

Participatory Forest Management and Poverty Reduction: a review of the evidence

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Action Research on Assessing and Enhancing the Impact of
Participatory Forest Management on the Livelihoods of the Rural Poor.
Nairobi, Kenya

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1	Introduction	3
1.1	Aims and objectives	3
1.2	Defining poverty	4
2	Methods	6
3	Development of a typology of Participatory Forest Management	7
4	A framework for assessing the impacts of Participatory Forest Management.....	13
5	The evidence	18
5.1	Availability and quality of the evidence	18
5.2	Impact of PFM on Forest Users	18
5.2.1	Impact on economic assets.....	18
5.2.2	Impact on physical assets.....	22
5.2.3	Impact on natural assets	22
5.2.4	Impact on human assets	23
5.2.5	Impact on social assets.....	24
5.2.6	Impact on political capital.....	24
5.2.7	Impact on vulnerability and security.....	25
5.3	Impact of PFM on stakeholders outside the FUG.....	26
6	Typologies and Impacts	27
7	Conclusions	30
	Appendix 1. Glossary.....	31
	Appendix 2. Websites relevant to Participatory Forest Management.....	32
	Appendix 3. List of journals reviewed for papers on PFM.....	33
	Appendix 4 Categories and definitions for describing forest ownership.....	34

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1 Introduction

Inclusion of communities in the management of state owned or formerly state owned forest resources has become increasingly common in the last 25 years. Many countries have now developed, or are in the process of developing, changes to national policies and legislation that institutionalise Participatory Forest Management (PFM). Donors' interests in PFM have moved from an initial concern with ensuring forest conservation to interest in PFM as a means of reducing poverty. However, despite the increasing promotion of PFM in the last two decades, there is a growing recognition that the assumptions concerning the poverty impact of this approach remain largely unsubstantiated [3, 106]¹. A better understanding of the magnitude and distribution of the benefits obtained through PFM would support the development of more precise interventions at the policy and programme levels, particularly with respect to enhancing their impact on the poorest elements of the rural population.

Within this context of uncertainty about the poverty impacts of PFM, an action research project has been initiated to answer the following key questions:

1. Can PFM contribute to poverty reduction by providing rural people with a sustainable stream of net benefits greater than those obtained under a non-PFM situation?
2. If yes, how significant are the benefits (in relation to other income-generating activities)? If no, what are the key negative impacts of PFM and are there ways of minimising or reversing these?
3. How do the impacts (both positive and negative) on poverty of different forms of PFM compare? What changes in policy, institutions and legal frameworks have the potential to enhance the contributions of PFM to poverty alleviation?
4. Are the costs and benefits of PFM distributed in an equitable manner both between communities and between households within communities? If not, are there means of ensuring a more equitable outcome?

1.1 Aims and objectives

As background to this new project, two related literature reviews have been carried out. The present document is a review of the impact of PFM on poverty. The review uses a case study approach to understand the different forms of PFM that have been implemented around the world, and to evaluate how they have impacted on the social and economic aspects of the livelihoods of those who depend on forests.

The current interim draft (29th April 2005) is based on a review of only 16 case studies. Its aim is not to present a full review but rather to use a small number of cases to develop a framework which can be used in the analysis of a larger body of cases. The immediate aim of the framework is to inform the development of an effective methodology for field research to investigate the impact of PFM in Tanzania, Vietnam, Kenya and Nepal in 2005-6.

The review begins with a discussion of different definitions of poverty and related terms and looks at how the definitions used may determine the way in which poverty is measured. Section 2 provides a brief presentation of the methodology used for the review. This is followed in Section 3 by a typology of PFM, developed on the basis of the case studies. Section 4 presents a framework for assessing the

¹ Numbers refer to references presented in the separate annotated bibliography (Excel file).

impacts of PFM and the case studies are assessed according to this framework in Section 5. Section 6 discusses how the type of PFM can influence the kinds of impacts it has, particularly on poverty. Finally, section 7 presents some brief conclusions.

1.2 Defining poverty

Following their review of 250 cases of community forestry, Glasmeier and Farrigan (2005) conclude that one of the remaining research challenges is a more critical evaluation of poverty. Only if we have a more differentiated understanding of who the poor are in any given case, can we determine what kinds of impacts would benefit them. Hence it is necessary to state clearly what is meant by poverty. Different concepts of poverty result in different approaches to measurement [67]. Poverty may be conceived of as absolute or relative, as a lack of income or failure to achieve capabilities. Being explicit over the assumptions that have been made about the nature and causes of poverty helps one to choose techniques and indicators for measurement.

Degrees of poverty

The poor are not a homogenous group and can be disaggregated into a number of different categories. One important distinction is between the chronic poor, who are always poor, and the transient poor, who are only poor sometimes [103]. The chronically poor may have very few assets and draw heavily on natural resources for subsistence or low-level commercial activities. They have few choices, few assets and suffer vulnerability to shocks [103]. Taking this as a basis the Chronic Poverty Research Centre (CPRC) distinguishes between five main poverty categories (based on severity and chronicity) to disaggregate 'the poor' [68]. These are:

- The Chronically Poor who are subdivided into
 - the 'always poor' who are consistently below the poverty line and
 - the 'usually poor' who are not poor in every period;
- the Transitory Poor, who include
 - the 'fluctuating poor' who are poor in some periods and not in others and
 - the 'occasionally' poor who have at least one period in poverty though they are usually above the poverty line;
- the Non-poor who are always above the poverty line.

These categories can be used to describe poverty transitions in a dynamic way. Households may move between different categories of poverty, so that, for example, households moving from being usually poor to occasionally poor can be seen as escaping poverty [68]. The distinction between different categories of poverty is crucially important when designing interventions and development activities such as PFM. The chronic poor are frequently more limited in the range of opportunities that they are able to take advantage of, being less able to respond to market opportunities that need skill and access to capital and markets [69].

Measuring poverty

Absolute poverty refers to subsistence which is below minimum living conditions, and is usually based on nutritional needs or the cost of purchasing a basket of goods and services. A food-only basket is often used as a lower poverty line and food plus other items as an upper poverty line [70]. The World Bank uses a figure of \$US 1 per day (in 1985 purchasing power dollars) for the absolute poverty line [71]. Relative poverty compares the lowest segment of the population with the highest, and is therefore defined with reference to a general standard of living, often as a fraction of the average income or the average wage or as exclusion from participation in society. The European Union for example, has decided that 'the poor shall be taken to mean persons, families and groups of persons whose resources (material, cultural, social) are so limited as to exclude them from the minimum acceptable way of life in the member state in which they live' [71].

Some authors stress the difference between taking an objective and a subjective approach to poverty. An objective approach assumes that there is a normative judgement on what constitutes poverty and what is needed, whereas a subjective approach emphasises people's preferences and how much they value goods and services [67]. The objective approach has traditionally dominated but there is increasing recognition of the limitations of objective indicators and the CPRC for example, argue that there is no objective way of defining poverty [68]. The use of participatory methods has greatly encouraged the exploration of local understanding and perceptions and the most radical proponents of a participatory approach deny the validity of standardised, so-called objective measures of poverty. Chambers, for example, has argued that these approaches are reductionist [1999].

Poverty indicators

Perceived causes of poverty vary and influence the approach taken to measure it. There are three main ways of expressing the causes of poverty: in terms of income, basic needs, or human capabilities. The first two approaches stress that people are poor due to a lack of food, clothing and shelter whereas the human capability concept focuses on the lack of opportunities to lead valuable and valued lives [67].

Different concepts of poverty require different kinds of indicators for measurement, and there are clear trends in the indicators used. Most noticeable is the distinction between means and ends indicators. Means indicators measure the inputs required to achieve an end result such as the cost of a minimum food basket, whereas ends indicators measure the ultimate outcomes such as nutritional status which can be measured by weight for height. Poverty is traditionally measured using means indicators as proxies for ends indicators, partly as it is easier. However the best option is to attempt to combine both. For example, the CPRC use poverty line measures such as the level of income or consumption necessary to meet minimum requirements in providing adequate food, clothing, housing and healthcare for the individual or household, combined with indicators of capability deprivation, such as low levels of material assets and social or political marginality that keeps people poor over long periods [68].

Income and needs concepts of poverty are characterised by mainly quantitative indicators whereas the human capability approach uses both qualitative and quantitative indicators. (Qualitative and quantitative methods should not, however, be confused with subjective and objective data). Poverty measurement is therefore dominated by the 'money-metric' approach based on income and expenditure and consumption indicators.

The different types of indicator have different advantages and disadvantages. Poverty measures which are income based best capture the livelihoods of those most dependent on cash income, but are not good at understanding livelihoods which have a non-cash component [103] and omit key features such as the time required to obtain a commodity. Basic needs concepts of poverty attempt to distinguish between private incomes, publicly provided services and different forms of non-monetary incomes including access to services and social networks etc [67]. Many observers include income obtained from common property and state provided commodities, particularly social welfare payments, but not always health and education provision [71]. There are different views on whether assets, including social claims, should be counted in a poverty matrix, and on the relative prioritisation of monetary and non-monetary variables. A human capability approach is an attempt to measure poverty in terms of outcomes such as life expectancy, literacy rates and malnutrition. An emphasis is put on people's ability to function at a minimal acceptable level in society [67]. The issue of participation is complex as it is hard to quantify. The framework used in this review is based on the Sustainable Livelihoods Approach rather than focusing on any one of the above approaches. It attempts to understand access to a range of assets and to focus on the multiple dimensions of poverty.

So why do the different concepts and indicators matter? The concept of poverty used will influence the nature of the anti-poverty strategy used to combat it. If, for example, poverty is perceived in terms of a lack of income and if one chooses income or expenditure as the most important indicator of poverty, then strategies to reduce poverty will centre on economic mobility. However, if a concept of poverty is used that traces its roots to notions of human deprivation, then an anti-poverty strategy will lead to building human capabilities to achieve social mobility [67].

When choosing poverty indicators, it is therefore necessary to consider the concept of poverty used and how this affects the choice of indicator. Income indicators may be neater and easier to measure, but risk losing a multidimensional understanding of poverty. It is also necessary to be clear about what is measured and why. Different indicators may be necessary to measure different types of poverty such as chronic, transitory, relative and absolute poverty, and to measure poverty at different levels such as those of the individual, household or village etc. The indicators chosen will also influence what the data can be used for.

Equity

Whenever measuring poverty it is essential to consider equity, i.e. the distribution within a population group. There are clear distinctions between the concepts of poverty and equity, however analysis of poverty often employs indicators of equity due to the inherent linkages between the two. Poverty and equity indicators can be associated through i) disaggregation by gender, race etc., or ii) associating

distribution measures with other poverty indicators such as per capita personal income and the Lorenz curve or iii) mathematical formulae such as the Atkinson method [67].

Vulnerability and risk

Vulnerability is the degree of exposure of individual households or individuals to shocks and stresses, and their ability to prevent, mitigate or cope with the event. Risk is the likelihood of occurrence of a particular and potentially adverse shock or stress (such as a drought or flood) [104]. Poverty and vulnerability are not synonymous although some groups are at risk of becoming poorer because of inherent vulnerabilities such as class or gender discrimination. Some vulnerable conditions are closely correlated with poverty such as female-headed households, but not all members of a vulnerable group are necessarily poor. There is therefore a need to distinguish between the two when dealing with indicators and careful analysis is required to determine the degree of correlation. Poverty relates to deprivation but vulnerability is a function of external risks, shocks, stresses and internal defencelessness (Streeten, 1994). A key part of attention to vulnerability is the need to reduce the variance of revenue [104]. Reduced variance might be associated with, for instance, with a lower income stream but one which is more sustainable in the long term or less dependent on unpredictable external markets, in this sense it can be clearly distinguished from income-based poverty indicators.

2 Methods

The literature consulted was drawn from the published and grey literature, but was limited to that available in the English language. There was a particular focus on literature relating to Participatory Forest Management (PFM) in developing countries but papers relating to PFM in the North, such as the USA, were also included. Three main sources were used. These were:

- a list of relevant websites drawn up for this purpose (Appendix 2), and
- personal contacts with people working in the field of PFM.

The literature was categorised into three main groups, discourse studies, meta studies and case studies. Discourse studies were general papers on PFM that did not draw on a specified set of case studies. These were analysed for general comments on PFM, particularly for information about typologies, impacts, and methods to assess them. Meta studies were reports that reviewed several cases of PFM. These were analysed as for the 'discourse' group with the aim of verifying and checking conclusions drawn from the sample of case studies. The case studies were papers that reported on one or more specific instances of PFM. Case studies were included:

- (i) if the authors considered them to be Participatory forest management (PFM), Community forestry (CF), Adaptive collaborative management (ACM) or Community-based natural resource management (CBNRM);
- (ii) if they had a focus on forest products e.g. timber, non-timber forest products (NTFPs), environmental services;
- (iii) if they were reported in the published literature or, if reported in 'grey literature', the report had a date, author and source.

In selecting the case studies an attempt was made to obtain as broad a geographical spread as possible and to select case studies representing different types of PFM. However, the overriding concern was to evaluate the impact of PFM on poverty and equity, and hence the case studies chosen were limited to those that provided greater detail of the impact on the livelihoods of different social groups of the population. This meant that limited information was obtained on the environmental impact of PFM as studies assessing the environmental impact have tended to be conducted separately to those assessing the social impacts.

For the purposes of this interim report, 16 case studies were analysed in two ways, (i) the type of PFM they represented, and (ii) their costs and benefits to different stakeholders. However it should be noted that as the impacts that have been recorded for each case study are based on the published literature, this means that they may not necessarily reflect the true impacts of those cases.

3 Development of a typology of Participatory Forest Management

“The lack of a precise conceptual frame makes it difficult to identify community forestry in practice by name” (Glasmeier and Farrigan 2005).

Originating in a set of fairly narrowly circumscribed set of activities during the 1970s consisting of woodlots for fuel and ‘social forestry’ in India [54, 55], there are now a wide range of activities variously called community forestry (CF), adaptive co-management (ACM), Community-Based Natural Resource Management (CBNRM), Community Involvement in Forest Management (CIFM) and Participatory Forest Management (PFM). Most recently Arnold has argued for a broad definition of community forestry as “any situation that intimately involves local people in forestry activity” [57], thus including both collective tree management and individual smallholder management of trees. This study uses a slightly modified form of the FAO definition of the term Participatory Forest Management (Reeb pers. comm.):

“Participatory forestry refers to processes and mechanisms that enable those people who have a direct stake in forest resources to be part of decision-making in *some or all* aspects of forest management, from managing resources to formulating and implementing institutional frameworks” [Italicised words added by authors]

The variability in the institutional arrangements for PFM makes comparative analysis difficult [58]. A typology was therefore developed to categorise cases of PFM in terms of their policy and institutional contexts. The case studies assessed ranged from community ownership and management of forest resources, to partnerships for forest management between the state and local communities, and devolution of forest resources from state management to individual household management.

Critical issues in understanding PFM are who owns the forest resource and who takes different management decisions. Based on these criteria, the FAO has developed a categorisation to describe different cases of sustainable forest management (Appendix , Reeb pers. Comm.). However, in assessing the different case studies for this review, it was decided that the FAO categorisation does not differentiate sufficiently between different types of PFM. The typology presented here has therefore expanded upon the categories of ownership and management to include other factors deemed necessary to understand the different institutional arrangements for PFM and their development. The details assessed for each case study are summarised in

Table 3.1. Elements 3.1 to 3.4 describe the institutional arrangements for forest management. A summary of these arrangements for each case study is included in Table 3.2. Where ever possible, and where relevant, both the *de jure* (official) and *de facto* (actual, including limitations to implementation) status of the resource have been noted as both are equally important in determining the potential impact of PFM. These should, however be clearly differentiated, as although the *de facto* status states actual access to the resource, the security of access is influenced by whether it is formal and legitimate or not. It should be noted that not all of the information required was available for each case study.

Motivation for PFM in different case study countries

Motivations behind greater efforts to involve local communities in forest management vary. Brown identifies ten different rationales [31], whereas Arnold highlights four main arguments put forth by different interest groups supporting community forestry [57]. Community forestry can be seen as:

- i. an important contribution to sustainable rural livelihoods for large numbers of rural households;
- ii. a philosophical commitment to people’s participation in their own affairs, and to the principles of self-determination and democracy;
- iii. an efficient way of managing forests by harnessing the skills, motivation and labour of interested local populations; and
- iv. a means of reducing the role of, and cost to, the State in protecting forests and the conservation value of forests.

Based on analysis of the case studies it is clear that different motivations dominate in different countries. In Nepal and India community forestry programmes were initially conceived to reverse degradation of national forests which could not be managed and protected effectively by state forestry services [19, 43]. Rural poverty alleviation has been a further motivation behind Leasehold Forestry in Nepal and Joint Forest Management in India [14, 43]. Elsewhere such as in Cameroon and Bolivia,

donors, political organisations and NGOs have been instrumental in developing participatory forest management programmes in recognition of local people's rights to resources controlled by state authorities and exploited by the timber industry, that could be better used in improving the livelihoods of the poor [36, 66]. Increasing local community's involvement in forest management has in many cases been associated with governmental decentralisation programmes such as in Honduras and Bolivia where responsibility for forest management, and increasing local people's involvement in it, has been devolved to municipal authorities [41, 66]. In contrast to cases from developing countries, those from Europe and North America, have shown no dominant 'top-down' motivation for participatory forest management, and involvement of communities has proceeded on a case by case basis resulting in great variability in the role of participatory forest management and the institutional arrangements that have developed [64, 65].

Table 3.1 Details assessed for categorisation of different types of PFM

Element	Details included
1 Objective and motivation for PFM	<ul style="list-style-type: none"> o Origin of motivation for PFM and the state's objective in changing policy and legislation o Origin and motivation of PFM in particular case studies
2 Extent and development of PFM programme	An indicator of the length of time PFM has been in operation in the country such as the date of significant legislation and the number of forest user groups established
3.1 Ownership of the forest resource	Ownership categories may include: <ul style="list-style-type: none"> o Public bodies – national or state governments; local governments at regional, provincial or district level; local administrations at city, municipality, village or other levels o Private bodies – such as individuals or industries o Community groups o Indigenous or tribal peoples
3.2 Decision making in forest management	<ul style="list-style-type: none"> o The decision making arrangements o The parties involved, o The form and duration of the management agreement and the unit of forest to which it relates e.g. 5 year forest management plan
3.3 Access to subsistence products	Rules and regulations for obtaining access to subsistence products from the resource
3.4 Ability to generate income from forest products	Rules and regulations concerning mechanisms for harvesting and marketing different forest products including: <ul style="list-style-type: none"> o Benefit sharing mechanisms o Legal requirements for harvesting and marketing o New skills and knowledge required
4 Mechanism for exclusion of outsiders	This will include: <ul style="list-style-type: none"> o The existence of any legislation, o The means of excluding outsiders o The effectiveness of exclusion
5 Type and value of the resource	The type of forest and its value, particularly for timber
6.1 Inputs required by the community to establish new forest partnership	This will include: <ul style="list-style-type: none"> o Institutional developments within the community o Preparation of management plans and other legal documents o An estimation of the cost of these inputs (where available)
6.2 Inputs required by outside agencies to establish new forest partnership and involve community in it	This will include: <ul style="list-style-type: none"> o Capacity building with communities o Technical inputs o Administrative inputs o An estimate of the cost of these inputs (where available)
7 Organisation of community	The organisation of forest users for the purpose of managing and exploiting the resource

Table 3.2 A summary of the institutional arrangements for forest management in the case studies

PFM program and country	Number of case studies assessed [and ids²]	Ownership of the forest resource	Decision making in forest management	Access to subsistence products	Ability to generate income from forest products
Community forestry, Nepal	4 [8,9,10,12,16,17]	State	Forest management agreement between the Forestry Department and Forest User Groups implemented through 5 year Operational Plans. In implementation of PFM, plans frequently developed with only limited consultation with community.	Access according to FUG rules and frequently rationed	<ul style="list-style-type: none"> o Limited opportunities for many FUGs as a result of emphasis on forest protection rather than production o Sale of timber legal but actively discouraged in many instances
Leasehold forestry, Nepal	1 [14]	State	Forest management agreement between the state and small groups of Leasehold Forest Users implemented through 5 year Operational Plans. Leasehold for a maximum (but renewable) 40 year period.	Land use mainly for fodder, and some fuelwood. Cultivation of cereals disallowed.	<ul style="list-style-type: none"> o Fodder grass either sold or used to raise livestock for sale
Joint Forest Management, India	1 [43]	State	Joint Forest Management agreement drawn up by the Forestry Department who may cancel it without compensation. Forest management largely for timber rather than objectives specified by communities.	Limited: access to non nationalised low value NTFPs according to FUG rules and regulations	<ul style="list-style-type: none"> o Entitlement to 25-100% of timber (in kind or as net sale proceeds) felled by Forestry Department after 5 or 10 years successful forest protection. o A proportion of income from sale of some higher value NTFPs in some states. No rights to other NTFPs (which are nationalised). o Complex and bureaucratic system for movement and sale of NTFPs.
Self initiated forest protection, Orissa, India	1 [45]	State	Strictly limited rights in the case of Reserved Forest, but usufruct rights in Protected Forest. Community management may take place with or without informal agreement of the Forestry Department.	Limited: access to non nationalised low value NTFPs according to FUG rules and regulations. Generally collection of some products and grazing permitted freely, with needs based and equal	<ul style="list-style-type: none"> o Largely limited by general restrictions imposed on harvest and sale of forest products, and by emphasis on forest protection rather than production. However some communities harvesting bamboo for sale

² Reference ID for the case studies – full reference provided in the annotated bibliography

PFM program and country	Number of case studies assessed [and ids ²]	Ownership of the forest resource	Decision making in forest management	Access to subsistence products	Ability to generate income from forest products
Community forestry, Indonesia	1 [30]	State	Community Forest Management Agreement negotiated between the state and community.	share rules governing access to scarcer products and products harvested by the group. Land allocated to individual households for crop production and afforestation	<ul style="list-style-type: none"> o Sale of agricultural products o Information on benefit sharing arrangements not available
Community forestry, Cameroon	1 [1]	State	Forest management agreement between the state and community according to a 5 year Simple Management Plan	Access exists, but PFM emphasis on timber exploitation	<ul style="list-style-type: none"> o Possible, but appropriate mechanisms still being explored. o Large technical, capital and organisational challenges for communities who carry out logging activities themselves.
Community Forest Enterprises, Mexico	1 [38]	Community	Community management of resources within a strong state regulatory framework. Community ownership provides strictly limited rights for individuals overall, but with user rights to individual parcels in some cases.	Where timber exploitation impinges on traditional use rights such as collection of fuelwood, ways are frequently found to maintain or replace rights	<ul style="list-style-type: none"> o Community exploitation of timber resources through community enterprises now permitted.
Decentralized forest management, Honduras	1 [41]	State Municipality	Forest harvesting licences available for some forms of forest exploitation. Households have user rights to individual parcels in recognition of customary rights (not legally recognised by the state).	Firewood collected free of charge from individual parcels.	<ul style="list-style-type: none"> o Permit and administration fee required to collect firewood and charcoal (from dead wood/trees only) for market sale. o Pine resin tapped from individual parcels, but regulations and organisation of marketing do not favour producers. o Timber cutting microenterprises operating in areas granted by the Municipal Corporation, but compete with larger external concerns for forest allocation.
Collaborative forest management, Uganda	1 [42]	State	Forest management agreement between the state and community according to a Memorandum of Understanding prepared by the community and agreed by the state.	Information not available	<ul style="list-style-type: none"> o The Forestry Department plans to give 40% of revenues from forest resources in the local area to the community through the local authority concerned.
Forest devolution, Vietnam	1 [47]	State	Private forest management of parcels granted to individual households	<ul style="list-style-type: none"> o Entitlement to 5m³ timber every 20 years. 	<ul style="list-style-type: none"> o Direct sharing of timber (when mature): for each year of natural forest protection, a household is

PFM program and country	Number of case studies assessed [and ids²]	Ownership of the forest resource	Decision making in forest management	Access to subsistence products	Ability to generate income from forest products
			according to contracts specified by the state which regulate the specific uses of devolved forest land.	o Different rules for land use in each village - in some, households are legally entitled to a limited area of cultivated land (it is not clear how much) but conversion is subject to approval of the authorities.	entitled to a share of 6% of the after tax value of the logged timber. o Collection and use of all products under the forest canopy permitted without tax. o Logging permit and plan required by state regulations for large scale timber extraction, but it is unclear who may grant permission.
Governmental decentralization, Bolivia	1 [20]	TCOs owned by indigenous peoples, Municipal Forest Reserves owned by the state	Timber exploitation in accordance with forest management plans drawn up by the groups concerned and approved by the state. Municipal forest reserves may be exploited by local communities of place (ASLs) through a contractual type of arrangement.	Information not available (emphasis on potential of communities to extract timber)	o Low annual area based tax on area exploited (1US\$ ha/yr on an. area exploited) that gives an advantage over concession companies who are taxed on basis of whole concession area and a min. 20 yr cutting cycle. o Technical, capital, marketing and institutional challenges faced by indigenous peoples without experience in timber industry. o Municipal forest reserves offer potential to legalise the operations of small scale loggers. o Primarily through timber sales and employment in the timber industry.
Hupa reservation, USA	1 [64]	Indigenous people (the Hupa)	Hupa people manage timber sales, administration, scaling, wildland fire, silviculture, and forest development. After 1991, the tribe developed its own forest management plan through a 2-year period of extensive outreach and tribal member input. This included a postal survey to all tribal households followed by a video showing the different forest management options	Appear to be freely accessible to tribal members.	
Communal forestry, Val di Fiemme, Italy	1 [65]	Community	Through the system of Town and General Assemblies, villages have a key role in the direct administration of the woods.	Information not available	After tourism, the forests provide the main source of income in the local economy.
Crofter forestry,	1 [65]	Various	Legal contract between landlords	Rights to various woodland	o The 1991 'Crofter Forestry (Scotland) Act' has

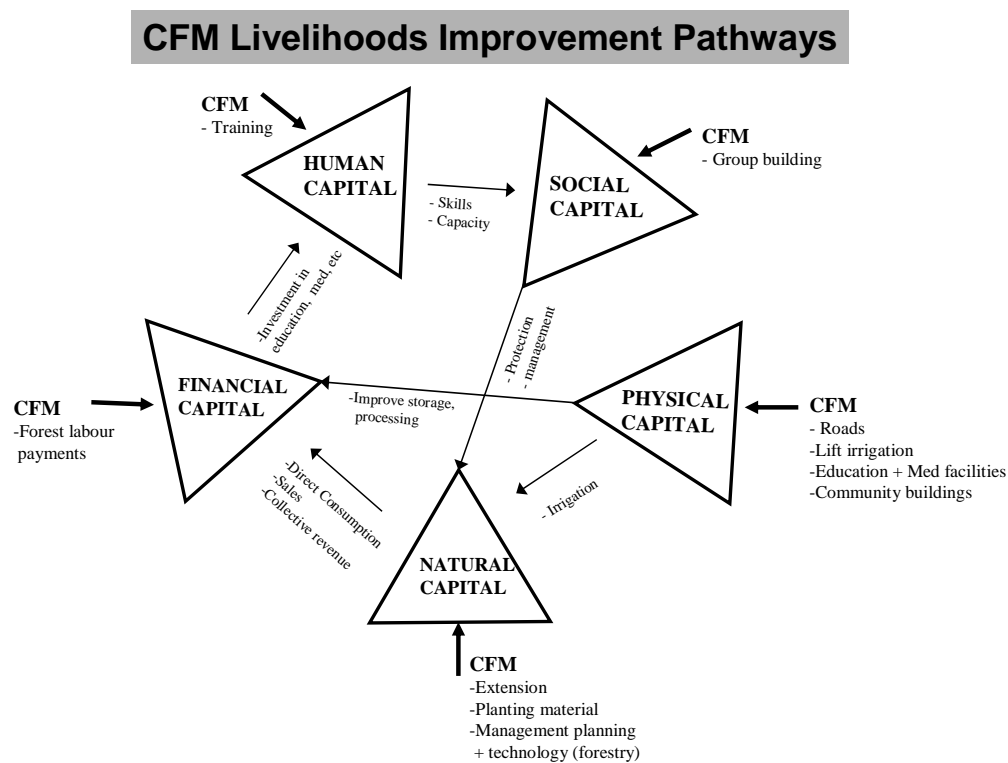
PFM program and country	Number of case studies assessed [and ids²]	Ownership of the forest resource	Decision making in forest management	Access to subsistence products	Ability to generate income from forest products
Scotland			and groups of crofters that enables crofters to plant up some common grazing land as woodland	products with agreement of the landlord. Access to hunting and fishing usually restricted	allowed crofters to generate an income, predominantly by accessing various government grants for woodland afforestation.

4 A framework for assessing the impacts of Participatory Forest Management

A simple framework was developed to categorise the impacts of PFM on forest users, local communities, the state and other stakeholders, with particular reference to impact on poverty. The framework was initially informed by the Sustainable Rural Livelihoods framework [46], thinking on the multiple dimensions of poverty [50], and by looking at how impacts had been reported in some detailed case studies [5, 10]. It later evolved as more case studies were assessed.

The framework presented here has some similarities and some differences with one developed by CIFOR for an assessment of the impact of Joint Forest Management in Jharkhand state in India [53]. Both frameworks use the Sustainable Rural Livelihoods framework to categorise the different impacts of PFM, both recognise the importance of assessing both inter-household and intra-household equity amongst users of the forest, and both recognise that PFM may entail costs as well as benefits. An additional aspect of the CIFOR framework is that it recognises that the benefits of PFM can have knock on effects, so that for instance, increased availability of materials for making compost increases agricultural yields leading to higher incomes which are then invested in education (Figure 4.1). These indirect benefits as a result of PFM can be captured within the framework, although it may be difficult to prove the causal connection in practice or attribute these changes to PFM alone.

Figure 4.1 A conceptual framework of the impacts of Community Forest Management (CFM) using the sustainable rural livelihoods framework [53]



The CIFOR framework recognises a division of stakeholders that includes people who have lost their customary rights to forest resources as a result of implementation of PFM as well as the legitimate forest users, but its emphasis remains on the latter group. In contrast, the framework presented here identifies a range of stakeholders in the following sections, and an important aspect of the research of which this review is a part, is to identify costs and benefits to the wider community beyond those who are legitimate users of the forest under PFM, particularly those who previously used forest resources but now no longer have the legitimate right to do so. However the impacts on legitimate forest users are differentiated into more sub-categories, again with a particular emphasis on any economic (subsistence and income) benefits. Any mention of causality and changes between pre-and post-PFM are particularly noted.

Categorisation of the impacts within the framework is summarised within the following tables. Table 4.1 assesses costs and benefits to stakeholders who are not legitimate members of the forest user group, providing some examples of each. Table 4.2 assesses costs and benefits to the formal group of legitimate forest users (the Forest User Group). It categorises costs and benefits using the five capital assets of the livelihoods framework. Distinguishing between the benefits that accrue to the group as a whole separately to those that accrue to individual members is important as individuals will have different levels of control over their disposal. Investment choices for group assets will be strongly linked to level of participation in decision making, and other factors will influence individuals ability to use community assets developed in this way. Inter-household and intra-household equity is considered separately for each type of impact. Further explanation including definition of the different stakeholders is included in the following sections.

Table 4.1 Framework for assessing the costs and benefits of PFM to non-FUG stakeholders

Stakeholder	Costs	Benefits
1.1 NGOs, development projects, foreign donors etc.	Support to the establishment of PFM and on going support, which may vary amongst different Forest User Groups within a single programme of participatory forest management.	Fulfilment of objectives to reduce poverty and maintain or improve forest condition and recognition of this
1.2 National and state governments and institutions	Support to the establishment of PFM and on going support, which may vary amongst different Forest User Groups within a single programme of participatory forest management.	Royalties and forest management services carried out by Forest Users etc.
1.3 Local government bodies	Support to the establishment of PFM and on going support, which may vary amongst different Forest User Groups within a single programme of participatory forest management	<ul style="list-style-type: none"> o Improvements in the forest environment o Reduction in poverty o Increased sources of revenue either directly from forest royalties (in the case of decentralization of forest management) or indirectly through taxes
1.4 The timber industry	Loss of benefits as a result of changes in forest management	Access to timber through partnerships with communities
1.5 World citizens		Gain in public environmental goods
1.6 National and regional non local consumers of forest products and services	Changes in the price of forest products, particularly amongst poor urban consumers	<ul style="list-style-type: none"> o Environmental benefits such improvements in water supply following protection of an upper watershed
1.7 Local non-Forest User Group members	Loss of benefits as a result of exclusion from the forest	<ul style="list-style-type: none"> o Benefits derived from illegal or informal use of the forest. o Infrastructural and other benefits as a result of Forest Users' investment in community development o Environmental benefits such as decreased run off and flooding following afforestation

Table 4.2 Framework for assessing the benefits of PFM to the Forest User Group and its members

Type of impact	Benefits	Costs	Equity
Economic (financial)	<p>Economic benefits are those classified as either subsistence or income, and may accrue to the Forest User Group as or whole or be distributed amongst individual members. They may include:</p> <ul style="list-style-type: none"> o Subsistence products obtained from the forest for household or agricultural use, and consumed at household level o Income generated by individuals or households from the sale of forest products, employment in a community forestry enterprise, or profit sharing. Credit schemes may also be included o Income generated by the Forest User Group through the sale of forest products, membership fees, fines, royalties etc. 	<ul style="list-style-type: none"> o Financial costs incurred in implementing forest management e.g. membership fees paid to the Forest User Group o Loss of benefits which may include the opportunity cost of labour used in forest management activities, and reduced availability of forest products 	<p>Differences in the distribution of costs amongst Forest User Group members may include differences in:</p> <ul style="list-style-type: none"> o the opportunity cost of Forest Users' time and labour used in forest management activities, o the impact of reduced availability of forest products due to differing initial dependency on the forest. <p>Distribution of benefits amongst individual Forest Users should take into account:</p> <ul style="list-style-type: none"> o the distribution of benefits between households o the distribution of benefits within households o the equity of the impact of distribution systems, as well as the equity of their design.
Physical	<p>Forest User Group funds may be used to invest in infrastructural developments within the community such as public buildings and roads.</p>	<p>Any losses in physical assets such as deterioration in existing roads as a result of use by heavy machinery.</p>	<p>Some Forest Users may be in a better position to take advantage of infrastructural developments than other Forest Users.</p>
Natural	<ul style="list-style-type: none"> o Improved quality of forest resource allowing for greater volume of product extraction o Other environmental benefits and services e.g. decreased run off and flooding following afforestation 	<ul style="list-style-type: none"> o (Temporary) exclusion from forest during regeneration phase o Loss of environmental benefits and services e.g. deforestation or reduced water for irrigation. 	<p>Differential impact of costs and benefits amongst Forest Users</p>
Human	<ul style="list-style-type: none"> o Forest User Group funds may be used to invest in improvements in education and healthcare. o Individual members of Forest User Groups may acquire new skills and knowledge or receive training. Skills and training may be in any field including knowledge of the forest industry, skills in business and finance, community development planning and community facilitation. 	<p>Loss in human assets e.g. the opportunity cost of women's time.</p>	<ul style="list-style-type: none"> o Improvements in education and healthcare may be more accessible or relevant to some Forest Users than others. o New skills and knowledge may be used for the benefit of all Forest User Group members, shared with all or a sub-set of members, or neither of these – retained for individual use only.
Social	<p>Relationships of trust, and membership of groups and networks. These may include the formation or strengthening of community based organizations and NGOs and coalitions of such organisations.</p>	<p>Development of relationships of trust may disadvantage individuals who are excluded from them.</p>	<p>Relationships of trust may develop more amongst some Forest Users than others.</p>
Political	<p>Participation in decision making both:</p> <ul style="list-style-type: none"> o Between Forest Users and outside agencies, particularly the state (i.e. the partner in forest management) o Amongst Forest Users concerning the management of the forest, and harvesting and disposal of forest products and proceeds 	<p>Loss of participation in decision making</p>	<p>Different Forest Users may have different levels of access to decision making e.g. within Forest User Groups the voices of women and the poor may not be heard.</p>
Risk and	<p>Benefits may include the stabilisation of household income streams as</p>	<p>Market forces and environmental variables</p>	<p>Differential impact amongst forest users</p>

vulnerability

a result of new income generating activities or changes to old ones, increased sustainability in supply of forest products, and improvements in soil structure on agricultural land through use of forest biomass.

may influence the riskiness of different ventures. Costs may include increased risk in household income streams as a result of changes in dependence on income generating opportunities.

Stakeholders

The stakeholders involved in PFM may include forest users, consumers of forest products, local government, the state, the timber industry and non-governmental organisations (NGOs). A large part of the framework presented here is devoted to assessing the impact of PFM on the immediate and legitimate users of the forest. PFM frequently involves the formation of Forest User Groups with a clearly defined membership. Within this framework the generic term Forest User Group (FUG) is used to refer to these groups, although different terminology may be used for them in different countries and contexts. Membership of a FUG is usually conferred on a household rather than an individual basis. Differences in impacts between different social groups of Forest Users and intra-household differences are assessed in the sections of the framework on equity. In some of the case studies there is no well defined FUG. In these cases the term Forest Users is used to refer to the legitimate users of the forest. For instance, the municipal authorities in Honduras receive revenue from timber extraction taking place on state owned land for which local people have individual usufruct rights [41]. There is no FUG but forest parcels are exploited legitimately by individual households.

A second very important group of stakeholders included in the framework are members of the local community who are not members of the FUG. (An exact definition of the geographical or other boundaries that defines the 'local community' is likely to be context specific). Some of these people may once have used the forest, but since the advent of PFM, are no longer formally entitled to do so. They may continue to use the forest illegitimately, or they may be prevented from doing so, so that PFM is a cost to them. However, where income generated by a FUG is spent on community projects such as building of a road or church, the benefits generated may not be confined to members of the FUG. Other members of the local community may also benefit, and this is also assessed in the framework.

NGOs, development projects and foreign donors are included in the framework for their role in motivating, financing, and facilitating PFM. The national and state governments and institutions most relevant to the impact assessment are those organisations in receipt of revenue from forest resources, and those organisations responsible for forest management and implementation of PFM. Local government bodies have also become involved in PFM under forest decentralization policies in some countries, receiving revenues from forest resources and taking responsibility for forest management. The timber industry refers to medium and large-scale operators who frequently, but not always, have their central management headquarters outside of the local area, and whose profits from forest exploitation flow largely out of the local area. National and regional non local consumers of forest products and services are included in the framework as changes to forest management as a result of PFM can have a significant influence on their livelihoods, through changes in the availability of forest products and environmental impacts. The impact of PFM on poverty may therefore go much further than the rural poor on the forest fringe. World citizens are also included in the framework as they may benefit from PFM, particularly from environmental improvements, which however, form a cost to Forest Users.

Costs

The costs incurred by Forest Users and third parties involved in establishing and supporting PFM are likely to be similar within the PFM programmes of individual states or countries. These costs are recorded within the typologies of PFM (Table 3.2). The impacts framework provides space to record additional costs incurred by third parties or FUGs, which vary according to the circumstances of the case study. For instance, some FUGs may receive additional help in establishing themselves from the Forestry Department or a well-funded international project which has a lasting impact on their success.

Benefits

Forest products may be sold or used by the household. 'Subsistence' products may be very difficult to value financially as they may have no simple alternative and ease of access to them may be vital for the livelihoods of rural dwellers. Household income obtained through PFM may be used for many different purposes including direct consumption or investment in education, healthcare, farming or income generating activities. It may also be squandered on drinking or gambling. During an assessment of the impacts of PFM, uses of household income should be noted where possible. Risk and vulnerability may be reduced specifically through stabilisation in income and supply of forest products. However an increase in any of the capital assets may also reduce risk and vulnerability and can be seen as an important step to alleviating (and perhaps even reducing) poverty.

5 The evidence

In the sections that follow, evidence for the impact of PFM in the 16 case studies will be presented. In the first of these sections, there will be some comments on the availability and quality of the evidence available in the case studies. Following this, the impact of PFM will be presented firstly for legitimate Forest Users, differentiating between the different types of impact specified in Table 4.2. Lastly, the impact of PFM will be presented for other stakeholders.

5.1 Availability and quality of the evidence

There was surprisingly little well documented work on the impact of PFM on poverty. Over one hundred documents were found which appeared to promise some content on the social or economic impact of PFM on local people in particular geographically defined cases, but of these, only 16 contained sufficient information to be selected for this analysis. More case studies were available from Nepal than from any other country. There are a number of good recent studies of the impact of Joint Forest Management in India as a whole [e.g. 43], but it was much more difficult to find recent case studies from particular states. Nine of the 16 case studies provided some information on equity, although in a few cases this was quite limited. 12 of the case studies provided some information on causality, linking either the success or more specifically, the social and economic impacts of PFM and their equity, to the institutional setting, the quality of PFM implementation or to the historical or other contextual details of the case.

5.2 Impact of PFM on Forest Users

5.2.1 Impact on economic assets

Table 5.1 summarises the evidence from the case studies of economic benefits of forest management to FUGs and member households. The evidence is discussed in more details in the sections that follow.

Income benefits to the FUG

Of the 16 cases analysed for this interim report, 11 mentioned income benefits to the FUG. In five of the case studies the majority of income was generated through the sale of forest products and other business activities (Table 5.1). However in the Nepalese case studies, income generation for most FUGs was limited to internal sources i.e. membership fees, royalties for forest product collection and fines. Very few FUGs in Nepal or India were actively managing the forest for production purposes, and income levels were therefore usually very low.

Collection of forest products and income benefits to FUG households

Management of the forest for subsistence products for household consumption or else use in agricultural production was of primary importance in the majority of the case studies (Table 5.2). In the Nepalese and Indian case studies, and as a result of emphasis on forest protection rather than production, forest management had produced few new income-generating opportunities for individual households, with one exception where collection of resin provided employment for 22 tappers. For the same reason, even where subsistence products were the main benefits for Forest Users, community forests in Nepal were not necessarily the main source, and government forests and private land were important in meeting household requirements. One case study assessing four FUGs found that only 1-32% of fuelwood, 1-7% of fodder, 28-73% of leaf litter and 0-30% of timber used by households was obtained from community forests [17]. Satisfaction with product supply varied amongst Forest Users, with poorer households feeling the restrictions on forest use more than wealthier households. In contrast, in Orissa in India, sources of fuel had in most cases increased under self-initiated community forestry, although more twigs and dry leaves were used and less wood than in the past [45]. Nevertheless, forest protection in both Nepal and India had resulted in an improved resource base and therefore an ultimately more sustainable stream of product flows.

In six of the case studies, forest management produced important income generating activities for individual households through collection of NTFPs or else employment in forest enterprises [1, 38, 41, 64, 65]. These included both Mexico and Honduras, where forests were used by households for collection of fuelwood and other NTFPs, as well as being sources of employment and income generating activities. In two additional case studies where land allocated to Forest Users was used for agricultural purposes or cultivation of fodder grasses, income had been generated from the sale of grasses or agricultural products [14, 47].

Table 5.1 Economic benefits to Forest User Groups and Forest Users

Id.	Case study	Source of Forest User Group income		Forest User Group income used for community development activities	Harvest of subsistence products by Forest Users	Household income generating activities
		Internal	Active forest management			
8,9,10	Nepal1	11/11*	2/11	8/11	11/11	3/11
12	Nepal2	X	0	X	X	0
16	Nepal3	X	0	Not avail.	X	0
17	Nepal4	X	0	Not avail.	X	0
14	Leasehold CF in Nepal	X	0	6/8	X	X
45	Self initiated forest protection, India	X	0	X	X	0
30	Community forestry, Indonesia	X	Not avail.	Not avail.	X	X
1	Community forestry, Cameroon	Not avail.	X	X	Not avail.	X
38	Community Forest Enterprises, Mexico	Not avail.	X	X	X	X
41	Decentralized forest management, Honduras	Not applicable	Not applicable	X	X	X
42	Collaborative forest management, Uganda	Not avail.	Not avail.	Not avail.	Not avail.	v
47	Forest devolution, Vietnam	Not applicable	Not applicable	Not applicable	X	X
20	Decentralized forest management, Bolivia	Not applicable	Not applicable	Not applicable	X	X
64	Hupa reservation, USA	Not avail.	X	X	X	X
65	Communal forestry, Val di Fiemme, Italy	Not avail.	X	X	Not available	X
65	Crofter forestry, Scotland	Not avail.	Not avail.	Not avail.	Not avail.	X

* 11/11 refers to 11 out of 11 Forest User Groups

Table 5.2 Subsistence products collected by Forest Users and types of household income benefits

Id.	Case study	Subsistence products collected from the forest	New or improved household income benefits
8,9,10	Nepal1	<ul style="list-style-type: none"> o Fuelwood o Pole-wood o Sawn timber o Agricultural tools o Grass & fodder o NTFP's including berries, fruit and medicinal herbs 	<ul style="list-style-type: none"> o Collection of resin providing jobs for 22 tapers (1 FUG) o Charcoal burning by blacksmiths (2 FUGs)
16	Nepal3	<ul style="list-style-type: none"> o Fuelwood o Poles o Fodder grasses o Leaf litter o Other grasses o Some timber o Red clay and stones 	<ul style="list-style-type: none"> o Employment for one forest watcher.
17	Nepal4	<ul style="list-style-type: none"> o Fuelwood o Fodder o Leaf litter o Timber 	Not avail.
14	Leasehold CF in Nepal	<ul style="list-style-type: none"> o Fuelwood o Fodder 	<ul style="list-style-type: none"> o Improved economic status as a result of sale of livestock or fodder grasses
45	Self initiated forest protection, India	<ul style="list-style-type: none"> o Fuel o Leaf litter o Grazing o Timber o Poles 	Not avail.
30	Community forestry, Indonesia	<ul style="list-style-type: none"> o Land for cultivation of crops and trees 	<ul style="list-style-type: none"> o Sale of agricultural produce. Participating households income raised to US\$500-600
1	Community forestry, Cameroon	Not avail.	<ul style="list-style-type: none"> o Employment in forest enterprises
38	Community Forest Enterprises, Mexico	<ul style="list-style-type: none"> o Fuelwood 	<ul style="list-style-type: none"> o Employment in forest enterprises: 481,620 pesos/US\$ 75,253 paid to 366 workers (50% of the economically active population) in 1995 (1 FUG) o Resin tapping o Stumpage payments after logging on individual parcels o Profit sharing: 2,500 pesos/US\$690 to each member in 1994 (1 FUG)
41	Decentralized forest management, Honduras	<ul style="list-style-type: none"> o Fuelwood o Medicinal plants o Pasturing for household or agricultural use 	<ul style="list-style-type: none"> o Resin tapping: typical monthly income of 770 lempiras/US\$45 (830 households) o Sale of firewood and charcoal o Payments for standing timber on individual parcels o 12-15 small scale logging operations in 1992: salaries of 50 lempiras/US\$3 a day
64	Hupa reservation, USA	<ul style="list-style-type: none"> o Timber and planks o Fuelwood o NTFPs o Fish 	<ul style="list-style-type: none"> o Seasonal employment for 9 local contractors in watershed restoration o Loans from revolving fund to about 30 people for business establishment (many forest related)
65	Communal forestry, Val di Fiemme, Italy	Not avail.	<ul style="list-style-type: none"> o Employment in the tribal Forest Nursery Forests in the valley (of which 40% are under CF) employ 800 workers in some 200 companies, out of a total population of 200,000.
65	Crofter forestry, Scotland	Not avail.	<ul style="list-style-type: none"> o Grants for the establishment and management of woodlands

Income generating activities varied significantly in their potential contribution to household incomes. Employment opportunities in community forestry enterprises and small scale logging in Mexico and

Honduras were typically only available sporadically, rather than providing year round full-time employment. In one community forest enterprise in Mexico 62% of employees earned 144–571 pesos/US\$ 22-89 in 1995 [38]. In Honduras forest related activities represented 20-30% of household income overall [41]. Logging salaries could be relatively highly paid – in Honduras the salary of 50 lempiras (US\$3) a day was twice that of an agricultural worker, and the income of households engaged in logging had doubled by 1997, with 50-60% of overall household income generated from forest related activities. Other opportunities such as collection of NTFPs were less remunerative and could be susceptible to fluctuation in market prices. Resin tapping in Honduras could only provide a living just above subsistence with typical monthly income amongst participating households from one barrel of resin being only 770 lempiras (US\$45). However the most intensive tapping period was between February and May when there was less agricultural work.

Where PFM focused on forest protection as in Nepal and India, costs to Forest Users generally involved restrictions on use of the forest, both during the initial stages of forest regeneration, and later on, when forest product supply was rationed, and a contribution to forest protection either financially or else in terms of patrolling the forest. Nursery and silvicultural operations were also mentioned in some case studies and one estimated the annual opportunity cost of the degraded forest land at Rs. 8 per head for cattle grazing [16]. There were costs involved in all case studies in terms of attending community meetings. In other case studies the costs of PFM were largely not detailed. In the case of forest protection and land allocation in Indonesia, negotiation between the community and the Forestry Department resulted in a more favourable outcome for the community than when the Forestry Department had dictated the terms of forest management [30].

Not all the case studies assessed the distribution of the impacts of PFM on different social groups within the community. In the case studies where this was done, inequitable outcomes in the distribution of subsistence forest products and the income benefits accruing to individual households were often apparent, largely as a result exclusion of particular social groups from decision making. Inequitable outcomes were either the direct result of particular social groups receiving preferential treatment, or else were the indirect outcome of treating all Forest Users in the same way, despite their different resource endowments and forest product requirements. The latter outcome was most apparent in the distribution of forest products amongst households in the case studies from Nepal and India [9, 10, 16, 17, 45]. Most FUGs had adopted equal systems of product distribution for products such as fuelwood. However under-utilisation of forest resources resulted in community forests contributing only a small proportion of fuelwood requirements. This disadvantaged poorer households more than wealthier households as the former had smaller private land holdings from which to make up the deficit, and in some cases now received fuel in payment for agricultural labour. Sale of fuelwood, which was previously an occupation of some of the poorest households had been banned by many FUGs without consideration of alternative income sources. Similarly, where Users were permitted to collect unlimited quantities of leaf litter for animal bedding this benefited wealthier households with higher numbers of livestock. Bidding systems for forest products such as timber also favoured wealthier households with greater access to cash. Similarly, the opportunity costs of attending meetings and patrolling the forest was higher for poorer members of the community due to their greater reliance on wage labour to meet household subsistence requirements [12, 16]. Inequities in the Nepalese case studies as a result of favouritism in forest product distribution and manipulation of decision making were also apparent but appeared to be less widespread.

Other forms of inequity found in the case studies included forest land allocation in Vietnam [47], provision of the better employment opportunities to residents of a central settlement in one Mexican forest enterprise [38], and granting logging permits to more powerful contractors rather than to small scale operators in Honduras [41]. The latter was carried out by the Municipal Corporation as a result of the small scale operators' inability to pay an administration fee up front, but was also a result of intimidation by politically and economically powerful individuals. As in many other case studies, powerful interests from outside the community had disrupted the community's ability to take full advantage of their forest opportunities, and in this case, the largest sawmill operator in Honduras had come to an agreement with a small number of local political and economic bosses to provide an up front loan to finance the administration fees.

Outcomes of PFM were considered more equitable in seven community forest enterprises in Mexico, where the case study described the auditing mechanisms used [38], and may have been more equitable in two FUGs in Cameroon [1]. In the case study from Indonesia forest land was deliberately allocated

to landless households and to single women with children but no employment [30]. In the case study of leasehold forestry from Nepal, forest land was deliberately allocated to poorer households, although the attempt was only partially successful as it was not possible to exclude other members of the community who had previously used the forest land, but who had not been consulted during the allocation process [14].

Very few of the case studies commented on the intra-household distribution of benefits from PFM. Only the case study of self-initiated community forestry in Orissa considered the impact of PFM on women, which was considered satisfactory due to increased supply of fuel [45]. It can be assumed that the majority of forest income generating activities such as logging, charcoal production, and resin tapping are male dominated, and that in Mexico household income from profit sharing is likely to be controlled by men who also dominate community assemblies there [38].

5.2.2 Impact on physical assets

In many of the case studies FUG income (either generated internally, or from active forest management) had been used for community development activities. These were occasionally consumptive such as spending on festivals, but most frequently improvements in community infrastructure such as electrification and the building of schools, churches etc (Table 5.3). There were also some cases of reinvestment in forest enterprises or diversification into other income generating activities.

Community development initiatives invested in using Forest User Group funds largely appear to have potential to benefit all members of the community (and it is assumed that many infrastructural and other community developments are not limited to Forest User Group members only). However, participation in decision making influences investment choices, and in two of the case studies from Nepal, investments in schools were perceived to be of less value to poorer members of the community who could not afford to send their children to them [10, 12]. The case study from Mexico provided details of one instance of PFM where decision making was dominated by an elite and investment in community infrastructure was limited to a central village of largely Mestizo inhabitants whereas requests for social investments in five surrounding villages of Mixtec villagers were ignored [38].

5.2.3 Impact on natural assets

Case studies were selected that demonstrated the impact of PFM on local livelihoods and poverty, and not all of them, therefore, specifically enumerated environmental benefits. However, in the majority of cases where environmental impacts were mentioned and participatory forest management had been successful, there were benefits in comparison with previous forest use as either an open access resource, or else for industrial logging. Most case studies described improvements in forest condition, but the impact of forest management on water courses was also mentioned in several cases [38, 64].

In most cases environmental benefits to Forest Users are likely to result in indirect increases in other types of future benefits through an improved or more sustainable supply of forest products. In some cases, such as in Nepal and India, this is an opportunity cost to the present as there are greater restrictions on access to forest products than in the past. However, in other cases, such as in Mexico, and where communities are producing FSC certified products, these costs also hold economic advantages in the form of increased employment opportunities in forest management operations for Forest Users, or marketing advantages for forest products.

Table 5.3 Forest User Group income and investment in community development activities

Id.	Case study	Forest User Group income	Type of development activities invested in
8,9,10	Nepal1	<ul style="list-style-type: none"> o Average annual income of < Rs.10,000/US\$128 (9 of 11 FUGs) o Annual income of approx. Rs.10,000/US\$128 (1 of 11 FUGs) o Annual income of Rs.150,000/US\$1923 (1 of 11 FUGs) 	<ul style="list-style-type: none"> o Water supply o Community hall o Electrification o Nursery o School o Monastery o Trail o Health post o Micro-credit programmes for income generating activities (5 of 11 FUGs)
12	Nepal2	Not avail.	<ul style="list-style-type: none"> o Construction of irrigation channels o Drinking water facilities o Roads o Provision of financial support to schools o Credit to needy members
14	Leasehold CF in Nepal	Not avail.	
45	Self initiated forest protection, India	Not avail.	<ul style="list-style-type: none"> o Religious festivals and festivities o Construction of temples and schools o Hiring of an opera teacher
30	Community forestry, Indonesia	Total assets worth Rp.40 million/US\$3,000 in 1999	Not avail.
1	Community forestry, Cameroon	Net benefits from sawn planks in 3 FUGs: <ul style="list-style-type: none"> o 40-70,000 FCFA /US\$ 53-93 per m³ o 30-40,000 FCFA /US\$ 40-53 per m³ o 18,625-32,250 FCFA /US\$ 25-43 per m³ 	<ul style="list-style-type: none"> o School & church benches o Community hall o Community grocery store o Agricultural and livestock rearing in savannah zone o Village electrification
38	Community Forest Enterprises, Mexico	600% increase in profits to community in first year of freeing themselves from a concessionaire in one FUG	<ul style="list-style-type: none"> o Public buildings: school, shrines, churches, offices, health clinic, road improvements, auditorium o Reinvestment: sawmills, kilns for drying lumber, furniture factory, resin distillery o Diversification: transport, agricultural promotion, ecotourism (8 FUGs)
64	Hupa reservation, USA	Not avail.	<ul style="list-style-type: none"> o Construction of a forest nursery o Revolving loan fund
65	Communal forestry, Val di Fiemme, Italy	Not avail.	<ul style="list-style-type: none"> o Reinvestment in the wood industry e.g. FSC certification o Development of new activities to keep people in the valley

5.2.4 Impact on human assets

Only 8 of the case studies mentioned participation in skills and training, and this is likely to underestimate the actual situation. Members of FUGs in Nepal have been involved in a variety of training events including workshops, study tours and training sessions. Some of these have been of limited value such as training in record keeping [10]. Furthermore, in many cases these events have been limited to Committee members who have not then shared their training with other members. Courses that have had more impact have included training provided to female facilitators in two FUGs which resulted in increasing women's awareness, social role, confidence and empowerment [10]. However, in many instances, and despite training in other areas, the capacity of many FUGs for productive as well as protective forest management and planning remains limited, and acquisition of skills in community development planning would also help to maximise potential benefits from revenue obtained by FUGs.

Building up small scale forest logging enterprises in Cameroon, Mexico and Honduras has entailed acquisition of technical skills and training in production of sawn timber and timber grading and knowledge of the forest industry [1, 38, 41]. The Mexican case study also mentions the acquisition of business and finance skills necessary to manage the community enterprise. Government agencies and NGOs have provided significant extension inputs in the Hupa and crofter case studies from developed countries providing people with new skills [64, 65].

5.2.5 Impact on social assets

In the majority of the case studies there had been a positive impact on networks and relationships of trust within communities, mainly through the formation of FUGs. In some cases, such as in Nepal, FUGs were used not only for discussing and implementing forest management activities, but also provided a new local institution that acted as a forum for community decision making. Improvements in relationships with other organisations including Forestry Departments and NGOs had also come about through PFM. In the case study of leasehold forestry in Nepal and in the Indonesian case study where FUGs were initially small, only collective organisation was effective in monitoring and preventing illegal use of the forest [14, 30]. By contrast, in Cameroon, where the issue of how FUGs should be formed in the absence of any notion of 'community' has received some debate, and where outside interests and resources of significant value were involved, there were instances of failed PFM that had a negative impact on relationships of trust and disrupted communities [1].

5.2.6 Impact on political capital

In many of the case studies PFM had resulted in an increase in local people's participation in forest management or at least in bringing them closer to being able to participate in decision making. In Bolivia and Honduras decentralisation programmes have strengthened local people's claims to forest resources, so that even where corruption and malpractice continues to pervade local authorities and their management of the forest, people are now protesting and attempting to assert their rights [20, 41]. However, where Forest Users were unclear of the concepts, procedures and legal issues involved in community forestry, as was found in two of the case studies from Nepal, it was more difficult for them to negotiate more beneficial arrangements with the Forestry Department [10, 17].

Participation in decision making was strongly linked to the equity of impacts of PFM. In the Nepalese and Indian case studies participation was influenced by caste and gender, with committees and general decision making dominated by the higher castes and by men, largely as a result of the social and cultural context (Table 5.4). This entailed that the views of poorer members of the community were frequently not heard and committee members did not usually implement special measures to help poorer households without encouragement from outside agencies. Community assemblies in Mexico also appeared to involve mostly or only men as the representatives of the households within the community [38]. In terms of transparency in decision making, one Nepalese case study found that where decisions were taken at the lowest possible administrative level, that of the *tole* or hamlet, decision making was more transparent [10]. In the case study from Mexico, it was found that strong participation by community members in assemblies, and the regular auditing of community enterprises by special committees of elected and trained community members maintained transparency in decision making and prevented mismanagement of resources [38].

Table 5.4 Participation in decision making

Id.	Case study	Partner involved in forest management and Forest User Group's potential or actual ability to negotiate with them	Participation in Forest User Group decision making	
			Inter-household differences	Intra-household differences
8,9, 10	Nepal1	Forestry Department: Medium to good (3 FUGs) Poor (8/11 FUGs)	Dominated by the wealthy, higher castes and men	Low female participation
12	Nepal2	Not avail.	Dominated by the wealthy, higher castes and men	Not avail.
17	Nepal4	Not avail.	Dominated by the wealthy, higher castes and men	Low female participation
45	Self initiated forest protection, India	Not avail.	Influenced by residency and caste	Low female participation in decision making although women generally supportive
30	Community forestry, Indonesia	Forestry Department: Good with facilitation by an NGO	Not avail.	Not avail.
1	Community forestry, Cameroon	Commercial logging company: Poor (1/4 FUGs) Internationally financed project: Poor (1/4 FUGs) Internationally funded project and a Cameroonian NGO: Good (1/4 FUGs) No outside partners: Poor ability to stop encroachment by a logging company (1/4 FUGs)	Domination by an elite (2/4 FUGs) Comparatively good (2/4 FUGs)	Not avail.
38	Community Forest Enterprises, Mexico	Not avail.	Dominated by an elite (1/8 FUGs) Comparatively good (7/8 FUGs)	Low female participation (8/8 FUGs)
41	Decentralized forest management, Honduras	Municipal authority: Poor	Not avail.	Not avail.
47	Forest devolution, Vietnam	State Forest Enterprise and local officials: Poor - land allocation decisions taken without consultation with ordinary village people	Not avail.	Not avail.

5.2.7 Impact on vulnerability and security

In the case studies that were assessed, the impact of PFM on vulnerability and security was rarely explicitly stated, but some inferences could be made from environmental, economic and other impacts. More targeted data collection would be necessary to provide a clearer picture.

Where PFM is improving the supply of forest products on a sustainable basis or increasing tree cover, such as in the case studies from Nepal and Mexico, vulnerability has in some ways been reduced by the more sustainable stream of subsistence forest products or income generating activities in the timber industry that have resulted [10, 37]. The development of small-scale forest enterprises is also likely to have had a positive influence on reducing vulnerability through increased income generating opportunities, although where these opportunities are only sporadic or seasonal, increased security may only really result when households invest the income in other assets and opportunities [37, 41]. In the European and North American case studies, PFM has played a role in buffering communities from the shocks of social and economic change. In Italy the benefits from forestry have been used to mitigate the shocks of a society that has changed rapidly since the 1950s and there has been investment in new activities that help people to remain in the rural area [65]. In Scotland the introduction of forestry is an

important step in reducing the vulnerability of crofters for whom sheep grazing is no longer a profitable land use [65].

However, there have also been circumstances where PFM may have increased vulnerability. Where community timber extraction has become dominated by an elite with little concern for environmental sustainability or forest regeneration, vulnerability has in some cases increased. In one case study from Mexico environmental damage to water courses has increased the vulnerability of the agriculturally dependent sectors of the population who require irrigation water [37]. In Nepal, banning the sale of fuelwood without the introduction of alternative income generating activities in some Forest User Groups may have increased vulnerability by restricting potential income generating opportunities [10]. Amongst the Hupa in the USA, PFM has not been sufficient to ensure community well being due in part to factors off the reservation and out of the immediate control of the community [64]. Commercial partnerships have not always been successful and diversion of water courses upstream of the reservation has limited the potential of rivers for salmon and other fish.

5.3 Impact of PFM on stakeholders outside the FUG

The case studies focused predominantly on the impact of PFM on Forest Users, providing only limited information concerning other stakeholders. However a few observations can be made concerning the impact of PFM on other stakeholders.

PFM can have an impact on poverty beyond the rural community. One case study from Nepal noted the opportunity cost of restricting fuelwood sale under PFM for nearby urban dwellers who, as a consequence, saw a rise in fuelwood prices [16]. In the case study from Indonesia, the forest being protected lies on a watershed which provides the irrigation and drinking water to the drier parts of the island [30].

Some cases of PFM have resulted in the exclusion of those who previously had usufruct rights to the forest from FUGs. This has most obviously occurred in cases where forest land allocation has occurred without consultation of the local community [14, 47], and has resulted in the inability of Forest Users to exclude those who formerly had usufruct rights to the forest. However the exclusion of legitimate forest users has also occurred in cases of community forestry in Nepal, particularly where the process of FUG formation was hurried providing insufficient time to identify all those who used the forest [10].

Where the costs of forest protection are too high, particularly for the forest dependent poor, some members of the local community may be unable to join the FUG, hence opting for voluntary exclusion. This occurred in one case study from Nepal where 50 bona fide forest user families did not join and where the ratio of costs to benefits jeopardises the sustainability of community forestry [16].

Investment of revenue generated through PFM in community development activities can benefit those who are not legitimate Forest Users, provided of course that they are not excluded from them. This may be one way in which those for whom the costs of PFM outweigh the benefits are still able to benefit from it. Furthermore, in communities where membership of the FUG is limited for historical, legal or other reasons, investing in community development activities that benefit all, rather than simply profit sharing amongst FUG members, has been used to provide an incentive for forest protection amongst those members of the community not included in the FUG. This has been the case in some *ejido* communities in Mexico where members of the *ejido* have property rights to private and common land, but where not all members of the community belong to the *ejido* due to legal restrictions which limit inheritance to only one child [105].

None of the case studies had assessed the environmental impact of PFM on neighbouring forests, and the environmental benefits of the protection of one forest may be offset by increased pressure on neighbouring open access forest resources. However, in the mid hills of Nepal, an increase in farm forestry has partially offset reduced access to state owned forests, and in Orissa in India, encroachment by neighbouring communities on unprotected forests has prompted a snowball effect with forest protection [45].

Timber companies and those employed by them from outside the community have in many cases lost out as a result of PFM. Local authorities have been able to demand an increased share of the revenue from these forest enterprises, timber companies have in some cases had to compete with local

communities for concessions, the area available for concessions has reduced and employment opportunities for outsiders have in some cases been lost [30, 36, 37, 41, 65].

However, PFM has also, in some cases, provided the potential for new partnerships between local communities and timber companies (although not always without negative and inequitable impacts for the communities concerned), or employment opportunities for outsiders within the forest industry. In Cameroon the high financial and technical input required from communities in order to exploit forests for timber production have resulted in some partnerships with logging companies [1]. Some crofters in Scotland have contracted forest managers to establish their woodlands in order to help defray the initial costs, and these new woodlands will provide a source of timber for the industry in years to come [65].

Governmental decentralization of forest services has in some cases resulted in new or increased sources of revenue for local authorities such as in the cases from Honduras and Bolivia [20, 47]. However it has also entailed new responsibilities that have incurred costs.

In many cases of PFM, the positive environmental outcomes of sustainable forestry can be counted as a public good where there has been a positive impact on biodiversity, carbon fixation etc., although this is clearly not so in cases where forest management has been unsustainable and focused too narrowly on immediate consumptive benefits.

6 Typologies and Impacts

Some features of the different types of PFM influenced their outcome in terms of their impact on Forest Users. These impacts will be discussed in the sections below. No single factor was identified which had overwhelming power to determine the outcome of PFM, and outcomes were frequently the result of several contributing factors. Furthermore, the way that PFM was implemented was also frequently influential in achieving positive or negative impacts.

Objective and motivation for PFM

Where the objective of PFM has been state driven to counter forest degradation, successful implementation has generally had a positive environmental impact in terms of improvement in tree cover. However Forest Users have tended to benefit more in terms of subsistence products with less frequent opportunities for new income generating activities. For those most dependent on the forest resources such as the poor, the costs of forest protection have not always justified the benefits. Nevertheless, the sustainability of the forest resource has improved, and in many cases in Nepal, the formation of a FUG has had a positive impact on community's capacity for development.

PFM driven more by decentralisation programmes, grassroots organisations and the social justice concerns of foreign donors, has generally resulted in more opportunities for income generating activities, although this has also been linked to the type and value of the resource. Attempts to counter forest degradation have generally focused on degraded forests with less current commercial value, whereas donors and grassroots organisations have pushed for greater community control over more valuable forest resources.

Ownership, management and decision making

In many instances of PFM, states retained the greater decision-making power. State objectives for forest management in the case studies tended to either prioritise forest protection, or else timber production. As already stated, emphasis on forest protection rather than production has resulted in under utilisation of the forest resource for providing both subsistence products and income generating opportunities. Where timber has been prioritised, this has tended to be at the expense of subsistence products and collection of NTFPs, which in some cases, are relevant to a larger number of Forest Users than logging operations.

The power of communities to negotiate over forest management and user rights of state owned forest resources within the context of management agreements varied in the case studies. Two important factors that appeared to influence community's ability to negotiate were community organisation, and facilitation by third parties. In Bolivia a well organised indigenous people's organisation was able to take advantage of a new Agrarian law in 1996 to lay a claim for much of the municipality's land as indigenous territories after having come into conflict with logging companies and large cattle ranchers

for many years [20]. In Indonesia both facilitation by a local NGO and formation of a community organisation were effective in negotiating with the Forestry Department [30]. In Mexico, formation of a regional organisation by communities in the Sierra Norte, and assistance from university trained activists was effective in protesting the renewal of a logging concession [38]. In Honduras, forest decentralization and management by the Municipality, rather than devolution to community management, has taken place [41]. User rights to individual forest plots are recognised but the management objectives of the Municipality relating to timber extraction take precedence. The power of the Municipality to choose whom to grant logging licenses to, and to prioritise timber production over collection of NTFPs has influenced the extent to which local people are able to benefit from decentralisation.

Increasing community's decision making power over forest resources has clearly had positive environmental impacts in many cases of community managed forests. In Uganda, and despite the apparently limited positive impact on livelihoods so far, collaborative management of a forest reserve has resulted in a decrease in illegal pit sawing and commercial firewood harvesting [42]. In Mexico, freedom from concessionaires has enabled communities to manage forest resources more sustainably [38].

In some cases dominance of decision making by members of the Forestry Department or local leaders has led directly or indirectly to inequity in the outcome of PFM by depriving Forest Users, or particular social groups of Forest Users, of participation in decision making. In Vietnam, where forest land allocation was carried out by the State Forest Enterprises and local leaders, allocation was influenced by political position. In Nepal, where the Forestry Department is more orientated towards Forest protection rather than production, under utilisation of forest resources has been more significant for the poorer members of the community who are most dependent on off-farm sources of forest products. Furthermore, the five year Operational Plans have been criticised as referring to a time horizon that is too long, and the process required to change them is lengthy and bureaucratic so that communities are sometimes unwilling to do so [19].

Access to subsistence forest products and the income generating potential of forest management

It is not only the rules and regulations contained within management agreements that limit income generating opportunities. More general regulations pertaining to the granting of logging licences and marketing of forest products also influence the extent to which communities are able to benefit from the forests they manage. Restrictions on the harvest and sale of forest products has affected both FUGs' and individual households' ability to generate income from forest products, and has limited the impact of PFM on poverty. In Nepal, many FUGs have been discouraged from marketing timber by the Forestry Department, although it is legal for them to do so [8]. Many poor households in India are heavily dependant on income obtained from NTFPs. Yet the income generating potential of many higher value NTFPs is limited by policy and regulations in many states [43]. Many commercially important NTFPs have been nationalised, or else state governments have granted monopoly collection rights to government or private organisations or contractors entailing not only poor prices to NTFP collectors but also disincentives to adding value through processing. For other NTFPS, Forest Users are frequently only entitled to a proportion of the revenue obtained from collection and sale. Furthermore, controls on the movement and sale of even non-controlled NTFPs provide additional impediments to realising their market value. In Honduras, the requirement to pay an administration fee up front has prevented local micro-enterprises from obtaining logging permits from the Municipal authorities and has allowed the authorities to grant permits to local political and economic bosses with inequitable results [41].

In some cases, where barriers to exploitation of potentially valuable timber resources exist, such as high start up costs involved in preparing the legal documents required to obtain access to forest resources and permission to harvest, or requirements for technical skills or capital equipment, communities have formed unfavourable partnerships with the timber industry and have seen the majority of profits from forest harvesting leaving the community, and potentially environmentally damaging logging practices. This was true of one case in Cameroon where a commercial company logged the forest at high speed on behalf of the community with comparatively low reimbursement to the community (which did not even eventually materialise). In Mexico, changing the rules of forest management to enable communities to set up their own forest enterprises, as opposed to keeping them dependent on commercial loggers, has had a positive environmental impact where community institutions have also remained free of corruption [38].

Type and value of resource

Higher value forest resources with standing timber have often provided greater income generating opportunities to communities than degraded forest patches. However, governments have frequently made it more difficult for communities to benefit from commercially important forests. Hence in Nepal and India establishment of community forests for degraded forest patches has frequently been driven by the Forestry Department and governments remain reluctant to hand over the better stocked forests to local communities. In contrast, in Cameroon, the cost of putting forward an application to establish a community forest is complex, has technical elements and has been estimated to cost 1.5 to 2.5 million FCFA/2000 to 3333 US\$ [34]. Furthermore, applications can be refused making it a risky venture and commercial contractors can obtain logging permits through Sales of Standing Volume more easily.

Inputs required in establishing a new forest partnership

Where a high level of inputs is required from communities to establish community forests, the formation of new partnerships can be slow limiting the coverage of PFM, as in Cameroon [34]. In India and Nepal, where community and third party inputs are lower, thousands of FUGs have been formed. There are also potential undesirable consequences in asking communities to submit costly, complex and technical documents in order to establish their own community forests and Cameroon is a good example of this. It has been estimated that more than 50% of initiatives have been supported by conservation and development projects, and that very few communities have supported the process from their own financial resources [36]. Lack of initiation of PFM from within the communities themselves has sometimes led to conflict when the new management structures set up have come into conflict with traditional structures who contest the loss of their authority. In other cases, the high costs involved in establishing the community forest, combined with the high potential value of the harvested resource has made communities vulnerable to, on the one hand the interests of the timber industry, and on the other, concentration of power and forest revenues in the hands of the elite members of the community. Logging companies can be highly disruptive to community cohesion, and can have a negative impact on income generation, social capital and equity within the community.

The formation of functional FUGs and ones in which decision making is inclusive and transparent has been related to the way in which the groups are formed and the implementation process [19]. Third parties, including Forestry Departments and NGOs can play a significant role in influencing the success of PFM. In Nepal, where there has been pressure to form as many FUGs as possible, short-cuts have been taken in the formation process leading to conflict and institutional weaknesses later on. Short cuts have resulted in not identifying all legitimate forest users, not resolving issues over forest boundaries with neighbouring communities, lack of attention to identification of the needs of all Forest Users by conversing only with the elite, the drafting of constitutions and operational plans by the Forest Department without adequate consideration of the needs of all Forest Users, and poor awareness of community forestry concepts, roles and responsibilities amongst Forest Users. Similarly in the cases of Vietnam and leasehold forestry in Nepal, where the allocation of forest land has taken place without consultation with community members who previously had user rights to that land, it has been difficult to enforce individualised user rights to the parcels allocated [14, 47].

Organisation of community

Within the case studies, there appears to have been greater success in excluding outsiders from the forest and in developing strong cohesive local institutions for forest management where all people with legitimate claims to the forest have been correctly identified. In Cameroon, the formation of User Groups has been particularly problematic, and the diversity of social groups and lack of social cohesion within communities has caused conflicts and been a serious obstacle to equity and realisation of community benefits from PFM [31, 52].

Granting FUG organisations independence, as in Nepal, has served to strengthen their claims to forest resources. Where FUGs are linked to government bodies, as in many states in India where the Forestry Department can cancel JFM agreements without any compensation for years of forest protection and where a Forestry Department officer serves as secretary to the Group, FUGs are more likely to be accountable to the Forestry Department than to their own members.

7 Conclusions

Reports for developing countries suggest that the persistently poor (those who remain in that condition despite earlier stages of development) have often only derivative possibilities of benefit from PFM [58]. Certainly, the impact and potential impact of PFM on poverty varied considerably in the case studies. PFM that focused on forest protection and provision of subsistence products for household use had less potential for reducing chronic poverty, but may function to prevent the worsening of poverty amongst the non-poor and transitory poor. Provision of new income-generating activities through PFM has greater potential for reducing poverty.

However, the lesser ability of the poor to take advantage of new opportunities can result in inequities in the impact of PFM. For instance, some of the most profitable opportunities such as small scale logging enterprises in Honduras, may have higher initial demands on capital and skills than less profitable opportunities such as resin tapping and the sale of fuelwood [47]. Hence these opportunities may have less potential amongst those who are chronically poor than amongst the non-poor and transitory poor. Poverty alleviation approaches that target the poorest households only, have not always been successful, such as in the case of Leasehold Forestry in Nepal, and facilitation of a range of income-generating activities in association with PFM may have greater chances of success, although they must address a wider range of beneficiaries. Poorer households are also frequently at a disadvantage by being less able to utilise investments in education and other community developments, and being marginalized in decision making.

Overall, evidence from the case studies suggests that PFM often does more than simply sustain or legalise existing forest use, although in some cases, as a result of an imbalance in the costs and benefits of forest protection, it has only very marginal immediate benefits for the poorest households.

Appendix 1. Glossary

Term	Meaning
CBNRM	Community-Based Natural Resource Management
CBO	Community-Based Organisation
CIFOR	Centre for International Forest Research
DFID	UK Department for International Development
FAO	Food and Agriculture Organisation of the United Nations
FLA	Forest Land Allocation (Vietnam)
FSC	Forest Stewardship Council
FUG	Forest User Group
FUGC	Forest User Group Committee
LFP	Livelihoods Forest Programme (DFID-funded project in Nepal)
NGO	Non Governmental Organisation
NTFPs	Non-Timber Forest Products
PFM	Participatory Forest Management
PLA	Participatory Learning and Action
PRA	Participatory Rural Appraisal
RRA	Rapid Rural Appraisal
SMART	Criteria for Poverty Indicators: Simple, Measurable, Adaptable, Relevant and Time-scale appropriate
VDC	Village Development Committee

Appendix 2. Websites relevant to Participatory Forest Management

Website	URL	Geographical scope
The Regional Community Forestry Training Centre for Asia and the Pacific	http://www.recoftc.org/	Asia and the Pacific
Forest Policy and Environment Programme, Overseas Development Institute, UK	http://www.odifpeg.org.uk	International
Forestry and Land Use Programme, International Institute for Environment and Development	http://www.iied.org/forestry/index.html	International
Centre for International Forestry Research (CIFOR)	http://www.cifor.cgiar.org/	International
Forest trends	http://www.forest-trends.org/	International
International Forestry Resources Institute (IFRI)	www.indiana.edu/~ifri	International
FAO Forestry Department	http://www.fao.org/forestry/index.jsp	International
UNDP Program on Forests (PROFOR)	http://www.profor.info/	International
World Bank Forest Department	http://lnweb18.worldbank.org/ESSD/ardext.nsf/14ByDocName/ForestsandForestry	International
United Nations Forum on Forests	http://www.un.org/esa/forests/	International
International Tropical Timber Organisation	http://www.itto.or.jp/live/index.jsp	International
Tropenbos International	http://www.tropenbos.nl/index.html	Africa, Asia, Latin America
European Forest Institute	http://www.efi.fi/	Mainly Europe
Natural Resource Institute	http://www.nri.org/work/lw-forestry.htm	International
Joint Forest Management India	http://www.jfmindia.org/	India
Eldis	http://www.eldis.org/forests/community_forests.htm	International
Environmental Change Institute	http://www.eci.ox.ac.uk/index.html	International
International Institute for Sustainable Development	http://www.iisd.org/ai/waterhen.htm	Canada
IUCN – World Conservation Movement	http://www.iucn.org/themes/fcp/index.htm	International
Forests and Communities	http://www.forestsandcommunities.org/	International
Mekonginfo	http://www.mekonginfo.org/mrc_en/Home.nsf/System/Resource/\$FILE/community_forestry.htm	Asia
Mountain Forum	http://www.mtnforum.org/resources/library/levels/lib1.htm	Mountainous areas esp. Asia
Asia Forest Network	http://www.asiaforestnetwork.org/	Asia
Global Institute of Sustainable Forestry, Yale School of Forestry and Environmental Studies	http://www.yale.edu/forestry/	International

Appendix 3. List of journals reviewed for papers on PFM

1. CIFOR Occasional Paper
2. CIFOR Working Paper
3. Ecological economics
4. European Tropical Forestry Paper (EUTFP)
5. Forest Policy and Economics
6. Forestry Briefings (FB)
7. Forestry Working Papers
8. Forests, trees and people
9. Natural Resource Perspectives (NRP)
10. Rural Development Forestry Network (RDFN)
11. Unasylva
12. World Development
13. Journal of Forests, Trees and Livelihoods
14. Journal of Sustainable Forestry
15. International Forestry Review
16. Agriculture and Human Values
17. Agroforestry Systems
18. Forest Ecology and Management
19. Journal of Development Economics
20. Journal of Environmental Management
21. Journal of Forestry
22. Society & Natural Resources
23. Environmental Conservation
24. Silva Fennica
25. Environmental Conservation
26. Geographical Journal
27. Ids Bulletin-Institute Of Development Studies
28. Human Ecology
29. Appropriate Technology

Appendix 4 Categories and definitions for describing forest ownership (Reb pers. comm.)

1	Public	
1.1	State	Forests owned by national and state governments, or by government-owned institutions or corporations.
1.2	Local governments: regional, provincial and district level	Forests owned by regional, provincial or district governments.
1.3	Local governments: cities, municipalities, villages and other local levels of administration	Forests belonging to cities, municipalities, villages and communes. These administrative units are locally self governed and managed by a local forest administration with no or little involvement of the public. These forests should not be confused with community or group owned forests.
1.4	Other public bodies	To be specified by the resource person. (See below)
2	Private	
2.1	Individual	Forests owned by individuals, households and families.
2.2	Industries	Forests owned by private forest enterprises or industries.
2.3	Other	Forests belonging to religious and educational institutions, pension or investment funds, NGOs, nature conservation societies and other private institutions.
3	Community/Group owned/ User groups	Forests owned by a collective, a group of co-owners, a community who hold exclusive rights and share duties.
4	Owned by indigenous or tribal people	Indigenous and tribal people are defined as those who: <ul style="list-style-type: none"> 1) are regarded as indigenous on account of their descent from the population which inhabited the country, or a geographical region to which the country belongs, at a time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all their own social, economic cultural and political institutions. 2) are tribal people whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partly by their own customs or traditions or by special laws and regulations.
5	Other types of ownership	Forests which are not classified as any of the above mentioned categories. To be specified by the resource person (See below)

Categories and definitions for describing forest management (Reeb pers. comm.)

A	Owner is the exclusive manager	The owners retains management rights and responsibilities <i>within the limits</i> specified by the legislation.
A.1	Strictly limited: No extraction rights for others	The owner is the sole manager of the resources; no subsistence or commercial use/extraction rights are allocated/granted to others.
A.2	Non-commercial, user rights/ Customary rights/Permits to hunt, gather dead wood and NWFP	User rights here refer to those allocated to satisfy local people's needs for forest products without these being commercialized by the users. User rights might be regulated through licences and permits
B	Forest operation contracted/ Partnerships	All those forests in which the management decisions remain solely with the owner but where the management activities are executed by a different group, according to an agreement. Includes e.g. forests allocated for extraction purposes through licenses or timber concessions. Property and management rights are not transferred.
B.1	Joint forest management with communities. Community timber concession /licenses	Forests where management agreements exist with the local communities, which foresee a certain degree of devolution in the execution of forest operations. The agreement allocate temporary exploitation rights for specific forest products or other forest activities. Local communities may be given licences or short term concessions to harvest for commercial purposes. Joint-collaborative management does not alter the state of the ownership, and includes a negotiated transfer of benefits.
B.2	Private company permits/ forest harvesting licenses/ schemes	The agreement allocate temporary rights for specific forest products or activities. Usually private companies are given licences or short term concessions to harvest for commercial purpose. This category includes also the case of partnerships between private processing companies and small holders for the production of commercial forest products on private or communal forests (also known as out growers schemes).
C	Devolved management rights	Under this category are included all those forests in which the management is devolved to a different group than the owner. Usually the agreements are renewable, and convey many of the property rights, however beyond these agreements overall property rights remain clearly with the owner.
C.1	Community forest leases/forest management agreements	Forests are managed by the local communities according to leases or management agreements, which usually last longer than 10-20 years, and through which management, user rights and responsibilities, and some property rights are usually transferred to the communities.
C.2	Private company leases/forest management concessions	Forests are managed by private companies according to leases or management concessions, which usually last longer than 10-20 years, and through which management rights and responsibilities, and some property rights are usually transferred to the companies.
D	Others	Those forests which do not belong to any of the management categories mentioned above. To be specified by the resource person (See below)

Bibliography							
ID	Type	Author	Title	Date	Source	Keywords	Abstract
1	Case Study	Formete, T. & Vermaat, J.	Community Forestry and Poverty Alleviation in Cameroon	2001	Rural Development Forestry Network Paper 25h(i)	Incomes, Ownership, Training, Efficiency, Poverty Alleviation, Cameroon	Study of four FUG's concluding that PFM has the potential to alleviate poverty and improve livelihoods, subject to certain conditions 1) enforced legal protection from outside 'incursions', 2) community ownership of the planning and organisation process, 3) available technical and management skills, 4) access to finance. The 4 case studies demonstrate progressively more successful instances of CF. Forests are logged by the communities and value added to the timber, with the proceeds spent mostly on community projects in the most successful cases. There is further potential for the exploitation of NTFPs which would help specific social groups such as women. These objectives may be achieved when 1) the legal framework is protected to safeguard communities from abuse by outsiders such as industrial loggers and village elites, and pertaining to benefit sharing and community development planning. 2) development of community organisation and management guidelines to allow communities to organise themselves and their administrative systems coherently and to maintain full ownership of planning and implementation activities. 3) establishment of guidelines to enable communities to
2	Case Study	Gardner, A.A., DeMarco, J., and Asanga, C.A.,	A conservative partnership: Community Forestry at Kilum-Ijim, Cameroon	2001	Rural Development Forestry Network Paper 25h(ii)	Livelihood activities, Partnership, Training, Income generation, Cameroon	Examines a partnership between local forest users and the conservation community and the potential CF has for protecting the forest for the benefit of multiple stakeholders i.e. for biodiversity conservation and as part of the livelihoods of local people. The project is located in the Bamenda Highlands region and involves 44 communities setting up community forests in the surrounding Kilum-Ijim Forest. This process is supported by the Kilum-Ijim project, first established by a conservation NGO, Birdlife International in 1987. The project has provided training in agricultural and other livelihoods activities to relieve pressure on the forest land and is also supporting the applications for community forests, both financially and through mediation.
3	Discourse	Thin, N. & van Gardingen, P.	Legal, Institutional and Policy Issues Affecting to Common Pool Resources: Forestry	2003	Edinburgh Centre for Tropical Forests (ECFT/DFID)	Common Pool Resources, Sustainable Livelihoods Analysis, Social Capital, Institutions	Examines CPR management of forests in four countries using the SLA. Concludes that CPR's do impact upon poverty alleviation and question how existing policy can be made more conducive for pro-poor and anti-poverty CPR regimes.
4	Case Study	Lewis, T. & Horn, J. et al	Small and Medium Scale Enterprises in the Forestry Sector in South Africa: An Analysis of Key Issues	2004	International Institute for Environment & Development (IIED); Institute for Natural Resources (SA)	Small/medium enterprises, Non-Timber Forest Products (NTFP), Profitability	Analyses the development and of small/medium enterprises in the South African Forestry Sector. Profitability is assessed and the contribution this makes to rural livelihoods.
5	Discourse	Maharjan, M.R.	Policy Implications for Equitable Cost and Benefit Sharing in Community Forestry in Nepal		W:\Forestry\CARE PFM\Papers	Social justice, Equity, Sustainable, Community Forest User Groups (CFUG's), Nepal	An overview of past and current PFM policy in Nepal. Concluding that the opportunity costs remain high for marginalised groups and any benefits accrued are distributed inequitably.
6	Discourse	Arnold, J.E.M.	Forestry, Poverty and Aid	2001	CIFOR Occasional Paper 33 (CIFOR)	Devolution, Subsistence, Dependence, Rights	Presents the case for an approach to forestry aid focussing on supplying subsistence and survival needs of the poor in addition to improving incomes. Warns of the risks of devolution in disturbing power relations resulting in limited pro-poor impact.
7	Case Study	Wily, L.A.	Moving Forward in African Community Forestry: Trading Power not Use Rights	1999	Society & Natural Resources vol.12 (1) p49-61 (IIED)	Community-based, forest-local communities, jurisdiction, power, responsibility	Analyses two examples of CBNRM in Tanzania where authority has been devolved to community level. Author argues that authority should always be vested in the community with the state acting merely as advisor. Any other form of PFM/JFM which retains control cannot obtain the same level of benefits as autonomous CBNRM.
8	Case Study	Springate-Baginski, O., Yadav, N., Dev, O.P., and Soussan, J.,	Institutional Development of Forest User Groups in Nepal: Processes & Indicators	2003	Forest & Livelihoods vol.3(1) p21-36 (ODI/Forest Action)	Forest User Group (FUG), Institutional Development, Forest Management, Equity, Nepal	Examines institutional development of FUG's in Nepal and means of assessment. Argues that income raised within FUG's tends to be under-utilised with the exception of a few community development activities. Distribution of forest products often inequitable, with similar inequities apparent favouring wealthier members.
9	Case Study	Yadav, N.P., Dev, O.P., Springate-Baginski, O., and Soussan, J.	Forest Management and Utilization Under Community Forestry	2003	Forest & Livelihoods vol.3(1) p37-50 (ODI/Forest Action)	Forest Resources, Participatory assessment, Decision-making, Forest Management, Community forestry, forest regeneration, Equity, Fuelwood, Timber, Poles, Fodder, Forest product distribution, Nepal	Examines the impact of community forestry on forest resources including processes of management, particularly inequity and participation. Finds a positive impact on community-wide income, with profits redirected into social development programs. Non-income benefits said to include forest regeneration (though no evidence pre-PFM given). However, inequity said to remain high due to lack of participation by poor/landless.

Bibliography							
ID	Type	Author	Title	Date	Source	Keywords	Abstract
10	Case Study	Dev, O.M., Yadav, N.P., Springate-Baginski, O., and Soussan J.,	Impacts of Community Forestry on Livelihoods in the Middle Hills of Nepal	2003	Forest & Livelihoods vol.3(1) p64-77 (ODI/Forest Action)	Process-indicators, Institutional Processes, Decision-Making, Livelihood Impacts, Nepal	Analyses the institutional arrangement of FUG's and the impact this has on livelihoods. A livelihoods systems approach is adopted in assessing this and concludes that income improvement is dependent upon access (to products, markets etc). Non-income impacts are said to include skill development, improved social cohesion within and between FUG's and reduced threat of loss of forest product supplies. Questions exist, however, over the restriction of forest use, distribution of products and the equity issues such questions entail.
11	Methodology	Richards, M. et al	Economics, Poverty and Transparency: Measuring Equity in Forest User Groups	2003	Forest & Livelihoods vol.3(1) p91-104 (ODI/Forest Action)	Equity Indicators, Participatory Economic Calculations, Opportunity Costs, Nepal	Develops an economic methodology, usable by Forest User Groups, for increased equity transparency in CF in Nepal. Concerns over effective participation/representation led to a switch from key informant use to household survey use. The main indicator for inequity was labour collection time (reflecting shorter distances to collect forest products for wealthier households. A more suitable indicator suggested is time needed to collect bundle of subsistence forest products per unit of household demand.
12	Case Study	Timsina, N.P.	Promoting Social Justice and Conserving Montane Forest Environments: a case study of Nepal's Community Forestry Program	2003	The Geographical Journal vol.169 (3) p236-242	Community Forestry Policy, Forest User Groups, Social Structure, Poor and Disadvantaged People, Social Justice, Nepal	Provides examples of CF programs promoting participation of women, the poor and marginalised. Also found cases of enhanced social justice and resources regeneration. However, also demonstrates the power of elitist domination of FUG's and the constraints and challenges this entails.
13	Case Study	Neupane, H.	Contested Impact of Community Forestry on Equity: Some Evidence from Nepal	2003	Forest & Livelihoods vol.2 (2) p55-62	Community Forestry, Equity, Livelihoods, Forest Management, Nepal	Discusses six key factors affecting ways benefits from CF are generated and distributed. Six factors analysed: 1. Limited support from District Forest Office 2. Limited access of committee members to new info/knowledge 3. Limited knowledge and techniques for CF management 4. Limited access of the poor in FUG decision-making 5. Inappropriate arrangements for forest products distribution 6. Emphasis on forest protection, rather than management.
14	Case Study	Thoms, C.A., Karmacharya, M.B., and Karna, B.K.,	Exclusion Isn't Easy: Lessons from a Leasehold Forest	2003	Forest & Livelihoods vol.2 (2) p48-54	Leasehold Forestry, Exclusion, Collective Action, Poverty Alleviation, Devolution, Nepal	Critically examines a leasehold forestry project in Nepal, arguing that exclusion by small groups is difficult, especially for the very poor. Concludes that CF would reap more benefits than Leasehold Forestry. If implemented well, CF can help the poorest of the poor to meet their forest product needs, without creating resentment towards the poorest.
15	Case Study	Malla, Y.B.	Impact of Community Forestry Policy on Rural Livelihoods and Food Security in Nepal	2000	Unasylva vol.51 (202) p37-45	Forest Products, Income, Subsistence, Food Security, Livelihoods, Nepal.	Examines the question: Is PFM incompatible with securing livelihoods from the forest? Analysis concludes that CF fails to provide the very poor with a secure livelihood and in many cases compounds their vulnerability and powerlessness. Argues for a revision of current PFM policy, possibly encompassing a combination of Community and Leasehold Forestry.
16	Case Study	Maharjan, M.R.	The Flow and Distribution of Costs and Benefits in the Chuliban Community Forest, Dhankuta District, Nepal	1998	Rural Development Forestry Network Paper 23e	Forest Management, Participation, Cost-Benefit Analysis, Nepal.	Case study highlighting importance of social/economic indicators (in addition to usual environmental indicators) as a measure of sustainability. Distribution of such costs/benefits among different forest users a particularly critical factor that could lead to the long-term success/failure of the FUG. Conclusions and recommendations include: management of the forest for increased productivity, a more equitable distribution system for forest products and income generating activities could see more interest from women and poorer forest users; focusing on disadvantaged users including women and the poor will increase the sustainability of the CF; marketing of surplus forest products could benefit the wider community as well as the FUG through community development activities; a cost benefit analysis may be helpful to the community in decision making about the community forest.

Bibliography							
ID	Type	Author	Title	Date	Source	Keywords	Abstract
17	Case Study	Malla, Y.B., Neupane, H.R., and Branney, P.J.	Why aren't poor people benefiting more from community forestry?	2003	Forest & Livelihoods vol.3(1) p78-90 July 2003	Community forestry, Nepal, Equity, Forest products	Assesses levels of participation, understanding of and benefits received from CF in 4FUGs in the west of Nepal. Concludes that the poor may be disadvantaged by CF, predominantly due to dominance of decision making by wealthier households and management of forests below their productive level. Awareness of CF and FUG institutional issues is also low, particularly amongst the poorest group. Main conclusions: 1) generally privileged households obtain a greater share of benefits from community forests. Distribution systems that assumes that FUGs are homogenous discriminate against the needs of the poor. 2) only a small proportion of forest products are currently supplied from community forests. Private on farm tree resources are important for meeting additional requirements - another factor discriminating against the poor who have less land and therefore on farm tree resources. 3) FUG committees and their decision making do not adequately represent the needs of the poor.
18	Case Study	Upreti, B.R.,	Social Transformation through Community Forestry: Experiences and Lessons from Nepal	2000	http://www.mtnforum.org/resources/library/upreb00a.htm	community forestry, Nepal, equity	Examines the status of community forestry in the hills of Nepal through use of secondary data and primary data collected from 2 hill districts in central Nepal where the Nepal-Swiss Community Forestry Project has been working. Reviews the problems of implementing CF. The project promoted specific inclusion of women, the poor and low castes in CF, and has improved the implementation of CF in terms of equity in product distribution and decision making. However social transformation may as yet be ahead of poverty reduction.
19	Discourse	Springate-Baginski, O., Dev, O.P., Yadav, N., and Soussan, J.,	Community Forest Management in the Middle Hills of Nepal: the Changing Context	2003	Forest & Livelihoods vol.3(1) p5-20 July 2003	Community forestry, Forest policy, Institutions, Nepal	Provides an overview of the policy context of community forestry in Nepal and the forest resource base. Describes the formation of 11 FUGs in the Middle Hills and analyses the role of the Forestry Department in formation and post-formation of FUGs. Identifies strengths, weakness, opportunities and constraints.
20	Case Study	Kaimowitz, D., Pacheco, P., Johnson, J., Pávez, I., Vallejos, C., and Vélez, R., Kaimowitz, Pablo Pacheco, James Johnson, Iciar Pávez, Christian Vallejos and Róger Vélez.	Local Governments and Forests in the Bolivian Lowlands	1999	Rural Development Forestry Network paper 24b	Governmental decentralisation, indigenous territories, equity, logging concessions, Bolivia	Bolivia embarked on a decentralization programme in 1994. It approved a 'Popular Participation' law strengthening municipal governments and attempting to make them more democratic. In 1996 it passed a Forestry Law giving municipal governments an explicit role in forest management and a right to receive a portion of forest revenues. Municipal governments are expected to administer up to 20% of public forests as municipal forest reserves to be exploited by local community groups (ASLs) and have a role in ensuring that timber concessions and sawmills comply with forestry regulations. In return the municipal governments are to receive 25% royalties from concessions and the revenue generated from forest clearing permits. This article reviews the progress that has been made so far in forest decentralization through case studies of 4 municipalities
21	Case Study	Kigenyi, F., Gondo, P., and Mugabe, J.,	Practice before policy: an analysis of policy and institutional changes enabling community involvement in forest management in Eastern and Southern Africa	2002	IUCN-EARO, Nairobi. Forest and Social Perspectives in Conservation No. 10.	Forest policy, forest legislation, community based forest management, Malawi, Tanzania, Kenya, Uganda, Zimbabwe, Zambia, Mozambique	In Eastern and Southern Africa exclusion of local communities has been incapable of ensuring sustainable forest management. More participatory forest management is now being developed and the most significant changes in policy and legislation have taken place in the last 10 years. However, legislative changes have not kept pace with policy reforms and in many cases participatory forestry initiatives have developed where supporting policy and legislation have not yet been put into place. Donors and NGOs have provided much of the impetus for these new community based forest management approaches. Outlines some shortcomings of current policy in the region, how forest and non-forest policy has contributed to forest degradation, and reviews the inadequacies of new forest policies. Concludes that insufficient use has been made of lessons learnt in other regions.
22	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Vietnam context		http://www.recoftc.org		Provides an overview of the state of CF in Vietnam.
23	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Thailand context		http://www.recoftc.org		Provides an overview of the state of CF in Thailand.

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ID	Type	Author	Title	Date	Source	Keywords	Abstract
24	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Philippines context		http://www.recoftc.org		Provides an overview of the state of CF in the Philippines.
25	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Laos context		http://www.recoftc.org		Provides an overview of the state of CF in Laos.
26	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Indonesia context		http://www.recoftc.org		Provides an overview of the state of CF in Indonesia.
27	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	India context		http://www.recoftc.org		Provides an overview of the state of CF in India.
28	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	China context		http://www.recoftc.org		Provides an overview of the state of CF in China.
29	Typology	Regional Community Forestry Training Centre for Asia and the Pacific website	Cambodia context		http://www.recoftc.org		Provides an overview of the state of CF in Cambodia.
30	Case Study	Suryadi, S.,	Community forestry institutionalized: never or ever: the community forestry program at Sesaot village in Nusa Tenggara Barat Province of Indonesia	2000	LP3ES, unpublished Pp220-238 http://www.recoftc.org	community forest, Governmental decentralisation, Taungya, Forest protection, Indonesia	Indonesia has undergone massive deforestation, until 1998 at a rate of 1.7 million ha pa. Attempts at reforestation have failed and this has been attributed to the failure to enforce concessionaires to replant. Nevertheless the government has never recognized this but has blamed forest damage on the poverty of communities. Government forestry policy and regulation continues to lay greater emphasis on timber management, and obtaining financial resources for the state than on improving livelihoods and forest conservation. There are clear laws, regulations and institutions, but government has failed in law enforcement permitting large concessionaires to extract timber illegally and this is a major factor in forest degradation. Political reform has included decentralisation to regional and district levels to reduce national disintegration resulting from centralization of power, monopolization of economic development and alienation of regional aspirations. However, despite clear articulation in the decentralization law, government program to empower communities at village level has not been significant. The basic forestry law includes some inconsistencies and overlapping responsibilities, still
31	Discourse	Brown, D.,	Principles and Practice of Forest Co-management: evidence from West-Central Africa	1999	European Union Tropical Forestry Paper 2, Overseas Development Institute, London.	Forest co-management, Ghana, Cameroon, Concessions, Forest co-management, participation, Forest legislation, Tropical forests, Timber, Tenure	The paper discusses some of the difficulties of forest co-management and identifies pointers to improve the design of development assisted interventions. In tropical moist forest areas of SSA imbalances of power between industrial and non-industrial forest users, and questionable levels of political will in state agencies present barriers to meaningful community participation. Changes to land tenure systems may be hazardous and do not necessarily guarantee improved access to the poor. Social complexity in the modern world makes these areas unstable in social terms and not necessarily conducive to community solidarity and joint action. The paper uses case studies in the high forest zones of Ghana and Cameroon to discuss problems faced with collaborative forest management in national contexts. It argues against re-creation of traditional resource management systems which assume the existence of effective traditional community leaders who represent the interests of the community. This is in doubt, and complicated by the presence of social heterogeneity due to immigration. The ability of local government authorities to control resources is weakened by the large areas they cover and

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ID	Type	Author	Title	Date	Source	Keywords	Abstract
32	Discourse	Scherr, S.J., White, A., and Kaimowitz, D.,	A new agenda for forest conservation and poverty reduction: making markets work for low-income producers	2004	Forest Trends, Washington, D.C.	Forest products, Forestry certification, Forest markets, Forest legislation, Concessions, Community forestry, Farm forestry, Timber	A much longer version of the next entry - which is a policy brief.
33	Discourse	Scherr, S.J., White, A., and Kaimowitz, D.,	Making markets work for forest communities	2002	Forest Trends, Washington, D.C.	Forest products, Forestry certification, Forest markets, Forest legislation, Concessions, Community forestry, Farm forestry, Timber	There are three seemingly contradictory goals in forestry at the start of the 21 st century: conserving forests, meeting fast-growing demand for forest products, promoting sustainable development to reduce rural poverty. There has been emphasis in development assistance programs on forests as safety-nets for low-income forest dwellers enabling the poor to meet their subsistence needs. Less has been done to help local people exploit their forest assets in a sustainable manner to take advantage of the growing demand for forest products. This policy brief identifies the most promising market opportunities for local producers in developing countries, illustrating possible business models with real life examples, and presenting a set of <u>strategies for realizing that potential</u> .
34	Typology	Klein, M., Salla, B., and Kok, J.,	Attempts to establish community forests in Lomie, Cameroon	2001	Rural Development Forestry Network Paper 25f (ii)	Community forestry, equity, timber, Forest management plan, moist tropical forests, Cameroon	Describes the process involved in establishing a community forest, and attempts to cost this up. Findings are taken from the SDDL project of the SNV in Lomie administrative district, Eastern Province of Cameroon
35	Typology	Auzel, Ph., Nguenang, G.M., Feteke, R., and Delving, W.,	Small-scale logging in community forests in Cameroon: towards ecologically more sustainable and socially more acceptable compromises	2001	Rural Development Forestry Network Paper 25f(i)	Community forestry, Cameroon, timer, moist tropical forests, income generation, small/medium enterprises	There has been considerable entrepreneurship within the informal sector involving artisanal sawing with a chain saw. This article examines the potential of small-scale logging as a means of sustainably exploiting community forests. The Forestry Law 1994 states 3 methods to exploit timber resources from community forests: by sale of standing volume, by individual felling authorisation, by logging permit, but none of these offers a satisfactory means to sustainably exploit timber resources, and exploitation for commercial use, would furthermore, require establishing a contract with a registered exploiter. Estimated potential income from small-scale logging of community forests based on a 30 year rotation and an income of 30,000 CFA per m3 for sawn timber would be 9 to 18 million CFA pa for a 1500 – 2500 ha community forest (270 – 360 million CFA over a 30 year rotation) and 27 to 36 million CFA pa for a 3000 – 5000 ha community forest (710 – 1080 million CFA over a 30 year rotation). By contrast, income from Sale of Standing Volume, which has been the standard practice to date, for a 2500 ha forest on a one off basis, at a rate of 1000 CFA per m3 of timber removed is estimated as 5 –
36	Typology	Djeumo, A.,	The development of community forests in Cameroon: origins, current situation and constraints	2001	Rural Development Forestry Network Paper 25b(i)	Community forestry, Cameroon, timber, moist tropical forests, forest legislation, forest management	Assesses the status of community forestry in Cameroon 7 years after the 1994 Forest Law first made community forestry possible. Highlights the key constraints which are socio-cultural (the notion of community and formation of 'legal entities' for the purposes of community forestry), institutional and financial - particularly relating to the costs of development of the application file and management plan required to establish a community forest.
37	Typology	Bray, D.B.,	Mexican Community Forestry: Perspectives on Common Property Enterprises and Asset-Building	2004	Paper presented at the International Conference on Rural Livelihoods, Forests and Biodiversity. May 19-23, 2003, Bonn, Germany. Electronic Proceedings, CIFOR. http://www.cifor.cgiar.org/publications/corporate/cd-roms/bonn_results/index .	Community forestry, Mexico, common property	Outlines the Common Property Regime in Mexico under which community forestry enterprises have developed. Assesses the extent to which these enterprises are profit and contribute to the social and economic development of the community.
38	Case Study	Klooster, D.,	Institutional Choice, Community, and Struggle: A Case Study of Forest Co-Management in Mexico	2000	World Development, 28, 1, 1-20	Community forestry, timber, tenure, sustainable forestry, forestry certification, small scale forest enterprises, equity.	This paper surveys the evolution of theory on change in commons management and briefly describes the institutional choice approach. It assesses the utility of this approach in explaining observed processes of change in a case study of success and failure amongst forest owning communities in Mexico.

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ID	Type	Author	Title	Date	Source	Keywords	Abstract
39	Discourse	Wily, L.A.,	Making woodland management more democratic: cases from Eastern and Southern Africa	2000	Drylands Issue Paper No. 99. International Institute for Environment and Development, London, UK.		Looks at changing power relations between the state and the people in Africa in land and natural resources, particularly woodlands. Looks at the extent to which communities are gaining authority over woodlands, including rights of ownership and looks at the extent to which community level institutions are emerging to support these altered patterns of forest ownership and control. Efforts to interest local populations in woodland management are only 5-10 years old in Eastern and Southern Africa and have been largely in the context of donor funded projects. Distinguishes between different types of community involvement in forest management as in other Wiley papers. Argues that community stewardship of forest resources is the only way to ensure conservation on a sustainable basis. Possibly a shorter version of Wiley and Mbaya.
40	Case Study	Wily, L.A.,	Forest management and democracy in East and Southern Africa: lessons from Tanzania	2001	Gatekeeper Series No. 99, IIED, London, UK.		Looks at the benefits deriving in Tanzania where forest management is being handed over from the state to the people, and argues that offering custodial rather than access rights to communities provides the most effective incentives for forest management.
41	Case Study	Nygren, A.,	Community-based forest management within the context of institutional decentralization in Honduras	2005	World Development, 33, 4, 639-655	Governmental decentralisation, equity, Forest management, gender, Small-scale forest enterprise, timber, NTFPs, Honduras	Case study of an internationally highlighted success in decentralized forest management - the municipality of Lepaterique in Honduras. The case study demonstrates the unevenness of the success story and resulting inequities. One conclusion is that decentralization in Honduras as in Bolivia and Mexico has enabled local people to voice their resource claims and protest more openly as conflicts over resource interests become more transparent, even though corruption and mismanagement remains.
42	Case Study	Gombya-Ssembajwe, W.S., and Banana, Y.A.,	Community participation in forest management: the case of Buto-buvuma Forest Reserve, Mpigi district, Uganda		Proceedings of the International Workshop on Community Forestry in Africa, 26-30 April, 1999, Banjul, the Gambia. Participatory forest management: a strategy for sustainable forest management in Africa. Pp 63-70	Community forestry, equity, Uganda, forest protection, degraded forests	Community forestry in Uganda takes 4 forms: 1) establishment and management of local forest reserves by local authorities for local benefits, 2) collaborative forest management of State forest reserves, 3) private farm forestry on private land or hired public land, 4) local community management of small forests of historical or cultural value. The paper looks at a case study of collaborative forest management. It is largely unsuccessful due to lack of legal status and authority to exclude outsiders from the forest, low level of incentives to forest protection resulting from inequitable costs and benefits.
43	Typology	Khare, A., Sarin, M., Saxena, N.C., Palit, S., Bathla, S., Vania, F., and Satyanarayana, M.,	Joint Forest Management: policy, practice and prospects. Policy that works for forests and people series no. 3.	2000	World Wide Fund for Nature-India, New Delhi and International Institute for Environment and Development, London	Community forestry, timber, Forest policy, Forest legislation, Equity, NTFPs	Assesses forest policy and JFM in India.
44	Case Study	Rosyadi, S., Birner, R., and Zeller, M.,	Creating political capital to promote devolution in the forestry sector - a case study of the forest communities in Banyumas district, Central Java, Indonesia	2005	Forest Policy and Economics, 7, 213-226	Indonesia, Governmental decentralization, collaborative forest management, social capital	Case study of a pioneering attempt at CFM in Indonesia. Looks at how a change in government and devolution opened up the forest debate, and how social capital and political capital were used in negotiating a new form of forest management.
45	Case Study	Conroy, C., Mishra, A., and Rai, A.,	Learning from self-initiated community forestry management in Orissa, India	2002	Forest Policy and Economics, 4, 227-237	India, community forestry, forest protection, equity, gender, forest reserves	Research on the difference between self initiated forest protection in Orissa and JFM. Provides reasons why communities motivated to carry out forest protection. Suggests conditions necessary for successful forest management.
46	Discourse	Carney, D.,	Implementing the Sustainable Rural Livelihoods Approach	1998	In D. Carney (ed.), Sustainable Rural Livelihoods: What contribution can we make? Department for International Development, London.		Overview of Sustainable Rural Livelihoods approach
47	Case Study	Nguyen, T.Q.,	Forest Devolution in Dak Lak, Vietnam: processes of benefit differentiation among households	2004	Paper prepared for seminars at London University College and Institute of Development studies in October 2004		
48	Case Study	Nguyen, T.Q.,	Forest devolution in Vietnam: differentiation in benefits from forest among local households		Draft paper submitted to Forest Policy and Economics.		
49	Typology	Baral, J.C., and Thapa, Y.B.,	Nepal's leasehold forestry for the poor: looking at the unintended consequences	2003	Mountain Forum on-line resources http://www.mtnforum.org/resources/library/barax03b.htm	Nepal, leasehold forestry	Discussion of the success of leasehold forestry in 2 districts of the Western region of Nepal

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ID	Type	Author	Title	Date	Source	Keywords	Abstract
50	Discourse	World Bank	World Development Report 2000/2001: Attacking Poverty	2001	Oxford University Press, New York	Poverty	
51	Discourse	Brown, D., and Schreckenber, K.,	Community forestry: facing up to the challenge in Cameroon	2001	Rural Development Forestry Network Paper 25a	Cameroon	
52	Discourse	Oyono, P.R.,	Profiling local-level outcomes of environmental decentralizations: the case of Cameroon's forests in the Congo Basin.	2005	Journal of Environment and Development 14, 2, 1-21.	Cameroon	
53	Methodology	Belcher, B.,	Monitoring Livelihood Impacts of Community Forest Management: Definitions, Criteria and Indicators. (Draft for Discussion Feb. 2005)	2005	CIFOR, Bogor	livelihoods, India, indicators, framework	Presents a framework developed by CIFOR for assessing the impacts of JFM in Jharkhand state in India in conjunction with the Forestry Department during the course of a World Bank assisted project to implement JFM.
54	Discourse	Shiva, V., Sharatchandra, H.C. and Bandyopadhyay, J.	Social, Economic and Ecological Impact of Social Forestry in Kolar	1981	Indian Institute of Management, Bangalore, India.	India, social forestry	A major early critique of social forestry based on an analysis of secondary information and primary data obtained through a short field-study in Kolar District of Karnataka between December 1980 and February 1981. The study concludes that the primary objective of social forestry had not been achieved, i.e. the subsistence forest product requirements of the poorest rural communities were not being met.
55	Discourse	Shepherd, G.,	Forestry, social forestry, fuelwood and the environment: a tour of the horizon.	1990	Social Forestry Network Paper 11a	India, social forestry	Provides a critique of village tree planting programmes aimed primarily at fuelwood production, with particular attention to Karnataka state in India.
56	Discourse	Arnold, M.,	Identifying links between forests and poverty	2002	Unpublished paper presented at the ECT/IIED Forestry and Poverty Reduction Workshop, Edinburgh, 13 June 2002	Forestry, poverty	Short paper and presentation discussing different ways of defining poverty, who the forest poor are and the role of forests in reducing poverty.
57	Discourse	Arnold, J.E.M.,	25 years of community forestry	2001	FAO, Rome	Community forestry	A fairly long paper that provides an overview of community forestry in the past 25 years and its role in rural livelihoods, and identifies some key issues that require addressing in the coming years.
58	Discourse	Glasmeyer, A.K., and Farrigan, T.,	Understanding community forestry: a qualitative meta-study of the concept, the process, and its potential for poverty alleviation in the United States case	2005	The Geographical Journal vol.171 (1) p56-69	participatory forest management, USA, global	A meta-analysis of community forestry (very broadly defined in this paper), particularly relevant to the US, and elsewhere focusing more on older cases, particularly social forestry. Some discussion of the issues involved in assessing the impacts of CF on livelihoods.
59	Discourse	Reeb, pers. Comm			FAO, Rome		Provision of a working definition of PFM and CF (email). Provision of a set of annexes for defining forest ownership, tenure and management
60	Methodology	Forest Stewardship Council	FSC Principles and Criteria for Forest Stewardship	2004	Forest Stewardship Council	Certification, methods	The FSC's ten principles and criteria for forest management.
61	Methodology	CIFOR C and I Team	The CIFOR Criteria and Indicators Generic Template	1999	Centre for International Forestry Research, Jakarta, Indonesia		
62	Methodology	Prabhu, R., Colfer, C.J.P., and Dudley, R.G.,	Guidelines for Developing, testing and selecting criteria and indicators for sustainable forest management.	1999	Centre for International Forestry Research, Jakarta, Indonesia		
63	Methodology	Prabhu, R., Colfer, C., and Shepherd, G.,	Criteria and indicators for sustainable forest management: new findings from CIFOR's forest management unit level research	1998	Rural Development Forestry Network paper 23a	methods, criteria and indicators	Discusses work of CIFOR in developing and testing a set of generic criteria and indicators for sustainable forest management.

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ID	Type	Author	Title	Date	Source	Keywords	Abstract
64	Case Study	Baker, M.,	Against the odds. (Re)building community through forestry on the Hoopa Reservation.	2003	In Kusel and Adler (eds). Forest Communities, Community Forests. Rowman & Littlefield Publishers, Inc., Maryland, USA. 301pp. Pp 27-54	Rural Livelihoods, Conflict, Employment, Environment, Democracy, USA	The book presents 12 case studies from across the USA, which examine the link between community well-being and forest ecosystem health in both urban and rural communities and in different regions of the country. The cases are organised around three themes. Three cases in Part I 'Investing in Natural Capital, Investing in Community', describe work to reverse patterns of decline and under-investment in the land and communities. Part II 'From Process to Practice', includes five cases in which residents organised and focused on developing good processes to tackle paralysing policy gridlock and social conflict. In the four cases in Part III, 'Stewarding the Land', residents focus on making a difference on the ground and in people's minds; by working through the 'heart' they address community health as well as ecosystem health.
65	Case Study	Jeanrenaud, S.,	Communities and forest management in Western Europe.	2001	IUCN, Gland. 150pp.	Italy, Scotland	
66	Typology	Nebel, G., Jacobsen, J.B., Quevedo, R., and Helles, F.,	A strategic view of commercially based community forestry in indigenous territories in the lowlands of Bolivia	2003	A paper presented at the International Conference on Rural Livelihoods, Forests and Biodiversity, 19-23 May, 2003, Bonn, Germany. CIFOR, Jakarta, Indonesia.	Bolivia, small-scale forest enterprise, timber	Evaluates 3 scenarios for commercial exploitation of land claimed by indigenous peoples in Bolivia: sale of standing timber, own extraction of timber, own extraction and sawing of timber. The later scenario holds the higher economic and employment potential, but there are barriers in terms of the skills, knowledge and capital required and difficulties in market positioning.
67	Discourse	Lok-Dessallien, R.,	Review of Poverty Concepts and indicators.	n.d. post 1997	SEPED series on poverty reduction, UNDP http://www.undp.org/poverty/publications/pov_red/Review_of_Poverty_Concepts.pdf		
68	Discourse	CPRC	The Chronic Poverty Report 2004 - 05	2005	The Chronic Poverty Research Centre, University of Manchester, UK.		
69	Discourse	Arnold, M.,	Identifying links between forests and poverty	2002	Paper presented at the Forestry and Poverty Reduction Workshop, Edinburgh 13 June 2002, Edinburgh Centre for Tropical Forests/International Institute of Environment and Development		
70	Discourse	DFID	Poverty: Bridging the Gap – Guidance Notes	2001	Department for International Development, London, UK		
71	Discourse	Maxwell, S.,	The meaning and measurement of poverty. ODI Poverty Briefing No. 3	1999	Overseas Development Institute, London, UK http://www.odi.org.uk/briefing/pov3.html		
72	Methodology	CARE International	Household Livelihood Security Impact Guidelines	2000	CARE		
73	Methodology	CARE International	Household Livelihood Security Assessments: A Toolkit for Practitioners	2002	CARE		
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75	Methodology	Nunan, F. Grant, U., Bahiigwa, G., Bajracharya, P., Pritchard, D. & Jose Vargas, M.	Poverty and the Environment: Measuring the Links. A Study of Poverty-Environment Indicators with Case Studies from Nepal, Nicaragua and Uganda	2002	Department for International Development, London, UK		
76	Methodology	Ashley, C. & Hussein, K.	Developing Methodologies for Livelihood Impact Assessment: Experience of the African Wildlife Foundation in East Africa.	2000	ODI Working Paper 129, ODI. London.		
77	Methodology	Herbert, A. & Shepherd, A.	Evaluation of DFID support to Poverty Reduction. Spin-off study: Impact Assessment for Poverty Reduction	2000	School of Public Policy, University of Birmingham. UK.		

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79	Methodology	Eland-Goossense, M.A., Van de Goor, L.A.M., Vollemans, E.C., Hendriks, V.M. & Garretsen, H.F.L.	Snowball Sampling Applied to Opiate Addicts Outside the Treatment System	1997	Addiction Research 5 (4) pp.14-23		
80	Methodology	Faugier, J. & Sargeant, M.	Sampling Hard to Reach Populations	1997	Advanced Nursing 26 (4) pp.8-28		
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82	Methodology	Preston, D.A.	Rapid Household Appraisal: a method for facilitating the analysis of household livelihood strategies	1994	Applied Geography 14 pp.203-213		
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100	Methodology	Smith, S. & Sender, J.	Investigation Poverty: an example from Tanzania	1988	RRA Notes 2 pp.18-20		
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105	Discourse	Alix-Garcia, J., de Janvry, A., and Sadoulet, E.,	A tale of two communities: explaining deforestation in Mexico	2004	World Development, 33, 2, 219-235	Mexico, deforestation, community forestry, common property	Presents a comparison of Mexican communities with different deforestation rates. Notes that not all members of the community are members of the <i>ejidos</i> which has formal rights to the land, as rights can only be inherited by one child. Compares <i>ejidos</i> , where development of a community logging enterprise enables the community to extract and sell wood and invest in public goods which benefit all members of the community (both members and non members of the <i>ejidos</i>). In this case the government sets a harvest limit and afforestation is included in the community's management plan. The <i>ejidos</i> prevents encroachment and conversion to agriculture or use for grazing by non members through investing in public goods that benefit all rather than merely profit sharing amongst <i>ejidos</i> members. These <i>ejidos</i> are compared with ones without a forest enterprise. In these some members of the community may cooperate on non encroachment, whereas others encroach.
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