efforts. The authors argue that concerted efforts should be made to coordinate global, national and local interests. Based on their analysis of forest use on a small montane forest in Northern Kenya they make it clear that, without specific measures, the poorest will lose because they are the ones that depend most on forest and woodland resources.

That brings us to institutional aspects of forest conservation and management and shifts in forest governance, which are the focus of Part III of this book. In Chapter 8, Baptiste Hautdidier and Dennis Gautier exemplify a much wider trend towards decentralised forest management in western Africa (see Chapter 15) with an analysis of the reforms in Mali's wood fuel markets. By giving people access to wood resources, favouring sustainable management through a differential tax system and creating markets under local governance, the Rural Wood Markets approach contrasts with conventional conservation approaches that often deny people access to forest resources.

One of the issues raised in this case is the relationship between new management structures and traditional chieftaincy. It reflects a dilemma typical of the African situation, where formal and customary laws in forest management and traditional leadership and western-type government structures co-exist. Chapters 9 and 10 investigate this dilemma in even more detail. In Chapter 9, Jolanda van den Berg and Karen Biesbrouck deal with legal aspects of forest management in Cameroon. They show that, based on customary tenure arrangements, forests are subject to multiple claims from various ethnic groups. The way forest use is

arranged under customary law also differs from forest-use regulations in state law. This legal pluralism occurs in a situation of unequal economic, political and social power between various stakeholders, including government, the private sector and various population groups. Van den Berg and Biesbrouck argue that such inequalities and conflicting interests in forest management should be taken into account from the moment new partnerships are initiated between local populations, public and private actors.

In Chapter 10, Morgan Ole Siloma and Fred Zaal highlight the co-existence of traditional and ‘modern’ structures from a governance perspective. Based on the case of Loita Forest in southern Kenya, they highlight the recent emergence of ‘neo-African’ governance forms, which amalgamate formal governing bodies, traditional leadership structures and non-governmental and community-based organisations. According to Ole Siloma and Zaal, such hybrid governance forms point the way forward to locally-controlled natural resource management and conflict resolution in forest use in Africa.

New institutional arrangements and partnerships in community-based conservation and management require a rigorous analysis of the stakeholders involved and their values, needs, attitudes and interactions. To that end, James Njogu applies a combination of the entitlement and multi-stakeholder approach to the case of the Taita hills forests in Southeastern Kenya. Based on his analysis, as presented in Chapter 11, he concludes that local communities lack the power and legitimacy to engage effectively in forest management, as a result of which real partnerships between the identified actors did not get off the ground.

The final part of this book addresses the question of what role science and research can play in developing sustainable and pro-poor forest management and conservation. In Chapter 12, Bernard Foahom and Wyb Jonkers present the results of an interdisciplinary research programme that aimed to develop methods and techniques for sustainable forest management in support of revised forest policies in Cameroon. They stress that multi-purpose forest management requires dynamic and participatory planning procedures and an informed consensus

between all the stakeholders involved. The research programme presented in Chapter 12 provided the corner stones to achieve this, including a mediation procedure.

Whereas in the case of Cameroon it is up to the government and stakeholders to apply the findings, the action research approach presented by Jan Joost Kessler in Chapter 13 links an analysis of multi-scale actors and factors in deforestation to concrete solution strategies. These strategies aim to stimulate actors to adopt sustainable practices by combining ‘pushing strategies’ (putting them under pressure) and ‘pulling strategies’ (stimulating them to adopt more sustainable and socially just practices). Northern financial institutions receive specific attention in this respect for their role in financing the conversion of forest to plantations.

The two research programmes above exemplify what Melissa Leach and James Fairhead in Chapter 14 call ‘globalised science’. They argue that, due to donor dependency, national research institutions conform to international objectives and conservation/management perspectives, which also permeate local perceptions and policy processes through mass media and text books. According to Leach and Fairhead, genuine pro-poor forest science requires the inclusion of forest users’ perspectives. This can be achieved only through participatory agenda setting, critical reflection on the concepts, values and perspectives that guide ‘globalised science’ and donor support for independent research by local institutions.

In the last chapter we synthesise the lessons learned, paying particular attention to the role of science. We will summarise the main themes that emerge from the present conservation/livelihood debate and put forward proposals for policy actions, institutional development and research.

By bringing together contributions by scientists from different backgrounds and disciplines and by integrating forest management with a livelihood and rural development approach, we hope this book will create synergy between two fields that were separated for such a long time.

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