

COMMUNITY FORESTRY IN BHUTAN

Putting People at the Heart of Poverty Reduction



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Ministry of Agriculture and Forests
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Royal Government of Bhutan
Ministry of Agriculture and Forests



Foreword

Over the past few years there has been a tremendous increase in the number of community forests throughout Bhutan, with over 300 community forests in existence today and more continuing to be established. Fully supported by the National Forest Policy, the Forest and Nature Conservation Act and Rules of the Royal Government of Bhutan and guided by the National Strategy for Community Forestry (2010), community forestry is rapidly becoming a significant movement as rural communities become empowered to sustainably manage their natural resources. In addition to meeting forest product needs through good environmental stewardship, community forestry gives rural communities scope for income generation and poverty reduction through the marketing of timber, firewood, non-wood forest products and ecosystem services and through group governance mechanisms ensuring equitable sharing of benefits and costs amongst the members of community forestry management groups.

As per the Constitution of the Kingdom of Bhutan ‘*Every Bhutanese is a trustee of the Kingdom’s natural resources and environment for the benefit of the present and future generations*’. Community forestry is a key means of enabling the people of Bhutan to fulfil both their constitutional role as environmental trustees as well as to contribute to the constitutional mandate of conserving at least 60% of Bhutan’s total land area under forest cover. Nationally, community forestry contributes to Bhutan’s overall socio-economic and environmental development goals and to local democratisation. Community forest management groups are local institutions that can play an important role in improving local livelihoods and promoting good local governance. As a practical example of democratisation in action, community forestry has the potential to be a positive influence on the evolution of a vibrant democracy, decentralisation and devolution.

Community forestry is exemplary of Bhutan’s national vision of placing sustainable management and conservation of natural resources at the forefront of development. It fully recognises the value of our natural resources and the importance of maintaining

environmental integrity not only for national benefit but also for the global community as a repository of globally significant biodiversity, and as a carbon sink. As the challenge of climate change and its impacts increases, community forests will have an important role to play in maintaining environmental integrity and resilience and developing local decision making capacities for adaptation to climate change. The importance and interconnection of people responsibly managing their forests for both human and environmental well-being at the local level will become increasingly evident.

I would like to express my sincere appreciation to the contributors of this book for sharing their experiences. I would also like to thank the editors for their hard work in preparing and finalising this book. It is my genuine hope that readers will find the material beneficial towards making a positive difference to the development of community forestry and national environmental stewardship in Bhutan.

Tashi Delek!



Sherub Gyaltshen

Secretary

Ministry of Agriculture and Forests

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Table of Contents

Foreword.....	i
Acknowledgements	iii
1 Forests, community forestry and their significance in Bhutan	1
Sonam Phuntsho	
2 Improving the contribution of community forestry to poverty reduction in Bhutan.....	5
Tashi Samdrup	
3 Timber marketing: the experience of Zhasela Community Forest in Lhuentse Dzongkhag	18
Ugyen Tshering	
4 Economic potential of timber production from Yarkey Community Forest under Tsirang Dzongkhag in Bhutan.....	30
Gem Tshering	
5 Analysing governance of community forestry in Bhutan: a case study from Punakha Dzongkhag	39
Tashi Wangchuk	
6 Subsidised timber and community forestry: analysing people's attitude towards sustainable forest management: a case from Dekiling Geog under Sarpang Dzongkhag	53
Karma Tempa	
7 Role of Lamjithang Community Forest in improving the quality of life of local people	63
Bhagat Suberi	
8 Participatory video as a research method for better understanding community forestry: a case study	68
Matthew J. Branch	
9 Community forestry and poverty reduction: the way forward	76
Kaspar Schmidt	
Glossary	80
Abbreviations and Acronyms.....	80



1 Forests, community forestry and their significance in Bhutan

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People of Bhutan, particularly those living in rural areas, are highly dependent on forests. Poverty in Bhutan is largely a rural phenomenon with some 30% of the rural population living in poverty (National Statistics Bureau, 2007). These poorer households rely on forests and other resources for their subsistence livelihoods. Bhutan's forests are also very important to maintaining the country's fragile Himalayan mountain ecosystem. Bhutan's forest management system recognises this and has evolved over time from traditional to centralised and scientifically-based management and subsequently further towards more decentralised and people-centred management.

Bhutan's approach to sustainable forest management is underpinned by the country's farsighted and visionary policies. Since the start of development planning in the 1960s, Bhutan has placed environmental conservation as a top priority while developing policies for socio-economic development (RGoB, 2002; Wangchuk, 2006). The importance of forests to Bhutan is reflected in the National Forest Policy 1974 through the adoption of the requirement to maintain at least 60% of the total land area under forest cover at all times (Dhital, 2002; Wangchuk, 2006) and subsequently affirmed by the Constitution of the Kingdom of Bhutan.

Within the last four decades, a number of legal reforms have taken place in Bhutan. Though the Thrimzhung Chenmo (Supreme Law) of 1957 regulated hunting practices of high-value wild animals such as tigers, elephants and musk deer, it did not regulate the harvesting of trees and other forest products (Dorji and Webb, 2003). The Forest Act 1969 was the first legal framework that directed forest utilization practices in the country.

A bottom-up approach to forest management in Bhutan began after the 1979 royal decree that called for the involvement of local people in tree planting activities (DoF, 2002; Phuntsho and Sangye, 2006). The Forest and Nature Conservation Act of Bhutan 1995 emphasized the active involvement of rural communities in forestry activities. It brought major changes in forest management by paving the way for community and private forestry (CF, PF) for the benefit of rural communities. Since then the forest rules have undergone several changes, widening the scope for people's participation in forest management. The creation of the Dzongkhag (District) Forestry Sector (DzFS) under the district administration was initiated in 1993 by decentralizing some forestry programmes such as PF and CF. From 2000, more forestry activities were decentralized to the district level, namely the afforestation programme, allocation of subsidized rural construction timber, and the watershed management programme.

The revised Forest and Nature Conservation Rules 2006 has further broadened the scope of community participation in forest management by clarifying some unclear provisions and developing clearer procedures in the Rules. It not only encourages rural communities to manage forests for their basic needs, but also to carry out their own income generation activities in CFs. One of the positive changes brought by the Rules 2006 is that it has lifted the clause on the ratio of forested and barren lands that needed to be considered while establishing CFs. The lifting of this provision has amongst other factors led to the rapid establishment of CFs in Bhutan and has also enabled the approval of many pending CF proposals.

Bhutan's CF policy not only recognizes the CF programme as a promising strategy for protection, conservation and sustainable use of forest resources in the country, but also strongly emphasizes contribution to poverty reduction and local democratisation. The long term vision for Community Forestry in Bhutan is *'for a future that is sustainable, affordable, makes significant contribution to rural livelihoods, poverty reduction and improved forest condition and is resilient to climate change'* (Social Forestry Division, 2010).

The policy objective of the National Forest Policy (2011) for community forestry is to *'empower rural communities (to) manage forests sustainably for socio-economic benefits, poverty reduction and to contribute to overall sustainable forest management at national level'*. This objective is also, in a slightly different formulation, the development goal for CF to which the strategies identified in the National Strategy for CF (2010) contribute.

The CF programme has gained considerable momentum since 2007 (Figure 1.1) with increased political and administrative support and interest of rural communities to establish CF and with continued support provided by the Swiss Agency for Development and Cooperation (SDC) through the Participatory Forest Management Project (PFMP). Over the past decade, the CF programme has proven to be one of the most promising avenues for rural communities to meet their basic forest needs and enhance their cash income (Phuntsho and Sangye, 2006; Bhutan Observer, 2008; MoA, 2008).

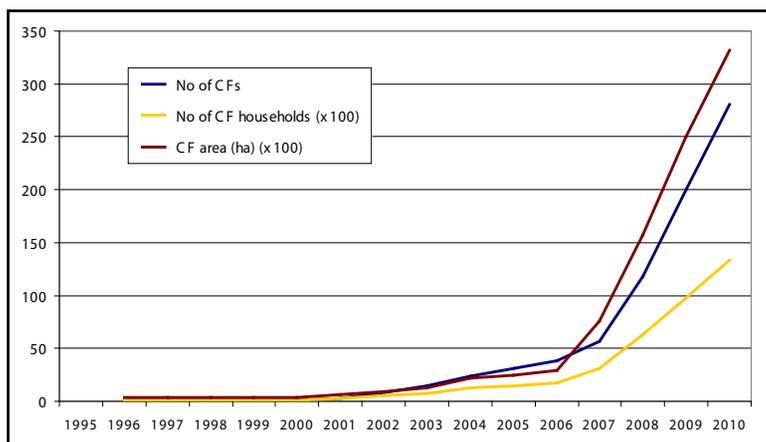


Figure 1.1: Trend of establishment of CFs in Bhutan until December 2010.

Today, CFs exist in all twenty Dzongkhags of Bhutan. It is projected that by the end of the 10th Five Year Plan (mid 2013) some 400 CFs will have been established, covering at least 4% of Bhutan's total forest area (SFD, 2009).

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2 Improving the contribution of community forestry to poverty reduction in Bhutan

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Summary

Community forestry (CF) is an institutional approach for preserving forest resources while providing rural households with forest products. This study analyses existing pro-poor activities in six community forests in Bhutan and assesses how they are perceived by the poor members of the community. It also identifies which activities the poor would like to implement to improve their livelihoods. Semi-standardized interviews with key informants, as well as focus group discussions (with committee members, poor women and poor men) were the main methods of data collection. Sticky dots were used to rank the importance of current and potential activities during focus group discussions.

The most frequently mentioned pro-poor activities were the harvesting of timber, poles and fencing posts for bonafide use. This was followed by the provision of loans and marketing of timber. Several problems were raised by the focus groups, especially the lack of skills (e.g., managerial skills), the lack of funds (e.g., to provide loans to all interested members) and uncertain rules (e.g., regarding the use of a stone quarry). Potential activities suggested by the focus groups included: strengthening loan facilities as well as initiating enterprises to produce and market furniture, non timber forest products and stones. There were some differences between the priorities for men and for women. For example, poor women suggested activities such as weaving, collecting medicinal plants, ferns and wild asparagus. Poor men suggested activities such as planting and marketing bamboo, using a stone quarry and starting a furniture enterprise. By and large, this indicates that the members of the community forestry management groups (CFMGs) would be interested in moving from using the forest for subsistence towards creating employment opportunities and commercialising forest products. The key obstacles to realizing these activities were lack of funds for initial investments and lack of knowledge related to processing and marketing forest produce. The study shows that poor members of the community have benefited from the establishment of community forests especially through easier access to forest resources to satisfy subsistence needs. New activities suggested by the focus groups require some investment, but they would allow the establishment of enterprises, thus creating employment for the youth and increasing cash income for the community.

2.1 Introduction

2.1.1 Community forestry in Bhutan

Community forestry was piloted by several projects during the past decade including the Third Forestry Development Project, the Wang Watershed Management Project, and since

2002, the Participatory Forest Management Project (Social Forestry Division, 2010). The actual CF programme began only in 2000 (Temphel and Beukeboom, 2006). It started with a pilot stage, and is now moving towards mainstreaming and institutionalization, thus becoming a major part of the forest management landscape of Bhutan (Social Forestry Division, 2010).

By the end of 2009, the government had approved some 200 community forests, with approximately 9,700 households involved in managing a total area of around 24,000 ha (Social Forestry Division, 2010). This constitutes less than 2% of national forest land. However, with growing interest in CF among the rural population, the figure is expected to increase (Chhetri et al., 2009). Thus, it is projected that the number of community forestry management groups could rise to about 400 by 2013, covering about 4% of the total national forest area (MoA, 2009; Temphel and Beukeboom, 2006; Social Forestry Division, 2010). In the long term about 20% of Government Reserved Forest land (about 238,000 ha) has the potential to become CF (Temphel and Beukeboom, 2006; Social Forestry Division, 2010). In order to boost the contribution of the CF programme to poverty alleviation, the CF programme has been prioritized under the 10th Five Year Plan (2009).

2.1.2 Problem statement

Considering that 69% of the population of Bhutan lives in rural areas and given that poverty is generally a rural phenomenon, a great benefit of CF is its potential to contribute to reducing rural poverty (Chhetri et al., 2009). The donors who are engaged in building stakeholder and government agency capacity have provided opportunities for the innovation, experimentation and identification of workable approaches, methods and tools to promote CF (Social Forestry Division, 2010). Despite the enhancement of contribution from CF in Bhutan, many challenges still remain. Although CFMGs have been successful in organizing people and in building social capital at group level, there is as yet relatively little generation of financial capital for the members of the CF. While trends towards resource degradation have been stopped and in many cases forest cover within the CF is reported to have improved, it is unclear to what extent local forest dependent communities benefit or not (Gilmour et al., 2004; Social Forestry Division 2010). In this context, it is useful to identify approaches that can directly benefit poor members of the CFMGs.

Therefore, the aim of this study is to determine which approaches targeting poverty alleviation are currently implemented by CFMGs. The study will also assess the perception of poor members of the community on the benefits they currently derive from the CF, and their suggestions for further measures.

2.2 Research aim, approach and methods

2.2.1 Research aim and approach

The study aims at exploring what pro-poor measures were implemented (or not) and how they are perceived. The aim of the study is thus to:

1. Provide a detailed image of the existing pro-poor activities in the CFMGs;
2. Assess whether they are perceived by the poor members of the community as benefiting them; as well as
3. Identify activities the poor would like to implement to further improve their livelihoods.

To address these aims, an applied and evaluative research approach was selected, which included both descriptive and explanatory elements (Neuman, 2006). To address 'how' and 'why' questions, case studies are appropriate (Yin, 1994). To collect empirical data, six CFMGs were used as case-studies.

2.2.2 Study sites

To cover a broad range of spatial and socio-economic conditions, CFs in each of the five agro-ecological zones of Bhutan were included. This helps to analyse both differences and similarities between agro-ecological zones.

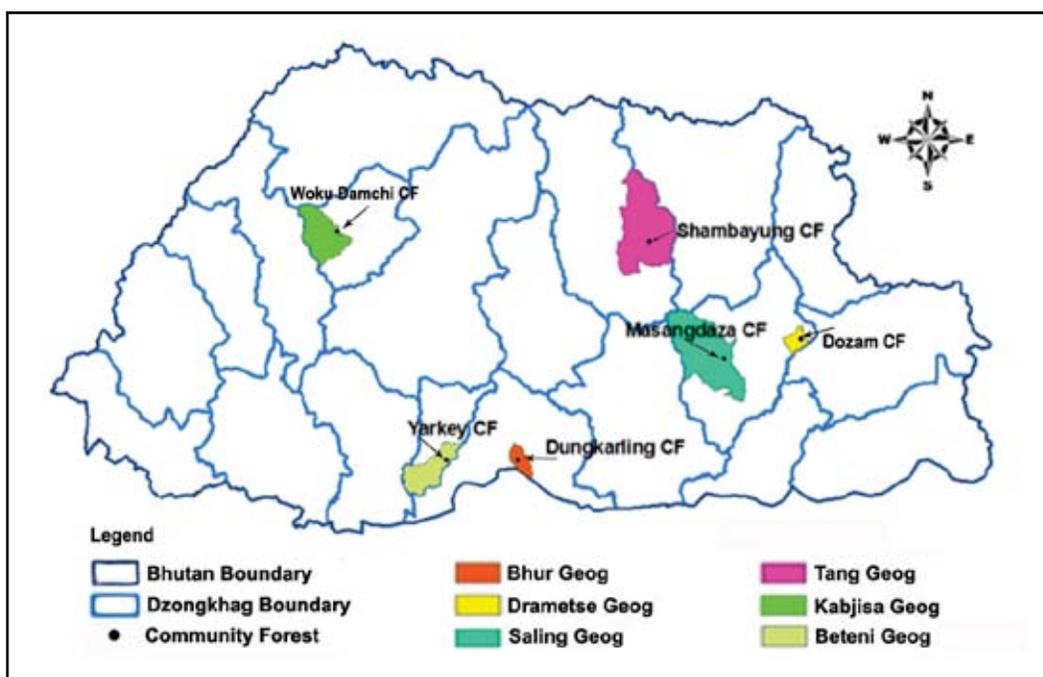


Figure 2.1: Location of the community forests included in the study.

The six CFs included three CFs with mostly conifer and three with mostly broadleaf forests (see Table 2.1).

Table 2.1: Key characteristics of the CFs included in the study.

Name of CF	Forest area (ha)	No of households	Forest type	Year of establishment
Dozam CF	300	114	Chirpine	1997
Masangdaza CF	87	36	Chirpine with some broadleaf forest	2002
Shambayang CF	46	24	Blue pine	2003
Dungkarling CF	114	78	Mixed broadleaf	2004
Woku Damchi CF	75	42	Mixed broadleaf	2005
Yarkey CF	128	44	Mixed broadleaf	2008

2.2.3 Data collection

Semi-standardized interviews and focus group discussions were the main methods applied for primary data collection. Semi-standardized interviews were conducted with three staff members of the Social Forestry Division in Thimphu and with two to three key informants (e.g., District Forestry Officer, Geog (Block) forestry extension staff, etc.) for each of the six CFs. The interviews were recorded using an audiotape. Through the semi-standardized interviews, the interviewer was permitted to explore aspects of CF beyond the answers to the guideline questions (Berg, 2006). The use of an interview guideline helped to ensure that comparable information was collected in each CF.

In each CF, three focus group discussions were held: one with the committee members, one with poor men and one with poor women of CF member households. The informants for the focus group discussions comprised of poor men and women members of the CFMGs were identified in discussions with village heads, chairpersons of the CFMG and forestry extension officers. Sticky dots were used to gather information on the preference of the focus group members for current and potential activities of the CFMG. A literature review on the subject for secondary data collection was also carried out.

2.2.4 Data analysis

The research followed a qualitative approach and the data was triangulated to ensure adequate interpretation. All key informant interviews and focus groups discussions were analysed as per the findings of the analysis and report of the focus group (Jayanthi and Nelson, 2002). This provided complete information on the discussion, which helped in data analysis. It was followed by analysis of the main content of the discussion. The analysis looked at the trend and patterns that reappeared within either a single focus group or among various focus groups (Berg, 2006). Information from the interviews was transcribed to written text. The transcripts were then summarized to ensure that they could

be understood and interpreted (Jimenez, 1985). Sections of the notes that related to each question were highlighted and comments were quoted.

2.3 Results and discussion

2.3.1 Current activities and benefits

The study showed that the different focus groups had similar preferences for currently conducted activities in the CFs studied. Most of the current activities highlighted by both poor men's and women's groups were for subsistence use only, with few CF enterprises established for income generation. This may be linked to the fact that most CFs have been established only a few years ago.

Out of the six CFs surveyed, five CFs have indicated the harvesting of timber, poles and posts to be the most important resources for their subsistence. This shows that the CFMGs are dependent on these resources for their livelihoods. Although Dozam CF has rather degraded forests, members' livelihoods have benefited much from it through the harvesting and marketing of lemon grass and amla fruit from their CF. The poor women's group from Dozam expressed:

*'We could sell as much as we have harvested from the CF'
'Although it was a small amount it helped a lot in purchasing household items.'*

The poor men's and women's groups in some CFs (e.g., Shambayung and Dungkarling) revealed that although there was some unfairness in loan disbursement, loan services established for the CFMG had benefited them. Thanks to the loans provided, the concerned households were able to buy household goods and other basic items during time of need. The poor women's group from Shambayung CF expressed:

'We can avail loan without interest for two months during emergencies like death or treatment of family members', and 'this has benefited us when we are in need.'

In other CFs (e.g., Dozam and Masangdaza) poor member households have limited access to loans as the preference for loans is given to rich member households and outsiders such as local contractors.

A study by Mahanty et al. (2006) in Nepal concluded that poor people are often restricted from access to forest and tree resources, while influential people are able to harness the resources. In contrast to Mahanty et al. (2006), Baral (2008) and Sharma (2002) concluded in their studies in Nepal that CF can contribute to poverty reduction as the poor members have easy access to forest resources and that commercialising forest products provides benefits to poor members. Similarly, the findings from the six CFs studied in Bhutan confirm that with the establishment of CFs, the CFMG members benefit, especially through ensuring easy access to forest resources. The CFMG members are able to obtain permits for harvesting forest produce within a short time span. Also, revenue from the fees collected for harvesting resources are being used by the CFMGs. The study also reveals

that the CFMGs generate revenue from the sale of forest products and the collection of fees and donations from visitors that accumulate as group funds. Through these funds, some CFMGs were able to provide loans at low interest rates as well as to support disadvantaged CFMG member households.

2.3.2 Problems

This study revealed several important problems that represent bottlenecks in enhancing the contribution of CF to poverty reduction. The CFMG members saw potential for establishment of CF enterprises such as timber processing and marketing, furniture and handicraft enterprises, weaving enterprise and medicinal plants. Beside the newness of the programme, lack of financial capital was seen as the major problem for not being able to initiate such enterprises by the CFMGs. For example, in Shambayung CF, lack of financial capital has led to lack of market access due to the absence of roads in the CF area. The study also found that although the government was increasingly giving assistance for effective implementation of the CF programme, there were some administrative hurdles faced by some of the CFMGs such as the non-issuance of timber marking and passing hammers by the government to the CFMGs. This represents an obstacle to harvesting timber as per the management plan. It also confirms that even though some CFs such as in Woku Damchi have well stocked forest stands and management plans that include provisions for harvesting and marketing of timber and firewood, the CFMGs were reluctant to start harvesting and marketing due to their limited capacities and lack of confidence in executing such operations. In order to derive optimum benefits from CFs, there is a need for the government to provide adequate capacity building trainings in management skills and to provide loans to the CFMGs so that they may invest in CF enterprises.

In some CFs (e.g., Dozam and Masangdaza) the poor members and disadvantaged groups were not able to fully access the loan services established within the CFMGs. This may be due to the fact that some CFMGs favour providing loans to richer households and outsiders, since they can be expected to repay the loan on time and can pay higher interest rates. If loans were to be provided to poor members, some CFMGs fear that their poorer members can pay only low interest rates and may not be able to pay back the loan on time.

The study also shows that in some CFs (e.g., Shambayung and Woku Damchi) there were lukewarm feelings amongst committee members with regard to their roles and responsibilities. This may be a hinderance to the effective implementation of CF management plans. This could be because the committee members were not provided with incentives or any financial benefits for performing their duties. A nominal incentive for committee members in terms of cash or in kind might accelerate the implementation of the CF management plans as stated by the focus groups from Shambayung and Woku Damchi CFs.

The study also revealed an unsatisfactory mind-set (e.g., Dozam and Dungkarling CF) on the issue of stone extraction from the CF area. The Forest and Nature Conservation Rules

says that although CFMGs have the right to manage forest resources, communities are not authorized to manage and operate stone extraction from the CF area, unless issued with a license (Royal Government of Bhutan, 2006). This clause in the Forest and Nature Conservation Rules has created a barrier for the CFMGs to start generating income through such enterprises. The poor men's group from Dozam expressed:

*'When other people can extract stone why is the CFMG not allowing it', and
'we have a good stone collection site if we are given chance to extract.'*

The poor men's group and committee members from Dozam and Dungkarling CFs would like the government to re-visit the Forest and Nature Conservation Rules to make it more flexible and to allow poor households to derive optimum benefit from CF. Similarly, Wangchuk (2011) concluded that the issue of poverty cannot be addressed just by handing over a forest to the people with high responsibilities and few rights. He also argued that CFMGs were not given the right to utilize all natural resources found within the CFs such as stone and sand. This is especially problematic if they have mostly degraded forests as CF, and severely hampers the potential for poverty reduction.

2.3.3 Potential activities

Potential activities and the number of times these activities were mentioned in the focus group discussions with poor women and poor men of the CFs are presented in Table 2.2.



Table 2.2: Potential CF activities suggested by poor men's and women's groups.

Activity	Number of CFs in which the activity was mentioned by...	
	poor men's group	poor women's group
Strengthening loan services	6	6
Harvesting of timber, poles and posts for CFMG members	4	4
Processing and marketing of timber	4	4
Furniture enterprises	5	3
Support to disadvantaged groups (construction of houses, student scholarships, etc.)	2	1
Nursery creation and forest plantation	2	1
Cane and bamboo product development and marketing	2	1
Medicinal plants production and marketing	1	2
Lemon grass production and marketing	1	1
Amla production and marketing	1	1
Firewood production and marketing	1	1
Mushroom farming/rearing	1	1
Commercial stone extraction	2	-- *
Construction of CFMG office	1	--
Weaving enterprises	--	1
Collection of wild asparagus and marketing	--	1

* -- Not mentioned

The study showed that many potential activities were mentioned by poor women and men in several CFs (see Table 2.2). Amongst these, potential activities such as strengthening of loan services, timber for marketing and furniture enterprises were considered important activities for generating income by both the poor men's and women's groups in most of the CFs.

According to Tempfel and Beukeboom (2006) the CF programme at inception was not much focused on NTFPs. They observed that NTFP collection was mostly based on conventional practice and that there were few value-adding activities. However they also observed that good management of NTFPs could provide economic benefits to communities, especially if the skills and product development of the communities could be improved. Subsequently, Peldon (2009) also suggested that there was large scope for marketing of NTFPs from CFs. Similarly, this study also reveals that there is potential for NTFPs which could be realised

through enhancing relevant skills and knowledge of CFMG members for processing and marketing of NTFPs for income generation. For instance, NTFPs such as lemon grass and amla were considered an important source of cash income by both the poor men's and women's groups in Dozam CF. They would further like to promote these resources through better management practices and to promote value addition and marketing of these products. Medicinal plants production and mushroom rearing activities are seen as potential sources of cash income by the poor men's and women's groups from Dungkarling and Yarkey CFs. The poor women's group from Dungkarling CF expressed:

'We earn money from harvesting broom grass and selling brooms and use the earned cash to buy household items.'

Moktan (2007) concluded that one of the strategies to generate income is the creation of forest-based enterprises such as the development of handicrafts and wood works. Similarly, this study revealed an interest by CFMG members to enhance their income by establishing forest-based enterprises. It was found that some focus groups (e.g., Shambayung and Masangdaza CF) were enthusiastic to form sub-groups within the CFMGs to run such enterprises in an efficient way. These sub-groups could for example run furniture and handicraft manufacturing enterprises to generate income and create employment opportunities.

The study has shown that there was not much variation regarding the suggested activities by poor men and women. Nonetheless, specific activities such as weaving enterprise (Masangdaza CF) and wild asparagus production (Dozam CF) were mentioned by poor women's groups only whilst the extraction of stone was proposed by poor men's groups (Dozam and Dungkarling CF). The collection and sale of wild asparagus is an important source of cash income for poor local households. These gender differences might be linked to the frequent engagement of women or men in such activities respectively and might also depend on the production potential of the concerned CFs and its perception by people. This study has shown that the CFMGs are interested in shifting from subsistence use of forest resources to an enterprise-based forest management system that would provide more benefits to the CFMGs.

2.4 Conclusions and recommendations

Community forestry is considered to be one of the most important strategies in Bhutan in terms of reducing poverty and providing equitable distribution of forest resources. Since the early 1990s, Bhutan's development planning has emphasized poverty reduction through the integration of various programmes within the forestry sector. The aim of this study has been to explore the preferences and ideas of CFMG members for currently conducted and potential new CF activities and benefits as well as to identify the main problems limiting the contribution of CF to poverty reduction.

The most important benefit the CFMG members receive is that the procedure to obtain a permit for harvesting forest resources (timber, poles, posts, fire wood, etc.) has become

much shorter with the establishment of a CF, as the group itself now decides on harvests of forest produce within the limits set by the CF management plan. Some CFMGs have started providing loans from their CF funds accumulated through selling timber, collecting fees for harvesting and from donations from visitors. The goal is to provide loans at low interest rates.

Potential activities for the CFMGs listed by the different focus groups were more numerous than the current activities. The most frequently mentioned potential activities were the strengthening of loan facilities to poor CFMG members and the establishment of furniture enterprises and processing and marketing of timber to generate income for the groups.

Several important bottlenecks and problems were raised by different focus groups such as lack of human and financial capital that hinders the effective implementation of the CF management plans. The lack of incentives for committee members was raised in Woku Damchi CF and members of Dozam and Dungkarling CF highlighted that the current rules did not allow stone collection from the CF area.

Based on the results of this study a number of recommendations for the further development of the CF programme are proposed:

- The limited skills and knowledge of the CFMGs hinders the effective implementation of the CF management plans and the development of small forest-based enterprises. Therefore the government and other stakeholders should accord high priority to capacity building. The committee members should be trained in areas such as group organisation and record and book keeping. Other CFMG members could be trained in processing (value addition) and marketing of products. This would allow the members to improve the governance of the CFMGs and diversify their activities.
- The government should facilitate the provision of loan services by relevant financial institutions to facilitate the establishment of CF enterprises, to create employment opportunities and to promote income generation.
- Priority should be given to making loans from CF funds available to poorer members. The required group funds to entertain a loan facility should be mobilised by promoting various income-generating activities. The option to pay back loans in forms other than in cash, for example as labour input or in kind, should be considered. Further, all CFs should give priority to provide loans to their poor members rather than to outsiders.
- It may be helpful to encourage the formation of sub-groups for specific activities such as weaving, furniture and handicraft production, mushroom rearing or medicinal plants production. This could create an avenue for the poorer members of the CFMGs to participate in income generating activities and eventually to gain employment.

- Timber harvesting and marketing from CFs with excess timber may be facilitated by the government (particularly the dzongkhag forestry sector).
- It is very important to motivate and encourage executive committee members of the CFMGs to effectively play their role in the implementation of the CF management plans. Therefore, if committee members have travel-related CF activities, they may be provided with reasonable compensation for the expenses incurred from the CF funds. Such incentives should however be linked to work effectively conducted.
- Revise the provisions concerning CF in the Forest and Nature Conservation Rules (Royal Government of Bhutan, 2006) to allow the CFMGs to sustainably manage all natural resources found in CFs. Some CFMGs consider stone extraction from CFs as a potential source of income.

In order to generate income and improve the livelihoods of poor CFMG members, it would be helpful to shift from forest management for subsistence towards an increasing commercial use of forest products. While doing so, considerations on equity such as the involvement of poor members in CF enterprises, creating employment opportunities for them and ensuring access to loan services for poorer households have to be taken seriously to ensure that poor CFMG members derive maximum benefit from CF.



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3 Timber marketing: the experience of Zhasela Community Forest in Lhuentse Dzongkhag

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Summary

Only few community forest management groups (CFMGs) across the country have so far ventured into timber commerce, despite the acute shortage of timber that the country experiences at the moment. Most CFMGs currently harvest timber conservatively below the annual harvesting limit (AHL) prescribed in their management plans (Temphel and Beukeboom, 2006; Dorji and Phuntsho, 2007; Beck, 2011). There is however a need to break the ice and encourage more CFMGs to market excess timber. The sale of excess timber by CFMGs promises to have far reaching impacts in terms of poverty reduction.

Zhasela Community Forest in Menjey Geog (Block) of Lhuentse Dzongkhag (District) has started marketing timber to enhance the living standard of the community, one of the objectives of this CFMG, and to contribute to the national goal of poverty reduction. This bold move by the CFMG has enabled the group to generate the substantial amount of Nu 3,88,945 from the sale of timber and wood products alone, in little more than two years. The CFMG has adopted its own modus operandi for timber marketing and has garnered much experience in timber production, processing, transportation and marketing. This experience is relevant for the formulation of a conducive framework and guidelines for the marketing of timber from community forests (CFs).

Instead of hoarding the 'hot cash' generated from the sale of timber in a bank account, the group decided to put the money into active play through a 'CF fund lending scheme'. The money is lent to CFMG members at a nominal interest rate and free of interest to families in need due to sickness requiring medical treatment or to deaths in the family. Approximately 84% of the income generated has been lent to date for various purposes.

3.1 Introduction

Community forestry in Bhutan has gained unprecedented pace in recent years. The number of CFs is burgeoning as more and more communities come forward to engage in this people-centred approach to forest management (Social Forestry Division, 2010). One of the core ideas of community-based management of forests and other natural resources is to enable communities and their members to improve their livelihoods and reduce poverty, which is primarily a rural phenomenon in Bhutan.

Marketing timber under strict adherence to the prescriptions of the approved CF management plan, is currently one of the most promising and lucrative of the many income generating opportunities that CF provides. The current acute shortage of timber due to the

construction boom is too good an opportunity to ignore. Thus, observing the old adage 'make hay while the sun shines', it is felt that this is the right time to start timber marketing from CFs.

Studies on timber marketing from CFs in Bhutan have shown that most CFs are very cautious when it comes to sale of excess timber (Temphel and Beukeboom, 2006; Dorji and Phuntsho, 2007; Beck, 2011). Also in the case of Zhasela CF, the group was initially hesitant to engage in the commercial use of timber. The dominant reason for this was that the CFMG members had, in the first place, been striving for timber self sufficiency and had a certain inclination to 'play safe' in the case that the CF has to face unpredictable future difficulties.

Zhasela CF is not the first but certainly one of the most progressive CFs when it comes to the sale of excess timber. The author, who formerly worked as Geog forestry extension officer (GFEO) in Menjey Geog where Zhasela CF is located, conducted this study to assess how much CF promises to contribute to poverty reduction in the case of Zhasela CF.

Over the course of time, the people of Bragong Village in Lhuentse observed a gradual depletion of forest resources in proximity to their village. Forest products such as timber for construction, firewood for cooking and heating, poles and posts for fencing and for use as flag poles, fodder for their cattle and other forest products had become scarce. As a reaction to this, the community came forward with the proposal to establish a CF.

The name of the CF is Zhasela CF derived from the local protecting deity who has their abode inside the CF area. The community forest management group comprises all community members of Bragong Village. Table 3.1 shows the main features of Zhasela CF.



Table 3.1: Main characteristics of Zhasela CF (Zhasela CFMG, 2004).

Location	Bragong Village, Menjey Geog, Lhuentse Dzongkhag
Date of approval of the CF management plan	02/02/2005
Plan period	2004 – 2014
Forest management objectives	<ol style="list-style-type: none"> 1. To protect catchment areas; 2. To generate income to enhance the living standard of the rural community; 3. Sustainable use of forest products.
Area	83.7 acres (33.9ha) split into two blocks
Forest type	Cool broadleaf forest with champ, oak species and <i>Castanopsis</i> spp. as dominant species
Annual harvest limit (AHL) for drashing size trees (dbh≥50 cm)	56 trees
CFMG members	15 local households (8 male, 7 female-headed households)

The forest management objectives were set at the initial inception of the CF. They guide activities, and the CFMG works towards achieving these objectives in the long run.

3.2 Timber marketing

3.2.1 Why Zhasela CF ventured into sale of timber

The main reason Zhasela CFMGs ventured into timber commerce was to generate income to enhance the living standard of the community members, i.e. to meet the second objective of the CF. The members of the Zhasela CFMG became self sufficient in their timber requirements from their CF a few years ago thanks to a productive forest as well as to judicious use of timber resources. Thus, as permitted by the CF management plan, the community pursued the sale of excess timber, i.e. of timber that can be sustainably harvested in excess to subsistence timber needs.

Interestingly and luckily, the timber species and quality available from the CF also matched the demand in the market. This applies particularly to champ (*Michelia champaca* L., local name: Karshing) which falls in the ‘class A’ timber category and is a highly valued timber.

3.2.2 Comparison of annual harvest limit (AHL) and effective harvest for drashing size trees

According to the CF management plan, Zhasela CF has a surplus of timber of drashing size (diameter at breast height ≥50 cm) (Zhasela CFMG, 2004). The graph in Figure 3.1 below

shows that the effective harvest of drashing size trees for subsistence and commercial uses has always been well below the annual harvest limit (AHL) over the past few years.

In total, the CFMG has so far extracted only 88 trees of drashing size against a cumulative AHL of 336 trees over the same period of time, which translates to an extraction percentage of 26% of the AHL for this diameter class. This strongly justifies the sustainable marketing of timber from Zhasela CF.

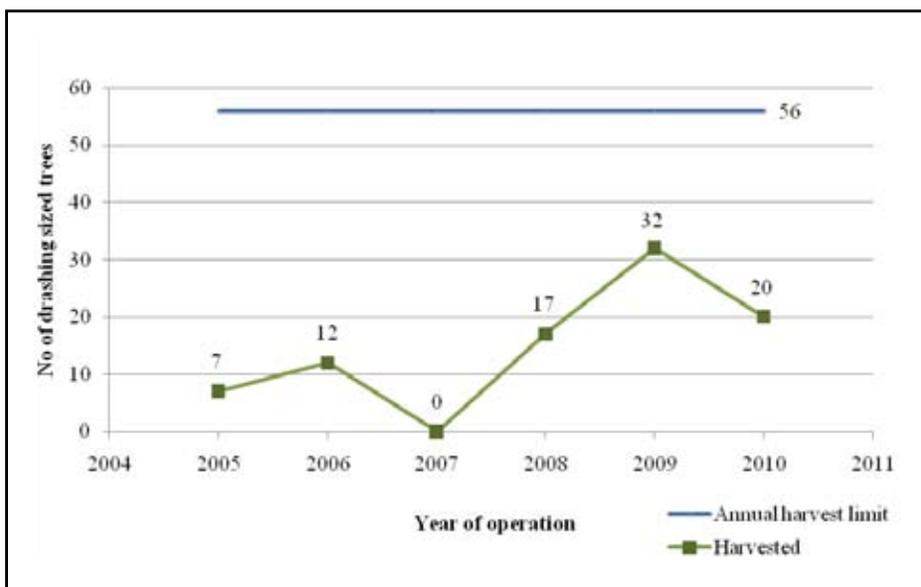


Figure 3.1: Annual harvest limit and effective harvest for drashing size trees in Zhasela CF from 2005 to 2010.

3.2.3 The modus operandi for timber marketing

The Zhasela CFMG has, with support from the forestry extension service, developed its own process for timber marketing including the main steps of production, processing, transporting and marketing. This process is illustrated in Figure 3.2 below and described in the following.

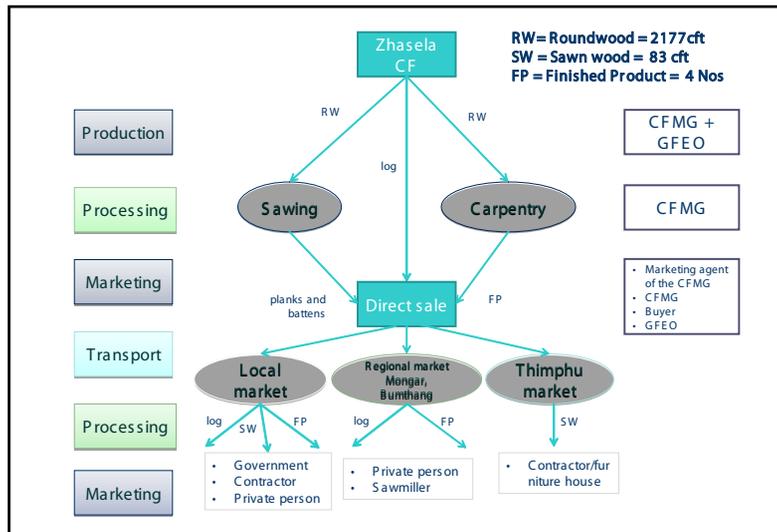


Figure 3.2: Illustration of the *modus operandi* for timber marketing applied by the Zhasela CFMG.

Customer and market exploration

Customers of Zhasela CFMG include contractors, government agencies and private individuals. These customers are contacted by CFMG members, executive committee members or the Geog forestry extension officers by telephone or in person. The customers place demands for particular species and categories of timber providing the specifications for the timber required. The Zhasela CFMG has a marketing agent appointed by its members from their midst. He explores the market for timber from the CF, advertises timber products from the CF and negotiates sale prices for timber in close consultation with the members of the CF executive committee.

Timber price setting

The CF management plan states that commercial prices ‘will be set according to the latest market price’. The price for timber is set in meetings involving all CFMG members and the Geog forestry extension agent. Before deciding on a sale price, timber prices in use by NRDCL, saw mills and contractors are studied. Expenditures such as labour contributions by CFMG members and a minimal profit margin are also taken into account. The following starting prices for negotiations have been fixed (subject to revision from time to time):

Logs: Nu 110 per cft

Sawn timber: Nu 210 per cft

The actual price is negotiated between the CFMG and its customers using these prices as starting points.

Marking of trees

Once a deal is struck, a team including the CF executive committee, the GFEO and chain saw operators marks the trees to be felled with the CF marking hammer. Marking is done respecting road and water catchment buffer zones and the prescriptions of the CF management plan.

Harvesting

Chainsaw operators cut the marked trees and de-branch and cross cut them into logs. This work is done by hired labourers from the CFMG if possible. The members of the CFMG are encouraged to do the harvesting in order to reduce out-flow of group funds and to take advantage of income making opportunities provided by the group.

Measurement

Once cross-cutting is completed, the GFEO measures mid-girth and length of the logs and the CF executive committee members record the measurements on the appropriate form. The volume of the logs is calculated in cubic feet (cft).

Splitting and sawing

Depending on the distance to the road, big logs sometimes have to be sawn (split) into four to five pieces by chainsaw to ease transportation. The logs are sawn into the sizes required by the customer.

Transportation

The split logs or the sawn timber (planks, battens etc.) are transported by the hired labourers to the road head. Once at the road head, the product is further loaded on the vehicle and transported to the destination.

Processing of timber

To sell timber in the form of finished products, it is, if possible, further processed into semi-finished or finished products such as altars. The processing is done by a carpenter from among the CFMG members who is paid for his work from the CF funds.

Payment

The buyer pays the CFMG in cash when lifting the ordered timber from the agreed road point. The final price is calculated based on the volume of timber (in cft) sold. The payment is done after issuing the money receipt and the timber transport certificate from the CF documents.

Issuance of internal timber movement order (ITMO) or timber release order cum certificate of origin (TROCO) by territorial forestry division

To avoid a mix up with illegally harvested timber, the timber from the CF is validated by the imprints of the approved CF passing hammer and Xerox copies of the CF certificate, the timber transport transcript and other documents. The concerned office of the territorial

forestry division issues ITMO and TROCO receipts before the transport of the timber to its destination. This validates the permission to move the timber and the source of the timber with official signatures and a seal.

3.2.4 Opportunities and constraints for timber marketing in Zhasela CF

The main opportunities and constraints for marketing timber from the CF in Zhasela, identified based on the experience gained from selling timber, are shown in Table 3.2.

Table 3.2: Overview of opportunities and constraints for timber marketing in Zhasela CFMG.

Step	Opportunities	Constraints
Timber production	<ul style="list-style-type: none"> - Forest management based on management plan; - Conducive legal framework and AHL gives provision for sale of excess timber; - CFMG members are experienced in timber harvesting; - No immediate investment needed for good natural stock. 	
Timber processing	<ul style="list-style-type: none"> - Small scale business or furniture house; - CFMG members possess carpentry skills; - Sawn timber is easier to transport and has less negative impact on the remaining forest stand. 	<ul style="list-style-type: none"> - High wastages (power chainsaw); - Small businesses need investment.
Transportation	<ul style="list-style-type: none"> - The CF is accessible via a farm road. 	<ul style="list-style-type: none"> - Dragging of logs damages top soil and regeneration; - Limited access to the CF in summer.
Timber marketing	<ul style="list-style-type: none"> - High quality timber species; - High demand and market prices for timber; - Timber shortage facilitates timber marketing. 	<ul style="list-style-type: none"> - Difficult record keeping; - Strong support required; - Limited marketing experience and skills of CFMG members and DzFS staff, need to develop these further.

3.2.5 Income generation from timber marketing

Zhasela CFMG has marketed excess timber in three forms: 2177 cft of round-wood (logs), 83 cft of semi-finished products such as planks or battens and four altars (choesham) as finished products. Details of these sales are presented in Table 3.3.

Table 3.3: Details of sales of timber and timber products by the Zhasela CFMG.

Sale of logs							
Sl No	Year of sale	Location of buyer	Type of product	Quantity (cft)	Rate (Nu/cft)	Total Amount (Nu)	Remarks
1	2009	Mongar	Logs	393	107	41,937	NRDCL rate
2	2009	Bumthang	Logs	136	110	15,000	Rates negotiated by the CFMG
3	2010	Lhuentse	Logs	1369	150	2,20,350	
4	2010	Bumthang	Logs	100	150	15,000	
5	2010	Lhuentse	Logs	179	150	26,841	
Total income from sale of logs						3,19,128	
Sale of planks and battens (sawn wood)							
Sl No	Year of sale	Location of buyer	Type of product	Quantity (cft)	Rate (Nu/cft)	Total Amount (Nu)	
1	2009	Menbi Geog, Lhuentse	Planks	1	240	240	
2	2009	Lhuentse	Planks	11	210	2,310	
3	2009	Khoma	Planks	12	210	2,510	
4	2010	Thimphu	Planks	60	210	12,579	
5	2010	Thimphu	Battens	10	210	2,006	
Total income from sale of planks and battens						19,645	
Sale of finished products							
Sl No	Year of sale	Location of buyer	Type of product	Quantity (no)	Rate (Nu/no)	Total Amount (Nu)	
1	n.a.	Lhuentse	Altar	3	14,000	42,000	
2	2009	Mongar	Altar	1	8,172	8,172	
Total income from sale of finished products						50,172	
Grand total of income generated						3,88,945	

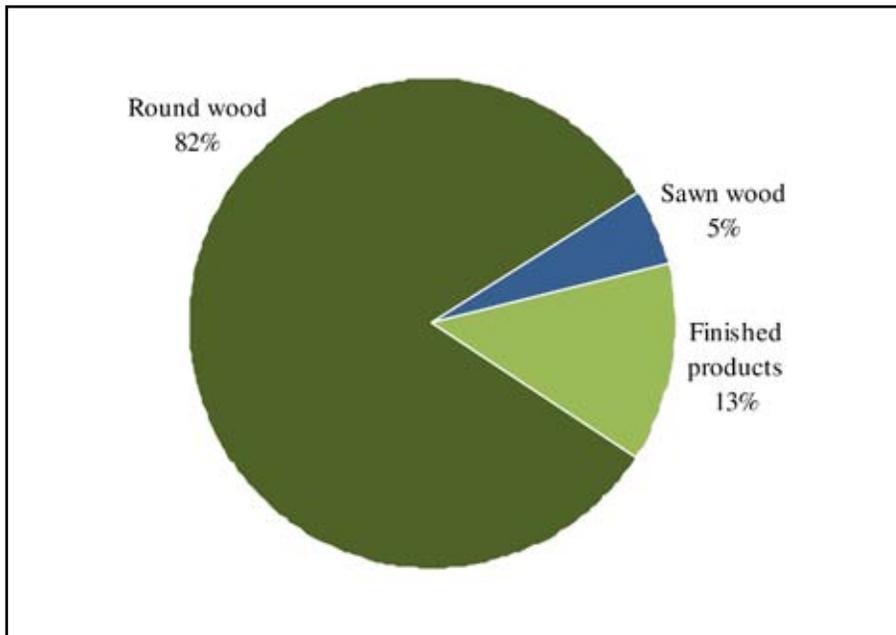


Figure 3.3: Percentage of total income generated from sale of round wood, sawn wood and finished products.

3.3 Income generation and poverty reduction in Zhasela CF

3.3.1 CF fund lending scheme

CFs generating income does not necessarily mean that this income contributes to poverty reduction. To reduce poverty, the funds generated have to be invested in a targeted way towards poverty reduction. Zhasela CFMG has instituted a CF fund lending-scheme to benefit its members and reduce poverty in the group. Saving the money in the group's bank account would have been an alternative use. However, the CFMG believes that the accumulated group funds should best be put to use to benefit the CFMG members.

All CFMG members can avail a loan from the CF funds. Separate CF fund lending by-laws governing the loan scheme were developed by the group members with support from the GFEO. The scheme provides relatively easy and cheap local access to cash for group members. The current annual interest rate is 2%. Interest free loans can be provided to bereaved families or households with members needing medical treatment. The CFMG also provides a solidarity contribution of Nu 5,000 per instance to victims of natural disasters. Until February 2011, a total of Nu 3,17,000 has been lent to 15 CFMG members for a range of purposes as shown in Table 3.4. The highest principal amount is Nu 50,000 while the lowest is Nu 3,000.

Table 3.4: Overview of amount lent under the CF lending scheme and purposes of the loans.

Year	Amount lent (Nu)	Purpose of loans
2009	1,50,000	New house construction, buy grinding machine, CGI roofing of houses, buy improved cattle breed, fencing of pasture land, pay back loan sharks, set up small business, buy carpentry tools, weaving, buy household goods, timber extraction for house construction
2010	82,000	
2011 (till February)	85,000	
Total	3,17,000	

With this credit facility available at their doorstep the CFMG members were enabled to initiate various activities which will improve their living standards and which are expected to make a contribution to the reduction of local poverty.

3.3.2 Timber donations from the CF

One feature of Zhasela CF is to respond to timber needs of victims of natural disasters such as earthquakes or windstorm. The house of Mr. Tshering Dorji in Bragong Village was damaged by the earthquake of September 2009. Mr. Tshering Dorji is an active member of the CFMG. In spring 2010, the CFMG allotted four drashing size trees from the CF free of cost to Mr. Tshering Dorji for the reconstruction of his house.

3.4 Conclusions and recommendations

The study has, despite its limitations as a case study of just one CF, shown that the CF programme has potential to contribute to poverty reduction. The programme supports people in rural areas at the grassroots level and the poverty reduction schemes of the CF programme target some of the most vulnerable groups of society.

From the study, the following recommendations to policy and decision makers for the development of a conducive and enabling framework for the marketing of timber from CFs have been developed:

Conduct a study on the potential of CF to supply timber to the market

Bhutan currently faces an acute shortage of timber. At the same time, there are more than 300 CFs in the country of which many have the potential to supply timber to the market. It is recommended to undertake a study to determine the amount of timber that CFMGs can supply to ease the timber shortage while at the same time generate income.

Develop timber marketing guidelines

The timber marketing procedures adopted by most CFMGs is based on trial and error. Guidelines for timber marketing from CFs should be developed to assist CFMGs in

marketing excess timber from their forests and to standardise and streamline marketing procedures.

Develop marketing skills of Dzongkhag Forestry Sector (DzFS) staff and CFMG members

DzFS staff including GFEOs support CFMGs members in timber marketing. But with no formal marketing training or appropriate skills, they are often themselves not very sure how to go about it. There is thus an urgent need to develop the marketing skills of DzFS staff and CFMG members.

Strengthen record and book keeping skills of CFMG members

The Social Forestry Division (SFD) of the Department of Forests and Park Services has issued 10 registers for record and book keeping to every CF. However, many CFMG members say that the format is too complicated particularly given the low literacy rates in rural communities. Therefore, it is suggested to simplify the format and to strengthen the record and book keeping skills of CFMG members.

Diversify sources of income

The avenues currently available to CFMGs to generate income are limited to marketing timber and non-wood forest products and ecosystem services. But forests host many additional products that could be used for income generation. It is therefore suggested that the government allows the CFMGs to diversify their sources of income, for instance by granting them the right to manage mines and exploit minerals including sand and stones within the CF area, or user rights for harvesting non-scheduled wild animals and fishing within the CF area.

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4 Economic potential of timber production from Yarkey Community Forest under Tsirang Dzongkhag in Bhutan

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Summary

A field survey was conducted during spring 2010 to study timber production and the financial return from timber sale in Yarkey community forest (CF) under Tsirang Dzongkhag (District) in Bhutan. Stratified random sampling was used to randomly select 71 respondents including community forest management group (CFMG) members, furniture house/sawmill owners, general timber consumers and contractors. Data was mostly gathered through semi-structured interviews.

The results of the statistical analysis showed that demand for timber depended on timber price with R^2 at 93.73. Market channel studies for timber showed that 89% of the timber was used for domestic consumption and 11% for commercial purpose. The financial analysis revealed profits of Nu 4.3 per cft (cubic feet) for timber and of Nu 44.8 per cft for lumber production (Nu 44.5 = US \$1). The highest profit of Nu 3931 was generated from the sale of a sofa set¹.

4.1 Introduction and research objectives

In Bhutan, some community forest management groups including Yarkey CFMG have started selling timber from their forests. In general, the overall volume of timber sold from CFs is however still very low. So far, there have been only a few studies and very few financial analyses of timber production in CFs, which is a major problem. Without sufficient knowledge and experience of timber marketing, the CFMGs might even incur losses when selling their timber. Thus, it was important to conduct this study in order to help and guide the CFMGs in timber production and marketing. There undoubtedly is a growing interest on the part of the CFMGs to sell timber where the CF management plans allows commercial use of timber.

Income generation is, according to the CF management plans, one of the main objectives of CF (Social Forestry Division, 2008). The two main underlying principles of the CF programme are that CFMGs are able to fulfil their timber requirement from their forest and that they can generate income from the sale of excess timber and other forest products (Department of Forests, 2004, p 13). The experience gained from the CF programme to date confirms that rural communities are indeed effective forest managers (Social Forestry Division, 2010).

Dorji and Phuntsho (2007) studied timber sale from CFs in Mongar and Bumthang. They

1 The sofa set comprised of two wooden armchairs and one long wooden armchair with a table.

found that there were several choices for CFMGs on how to sell timber including auction and direct sale. Furthermore, as per the present timber market demand and price, the CFMGs had a good opportunity to earn cash income from the sale of surplus timber thus generating income to enhance the livelihood of the community.

Research objectives were to assess the supply of timber from Yarkey CF as well as to assess the demand of timber from the CFMG and other stakeholders such as furniture house owners, saw millers, general timber consumers and contractors. The study's goal was to conduct a financial analysis for timber and furniture production in a community forest.

4.2 Material and methods

The information used in this study was obtained from various secondary sources, namely: Yarkey community forest management plan, Tsirang Dzongkhag and Gyeltshen furniture house, Gelephu. The timber production from the CF was computed from the timber resource assessment data compiled for the Yarkey CF management plan. The total average timber volume production was calculated with the help of a volume table.

4.3 Results and discussion

4.3.1 Demand and supply of timber

For the year 2009, the field survey indicated a supply of 5,261 cft of timber from the CF to satisfy the demand from various stakeholders (incl. CFMG members for their own use). The CF had a standing volume of 938,084 cft of timber.

4.3.2 Estimated regression coefficient of the demand function for timber for a furniture house

Wangchuk and Beck (2008) studied the area size required for each forest type in order to satisfy the basic timber requirements of CFMG members and to generate income from the sale of excess timber. Wangchuk and Beck (2008) and Wangdi (2009) provide evidence that the area ceiling of 2.50 ha per household according to the Forest and Nature Conservation Rules (Royal Government of Bhutan, 2006) limits the ability of CFMGs to manage their forests for income generation. The participants of the National Community Forest Workshop held in Thimphu in April 2009 and the National Strategy for Community Forestry (Social Forestry Division, 2010) thus recommended removing the cap on the area of CF per household and using traditional and natural boundaries to define the limits of the CF. The National Strategy (Social Forestry Division, 2010, p 47) also identifies principles to guide the determination of the CF area.

From 2005 to 2009, the relation between the price of timber and the demand by furniture houses was positive (see Figure 4.1) which means that both the price of timber as well as the demand for timber increased from year to year.

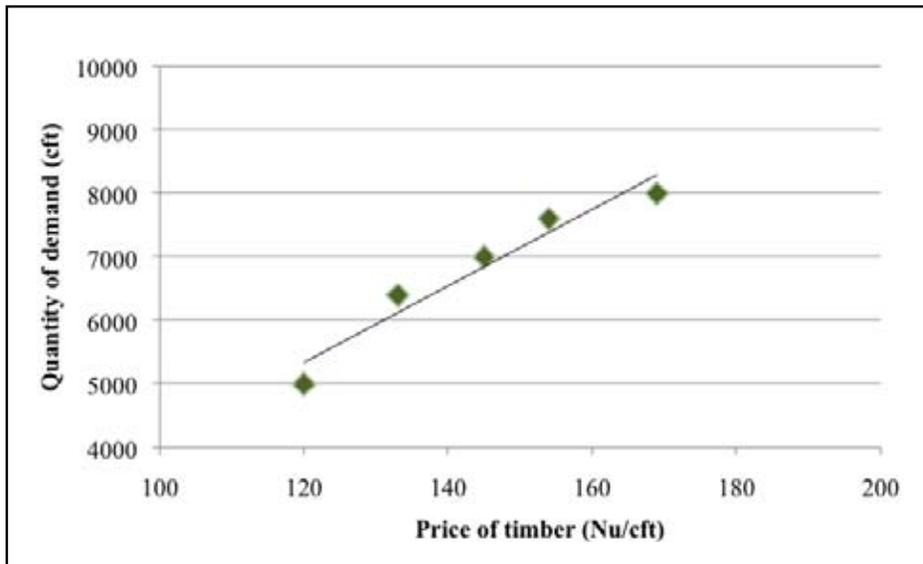


Figure 4.1: Relation between the price of timber and the demand for timber for the years 2005 to 2009 (see Table 4.2 for year-wise data).

R^2 of this equation was 0.9373 which means that the explanatory variable (price of timber, Pt) explains 93.73% of the deviation of the dependent variable (demand for timber, Dt). Additional statistical results are shown in Table 4.1. The result of the Durbin-Watson test for serial correlation indicates that there are no problems of serial correlation in the calculated demand function.

Table 4.1: Estimated regression coefficient of the demand function for timber in favour of a furniture house.

Independent variable	Constant term	Coefficient	SE	t-ratio	R^2	DW	r_a
	-1895.783		1307.0438	-1.4504 ^{ns}	0.9373	1.8866	
Pt		60.3036	9.0027	6.6984 ^{**}			-0.4197

** = Significant at 0.01 level SE = Standard error of estimate

ns = Not significant at 0.05 level DW = Durbin-Watson statistical test value

R^2 = Coefficient of determination r_a = Autocorrelation coefficient

Calculated by a computer programme, the relation between the quantity of demand and the price for timber over the years 2005 to 2009 was expressed in linear equation form as follow:

$$Dt = -1895.7830 + (60.3036Pt) \dots (1)$$

Where:

Dt = Quantity of demand for timber in favour of furniture houses.

Pt=Price for timber

Calculated by a computer programme, the relation between timber price and time was expressed in an allometric equation form as follows:

$$\text{Log}(Pt) = 2.0711 + (0.2041(\log T)) \dots (2)$$

Where:

Pt = Price for timber. T = Time (n=1, 2, 3,...; start year was 2005)

Table 4.2: Demand and price for timber for a furniture house for the years 2005 to 2009.

Year	Price for timber (Nu/cft)	Demand for timber (cft)
2005	120	5,000
2006	133	6,400
2007	145	7,000
2008	154	7,600
2009	169	8,000
Total	721	34,000
Average	144.2	6,800

4.3.3 Prediction for price and demand of timber for the future

Hoamuangkaew (1978) studied the supply and demand on the lumber market in Thailand and attempted to determine the demand and supply relationship and prepared models for projecting consumption, production and price of lumber using time series data covering the period 1957 to 1972. From Table 4.2, a time trend equation of the price for timber has been created to predict the demand for timber for the future (Table 4.3). Furthermore, from the above equations (1) and (2), the price of and the demand for timber over the next five years (2010 to 2014) have been predicted (Figure 4.2).

Table 4.3: Calculated price and demand for timber in favour of a furniture house over the next five years (2010 to 2014).

Year	Price for timber (Nu)	Demand for timber (cft)
2010	170	8343
2011	175	8670
2012	180	8962
2013	184	9226
2014	188	9468

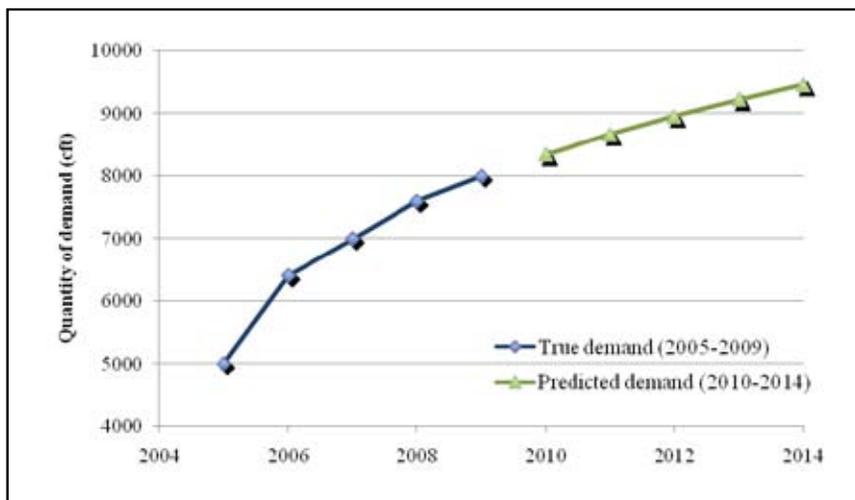


Figure 4.2: Prediction of demand for timber compared with the current quantity of demand for timber.

4.3.4 Marketing channel analysis

The analysis of marketing channels is a tool to understand benefits from natural resources and how benefits and patterns of their distribution change (Ribot, 1998). The study indicated that, out of a total of 5261 cft of timber produced from the CF, 4664 cft (89% of the total volume) were consumed by the CFMG members for their domestic use, 387 cft (7%) were bought by contractors and 210 cft (4%) consumed by general timber consumers (Figure 4.3).

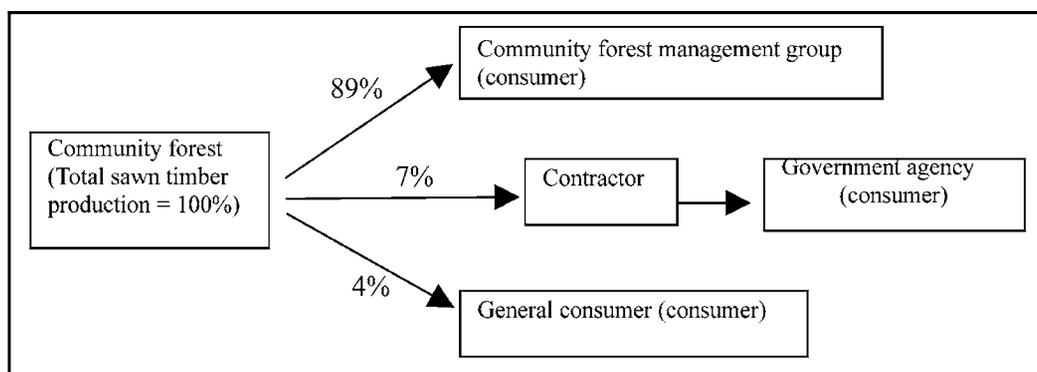


Figure 4.3: Distribution channels of sawn timber from Yarkey CF.

4.3.5 Financial analysis of production and sale of timber, sawn wood and furniture

The costs and revenues for the production and sale of timber (round wood), sawn wood (planks, battens) and furniture in the CF were calculated. Timber production costs included labour cost, material cost and machinery cost. These costs were subtracted from the total

revenues generated from sales (total revenues from timber production – total costs for timber production = profit). The costs of sawn wood production included labour cost, material cost (petrol, oil etc.), transportation cost and machinery cost. These costs were subtracted from the total revenues collected from the sale of sawn wood (total revenue from sawn wood production – total costs for sawn wood production = profit).

The profit per cft obtained from producing and selling 267 cft of timber as round wood was Nu 4.31 per cft of round wood. The profit per cft from the production and sale of sawn wood (planks, battens) amounted to Nu 44.77 per cft of sawn wood. Thus, it is observed that the profit per cft from the production and sale of sawn wood was much higher than from the production and sale of timber as round wood due to the added value generated by processing round into sawn wood like plans or battens.

Table 4.4: Summary of the financial analysis of production and sale of timber (round wood) and sawn wood from Yarkey CF in 2009 (Tshering, 2011, p 67).

Item	Quantity	Rate (Nu)	Value (Nu)
Production and sale of timber as round wood			
Labour costs	17 man days	120 Nu/day	2,040.00
Material costs			3,533.60
Machinery costs			178.04
Total costs			5,751.64
Total revenues	267.00 cft	25.85 Nu/cft	6,901.96
Profit from the production and sale of round wood			1,150.31
Profit per cft (Nu/cft round wood)			4.31

Production and sale of sawn wood			
Labour cost for timber sawing	90 man days	150 Nu/day	13,500.00
Material costs			15,253.58
Machinery costs			3,610.56
Transportation of mobile saw mill to the site			3,500.00
Total costs			35,864.14
Total revenues	160.20 cft	268.64 Nu/cft	43,036.13
Profit from the production and sale of sawn wood			7,171.99
Profit per cft (Nu. /cft sawn wood)			44.77

The financial analysis of the production and sale of three sofa sets (furniture) sold in 2009 took labour costs, machinery costs (including depreciation), material costs, electricity costs and transportation costs into account. These costs were then subtracted from the revenues collected from the sale of furniture (total revenues – total costs = profit). The profit from the sale of three sofa sets amounted to Nu 3,931.30 per sofa set or Nu 334.01 per cft of sawn wood used for the production of the sofa sets (Table 4.5).

Table 4.5: Summary of the financial analysis of production and sale of three sofa sets (furniture) in 2009 made from timber from Yarkey CF (Tshering, 2011, p. 70).

Item	Quantity	Rate (Nu)	Value (Nu)
Production and sale of three sofa sets (furniture)			
Labour costs			12,000.00
Material costs	35.31 cft	250 Nu/cft	8,827.50
Electricity costs	30 kwh	0.85 Nu/kwh	25.50
Transportation costs of sawn wood			353.10
Total costs			21,206.10
Total revenues from the sale of 3 sofa sets	3	11,000 Nu/set	33,000.00
Profit from the production and sale of 3 sofa sets			11,793.90
Profit per cft (Nu/cft sawn wood)			334.01

4.4 Recommendations for the future

- Timber from champ (*Michelia* spp. L) is high in demand and preference but currently has a low standing volume in Yarkey CF. Thus, the establishment of plantations of champ in open and barren areas inside the CF should be encouraged.
- Carriage and loading of sawn timber from the CF should not be done by CFMG members without any payment as was previously practised.
- Encourage the processing of round wood into sawn wood to capture the added value of processing.
- Build capacity of the CFMGs in market analysis and exploration so that they may gain knowledge of the market and experience in marketing (Thoma and Camara, 2005), as well as understanding of the production and value chain of their products and enhance employment opportunities.
- Link CFMGs with private entrepreneurs to facilitate processing and marketing of forest products and to build capacity in income generation with a particular focus on product development and marketing aspects to enhance value addition.
- Encourage CFMGs to sell their timber through auction to gain more experience and obtain higher prices for the timber coming from their CF.
- Due to the lack of forest growth data within the CF, there was uncertainty about

the annual growth rate of various tree species. This area clearly needs further study.

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5 Analysing governance of community forestry in Bhutan : a case study from Punakha Dzongkhag

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Summary

Governance in community forestry (CF) was analysed in Punakha Dzongkhag (District), Western Bhutan. The main aim of the research was to analyse the current status of governance in CF in Bhutan and whether governance in community forests (CFs) meets selected good governance principles. A second aim of the research was to identify the 'stumbling blocks' and 'building blocks' in the community forestry programme focusing on aspects of CF establishment and management.

Following the suggestions of a workshop on governance in natural resource management held at the Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) in Bangkok in 2009, three components of good governance (laws and other norms, institutions and processes) along with four good governance principles (accountability, transparency, participation and rule of law) were considered as the conceptual basis of this research. Data was collected through pre-tested questionnaires, focus group discussions and a stakeholder workshop. Secondary information was collected from records maintained in different offices. Data was analysed using statistical packages.

The results of this study indicate that community forestry in Bhutan is characterized by the application of good governance principles. The findings regarding 'laws and other norms' indicate that Bhutan has an enabling legal framework for CF. The 'institutions' involved in the community forestry programme provide more 'building' than 'stumbling blocks'. However, the 'processes' in establishing community forests were considered as 'stumbling blocks' due to numerous bureaucratic steps. From among the four principles of good governance, all stakeholders involved in the community forestry programme were found accountable with the presence of 'watchdog bodies'. Transparency needs to be enhanced by developing mechanisms to lodge complaints and appointing internal auditors. Community forest management group (CFMG) members are actively participating in decision-making and follow the principle of 'rule of law'.

5.1 Introduction

Community forestry as a term means different things to different people, depending on their background and experiences. According to RECOFTC (2004) 'community forestry involves the governance and management of forest resources by communities for commercial and non-commercial purposes, including subsistence, timber production, non-timber forest products, wildlife, conservation of biodiversity and environment,

social and religious significance. It also incorporates the practices, art, science, policies, institutions, and processes necessary to promote and support all aspects of community based forest management’.

In Bhutan, community forestry involves the governance and management of forest resources by communities for both commercial and domestic purposes. Governmental bodies like Dzongkhag Forestry Sectors (DzFS) and Territorial Forestry Divisions (TFD) under the Department of Forests and Park Services (DoFPS) and Dzongkhag (District) and Geog (Block) administrations are heavily involved in supporting local communities (providing ‘building blocks’) to establish CFs and sustainably manage and use CF resources.

Fisher and Gilmour (1990) mentioned that the major barriers (‘stumbling blocks’) to the successful implementation of community forestry are institutional and organizational rather than technical. This was confirmed in this study for Bhutan especially with regard to CF establishment which involves lengthy procedures.

The terms governance and good governance are being increasingly used in development literature. Governance is complex, covering global-local and sector-sector links and differing values. But it is increasingly recognized that governance problems underlie many forestry problems (Mayers and Macqueen, 2005). Governance is guided by policy, enforced by laws and executed through institutions (Mayers and Macqueen, 2005). A governance workshop held at RECOFTC in partnership with SNV in October 2009 (attended by the researcher) identified three components of governance (laws and other norms, institutions and processes) along with four principles of good governance (accountability, transparency, participation and rule of law). These three components and four principles were used as conceptual basis of this research.

The main aim of the research was to analyse the current status of governance in CF in Bhutan using a case study of Punakha Dzongkhag. A second aim of the research was to identify ‘stumbling blocks’ and ‘building blocks’ in the community forestry programme focusing on CF establishment and managements. Punakha Dzongkhag was chosen for two reasons: 1) the Dzongkhag has been involved in CF development since 1994, and 2) it is amongst the districts with the highest number of CF in the country.

5.2 Methods

For this case study, 581 households registered as community forest management group (CFMG) members formed the overall population. Simple random sampling was used. For the interviews, a sample size of 237 households was calculated using Yamane’s formula (1967). However, 242 respondents were interviewed in the field. One community forest executive committee (CFEC) member from each CF and foresters working in the DzFS and the TFD were involved in a stakeholder workshop. In this workshop, the tool ‘stakeholder influence mapping’ was used. The workshop participants were asked to arrange different stakeholders within a triangle according to their influence. Participatory rural appraisal

tools such as questionnaire survey, focused group discussion and semi-structured interviews were used for data collection.

5.3 Results

5.3.1 Laws and other norms

Relevant policies, acts, rules and the CF Manuals (Department of Forests, 2004) were considered as 'laws and other norms'. The Forest and Nature Conservation Rules (FNCR) (Royal Government of Bhutan, 2006) are crucial for the community forestry programme in Bhutan. The revision of rules in 2000, 2003 and 2006 incorporated more flexibility especially in terms of CF size and area. These revisions were important in making the legal framework for CF more enabling. The increased flexibility provided by the FNCR 2006 is one of the reasons for a significant increase in number of CFs in the country since 2007.

5.3.2 Institutions

For this research, the following 'institutions' were selected: DoFPS, Social Forestry Division (SFD), TFD, DzFS, Dzongkhag administration, Geog administration, donor agencies and CFMGs. The results from the questionnaire surveys with 242 CFMG respondents are presented in Figure 5.1. The analysis reveals that the informants perceive the DzFS as the most important and influential institution in the CF programme.

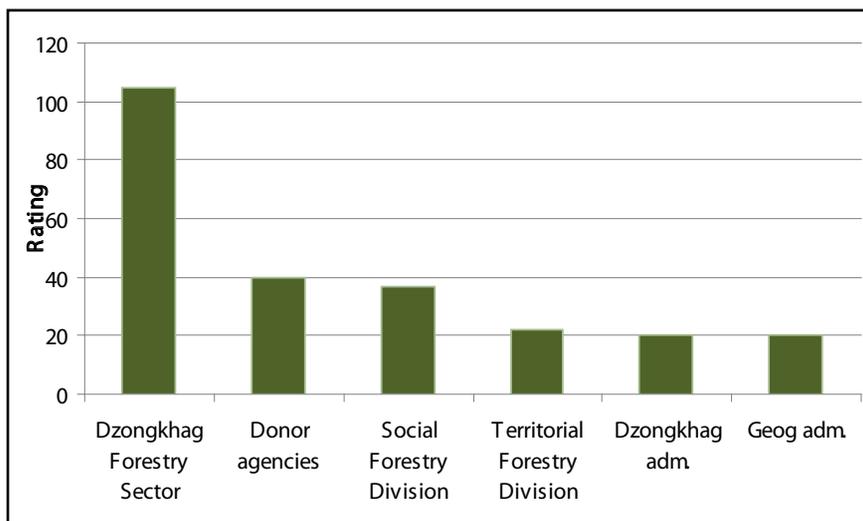


Figure 5.1: Most important and influential institutions in the community forestry programme, rated by CFMG members (n=242).

The results of the 'stakeholder influence mapping' conducted to triangulate the findings from the questionnaire survey, are shown in Figure 5.2 below. The closer a stakeholder is to the apex of the triangle, the more influence it has. The size of the circle represented the size of the stakeholders.

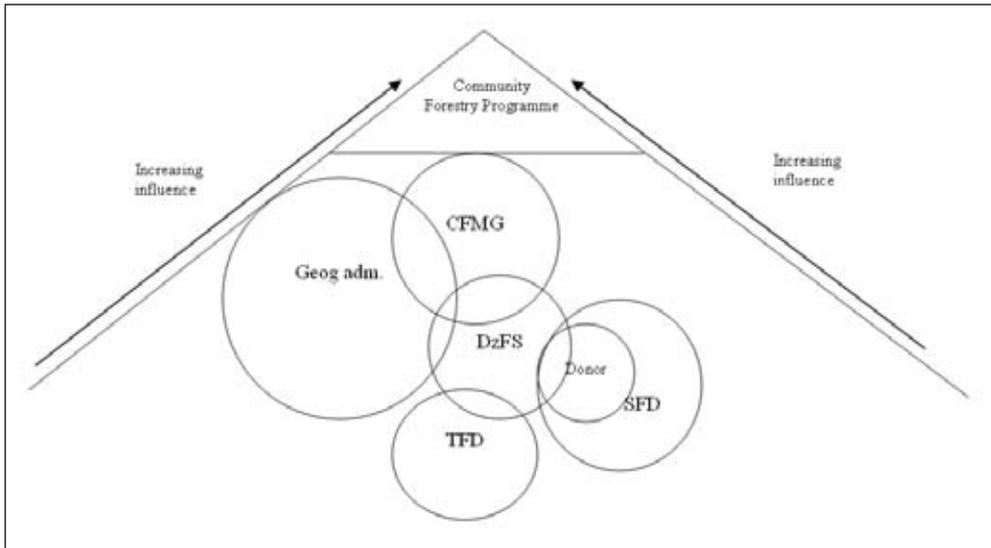


Figure 5.2: Stakeholders' influence over the CF programme in Punakha.

The findings from this tool reveal that the CFMGs have the strongest influence on the CF programme. It also shows that the DzFS is the cornerstone for the CF programme in Punakha and possibly in the whole of Bhutan.

5.3.3 Processes

In this study, 'processes' were regarded as the CF establishment processes set out in the FNCR 2006 (Royal Government of Bhutan, 2006) and the CF Manual for Bhutan (Department of Forests, 2004). Figure 5.3 shows the opinion of 242 CFMG (a) and nine DzFS respondents (b) on CF establishment processes respectively.

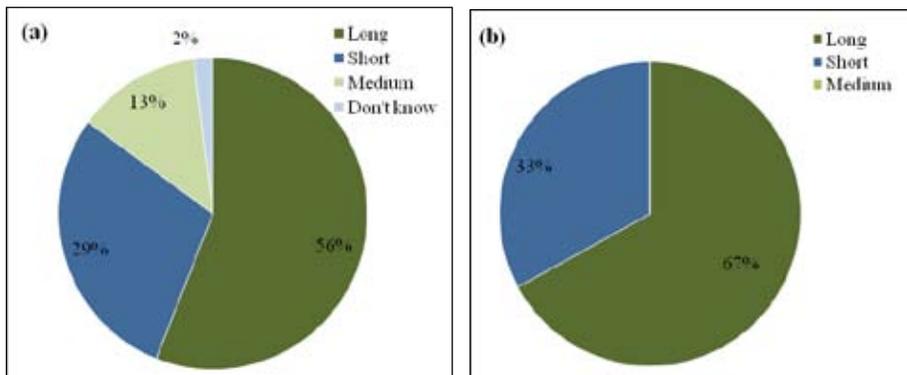


Figure 5.3: Respondents' opinion on CF establishment processes, separated by (a) CFMG members ($n = 242$) and (b) DzFS staff ($n = 9$). Long ≥ 1 year, medium = 6 months, short = 3 months.

From the interviewed CFMG members, more than 56% said that CF establishment involved a lengthy procedure. A majority of interviewed DzFS staff (67%) agreed with the CFMG members on the qualification of the CF establishment process as ‘long’.

5.3.4 Accountability

Accountability was analysed using the accountability relationship framework from RECOFTC (2009). Figure 5.4 shows that stakeholders within the framework are held accountable to those above and below them. Stakeholders such as CFEC, DzFS and elected government representatives were found accountable with regard to the overall management of the CFs and the functioning of the CFMGs. TFD and SFD are more accountable on monitoring, evaluation and checks and balances thereby act as ‘watchdog bodies’. The DzFS is accountable to SFD in terms of its services to the CFMGs. Likewise, the CFMGs are accountable to the TFD for movements and transits of CF products outside the CFs. The CFMGs and CFECs were found accountable to the elected government representatives with regards to the functioning of the CFMGs.

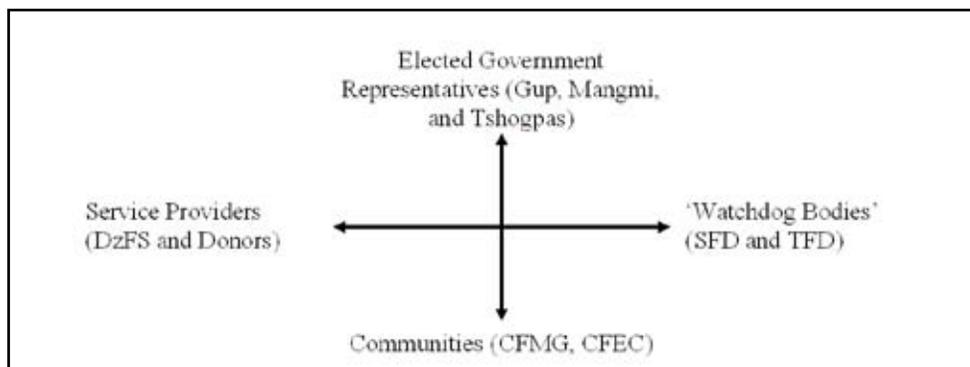


Figure 5.4: Accountability relationships in the CF programme in Punakha.

5.3.5 Transparency

To analyse transparency, the question was asked whether or not the CFMG members felt sufficiently informed about the overall management of their CF. Table 5.1 reveals that out of 242 respondents, about 83% said that they were sufficiently informed and 14% said that they were not informed adequately.

Table 5.1: Status of information of respondents on CF management.

Valid	Counts	Percent
Yes, sufficiently informed	200	83
No, not sufficiently informed	34	14
No response	8	3
Total	242	100

To make it more specific, the overall information was segregated into three aspects: (1) information on annual plans and programmes, (2) information on meetings and meeting resolutions and (3) information on the CFMG fund and its management. The interview results show that more than 71% of the respondents were informed on all three aspects of CF and only 8% of the informants were not informed in these three aspects (Figure 5.5).

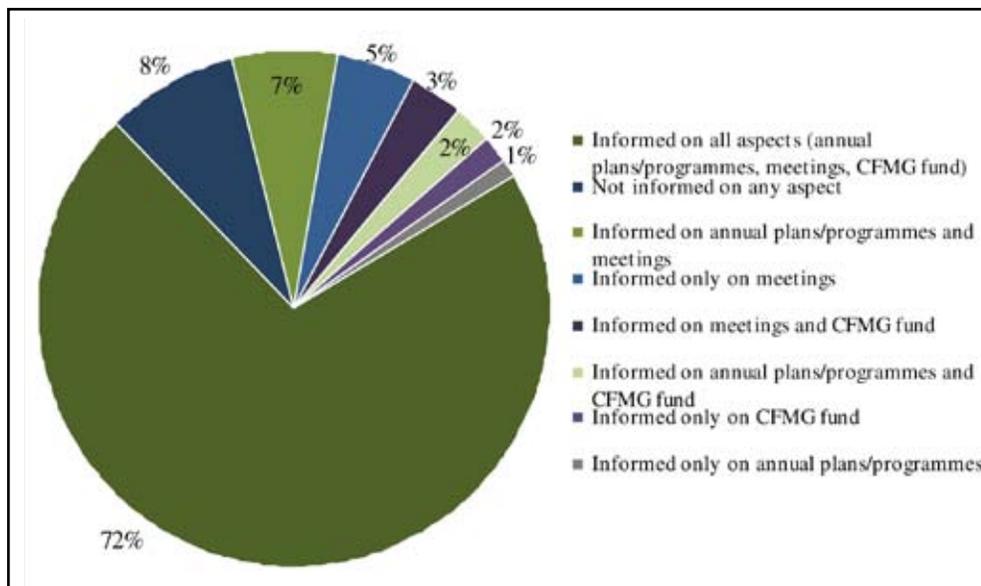


Figure 5.5: Status of information of interviewed CFMG members (n = 242) on three aspects of CF (annual plans/programmes, CF meetings, CFMG fund) in Punakha's CFs.

CFMG members were also asked whether or not they had group-internal auditors and mechanisms to lodge complaints. More than 95% of the respondents said that their CFMG had no internal auditor(s). All respondents (100%) said that there were no mechanisms to lodge complaints by the CFMG members.

5.3.6 Participation

Since inception of CF in Punakha, participation in CF activities and decision-making have been encouraged irrespective of gender and social status. Although there was specific mention of equal opportunity for women and men aspiring to become members of the community forest executive committee (CFEC), more men than women are members of the CFEC in the CFs in Punakha (Figure 5.6).

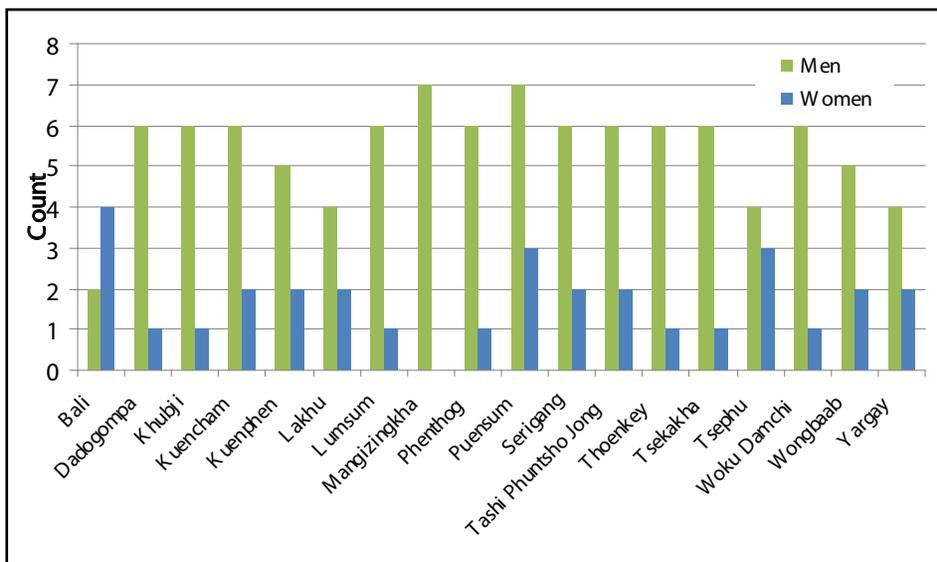


Figure 5.6: Gender composition of CFECs in Punakha.

Gender participation in three major activities (training, study tour and workshops) was assessed during the interview with the 242 respondents. Out of 242 respondents, 37 men and 34 women participated in trainings, 19 men and 12 women participated in study tours and 11 men and 6 women took part in workshops (Figure 5.7).

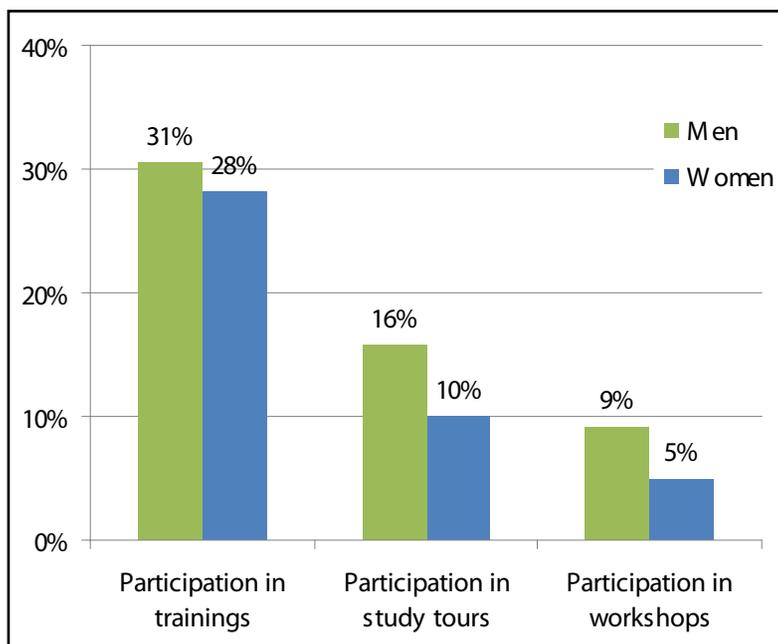


Figure 5.7: Gender participation in trainings, study tours and workshops (n = 242).

5.3.7 Rule of law

The existence of CF by-laws, executive committees and the nomination and/or election of its members in general meetings of the CFMG indicate that the CFMG members follow the principle 'rule of law'. The assessment on the adherence to this principle focused more on the enforcement of CF by-laws by CFMG members and outsiders' respect of the by-laws.

In terms of CF by-laws enforcement, 235 respondents out of 242 were confident about the enforcement of their CF by-laws, while 186 out of 242 informants said that their CF by-laws were respected by outsiders (Figure 5.8). In short, these results show that CF by-laws are perceived to be enforceable internally within the CFMGs and respected externally by outsiders.

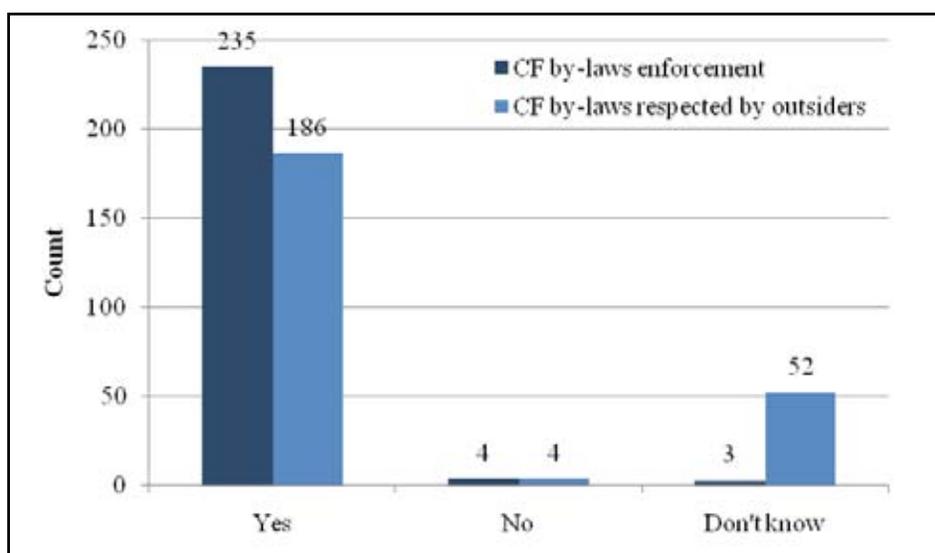


Figure 5.8: Opinion of CFMG members (n = 242) on CF by-law enforcement and the respect of CF by-laws by outsiders.

5.4 Identifying 'stumbling' and 'building blocks'

5.4.1 'Stumbling blocks'

Respondents from CFMGs (n=242) qualified the stakeholders to find out who act as 'stumbling blocks' in CF establishment and management separately. Table 5.2 shows the stakeholders and CFMG members' assessment on them being 'stumbling blocks' in CF establishment. It was found that the assessed stakeholders were largely seen as not acting as 'stumbling blocks'.

Table 5.2: Stakeholders and CFMG members' assessment of the stakeholders acting as 'stumbling blocks' in CF establishment.

Stakeholders involved in CF establishment	CFMG members' assessment on 'stumbling blocks' in CF establishment			Total
	No 'stumbling blocks'	Some 'stumbling blocks'	Many 'stumbling blocks'	
DoFPS	222	4	16	242
DzFS	241	1	0	242
Dzongkhag adm.	241	1	0	242
Geog adm.	229	12	1	242
SFD	225	15	2	242
TFD	225	12	5	242
Total	1383	45	24	

Table 5.3 shows the stakeholders and the assessment of the interviewed CFMG members on the stakeholders' role in CF management. All the listed stakeholders were largely perceived as not being 'stumbling blocks' when it comes to CF management.

Table 5.3: Stakeholders and CFMG members' assessment of the stakeholders acting as 'stumbling blocks' in CF management.

Stakeholders involved in CF management	CFMG members' assessment on 'stumbling blocks' in CF management			Total
	No 'stumbling blocks'	Some 'stumbling blocks'	Many 'stumbling blocks'	
DFPS	242	0	0	242
DzFS	224	18	0	242
Dzongkhag adm.	242	0	0	242
Geog adm.	231	11	0	242
SFD	241	0	1	242
TFD	218	16	8	242
Total	1398	45	9	

5.4.2 'Building blocks'

The constructive role of stakeholders involved in CF establishment and management was also assessed. Table 5.4 shows the assessment made by the interviewed CFMG members on the stakeholders providing 'building blocks' in CF establishment. It was found that the DzFS provides more 'building blocks' compared to other stakeholders.

Table 5.4: Stakeholders and CFMG members' assessment of the stakeholders providing 'building blocks' in CF establishment.

Stakeholders involved in CF establishment	CFMG members' assessment on 'building blocks' in CF establishment			Total
	No 'building blocks'	Some 'building blocks'	Many 'building blocks'	
DoFPS	224	0	18	242
DzFS	4	3	235	242
Dzongkhag adm.	222	4	16	242
Geog adm.	195	34	13	242
SFD	216	7	19	242
TFD	51	174	17	242
Total	912	222	318	

Table 5.5 shows the assessment by the informants on the provision of 'building blocks' for CF management by the main stakeholders. Again, the DzFS was found to be the main provided of 'building blocks'.

Table 5.5: Stakeholders and CFMG members' assessment of the stakeholders providing 'building blocks' in CF management.

Stakeholders involved in CF management	CFMG members' assessment on 'building blocks' in CF management			Total
	No 'building blocks'	Some 'building blocks'	Many 'building blocks'	
DoFPS	219	6	17	242
DzFS	3	10	229	242
Dzongkhag adm.	220	9	13	242
Geog adm.	204	26	12	242
SFD	71	151	20	242
TFD	218	10	14	242
Total	935	212	305	

From this analysis, it can be concluded that the DzFS plays a central role both in CF supporting establishment and management. The capacities of the DzFS as well as of the CFMGs are therefore key for further developing CF into a viable regime contributing to sustainable forest management in Bhutan.

5.5 Conclusions and recommendations

The results indicate that CF in Bhutan is characterized by the application of good governance principles. They also revealed that all the stakeholders provide more 'building blocks' than 'stumbling blocks' in community forest establishment and management. The long bureaucratic procedures involved in CF establishment did overall apparently not hamper CF progress, also thanks, as the results suggests, to key institutions such as the DzFS.

Well-governed CFMGs operating under an enabling policy and legislative framework can become viable local institutions for the sustainable management of forests. The key to creating and supporting such viable local institutions lies in good group governance. By ensuring robust institution building, that is, by enhancing the capacity of DzFS and CFMGs and strengthening the application of good governance principles (accountability, transparency, participation and rule of law) the stakeholders involved in CF can develop CF into a viable approach contributing to sustainable forest management, rural development and improved local governance in Bhutan. The following recommendations aim at further improving and enhancing governance of CFMGs in Bhutan.

Laws and other norms

- The Forest and Nature Conservation Act 1995 as well as the Forest and Nature Conservation Rules 2006 need to be revised to devolve more authority to the CFMGs.
- All natural resources available within approved CFs should be made available to CFMG members to enhance income generation for the CFMGs.

Institutions

- The coordination of activities concerning CF between different stakeholders (in particular: Dzongkhag, Park, Territorial Forestry Divisional) should be improved through regular coordination workshops.
- CF establishment is incentive driven and moreover, the CF programme in Bhutan is at the 'learning stage': Hence, the Royal Government of Bhutan and/or donor agencies should accord high priority to capacity building through financial assistance, provision of expertise, transfer of technology and assistance in training.

Processes

- The CF establishment process needs to be analysed and shortened. The existing CF manuals and the parts concerning CF in the FNCR 2006 need an immediate revision.
- Facilitation and backstopping for the CFMGs from the DzFS can be strengthened by collaborating with relevant agencies like TFD, NGOs, and others who could assist in preparing community forest management plans. A clearer division of roles amongst the agencies should be made to avoid conflicts.
- A clear division of roles and responsibilities of DzFS and TFD/PM needs to be made in terms of CF area inspections which incur a lot of time in making joint

field visits. Hence, staff of DzFS and TFD/PM need frequent dialogue and a forum to decide and plan jointly. This will not only save time but also bring up possible issues in a transparent manner and enable immediate response.

Accountability

- Both parties, the government and local communities, have responsibilities as well as rights. In the interests of enhancing accountability and transparency, procedures should be established to enable CFMG members to hold forestry officers accountable for their actions.
- Annual progress reports are very important and currently the only reports in place. The reporting system not only facilitates monitoring of the CF and/or CFMG, but will also ensure sustainable management of the CF resources (forest products as well as financial). DzFS staff, particularly the GFEOs, are urged to submit authentic reports to SFD through the DzFO. It is recommended that SFD provided feedback on the reports to the DzFS.
- Design accountability rules for decision-making processes and establish an independent monitoring office.

Transparency

- It is recommended that CFMGs have internal auditors and develop a mechanism to lodge complaints by the CFMG members.
- The proper functioning of the community forest executive committee (CFEC) is crucial for the implementation of the CFMP and the good work of the whole CFMG. Hence, it is recommended that CFEC members should not serve on a rotational basis. The nomination of capable and suitable candidates should be encouraged and facilitated by the GFEOs.
- CFMPs as well as key parts (at the very least) of the CF Manuals need to be translated into Dzongkha so that more people will be able to read and refer to them.

Participation

- Continue to encourage women to actively participate in the decision-making forums, e.g. in community forest executive committees.
- There should be good involvement from the TFD/parks in CF establishment, in particular in: CF area identification, boundary survey, resource assessment, framing of CF by-laws, and monitoring and evaluation.

Rule of law

- Enforcement of CF by-laws needs to be supported by relevant agencies (particularly TFD and/or PM).
- The marking of trees within the CFs should be decentralized to the CFMGs. However, the concerned GFEOs need to facilitate the marking based on his/her silvicultural knowledge and experience.

In Bhutan, there have been sceptical voices about the sustainability of CFs and the capability of CFMGs to manage their forests, not only from outside, but also from amongst foresters. Therefore, more research and evidence is required to prove that CF is a viable approach to sustainable forest management. In particular, it is recommended to do more research on policies that affect the community forestry programme in Bhutan.

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6 Subsidised timber and community forestry: analysing people's attitude towards sustainable forest management: a case from Dekiling Geog under Sarpang Dzongkhag

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Summary

This study investigated people's attitudes towards subsidized rural timber allotment (SRTA) policy and community forestry (CF) in Bhutan. The starting hypothesis was assumed that there was no people's participation in the current SRTA policy and that this was a threat to sustainable forest management (SFM). The study was conducted in Dekiling Geog (Block) under Sarpang Dzongkhag (District). Qualitative data was collected through household interviews. The analysis of the data gathered confirmed that there was little or no people's participation in forest management under the current SRTA policy. The attitude of people on SFM indicated uncertainty in future rural timber supply. The assessment of the attitude of people on SRTA and people's opinion of CF strongly favoured replacing SRTA by CF for sustainable forest management.

6.1 Introduction

Bhutan is a small country with a total area of 38,394 sq. km located between the Indian plains and the Tibetan plateau. About 69% of its population is dependent on subsistence agriculture and livestock farming. Forests play a very important role in sustaining people's livelihood. Forest resources are granted almost for free to rural communities and supplement their farming activities. Royalties for subsistence use of forest products are charged only at nominal rates, and timber is highly subsidized.

The subsidized rural timber allotment is one of the essential grant systems in place since 1969 in Bhutan. It primarily aims at ensuring proper rural housing and farm infrastructure development. It was initiated when most people were economically impoverished and the population was smaller (Dhital, 2009). Today, times have changed significantly and the socioeconomic conditions of many rural people in Bhutan have improved. Yet, SRTA is currently claimed as a matter of right (Royal Government of Bhutan, 2009). At the same time, there is a tremendous increase in demand for timber in the country.

The recipients of subsidized rural timber have no role and responsibility to reciprocate in managing government reserved forests, from where the subsidized timber is taken, or for ensuring sustainability for the future. Although the community forestry programme was initiated almost two decades ago and proved more effective in improving local resources management, SRTA has continued to date with a series of amendments of the Forest and

Nature Conservation Rules (FNCR). Every change in the rules made SRTA more attractive by increasing the volume of subsidized timber, extending time for timber harvesting and reducing royalty rates (Royal Government of Bhutan, 2006). However, people's participation and aspects of sustainable forest management were not considered under the SRTA policy.

An immediate abolishment of the timber subsidy would be difficult to implement since it would negatively affect poorer sections of the population. Use of forest resources is inevitable since one fourth of the country's population continues to live in poverty mostly in rural areas and are thus partly dependent on forest resources. Natural resources dependency and poverty are directly linked to each other (Giri, 2004). Under the conditions of a changing economy and recognising people's needs, it would be a challenge to limit this policy of allocating timber to rural households. However, if the current trend of SRTA continues, it will be a great threat to SFM in the country. There is thus a genuine need to analyse the impacts of SRTA and to study the attitude of people on gradually replacing SRTA with community forestry. Therefore this study focused on assessing people's attitudes on SRTA and community forestry in relation to SFM.

6.2 Study area and methods

6.2.1 Study site

Dekiling Geog under Sarpang Dzongkhag in Southern Bhutan was selected as a study site based on its central location and mixed ethnic composition. The unit of analysis was a rural household (HH). Participating households were selected from nine Chiwogs (Hamlet) of Dekiling Geog. Out of a total of 651 rural HHs, 248 sample households were selected randomly. At the time of fieldwork, the Geog had one approved community forest (Bumpaling CF) and another one (Dolpani CF) was under process of establishment.

6.2.2 Data collection and analysis

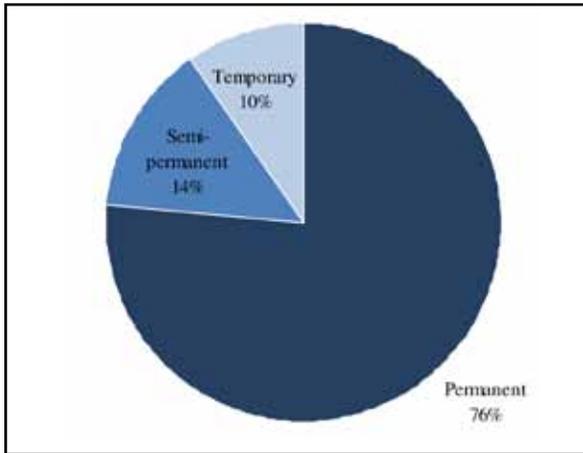
Quantitative data was gathered through structured questionnaires from sample households. The collected data was processed and analysed using descriptive statistics and the parametric Chi square test. Correlation (Spearman rank) was also used to determine the relationship between variables.

6.3 Results

The results of the study are presented in three separate sections: impact of SRTA on rural housing, attitudes of people towards SRTA and opinions of people on CF.

6.3.1 Impact of SRTA on rural housing

The assessment on subsidized rural timber allotment (SRTA) revealed a positive impact on rural housing. The allotted timber was mostly used for building permanent (mostly concrete houses) followed by semi-permanent houses (dacha zhikhom or ekra) and temporary structures (huts) (Figure 6.1).



The correlation between the types of houses and SRTA was significant ($r_s = 0.125$, $P = 0.048$). Increasing timber allotment through SRTA increases the quantity and quality of houses. Impact assessment of SRTA on livelihood also yielded a significant positive correlation ($r_s = 0.142$, $P = 0.026$). It indicates a positive effect of timber supply (SRTA) on rural livelihood.

Figure 6.1: Types of houses constructed from SRTA.

6.3.2 People's participation and sustainability

The study found a significant relationship ($c^2 = 14.514$, $P = 0.024$) between the present level of people's participation in forest management and benefits of SRTA. The statistical test confirmed that there was no or very little participation of local people in forest management due to SRTA (Table 6.1). A majority of households (87%) responded that they did not participate in the management of forests used for SRTA (Table 6.1). Passive participation in forest management was reported by 6% and active participation by 7% of the interviewed households.

Table 6.1: Perception of beneficiaries on current level of people's participation in forest management under SRTA policy.

Present level of participation	Benefits of SRTA				Total (%)
	None	Low (1-500)	Moderate (501 - 1000)	High (>1001)	
1. No participation	38	24	130	24	216 (87%)
2. Passive participation	1	1	10	2	14 (6%)
3. Active participation	1	3	11	3	18 (7%)
Total	40	28	151	29	248

Chi-square (c^2) = 14.514*, $df = 6$

In an assessment of people's opinion about the sustainability of forests, almost 88% of the households expressed that there was no sustainable management of forests used for SRTA (Table 6.2). While 9% of the informants had no idea about sustainable forest management and SRTA, 3% of the households were of the opinion that forests used for SRTA could be sustained.

Table 6.2: Opinions of people towards sustainability of forest under SRTA policy.

Sustainability of forests under SRTA policy	Benefits of SRTA				Total (%)
	None	Low (<500)	Moderate (501 – 1000)	High (>1001)	
1. Yes	2	0	2	4	8 (3%)
2. No idea	3	4	13	2	22 (9%)
3. No	35	24	136	23	218 (88%)
Total	40	28	151	29	248

The statistical test also found an association ($\chi^2 = 42.372$, $P = 0.001$) between benefits of SRTA (X) and opinions on the sustainability of the forest use under SRTA policy. Although rural people are mostly of the opinion that forest use under SRTA was not sustainable there is huge demand for timber from SRTA.

6.3.3 Perception of people on future rural timber supply

The views on SRTA and CF were analysed with respect to future timber sourcing. A majority of informants (56%) were for the replacement of SRTA by CF, while 44% of the interviewed households felt that the current SRTA system should be continued (Table 6.3). Other options such as purchasing timber from commercial sawmills or the Natural Resource Development Corporation Limited (NRDCL) were not preferred at all.

Table 6.3: Perception of people on possible option for future rural timber supply.

Benefits of SRTA	Rep (%)	Opinions of people on future rural timber supply (%)			Total (%)
		Continue SRTA	Replace by CF	Phase out SRTA completely	
None	16	47	53*	0	100
Low (1-500)	11	39	61*	0	100
Moderate (501 - 1000)	61	44	54*	1	100
High (>1001)	12	45	55*	0	100
Average		44	56	0	100

*Majority of people's opinions within a group

6.3.4 People's participation in CF

It can be inferred from the stated willingness of people to participate in forest management that around 77% of the respondents would be willing to participate in community forest management activities (planning, decision-making, protection, production, benefit sharing, cost sharing and monitoring; see Figure 6.2). Informants showed the greatest interest in participating in benefit sharing. Averaging across all categories, 23% of the interviewed households showed no interest in participating in CF activities.

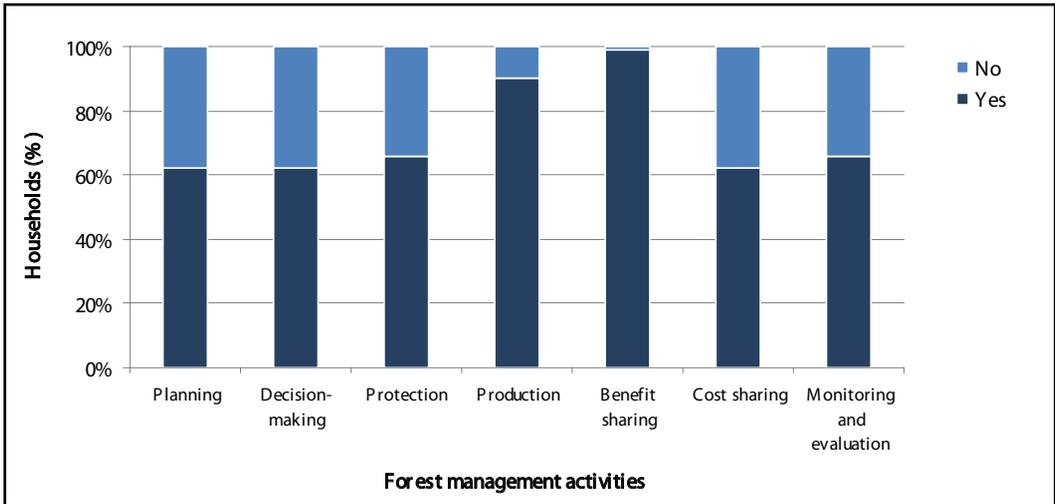


Figure 6.2: Assessment on willingness of people to participate in CF activities.

6.3.5 Expectation of participation in CF

It was found that 61% of the households mentioned sustainable forest management as a motive to participate in the CF programmes (Figure 6.3). Nearly 26% of the respondents expressed that they would join CF to improve the productivity of forests. Protecting degraded land and water resources was an equally important expectation. Income generation was also an expectation for about 6% of the households. Also 6% of the households expected benefit sharing (timber and NWFP) from their participation in CF.

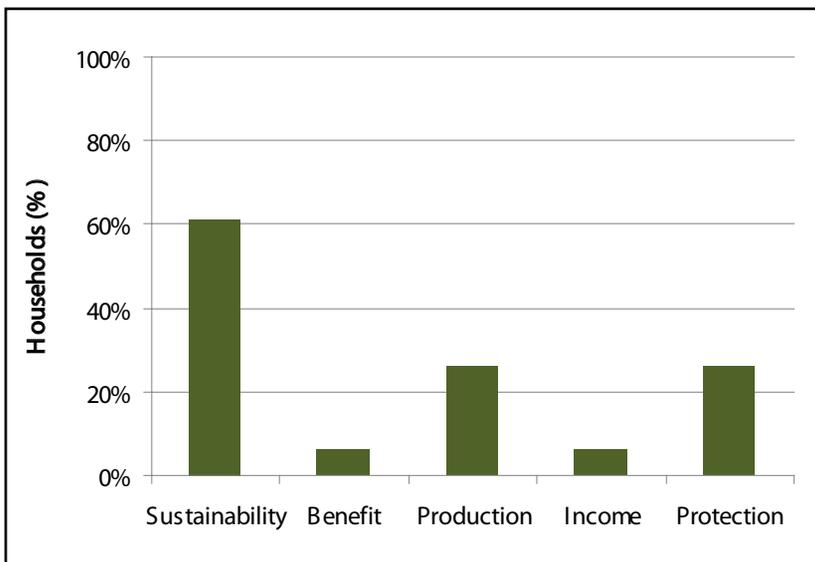


Figure 6.3: Expectation of interviewed households from participating in CF.

A statistical test showed a significant, positive correlation between the level of people's participation in forest management and their opinion on future timber supply ($r_s = .170$, $P = 0.007$). This indicates that there is a positive correlation in the perception that an increase in people's participation in forest management would increase supply of rural timber from CF.

6.4 Discussion

6.4.1 Participation and sustainability

The results from the household survey indicate that there is little or no participation of people in forest management under the current SRTA policy at the level of 'non' or 'very weak participation' according to Arnstein's ladder of participation (Arnstein, 1969). This 'non participation' level corresponds to 'passive participation' in the IIED typology of participation (International Institute for Environment and Development, 1994). The low participation might be due to a lack of opportunity in the present context.

Westoby (1987) famously stated that forestry was not about trees, but about people and that it was about trees only as trees satisfy the needs of people. Thus, managing resources is about managing people. This is widely accepted and supported by many resource managers in different fields. Further, His Majesty the Fourth King of Bhutan stated in a royal decree that 'people's participation is a key to conservation and utilization of forest resources' (Chhetri et al., 2009). Thus, it appears that it would be best to lay forest management in the hands of local communities as legitimate guardians and managers of local forest resources.

While rural communities in Bhutan are blessed with SRTA, the SRTA policy provides no encouragement for forest management to ensure future sustainability. The SRTA beneficiaries do not play a role in forest management and the policy makes people more dependent on the government. In the long run, this could be a threat for the sustainability of forests used for SRTA. This is evident from the huge accumulation of timber volume due for supply (Royal Government of Bhutan, 2010). Various studies (Colfer, 1995; Harrison and Suh, 2004; Penjore, 2007; Zare et al., 2008; Ozturk, 2010) found that a situation with local people dwelling nearby forests without being involved in their management has a high risk of leading to forest degradation. Thus, the needs of people whose livelihoods depend on forests must be taken into account in sustainable forest management.

In general, local forests in Bhutan, amongst the forests used for SRTA, tend to be over-utilized and under-managed and to have a very low productivity (Schindele, 2005). The rural timber allocation is purely done on an ad hoc basis and tree harvesting for SRTA is usually demand driven and not based on silvicultural considerations. There is no proper plan for timber use for SRTA ensuring sustainable yield and generally weak monitoring results in over exploitation of timber resources in accessible areas and around settlements.

6.4.2 SRTA and CF approach

People's opinions on the replacement of SRTA by CF revealed not much difference. Nearly 44% of the interviewed households still want SRTA to be continued, while 55% of the respondents were in favour of replacing SRTA by CF. Thus, the present rural timber supply policy and the incentives it provides could limit the interest of communities in becoming involved in CF. Another analysis (Royal Government of Bhutan, 2010) also found that the current rural timber supply through SRTA might negatively effect the interest of rural communities in establishing CFs. Sratz et al. (2007) have indicated that entitlements are guaranteed by law and timber/wood is either provided free of cost or (in the case of construction materials) at minimal rates. This has resulted in a situation where local communities are not motivated to play an active part in the rehabilitation and management of forests.

Local people do not care for forests used for SRTA since they are not given responsibility and access to manage these forest resources. Generally, people tend to have the notion that the government takes care of everything. But in reality, it is very difficult to monitor every piece of forest with the limited number of foresters employed by the government (Penjore and Rabten, 2004). Weak monitoring is one of the main problems of misuse/deflection of timber supplied through SRTA (Royal Government of Bhutan, 2009).

While 23% of the consulted households did not show an interest to participate more in forest management, 77% of the households stated their willingness to participate in forest management activities. Resistance to participation in forest management can largely be attributed to the guaranteed entitlement to timber and other forest resources under the SRTA policy without any obligation for forest management. Moreover, local communities often lack confidence in their technical expertise to manage forests.

The concept of people's participation is not new to Bhutan. It existed since time immemorial and some form of strong participation was still seen in rural Bhutan (Dorji, 2003). It was mostly related to sharing and helping each other within the context of forest resource allocation. Thus, as suggested by several studies (Gilmour et al., 2004; Tempfel and Beukeboom, 2006; Wangdi and Tshering, 2006; Gilmour, 2009; Social Forestry Division, 2010) community forestry is a promising form for people's participation in forest management. CF usually builds and mobilises social capital for forestry and instils a sense of ownership for local forests. The findings of this study also favoured a transformation from the SRTA policy to community forestry to contribute to the sustainable forest management of Bhutan's forests.

6.5 Conclusions

SRTA is without doubt a very useful and attractive timber-providing scheme for rural households. However, it provides no encouragement for people's participation in forest management and its sustainability is doubtful in the long run. Almost 86% of the interviewed households have shared their concern that if the current SRTA continues the concerned forests cannot be sustainably managed.

The findings of this study favour phasing out of SRTA gradually and replacing it with CF which offers much better prospects for ensuring sustainable forest management. Increasing people's participation in forest management is perceived to increase the supply of rural timber. Sustainability will also be best achieved when current 'resource users' are empowered to become 'resource managers'. This transformation would not only contribute to poverty reduction but also to the constitutional mandate of maintaining 60% of Bhutan's land area under forest cover and to the realisation of the national vision of Gross National Happiness.

Based on the above conclusions, the following recommendations are suggested:

- Since community forests are governed by proper management plans and silvicultural norms, CF is appropriate for local forest resource management.
- In order to continue improving social livelihood and to maximize people's satisfaction, SRTA needs to be gradually replaced by community forests.
- People's participation needs to be encouraged along with access and management rights and responsibility for sustainable forest management at all levels.

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7 Role of Lamjithang Community Forest in improving the quality of life of local people

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Summary

The objectives of this study were to investigate patterns of use of forest and non-forest products from a community forest (CF) and to analyse roles and responsibilities of the members of Lamjithang CF in Wangdue Phodrang Dzongkhag (District). In total, 86 households are members of the Lamjithang community forest management group (CFMG). All 86 households were interviewed during data collection. Questionnaires for household interviews and checklists for interviews with key informants were developed. The data was analysed by applying descriptive statistics.

It was found that wood products such as timber and poles were mainly used for the construction and maintenance of existing buildings. Out of 86 households, 61% used timber for construction and 39% used it for maintenance. An almost equal number of households (50%) used poles for construction and maintenance work. It was also found that people used wood products from the government reserved forest (GRF) because there are not yet enough matured trees in the CF for construction purpose. Households use non-timber forest products for domestic consumption and for sale if the products are found in excess. Regarding the use of non-timber forest products, 79% of all households collect firewood, 21% of the households collect fern for domestic consumption and 2% of households collect fern for sale. Wild asparagus is collected by 41% of the households for domestic use and by 4% of the households for commercial sale. Mushroom is collected by 74.4% of the households for domestic purpose and by 8.1% for sale. Bedding material is collected by 30% of all households for domestic use only. By selling forest products the households generate additional income to support their livelihood. In general, local households generate most of their income from agricultural activities and livestock rearing but also supplement this with the collection of non-timber forest products.

7.1 Study area

The study area is Rinchengang Village under Wangdue Phodrang Dzongkhag in Western Bhutan. The community forest lies approximately two kilometres south of the village. The forest mainly comprises chirpine (*Pinus roxburghii* Sarg.). The topography of the site is undulating with gradual to steep slopes. The community forest management group is responsible for all management activities and for forest protection. Approximately 5 km west of the village, also in vicinity of the local community, there are government reserved forests. These are managed and looked after by the local forestry office. Before the establishment of the community forest local people relied entirely on government reserved forests for various timber and non-timber forest products.

Before the establishment of the CF, people had to undergo a lengthy process to obtain a permit from the local forestry office to extract forest products. Moreover, they had to travel longer distances to collect forest products from the government reserved forests and to accept the rules and regulations set by the government for the use of the forest products.

However in 2003, people expressed interest in having a CF and proposed the establishment of a CF to their local government. The local government supported the proposal and Lamjithang CF was established in 2004 within vicinity of the village. Since then, this CF has been managed by its CFMG with technical support from the forestry extension service. CFMG members no longer need to apply for special permits for the use of forest products from their CF, but can themselves decide on the harvest of forest products within the limits set out in the CF management plan.

7.2 Methods

7.2.1 Informants

All 86 CFMG member households were selected as respondents for the questionnaire survey. The head of the village, the chairperson and the secretary of the CFMG were selected as key informants for in-depth interviews. Two forestry officers from the central office of the Department of Forests and Park Services and two district forestry officers were selected for in-depth interviews. One representative of an implementing NGO was also interviewed.

7.2.2 Data collection

Socio-economic data, data on forest use patterns and on roles and responsibilities of local people in managing the CF was collected through household interviews, key informant interviews and from secondary sources.

7.2.3 Data Analysis

The influence of CF on people's quality of life was assessed from the use of forest products and from people's benefits in terms of health, education, food, income and shelter. The influence of CF in these latter areas was categorised as high, medium or low. Data was analysed using descriptive statistical methods with the help of SPSS software.

7.3 Results and discussion

7.3.1 Use patterns of forest products

Local people depend on timber for construction of new houses and sheds and maintenance of existing buildings. They also use wood to make tools such as handles for shovels. Since the establishment of the CF, people access timber more easily. Hence, families who used to share a house have now started to build new houses and live separately. However, the total demand for timber can only be met by the CF in 10-15 years, since most trees are still at the pole stage. Therefore, the CFMG members currently also get timber from the government reserved forest.

People collect non-timber forest products such as mushrooms, ferns and wild asparagus from the forest for their own consumption and if available in excess, for sale in the nearby market. For poor households, non-timber forest products are a main source of additional income. The total amount of income generation from the sale of non-timber products from the CF by all the households over a period of five years (2005 to 2009) was found to be Nu 7,160. The availability of non-timber forest products in the CF is however limited. Therefore, people also collect these products from government reserved forests.

So far, the CFMG has collected the amount of Nu 21,000 from fines levied for illegal activities taking place in the CF. This amount has been deposited in the bank account of the CFMG. It will be used for development activities such as building a proper footpath in the village, installing more water taps and improving the sanitation of the village.

7.3.2 Roles and responsibilities of local people in managing community forest

The CFMG member households carried out various activities in the CF such as thinning, establishing enrichment plantations and afforestations on barren land for the long-term improvement of the forest, weeding, refilling of plantations, ensuring a high survival rate of seedlings, patrolling, promoting natural regeneration, removal of slash/debris and fallen and dead trees and maintenance of fire lines. All households are jointly responsible for forest management and are engaged in all the activities. The households carry out the activities for the improvement of the CF once a year and actively patrol throughout the year.



7.3.3 Quality of life

Under certain circumstances, CF allows CF member households to save money which is then available to improve their lives. In this study, savings linked to CF in the areas of health, education, food, income and shelter are considered and categorised into 'no money saved', 'saved less than 50 Ngultrum', 'saved between 50 to 100 Ngultrum' and 'saved more than 100 Ngultrum' per year.

In the case of health, the amount of money saved from not going to hospital was found to be nil since every family visited the government hospital for treatment. The CFMG member households do not collect medicinal plants from the CF to treat themselves as a substitute for hospital treatment. Regarding forestry education local people can save more than Nu 100 because forestry related training is provided for free by the government as technical support to enhance the knowledge of the local people in managing their CF. With respect to wild food collected from the CF the members of the CFMG saved more than Nu 100 since it was found that the consumed quantities of forest produce cost more than Nu 100 on the market. The CFMG member households also generated more than Nu 100 income per household from the sale of non-timber forest products such as mushrooms, fern and asparagus collected from the CF. In terms of shelter and housing, CF also has a positive influence, as it provides the necessary timber for building and maintenance work.

7.4 Conclusions

This study was designed as a case study of a CF in Western Bhutan focusing on forest use, management and the general influence of CF on local people's lives. Lamjithang CF has influenced the lives of its members in a positive way, in particular thanks to easier access to timber and with respect to wild food for domestic consumption and as a source of additional income when sold at the local market. It would be wise to explore the availability of medicinal plants in the CF and their local use to spare people from going to the hospital every time they are sick.

Regarding education, adult CFMG members are given forestry training on planting, thinning, harvesting, cleaning and group mobilization. The knowledge of forest management is important as it will be passed on to the younger generation for the improvement of the CF. Skills received through training are directly applied while implementing CF activities in the forest. Additional trainings in areas such as forest nursery and forest fire management are equally important for the improvement of the CF.



8 Participatory video as a research method for better understanding community forestry: a case study

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8.1 Introduction

Community forestry is a new development in Bhutan's environmental governance, although it is actually a hybrid between new policies and traditional forms of local ecosystem management. One of the top goals of community forestry is to 'Support decentralization and devolution through empowerment of local communities to manage their local forests' (Social Forestry Division 2010, p 2). This is an important goal, as it acknowledges the role of the local actor as potentially negative or positive on natural resources and empowers them to act as positive agents that can contribute to the sustainability of Bhutan's forests.

Bhutan is internationally famous for its healthy natural environment, and much of this is a result of the country's development policies (Zurick, 2006). Bhutan has protected its natural resources, especially important as the country is located within one of the world's biodiversity hotspots (Myers et al., 2000). Over 70% of the country is forested, and the government is constitutionally mandated to maintain at least 60% forest cover in perpetuity. The government has the ability to meet this commitment as it nationalized all forests in 1969 and has set aside over 50% of the country for national parks and habitat corridors (Gurung and Seeland, 2008). Due to the steep landscape, only 12% of Bhutan is used for grazing and cultivation, while 85% of the population practices subsistence agriculture (Zurick, 2006, p 668-669). Also a net carbon sink, Bhutan could justifiably be called a 'green state' (Eckersley, 2004).

While green states are essential to world-wide sustainability, top-down approaches towards conservation and environmental laws have repeatedly failed due to lack of community interest. Weber (2000) points to the need for community approaches towards ecosystem management that includes voices from multiple and potentially opposed community actors and institutions. Traditional ecological knowledge has often been ignored by governments, but such approaches to understanding local ecosystems can lead to better resource management (Rist and Dahdouh-Guebas, 2006). To this end, Forsyth (2002) has called for the democratization of environmental science, to connect traditional positivist science with community perceptions of environmental issues and processes. Community-based natural resource management has been increasingly deployed as a result, but there have been useful critiques of the role of community in these situations (Agrawal and Gibson, 1999).

Approaches to research are in many ways experiencing a similar shift towards increased

participation and democratization of the scientific process. This paper examines the confluence of community forestry with participatory video, a novel approach to gathering information concerning community perceptions on various topics. The article begins by describing participatory video and the reasons behind its implementation. Following this is a description of the project, including preliminary findings. It ends with a discussion on the benefits and drawbacks of using participatory video as a tool for understanding how community forestry is impacting people in ways such as poverty alleviation. This information will hopefully help shape future research projects in Bhutan as well as further afield as it expands the benefits not just to the research institution but to the researched community as well.

8.2 Participatory video

Using visual methods in social research provides another way to describe or analyse a social setting or particular phenomenon (Harper, 1988). Such methods are divided into in three types of activities: (1) making visual images (studying society to produce visual representations); (2) examining pre-existing images taken by someone else (studying images for information about society); and (3) collaborating with participants in the production of visual images (Banks, 2001). This project used visual methods to collaborate with social actors as a means of data collection; specifically, we used a collaborative form of visual methods known as participatory video.

Participatory video (PV) is a visual method where the researcher works with local groups to produce video documentation of community perceptions. PV uses video as a research tool for increased participation of research participants that enables them to take a more engaged role in the research process (for an overview, see Lunch and Lunch 2006). PV not only empowers participants, but also allows for an iterative process of analysing and interpreting images produced during fieldwork (Pink, 2007). This additional benefit diminishes the traditional hierarchy between the researcher and participant since results are constantly shaped throughout the research process by interaction and discussion between the participants and researchers (Odutola, 2003). According to Hall (1992) using participatory methods such as collaborative storytelling, drawing, community drama and other forms of active participant interaction allows for the free flow of repressed information. Additionally, participatory methodologies are beneficial to yielding problem description and generation of new perspectives and ideas through visualization and group analysis (Johansson, 1999).

PV participants record themselves and others that they identify as being important to interview, to create short documentary films. Typically, students engaged in PV will spend time both in front of and behind the camera; student groups discuss film segments to be collected and plan how to collect and edit the footage; and lastly, the video is further circulated and vetted with the wider community. Through community interviews and the decision making process, PV can be a powerful tool for individual people to connect with their communities and gain an understanding of how communities understand environmental

issues (Honwad and Branch, in preparation). PV can provide access to discourse for people normally excluded; participants express their hopes, ideas and opinions, and through viewing and editing these, facilitate an understanding of others' points of view. Since PV presents the documentaries as works in progress and incorporates community feedback into the product, it leads to increased understanding and trust between the research team, the videographers and other groups involved. Because of this, PV is an optimal method for engaging communities rapidly and creating an environment where potentially contentious issues can be approached.

In addition to gaining access into the community, PV is also a useful pedagogical tool. Students are taught valuable lessons including ethnographic interviewing techniques, video-camera use, environmental awareness, and documentary filmmaking and editing. Video provides a useful entrance for interviewing work, as it requires minimal training and the subsequent technology-oriented work (such as video-editing) is taught by the research team as the project progresses. Producing the video also creates opportunities for sharing concerns and problem solving, facilitating information exchange through stories and increasing student's self-esteem through learning a new skill.

Connecting to communities through school students is based off of a 'students as action researchers' (SAR) approach (Atweh et al., 1998) that collaborates with high school students in social justice research. Their framework is guided by two basic tenets: 1) 'the providers of information are the owners of that information'; and 2) 'participating with students as co-researchers is an expression of trust and respect for their ability to find creative solutions to their current life problems as well as an opportunity for them to nurture this ability' (Atweh et al., 1998, p 114-115). The first tenet emphasizes involving individuals who are facing a problem to find a solution to that problem makes the solution more applicable and relevant than a solution developed by experts. The second tenet reinforces trust among students and community members while at the same time nurturing and developing students' education potential and the importance of using one's knowledge in the solution of real problems.

This case study involved Nature Club students at Tashitse Higher Secondary School and members of the Phendeyling Community Forest which serves the community of Moshi. Both are located in Trashigang Dzongkhag (District) in Eastern Bhutan. 20 students were selected from the school's Nature Club (the Royal Society for the Protection of Nature has started Nature Clubs in all of the higher secondary schools across the country). The students were broken into four groups, and each was tasked to create a short, 5-10 minute documentary film about local perceptions of community forestry. Each group was given a different sub-theme to focus on: non-wood forest products; traditional practices and how they are being impacted by the introduction of community forestry; wood products, and livelihood impacts. The researchers spent one day teaching the students how to use the cameras (Flip cameras were selected due to their simplicity and high video quality), how to conduct an interview, and how to storyboard (outline) a documentary film. Additionally, we had each of the students interview each other briefly, and allowed each group to go out

and collect a couple sample interviews and scenery shots in order to give them practice with the cameras and critique the clips to help the students learn how to obtain high quality footage.

Following the one day course, the school was left with two Flip cameras and had one month to conduct interviews and collect scenery shots for their documentary video. The school decided to send the students to the community in a bus all in the same day, which was useful because it allowed the students to focus their efforts and compare their experiences, but at the same time, it was potentially overwhelming for the community involved, and some students were denied interviews as a result. Once the interviews and scenery shots were collected, the researchers returned to the school to spend another day-long session in which the students were taught how to edit videos, and proceeded to edit their videos into a final product. Windows Movie Maker was chosen as the editing software, as it was already installed on the school's computers and serves as a useful first programme for video editing. At the end of the day of editing, a viewing of the film allowed for community members to see the documentaries that the students had produced and to comment on them. Additionally, a panel of judges rated the documentary films and the best was selected and that group was given a small prize of American chocolates. While turning the project into a competition was not ideal, it was chosen as it motivated the students to do their best.

8.3 Discussion

As a research project, there were several advantages and disadvantages that were discovered through the use of PV as a method. First, given the time constraints on the researchers, it allowed for the rapid collection of data without the difficulty of having to build rapport in the community or learn the local dialect. The researchers were able to invest only two days of labour to obtain several hours worth of interviews from numerous community members. The amount of data could easily be increased through increased attention paid to the students' interview questions and by adding length to their interviews. Second, since translation was done by the student groups who were engaged with the interview, it allowed them to discuss the meaning of the answers and better understand the interviewee's perceptions about community forestry. Perhaps the most time-consuming aspect of the video-editing process was translating the interviews. Third, by having the students select the interview questions and plan out their documentary video, they were given creative license over the project, which created questions that the researchers might not have thought of. For example, one student group asked an interviewee about Tseri (shifting cultivation) and whether the community forest had impacted its use. Tseri is currently illegal in Bhutan, but is still practiced in some parts of the country. The introduction of community forestry in a place could very well impact people's continuation of this traditional practice.

However, there were also some drawbacks to this research method. The students had very little or no experience interviewing, and often did not get much depth in their questions. Much of the information provided was superficial, and the students did not know when to ask follow-up questions when provided with an interesting answer. This could have been

solved by the researchers spending a bit more time with the students developing their interview questions and also showing them the importance of asking follow-up questions. A second issue was that of translation: often, the student's English was imperfect, and so while they would try to translate to English, assistance was needed, and at times someone who spoke both the local dialect and English well was not handy. Even when present, the translator was not professionally trained and would often take liberties with the translation or would sometimes say what he/she thought the researcher wanted to hear. Third, due to the physical distance between the school and the community forest, no members of that community came to the school during the showing (it also was possibly due to lack of communication). This prohibited the ability of the community members to discuss the film and their perceptions of it, a vital component of PV research. The final main drawback of the project was the time constraint itself. Due to the limited time spent at the school, the students did not learn how to complete the project with the expected results. Additionally, rapport was not built up between the students and the researchers so that issues could be comfortably raised.

In order to build upon the success of the PV project and to defeat the drawbacks, it seems that the best solution would be for the researcher to be more involved with the entire process, helping the students not just learn how to do it, but attend the data collection events as well, in order to help guide the students to produce better interviews and thus better documentaries. Additionally, the one day-long class design is likely difficult for the students to fully remember all of the lessons, so it would be preferable to spread out the training over the course of a week or two. In this way, the students can slowly learn the process and develop rapport with the researcher at the same time. Additionally, a longer period of stay would allow the researcher to also get to know the school and community better and to begin learning some of the local issues that might not be immediately apparent. Although PV as a research method is supposed to provide increased data within a short amount of time, some time is needed in order to ensure the quality and increased quantity of data.

8.4 Conclusions

PV is a useful pedagogical and research tool, but as it is still nascent, there is quite a bit of refining that needs to be done in order to obtain the best results. The documentaries that the students produce are generally not publication-ready, indeed, expectations of the quality should be kept low, as the project is similar to a student writing their first paper. However, the research benefit of PV is the raw interviews, which could provide useful data in terms of understanding perceptions of community forestry. Although this may not be the direct aim of all research projects, PV does help to quickly gain community trust, building a strong foundation for future research projects in the area. Additionally, the visual data collected can also be used to understand how a community changes over time, so a PV project that is done ten years from now in the same location would be able to show poverty alleviation, community growth, forest growth and other useful visual data.

The PV approach to collecting data brings along with it the same spirit of democratization that community forestry was founded on. The students involved have the ability to shape the research and to bring in their own perspectives and concerns into the process in a way that could potentially push the research in new directions and bring more benefits to the community forest. Additionally, it is a way to continue benefiting the community, by helping develop the students through giving them new skills and a product that they can show in their community and feel proud of. While there are drawbacks to PV as a research method, when combined with other methods, it plays a strong role in producing quality research.

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9 Community forestry and poverty reduction: the way forward

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The Royal Government of Bhutan (RGoB) and other key stakeholders involved in developing community forestry (CF) promote CF as a means to reduce poverty, to empower local communities and improve local governance, to bring more forests under formal, sustainable management and also to sustainably source much demanded timber and other forest products and services for the market. CF is also, as Karma Tempa shows in his study, a promising avenue to replace the current system of subsidised rural timber supply in the mid term or in the long run. The interest shown by local communities in community-based forest management and the wholehearted support provided by the government and other stakeholders to CF and the management of non-wood forest products (NWFPs) forms a solid basis for the further development of CF in Bhutan.

As the CF programme in Bhutan evolves, the focus of attention has increasingly shifted from quantitative aspects, such as the number of groups established and management plans approved, to focus on qualitative aspects of community forestry such as social learning in the community forest management groups (CFMGs), democratic decision making on forest management in the CFMGs and poverty reduction. As the case studies in this publication show, CF has a significant potential to contribute to the reduction of rural poverty in Bhutan. The changing focus of CF development is also reflected in a growing interest of Bhutanese and international students and professionals to research qualitative aspects of CF, partly with new research approaches such as participatory video described by Matt Branch in his case study.

The case studies in this book provide a range of useful lessons learned and indications of opportunities for CFMGs to improve the livelihoods of their poorer members and of issues to be addressed to ensure that CF effectively contributes to poverty reduction. The key conclusions are:

Resource availability in CFs is essential

As a prerequisite for effective income generation from CF and poverty reduction, CFMGs have to be endowed with sufficient resources to satisfy the needs of their members and to market excess forest products. Only communities endowed with sufficient forest resources for subsistence and commercial use are empowered to take responsibility for sustainable resource management and to generate income from the use of forest resources and thus also to reduce their dependency on the government. The handing-over of (wherever possible) sufficiently large areas of well-stocked productive forest to the CFMGs is equally

important to avoid situations in which CFMGs still partly depend on government reserved forests (GRF) for their rural timber supply. Such situations unnecessarily complicate forest management, its monitoring and administrative procedures and thus the work and lives of foresters as well as of community members.

Based on their studies, Tashi Samdrup and Ugyen Tshering both recommend diversifying the sources of income for CFMGs by allowing the groups to sustainably manage all natural resources found in their CFs including sand and stones. This will require further discussions within the Department of Forests and Park Services and beyond, and clear guidance to be provided by the Department to the CFMGs and its field staff.

Deliberate efforts are required to ensure equity and reduce poverty

Generating income by CFMGs does not automatically translate into poverty reduction. To reduce poverty, the CFMGs have to address distributional issues to ensure equity in sharing of costs and benefits within their groups. Thus, group governance and the observation of good governance principles is key to achieve the expected socio-economic and other outcomes of CF, as Tashi Samdrup and Tashi Wangchuk point out in their papers. Effective poverty reduction requires social capital and cohesion within the group and a deliberate focus and willingness of the CFMG members to improve the livelihoods of the poor members of their communities in the first place. The groups should reach an explicit agreement on how to reduce poverty and express this vision and the planned activities in their CF management plan. They are also recommended to introduce and implement pro-poor provisions in the CF by-laws, most importantly to reduce the inequitable burden of high transaction costs that often fall on poor members of CFMGs and to enhance equitable benefit sharing.

These principles and approaches also apply to local loan giving schemes such as described by Ugyen Tshering and Tashi Samdrup in their case studies. As Tashi Samdrup states, loans from CF funds should easily be made available to poorer group members rather than prioritising less needy community members or even outsiders.

Marketing of forest products and services from CFs offers significant potential to generate pro-poor income

The most obvious potential to generate pro-poor income for CFMGs currently lies in harvesting and marketing excess timber and wood products from their forests given the shortage of timber on the domestic market in Bhutan. Gem Tshering and Ugyen Tshering illustrate this potential in their papers and also identify current constraints to the realisation of this potential. Both show how important it is to explore the market for timber and wood products first to make sure that the production is market oriented. The experience from the described and other CFMGs pioneering the commercial sale of timber from their forests has been used to develop guidelines for the marketing of timber from CFs by the Social Forestry Division and its partners (to be issued in 2011).

The management and sale of NWFPs equally offers potential for pro-poor income generation as already practised by many CFMGs and NWFP management groups in the country, as mentioned in Bhagat Suberi's paper. In addition, some groups also harbour potential for marketing ecosystem services provided by their forests such as supply of drinking water, community-based tourism or in future possibly also climate change adaptation and mitigation services. A strong market orientation and an explicit pro-poor focus are essential for any such venture if it is to be economically viable and to contribute to poverty reduction in the group.

There is potential for local value addition by processing forest products from CFs

The studies undertaken by Tashi Samdrup, Ugyen Tshering and Gem Tshering all consistently emphasise and show that there is significant potential for local communities to generate additional income by processing forest products and thus capture the added value of processing. The CFMGs consulted for these case studies presented have either already taken first steps towards value addition or are interested in doing so. In many cases, value addition will, as Ugyen Tshering concludes, require the groups to collaborate with private sector partners, such as carpenters' workshops or owners of mobile or fixed sawmills. Value addition often also requires investments to start commercial enterprises, as observed by Tashi Samdrup. CFMGs with sufficient timber or other valuable marketable products have the possibility to generate at least some of the capital needed for such investments themselves by marketing timber and possibly other products. In addition, Tashi Samdrup also recommends that CFMGs should have access to loan services by relevant financial institutions to mobilise the required financial needs. The development of existing processing skills within the communities, for example in furniture making as described in the cases of Zhasela and Yarkey CF, and the development of new processing and marketing skills will equally require further attention.

Further develop capacities for active forest management, marketing of forest products and services and group management and governance

Most of the authors identified a need to further support CFMGs and field foresters in developing their skills from the management of forest resources right through to processing, marketing and sales of forest products. Such capacity building will serve to instil confidence of CFMG members in managing their resources as well as their groups. An area deserving particular attention is record and book keeping in the CFMGs. This is important for the sound financial management of the groups in general and in particular of their commercial activities. It provides the basis for informing group members and other stakeholders according to good governance principles of transparency and accountability and for sound decision making by the CF executive committee and the group (e.g. on volumes sold and prices, profitability of activities). At the national level, aggregated information from CF record and book keeping is also important for the monitoring of the outcomes and impacts of the CF programme.

The stakeholders involved in the development of community forestry in Bhutan will have to undertake a collaborative effort to address these and other issues and challenges to ensure

that the well-demonstrated potential of community forestry to contribute to the reduction of rural poverty in Bhutan is effectively realised.



Glossary

Chiwog	Hamlet or village, sub unit of a Geog (block)
Drashing	Trees with a diameter at breast height (dbh) ≥ 50 cm
Dzongkhag	District
Geog	Block
Gup	Head of Geog (elected)
Mangmi	Deputy head of Geog (elected)
Tseri	Shifting cultivation
Tshogpa	Village head (elected)

Abbreviations and Acronyms

AHL	Annual Harvesting Limit
CF	Community Forest/Forestry
CFEC	Community Forest Executive Committee
CFMG	Community Forest Management Group
CFMP	Community Forest Management Plan
CNR	College of Natural Resources
dbh	Diameter at breast height
DoFPS	Department of Forests and Park Services
DzFO	Dzongkhag Forestry Officer
DzFS	Dzongkhag Forestry Sector
FAO	Food and Agriculture Organization (of the UN)
FMU	Forest Management Unit
FNCA	Forest and Nature Conservation Act
FNCR	Forest and Nature Conservation Rules
GFEO	Geog Forest Extension Officer
GRF	Government Reserved Forest
ha	Hectare
HH	Household
ITMO	Internal Timber Movement Order
MoAF	Ministry of Agriculture and Forests
NRDCL	Natural Resource Development Corporation Limited

NWFP	Non-Wood Forest Products (not including fuel wood)
NTFP	Non-Timber Forest Products (including fuel wood)
PF	Private Forest/Forestry
PFMP	Participatory Forest Management Project
PM	Park Manager/Park Management
PV	Participatory Video
RECOFTC	Regional Community Forestry Training Center for Asia and the Pacific
RGoB	Royal Government of Bhutan
RNR	Renewable Natural Resources
SDC	Swiss Agency for Development and Cooperation
SFD	Social Forestry Division
SFM	Sustainable Forest Management
SNV	Netherlands Development Organisation
SRTA	Subsidized Rural Timber Allotment
TFD	Territorial Forestry Division
TROCO	Timber Release Order cum Certificate of Origin
UWICE	Ugyen Wangchuck Institute for Conservation and Environment



Community forestry in Bhutan is evolving dynamically as it rises to the challenges of addressing the needs of rural poverty reduction and development and improving local governance. The case studies collected in this book are the work of practitioners and researchers at the cutting edge of community forestry, and reflect a shift from traditionally quantitative to more qualitative and evaluative studies. They share experiences from community forests throughout the country and take stock of and review the current status of community forestry in Bhutan. This publication advances thinking and conceptualisations on community forestry and poverty reduction in Bhutan and provides analyses and recommendations for the future direction of this rapidly evolving and most promising shift of natural resources management into the people's hands.



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