

Edited by Digby Race and Gib Wettenhall

ADDING VALUE TO THE FARMERS' TREES



Experiences of Community-based
Commercial Forestry In Indonesia

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June 2016

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Some of the research team after one of the project's annual meeting with partners, 2013.

THE PROJECT TEAM

The project team was large and diverse, bringing together people with a range of expertise: economics, social science, technical forestry, forest policy, community development and farmer education. The research capacity of the team was needed to explore the complex dimensions of community-based commercial forestry discussed in this publication. While individual members contributed variously to the overall research, the key findings and insights derived from the research were only achieved by the project team's enthusiastic collaboration with each other, and with the cooperation and support of the many local partners.

The material presented in this publication is largely drawn from research reports and other publications prepared by the project team during 2011-2015, based on the research conducted by the project – *'Overcoming constraints to community-based commercial forestry in Indonesia'*, principally funded by the Australian Centre for International Agricultural Research (ACIAR) (Project FST/2008/030).

A list of the *Key unpublished reports* prepared by the project team can be found on page 124. These reports constitute a primary source for the Figures and Tables as well as text in this publication. Pull quotes throughout highlight important facts and findings made not only by the project team, but also other researchers.

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The research team on a village walk.

THE EDITORS

Digby Race - has contributed to, and led research teams, exploring the socio-economic dimensions of rural development in the Asia-Pacific region and Australia over the past 25 years. Digby has worked in Indonesia during the last decade to improve understanding about how community-based forestry can better contribute to the livelihoods of rural communities. During the period of research covered in this publication, Digby was employed as a Senior Research Fellow at the Australian National University (ANU). He has recently joined the Tropical Forests and People Research Centre at the University of the Sunshine Coast, and has continuing affiliations with the ANU, Charles Darwin University, Charles Sturt University and the University of Gadjah Mada. When not working with research partners in tropical forests, Digby enjoys living with his family on a small farming property in north-east Victoria.

Gib Wettenhall - is an editor, publisher, journalist, and lawyer by training, and an award-winning author. He has over 30 years of experience in farm forestry and community development. Gib was Editor of *Australian Forest Grower* magazine for 14 years, Convenor of the Ballarat AFG 2004 National Conference, and Secretary of SMARTtimbers Cooperative Ltd. A founding member of Ballarat Region Treegrowers (an AFG Branch), he remains the Secretary and manages their website: www.biorichplantations.com. He is the Principal of 'em PRESS Publishing' and Chairman of an environmental organisation, the Norman Wettenhall Foundation, of which he has been a trustee for the past 19 years. With his wife Gayl, he lives on top of the Divide at Mollonghip, where he has thinned 30 acres of private native forest.

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The project team particularly wishes to thank the following people for their important contributions to the project: Dr Tachrir Fathoni (former Director General – Indonesia's Forestry Research and Development Agency), Abidin Kongse (former Head of Indonesia's Forestry Research and Development Agency, Makassar), Ibu Misbawati A. Wawo and Abd. Rahim (Bulukumba District Forestry and Plantation office), Julmansyah (Batulanteh Forestry Unit - KPHP, Sumbawa), Andi Setiawan (BP4K, Sumbawa), Safrudin (Community Leader of Semamung), M. Ridha Hakim (WWF Indonesia, Mataram), Astrida (Trees4Trees, Semarang), Mudji Krisworo and Sugeng Teguh Pribadi (Forestry & Plantation District Office, Pati), Anik Sri Kismiati and Yamto (District Forestry Extension, Pati), Susilo Margono (Forestry Extension of Central Java Province, Semarang), Karnoto (Head of Village, Pati), Jamaluddin Tambi (Head of Village, Malleleng, Bulukumba), H. Ansar and Banding (Forestry extension staff, Bulukumba), Asemsudin and Abd. Basir (Farmer Forest Group leaders, Bulukumba), Abd. Haris Tamburaka (FFG leader, South Konawe), Junaedi Ramba (Secretary of Forestry District office, South Konawe), Muh. Jufri (Head of Village, Benjala, Bulukumba), Jacob and Tanti Goss and Jaka Yulianto (PT. Albazia Bhumiphala Persada, Temanggung, Central Java), Arman Hermawan, Andarias Ruru, Supardi and Hamdan (Indonesia's Forestry Research & Development Agency, Makassar).

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- District Forestry Offices at Gunungkidul, Pati, Sumbawa, Bulukumba and South Konawe;
- *Koperasi Wana Manunggal Lestari* in Gunungkidul;
- *Koperasi Hutan Jaya Lestari* in South Konawe;
- *CV. Dipantara* in Gunungkidul, *CV. Sumber Anugrah* in Temanggung and *CV. Kembang Sengon* in Pati;
- *PT. Jawa Furni Lestari* in Yogyakarta.



CHAPTER 1

BACKGROUND TO INDONESIA'S RURAL PEOPLE AND THEIR FORESTS



Recent data indicates Indonesia has the highest rate of tropical deforestation compared to any other country (almost twice the rate of forest loss in Brazil, a country long thought to be the epicentre of tropical deforestation). Alarmingly, it appears that much of Indonesia's forest loss has been under-reported over the past decade. Moreover, Indonesia has about 40 million people that comprise its farming community, with about half of them living in poverty and suffering from inadequate food and shelter.

Creating an enterprise that links reforestation with commercial opportunities for rural communities seems a logical strategy. Consequently, Indonesia (like many other countries) has moved to invest heavily in supporting community-based commercial forestry (CBCF). Although the overarching strategy for CBCF appears sound, raising the farmers' knowledge about the true value of their trees and linking them to appropriate markets is proving far from straightforward.

This book draws heavily on 10 years of research to provide a critical analysis of CBCF as it is practised in Indonesia.



CHAPTER 1

BACKGROUND TO INDONESIA'S RURAL PEOPLE AND THEIR FORESTS

THE GLOBAL CONTEXT OF COMMUNITY FORESTRY

During the past 50 years, the earth's forest resources have contributed to the daily livelihoods of 90% of the 1.2 billion people living in extreme poverty, and have indirectly supported the natural environment that is essential for agriculture and the food supplies of nearly half the population of the developing world.¹ As stated by Jack Westoby: "Forestry is not about trees, it is about people. And it is about trees only insofar as trees can serve the needs of people."²

In recent decades, however, most tropical countries have lost significant areas of forest. This is particularly so in South-East Asia where the population has increased significantly and become more urbanised. Resettlement programs in Malaysia and Indonesia to alleviate some of the pressures of rapid population growth have exacerbated deforestation. Incentives to relocate to less densely populated rural areas often involve handing over forested land, typically leading to clearing of native forests.

With population growth comes rising demand for food resulting in further forest clearing to establish agricultural crops, such as rice, grain, maize, vegetables and estate crop plantations (e.g. rubber and palm oil). In Indonesia, Malaysia and Thailand, rubber plantations expanded from 260,000 hectares in 1910 to nearly seven million hectares by 1990. Most of the new plantations were carved out of native forests. But as data analysis by CIFOR has concluded: "The poorest play only a modest role in local forest clearing, thus refuting a generalised notion about poverty-led forest loss."³

Increased commodity prices have also spurred deforestation over the past decade, especially when new opportunities have emerged to supply large global markets. For instance, in Brazil, Bolivia, Paraguay and Argentina, a primary cause of deforestation is the trend to supply soybean commodity markets that deliver greater profit margins than traditional native forestry. In Indonesia, the booming cocoa and palm oil markets have encouraged internal migration to develop these commodities, much of it at the expense of forests.

In Indonesia, forests covered about 95 million hectares in 2010, representing approximately 52% of the country's land area. Of this, 50% was primary forest, 46% other naturally regenerated forest and 4% was planted forest. Ninety-one per cent of the forest estate was in public ownership and 9% was privately owned.⁴



Small scale forestry is an integrated component of most Indonesian farming communities.

WHAT IS COMMUNITY FORESTRY?

In many tropical countries, traditional farming practices by small scale (smallholder) farmers have always included some management of trees or forest for multiple purposes.

In the 1970s, integrating agriculture and what was known as ‘community forestry,’ became viewed as a foundation for reversing deforestation and providing more sustainable livelihoods for smallholders in developing countries. Popularised by international aid agencies, the concept was taken up by governments throughout Asia, Africa and Central and South America. It was later expanded to include options for commercialisation of forest products as a means of addressing rural poverty.

“Essentially, community forestry tries to achieve simultaneous biodiversity conservation and community development,” explains Yustina Murdiningrum about her research. “First, through formally vesting some degree of responsibility and authority with local communities to manage and utilise forests. Second, by providing social and economic benefits from the forests to local communities. Third, by encouraging the local communities to maintain sustainability of the forests and restore forest health for future generations.”



Most governments promote the benefits of community forestry, although a large number of regulations make it complex and confusing for communities to adhere to all the rules. Competing policy objectives and overlapping regulations can restrict the commercial benefits from community forestry for smallholders.

Ref: Gritten et al. (2015) An Uneven Playing Field: Regulatory Barriers to Communities Making a Living from the Timber from Their Forests—Examples from Cambodia, Nepal and Vietnam. *Forests*, 6 (10): 3433-3451.

Although having incomplete data and informal use of forests make it difficult to accurately define the total global area of community forestry and the number of people now involved, indications are that it's growing exponentially. In 2001, nearly 400 million hectares of forest was estimated as under community control or management. By 2015, this area was thought to almost double to 740 million hectares, directly involving about 300 million people.⁵

Despite the enormous scale of community forestry, several experienced analysts have expressed doubt about the magnitude of the benefits achieved for smallholders. One of their major concerns is that too often smallholders are drawn into commercial markets that they don't fully understand. Poised as they are at the interface of intense, and often competing, pressures of agriculture and forestry, smallholders in striving to maintain their livelihoods must increasingly bridge traditional farming practices and modern commercial markets. At its most extreme, persistent pressure is applied to convert forests to food-oriented agriculture to meet the needs of the local population and commercial markets further afield.

In recent years, the focus of community forestry has generally shifted from arresting deforestation towards revitalising rural communities. This has led to a call for investment in processes that build social capital. Yet undertaking such investment can prove complex, particularly when seeking to overturn entrenched social inequalities and in forging new relationships that differ from those already embedded in local communities. In addition, rural communities often face a range of limitations in physical capacity (e.g. inadequate transport and infrastructure), economic attributes (e.g. remote from commercial markets, weak bargaining position), and institutional support (e.g. low levels of government support). As people-centred forestry, community forestry, by implication, ought to involve a critical analysis of a community's composition and structure, decision-making processes and people's relationships within the community and with 'outside' market players.

COMMUNITY FORESTRY WITHIN INDONESIA

Recent data indicates Indonesia has the highest rate of tropical deforestation compared to any other country (almost twice the rate of forest loss in Brazil, a country long thought to be the epicentre of deforestation). Alarming, it appears that much of Indonesia's forest loss has been under-reported over the past decade.⁶ Moreover, Indonesia has about 40 million people in its farming community, with about half of them living in poverty, suffering from inadequate food and shelter.

Despite the priority given to agriculture by most rural communities, forests on some scale are usually viewed as a desirable and complementary land-use throughout much of Indonesia. Figures indicate that more than 80 million people are forest-dependent in Indonesia alone.⁷ Small scale forestry is an integrated component of most family farms, comprising, for example, about 30% of farm income in Java. Thousands of smallholders manage more than 1.5 million hectares of planted forests across Indonesia with two of the most important commercial tree species being teak (*Tectona grandis*, grown on 15-30 year rotations) and sengon (*Paraserianthes falcataria*, grown on 5-7 year rotations).



Rising demand for food has led to increased forest clearing across South East Asia.

Table 1: Overview of the major approaches to community-based forestry in Indonesia

Name in Indonesian	English terms	Land tenure	Production arrangements	Objective
Hutan Rakyat (HR)	Community forest, farm forest, private forest	Farmers own the land	Cropping pattern and inputs by farmer. Output: 100% for farmer	To support family livelihood
Hutan Tanaman Rakyat (HTR)	Community plantation forest	State owns the land, farmers obtain fixed-term tenure	Cropping pattern and inputs by tenant farmer; access to credit and markets facilitated by the Department of Forestry. Output: 100% for tenant farmer	To accelerate national economic growth through increased wood production and market supply
Hutan Kemasyarakatan (HKm)	Community forest	State owns the land, farmers obtain fixed-term tenure	Tree cropping pattern and inputs by state; non-tree by community. Wood output: 60% for state, 40% for tenant farmer, depending on site. Non-wood output: 100% for tenant farmer	To provide access to land for community members with limited land (poverty alleviation) while preserving forests

Source: adapted from Table 1, Social dimensions analysis, van de Fliert. [2013].

Creating an enterprise that links reforestation with commercial opportunities for rural communities would seem a logical strategy. Consequently, Indonesia (like many other countries) has moved to invest heavily in supporting community-based commercial forestry (CBCF). Establishing a vibrant CBCF sector is widely viewed by policy makers as a strategy to assist smallholders build productive and sustainable farming systems that include a diverse and resilient ‘package’ of commercial opportunities. Overall, the Indonesian government regards its investment in CBCF as a means of achieving the twin goals of alleviating rural poverty and building a sustainable forest industry. CBCF approaches adopted to date are summarised in Table 1.

One of the government’s biggest CBCF initiatives is the *Hutan Tanaman Rakyat* (HTR) program, or the People’s Plantation Forest program, which aims to establish 5.4 million hectares of commercial forestry with 360,000 farm families leasing state-owned plantations by 2016.⁸ The government has also set a target of establishing 12.7 million hectares of more general community-based forestry, so that local communities are actively engaged as managers and owners of forests as a strategy to reduce forest fires, land tenure conflict and illegal forest activities. In addition, CBCF is intended to provide communities with access to forest resources as another pathway to improving their welfare.

While Indonesia has an ambitious policy goal for CBCF, it faces considerable challenges with program implementation including the variable capacity at the local level. Based on her recent research, Yustina Murdiningrum explains, “smallholders, especially poor households, still tend to receive only a small portion of the commercial benefits ... because many policies, markets for forest products and market institutions commonly prioritise large scale forest producers.”

Targeting the poorest smallholders and raising their knowledge and skills is proving far from straightforward. Only then can they realise the true value of their trees and link their sale to appropriate markets.

Table 2: Main timber species and characteristics

Common name	Scientific name	Silviculture	Common uses
Bitti	<i>Vitex coffasus</i>	Slow growing species, native to the area (adapted well to local conditions). Trees normally at least 20 years old before harvest.	Durable timber used for construction, including flooring and decking, and veneer.
Gmelina or white teak	<i>Gmelina arborea</i>	Fast growing species. Can be a monoculture plantation or be combined with teak.	Strong timber used in construction, furniture and panelling, frames for doors and windows.
Mahogany	<i>Swietenia mahagoni</i>	Slow growing species to diversify timber production	Durable dark timber highly valued and used for furniture and interior panelling, and boats.
Sengon or albizia	<i>Paraserianthes falcataria</i>	5-7 year rotation. Used in agroforestry or planted as a monoculture.	Soft pale timber, of increasing value for veneer, interior panelling of doors and cupboards, small furniture.
Teak	<i>Tectona grandis</i>	15-30 year rotation. Can be a monoculture plantation, mixed species plantation or used for agroforestry.	Durable dark teak highly valued for exterior and interior construction, furniture, carving, boats and veneer.
Sonokeling or Indonesian rosewood	<i>Dalbergia latifolia</i>	40-60 year rotation. Can be a monoculture plantation, mixed species plantation or used for agroforestry.	Strong dark red-brown timber, highly valued for furniture, feature panelling and musical instruments.

Source: adapted from Table 5.2, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

RESEARCH SCOPE

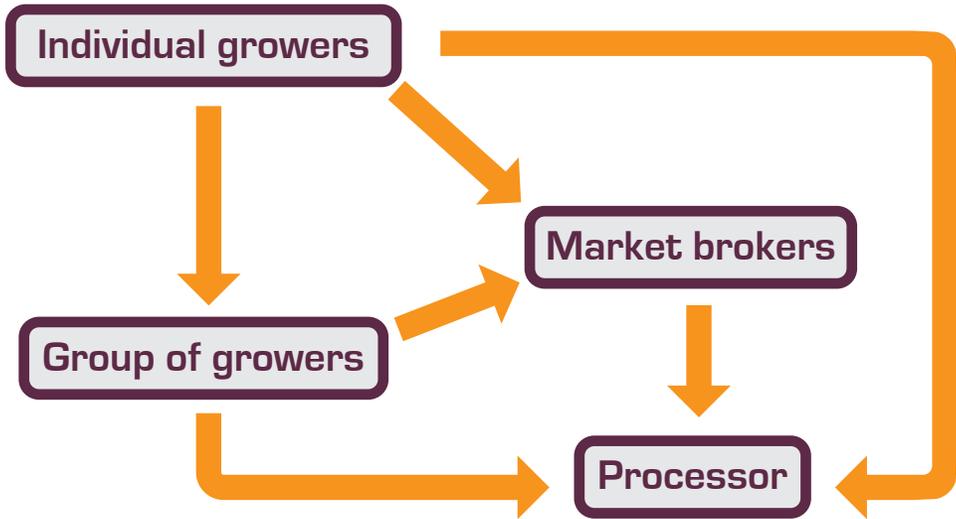
This book draws heavily on ten years of research grounded in the experiences of smallholders in Central Java, Sulawesi and Sumbawa. It provides, first, a critical analysis of CBCF as it is practised in Indonesia by exploring the integrated management of community forestry, and the challenges smallholders face when seeking to enter into new commercial timber markets.

Building on this research platform, the project partners sought to devise means for overcoming identified constraints, such as lack of marketing knowledge and silvicultural skills. The end goal was to find ways of adding value to smallholders' commercial forestry enterprises.

While the HTR program is one of the major Indonesian community forestry initiatives led by government, the private sector has established and refined its own CBCF initiatives over the past 20 years. An example of the private sector's enthusiasm and innovation for forging joint-venture partnerships with local farming communities are the agreements to produce fast-grown timber from sengon (also referred to as *albizia*) for commercial markets. Moreover, an increasing number of Indonesian wood processors and manufacturers source timber from farmers (usually via market brokers) for domestic and global markets. The outcomes generated from the increasing trend of commercialising community-based forestry are complex and varied.

While CBCF at a broad level covers a range of land tenures, commercial arrangements, and silvicultural options, this project focused on forests grown by smallholders on privately owned land primarily for commercial markets, traded directly to processors, via timber brokers or collectively through cooperatives – commonly referred to in Indonesia as *butan rakyat* (HR), or private forestry. Exploring the dominant market pathways used by smallholders involved in CBCF was an important component of this research project, with the main pathways simplified as shown in Figure 1.

FIGURE 1: Market pathways studied by the project.



Source: adapted from Figure 2.3, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015)

Scaling-up community involvement in CBCF – in public and private sector programs – is not always viewed as straightforward nor desirable, with the concept of CBCF being challenged by some.⁹ These authors have identified a range of issues that will influence the degree to which models of CBCF will achieve the stated goals of economic, social and environmental progress, with uncertainty about:

- The capacity of the various levels of government to be able to facilitate widespread participation of rural communities in desirable models of CBCF; and
- The capacity of rural communities to make informed business and livelihood decisions in regard to their involvement in varying models of CBCF.

Notwithstanding these concerns, creating a vibrant CBCF sector is widely viewed by policy makers as part of a strategy to see smallholders develop productive and sustainable farming systems. While small scale forestry is commonly an integrated component of family farms, for example, comprising about 30% of farm income in Java, most smallholders fail to realise the commercial potential of the trees they plant or appreciate the silviculture required to meet market specifications.¹⁰



Despite the enormous global scale of community forestry, several experienced analysts have expressed doubt over time about the magnitude of the social benefits that have been achieved.^{11 12 13 14 15} Lessons from Indonesia and other countries indicate that community participation in the commercial forestry sector alone is insufficient to guarantee 'successful' community-based forestry for participants, with a major concern being when inexperienced farmers are drawn into unfair long term contracts.¹⁶ Other research has further identified that the financial returns from commercial forestry for farmers often falls a long way short of the potential, commonly due to:

- Lack of market knowledge (e.g. uncertainty about prices for different species & timber grades);
- Selling into constrained markets (e.g. lack of viable transport can restrict sales within uncompetitive local markets);
- Limited capacity to achieve economies of scale (e.g. often selling small discontinuous supplies);
- Low levels of silvicultural skills (e.g. failure to implement 'best practice' thinning of planted trees); and
- Use of poor genetic plant stock (e.g. planting of poor quality seedlings).

This is the context within which the research project – *'Overcoming constraints to community-based commercial forestry in Indonesia'* – has operated over the past four years (2011-15). The aim of the project was to analyse the dominant business models used in CBCF in Indonesia, so as to better inform smallholders about their investment decisions in relation to commercial forestry. The project was framed by four objectives:

1. To conduct a social dimensions analysis of the community context of CBCF, and to design a framework for assessing the livelihood outcomes;
2. To evaluate the dominant business models of CBCF;
3. To increase the capacity of smallholders participating in CBCF;
4. To engage and influence priority stakeholders to enhance the conditions for CBCF.

Some of the key results of the project were that it:

- Identified the common barriers facing different smallholders involved in CBCF across different provinces (e.g. low understanding of the dynamics of commercial forestry markets, uncertainty about the silviculture to practise to improve wood quality, uncertainty as to how to assess the quality and volume of timber in a standing forest);
- Analysed the dominant value chains (market pathways) used by smallholders and the potential to add value at different market points (e.g. what value does forest 'certification' offer smallholders?), including revealing the important role many women have in negotiating the sale of forest products;
- Piloted an innovative approach to forestry extension with the design of the 'Master TreeGrower' training course that improves the silvicultural skills of smallholders, enabling them to produce high quality timber and receive higher prices from the private sector.

RESEARCH METHODOLOGY

The research consortium of partners consisted of a range of research and development organisations, namely FORDA Bogor and Makassar, CIFOR, University of Gadjah Mada, WWF Indonesia and several Australian universities – the Australian National University, University of Melbourne and University of Queensland. The multi-disciplinary project team selected a wide range of expertise including forest silviculture, socio-economic science, forest policy, forest industry analysis and community development. Moreover, the project team adopted a participatory research approach in order to more fully understand the range of experiences by different people related to CBF in Indonesia. The research methodology deliberately engaged a wide range of smallholders, community leaders, commercial market brokers (middlemen), industry processors, forest agency staff, local NGO staff and other analysts.

The research project was conducted with communities in 10 villages located in five districts: Gunungkidul (Yogyakarta), Pati (Central Java), Bulukumba (South Sulawesi), South Konawe (Southeast Sulawesi) and Sumbawa (East Nusa Tenggara) [see Figure 2 map]. The consortium also worked closely with local partners, such as government agencies (e.g. *Dinas Kebutanan* in Bulukumba) and NGOs (e.g. Trees4Trees in Pati).

FIGURE 2: Map of the five project districts involved in the research.



Source: adapted from Google map, plus adapted from Figure 1, van de Fliert. [2013].

The units of analysis were the farm family for human and economic indicators at the household level, and the hamlet (*dusun*) for social indicators. Selection of hamlets and farm families was done using predetermined criteria. These were the importance of community-based forestry to the livelihoods of the local people; and the feasibility of conducting, in particular, social analysis, which required a willing community, accessible locations and support from local governments.

To ensure an adequate representation of differing viewpoints across the project's five districts, a diverse sample was sought in relation to socio-cultural conditions, tree species produced and CBCF models applied. As well as household interviews, focus group discussions were held. Table 3 lists the ten villages included in this study and gives an overview of the dominant tree species produced and CBCF market chain models found in each village.



This research project aims to better inform smallholders about their investment decisions in relation to community-based commercial forestry.

TABLE 3: Overview of the ten village study sites.

Project location (Province in brackets)	Sub District	Village	Tree species (minor species in brackets)
Gunungkidul District (Yogyakarta)	Nglipar	Katongan	Teak (Mahogany)
	Playen	Dengok	Teak (Mahogany)
Pati District (Central Java)	Cluwak	Payak	Sengon
	Gunungwungkal	Gilling	Sengon
Bulukumba District (South Sulawesi)	Bontobahari	Benjala	Teak
	Bontobahari	Benjala	Bitti
	Kajang	Malleleng	Teak
	Kajang	Malleleng	Bitti
South Konawe District (Southeast Sulawesi)	Laeya	Lambakara	Teak
Sumbawa District (West Nusa Tenggara)	Moyo Hulu	Semamung	Teak (Sonokeling)

Source: adapted from Table 4.1, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

For the in-depth household interviews, farmers were visited in their homes or nearby places to ensure privacy, with both husband and wife encouraged to participate. Interviews were conducted by two members of the study team, with one taking the lead in interviewing the farmers and the other recording answers in the data collection sheets. Interviews generally lasted between one to two hours. Interviews were preferably conducted in local languages by members of the study team proficient in those languages; or in Indonesian when team members did not speak the local language and interviewees were proficient in the national language.

Focus group discussions were selected on the basis of farmer group membership and gender. Within each group, farmers were selected from three different wealth categories: those managing less than 0.5 hectare of land, those with 0.5-1 hectare of land and those with more than 1 hectare of land. Where applicable, a proportionate number of landowners and tenants were included.

As summarised in the following chapters, the findings, are drawn mainly from research conducted during 2011-15, which builds on a longer research interest that ACIAR has supported since 2005.



CHAPTER 2

EXPLORING THE SOCIAL AND COMMUNITY DIMENSIONS OF CBCF



Where a strong market demand for timber exists in Indonesia, there is a corresponding trend by smallholders to incorporate additional trees in their farming systems (e.g. in Pati, Bulukumba and South Konawe). Taking advantage of market demand and smallholder interest in tree growing faces, however, some common challenges.

The starting point for the team's research was to understand the local community context within which CBCF operates. While acknowledging that Indonesia's vast size and diversity makes it problematic to oversimplify, the researchers involved in the project's Social Dimensions Analysis (SDA), led by Elske van de Fliert, found that:

- Smallholders often have a weak understanding of market dynamics;
- Their silviculture does not always relate to market demand;
- Extension support is often too focused on just the technical aspects of silviculture; and
- Local farmer groups can have a limited organisational capacity.

Many in rural communities remain disadvantaged and marginalised from the country's growing wealth, according to the SDA analysis. Women in general and the poorest and least educated smallholders are unable to take advantage of current CBCF policies and programs to develop commercially-oriented forest enterprises. These two groups have the most limited knowledge of how to manage their trees and the least capital with which to 'add value' to forest products.

CBCF may inadvertently entrench existing inequalities within a rural community if its more powerful members dominate planning and management processes, as well as for silvicultural training and marketing.



CHAPTER 2

EXPLORING THE SOCIAL AND COMMUNITY DIMENSIONS OF CBCF

DIFFERENCES BETWEEN PROJECT LOCATIONS

Spread across five provinces on three different islands in Indonesia, each of the community-based commercial forestry (CBCF) project districts had its own unique set of characteristics, from a socio-cultural perspective, as well as ecologically and economically.

These differences are identified below, although it is worth noting that a number of the characteristics were common to all project districts.

Local government structure is the same in all locations and accords with the national model. This consists of a village leader (*Kepala Desa*) and village parliament (*Badan Perwakilan Desa*), who are elected by the people, and a village secretary, as well as village government section heads, who are appointed by the district regent (*Bupati*). Each village also has a Village Community Empowerment Organisation (*Lembaga Pemberdayaan Masyarakat Desa*), which makes the annual development plans.

All project districts were characterised by high population density associated with small landholdings, and, particularly in some of the villages in Java (Gunungkidul and Pati), relatively larger numbers of landless community members. No evidence of major conflicts relating to land or social issues was found in any of the villages included in this study.

Most of the villages (except Dengok in Gunungkidul), are located at a distance of 15 kilometres or more from the district capital city, which restricts the availability of goods and services. Although the project districts are served by sealed roads that connect the villages with major business centres and the wider region, not all villages have their own markets, and rarely their own timber markets.

Timber trading is usually conducted with local brokers or traders residing in or near the village, who have business connections to larger regional, national or international markets or processing industries. Although less common, some farmers sell directly to local processors. Each village included in this study has its own specific timber production and trading system. An overview of the CBCF production and trading systems of the various study sites is provided in Table 4.

TABLE 4: Challenges facing rural communities in study areas.

Livelihood capital	Gunung Kidul	Pati	Bulukumba	South Konawe	Sumbawa
Human	<ul style="list-style-type: none"> • Low level of formal education • Small land areas (0.5 ha), not always certified 	<ul style="list-style-type: none"> • Low level of formal education 	<ul style="list-style-type: none"> • Limited capacity causing inefficient use of the land and low output • Limited experience/ skills to manage a variety of crops 	<ul style="list-style-type: none"> • Limited awareness and knowledge about timber production and the cooperative's existence 	<ul style="list-style-type: none"> • Traditional livestock cultivation methods (free ranging) limiting knowledge about intensive crop production
Social	<ul style="list-style-type: none"> • Role of women in public events is limited, despite their role in timber transactions 	<ul style="list-style-type: none"> • Limited availability of health and educational services • Lack of capacity and trust to collaborate in cooperative 	<ul style="list-style-type: none"> • Advisory service provision is limited (frequency, quality) • Collective activities are limited • Participation of women in collective activities and local governance is limited 	<ul style="list-style-type: none"> • Coordination among stakeholders in timber industry not optimal • Limited opportunities for women to attend training or meetings 	<ul style="list-style-type: none"> • Frequent change of regulations relating to development programs • Weak capacity of local government to coordinate programs
Financial	<ul style="list-style-type: none"> • Lack of funds for investment 	<ul style="list-style-type: none"> • No easy access to credit facilities resulting in tree resource sales on a needs basis 	<ul style="list-style-type: none"> • Lack of funds for investment • Income from tree production not readily available given long lead time to grow trees 	<ul style="list-style-type: none"> • Many farmers cannot afford the membership contribution to the Forestry Farmer Cooperative • Timber prices offered through cooperative still low 	<ul style="list-style-type: none"> • Limited capacity to invest • Higher level expenditures than income • Farmers have little bargaining power
Environmental	<ul style="list-style-type: none"> • Sloping, dry land, low fertility 	<ul style="list-style-type: none"> • Sloping land with difficult access 	<ul style="list-style-type: none"> • Water availability is limited • Soil is dry and rocky 		<ul style="list-style-type: none"> • Short rainy season, hence dry conditions and limited crop choice
Physical	<ul style="list-style-type: none"> • Service facilities are far away • No irrigation system 	<ul style="list-style-type: none"> • Limited road access, hence lack of access to health and other service facilities • Irrigation system no longer provides sufficient water for paddy, causing conversion to dry land 	<ul style="list-style-type: none"> • Not all community members have access to electricity yet • Water availability 	<ul style="list-style-type: none"> • Market to sell agricultural produce is far away 	

Source: adapted from Table 7, Social dimensions analysis, van de Fliert. (2013).



Most community forestry is associated with farmers' own land, but in two of the project's study districts, the government has established community forestry on state land.

Community forestry was generally practised by farmers on their own land, but only the project districts in Gunungkidul and Sumbawa have established community forestry programs on state forest land (HTR and HKm). In South Konawe efforts have been made to initiate the HTR program and get farmers' interest to participate.

In all locations, agriculture, forestry and livestock production form the main sources of subsistence and household income. Timber production is generally not considered the largest contributor to the annual household income, which is commonly attributed to cattle, goats, corn, cassava and other secondary food or estate crops. Harvesting trees for sale is mainly valued for its ease of production and marketing, and for the financial security it gives when large expenditures are needed in the household, a function it shares with cattle farming.

This general trend seems to be changing in Pati where the production of sengon (*Paraserianthes falcataria*) is becoming a regular and substantial source of income. In most places a variety of trees is grown, with teak the preferred species, but in Pati sengon's shorter growth duration has led to intensified specialisation in its production. Researchers have also observed a trend to convert agricultural or estate crops land into forestry or agroforestry systems in Pati, Bulukumba and South Konawe.

CASE STUDY 1

Trend towards growing short rotation trees

The contribution of community forest to smallholders' income in Pati was estimated in 2011 as varying from about 25% to 32% of total income. Not an insignificant percentage, and it is interesting to note that when comparing villages, the highest contribution was in those villages with the greatest degree of community forestry. Furthermore, when comparing the income return of forest industry workers with that of community forest smallholders, they were, in general, similar – although industry workers received regular wages per month, while smallholders' returns came years later.

The community forest area in Pati is the tenth in size among 35 districts in Central Java. From the project study of three villages, a trend is evident towards specialising in growing a short rotation tree crop, sengon, within an agroforestry system. Demand was found to be increasing for timber, and sengon's low cost of establishment, compared to agricultural crops, made it attractive.

Sengon is planted in the yard around houses and on dry land, intercropped with food crops, spices, medicinal plants, fodder grass, estate plants, fruit trees and forest trees. Monocultures of trees or crops are rarely found because of the limited land size: the smallholder ownership average within the three villages was 0.86 hectare per household.

Sengon timber is harvested at the age of 5-6 years for both commercial timber and non-timber forest products. It was found to make up 92% of the income from farmers' forests in the three villages.

GENDER ROLES

Household male members spent more time on commercial tree production than females in all project sites. In particular, men play a greater role in species selection, timing of planting and harvesting, and in overall cultivation practices. They are also more actively involved in community-based activities and meetings, which can mainly be ascribed to cultural practice.

Women play a greater role in the harvesting and use of non-wood products from the forest and in the financial aspects of wood production, such as negotiating prices with timber traders and overall household financial management.

The workload for the production of food crops is mostly shared equally between men and women.

Much of the government and NGO support for CBCF is directed to the existing village-based farmer forest groups, and these groups are predominantly comprised of men. As such, rural women often miss out on receiving commercial information and support that might enhance their ability to negotiate better prices for their family's forest products.

Extension services offered by the departments of forestry and agriculture or NGO programs tend to focus on specific community forestry programs on state forest land that apply to the People's Plantation Forest program (HTR) and HK systems. Support to farmers growing trees on their own land (as under the HR system) is, however, sporadic - although this has the highest potential benefit for farm households in terms of delivering adaptable and profitable livelihood strategies.

Most villages, especially in Java, have a myriad of savings groups, mostly gender-separate for men and women. These groups, however, are generally not effectively linked to farmer groups or grower cooperative activities.

The leader of the SDA research team, Elske van de Fliert commented: "Effective cooperatives are rare due to either the lack of organisational capacity by the community or service providers, or the lack of trust among group members who have previously suffered from past poor experiences with cooperative management. An exception from which much can be learned is the farm forestry cooperative in South Konawe (*Koperasi Hutan Jaya Lestari - KHJL*)."

See Case Study 2 to learn about the KHJL cooperative in South Konawe.

A sengon plantation in Pati district.



CASE STUDY 2

Farmer cooperative KHJL and its experience selling certified teak

In 2009, the People's Plantation Forest program was launched in South Konawe through a farmer cooperative, namely *Koperasi Hutan Jaya Lestari* (KHJL). At Lambakara Village, farmers had 56 hectares of private forest dominated by old growth teak. They also planted fast growing tree species, such as white teak (*Gmelina arborea*) and jabon (*Antocephalus cadamba*).

The farmers sold their teak timber as squared planks to KHJL. The farmers hired tree fallers to fell the trees, process the logs into squared planks and transport the planks to a nearby accessible road. KHJL picked up the planks and on-sold them to Forest Stewardship Council (FSC) certified timber buyers – usually industries in Java who produced certified furniture products. KHJL paid for transportation to Port Kendari and other transaction costs related to permits and administration.

The cooperative selling price of teak at South Konawe was very much higher than in Gunungkidul, another teak-growing district. Research found that the price difference reflected different grades of teak. In South Konawe, the teak was derived from older aged forests, while in Gunungkidul the teak was dominated by small diameter trees from younger stands.

While KHJL took a significantly higher profit margin, interviews revealed that the cooperative had made a significant initial investment to obtain FSC certification for their timber. The cost for the certification process of KHJL was estimated at IDR 200 million (A\$22,000) and it took two years to gain the certificate. A NGO called JAUH (*Jaringan untuk Hutan*, Networking for Forests), based in Kendari, provided extensive assistance to KHJL in the certification process.

Unfortunately, at the time of the project's study, the price for teak offered to KHJL had fallen to IDR 4 million per cubic metre, meaning the cost of certification could not be recouped. This situation arose as the result of a cheaper source of FSC certified wood emerging in Java.

CONSTRAINTS AFFECTING SMALLHOLDERS' COMMUNITY FORESTRY CAPABILITIES

Communities in the project's study areas experience a range of constraints affecting the capability of smallholders to fully exploit the benefits of community forestry. Limitations identified include low education, the restricted role of women, dry and sloping land of poor quality, lack of access to markets and service providers, and few incentives to learn and engage in collective action. Table 4 highlights the assets lacking within the study areas' rural communities from social to economic and environmental.

Constraints specifically tied to tree growing are the lack of economies of scale as a result of the small size of landholdings. Needs-based harvesting occurs sporadically when households require large sums of money, such as to pay for a wedding. The downside is that the sporadic nature of tree growing leads to little knowledge of silvicultural techniques and marketing opportunities.

As a result of the former, tree plantations are not only poorly managed, but also unlikely to use improved varieties. Consequently, plantations suffer from relatively low yields and/or low quality wood.

In the marketing of timber, most project districts are dominated by local or regional brokers or middlemen. For their part, the farmers' reliance on brokers leads to limited knowledge about timber volume assessment methods and prevailing market prices, putting them in a weak bargaining position. This is aggravated when selling timber on an ad-hoc, needs basis. While farmers are aware that they do not always get a fair price for their trees, they appreciate the convenience that comes with the dependence on a broker. They are spared the worry about harvesting the trees, organising complicated and expensive permits and transporting the logs to processors.

The restricted role of women acts as a major limitation.





Smallholders vary in their capacity and interest in growing trees as a commercial enterprise. A study of a sample of smallholders in Central Java found that smallholders with larger farms, and with higher on- and off-farm incomes, were more likely to manage trees for timber production.

Ref: Sabastian, G., Kanowski, P., Race, D., Williams, E. & Roshetko, J.M. (2014) Household and farm attributes affecting adoption of smallholder timber management practices by tree growers in Gunungkidul region, Indonesia. *Agroforestry Systems*, 88 (2): 257-268.

While many CBCF initiatives started off with the establishment and management of farmer groups or cooperatives, it has proven difficult to sustain effective, representative farmer organisations. The needs-based harvesting system tends to encourage individualism. Groups often consist of the better-off members in the community, who own larger pieces of land and can afford the risk to invest in new practices. Women have a limited role in the forestry groups. Financial service providers fail to support farmer groups or cooperatives in CBCF, with the long term return on investment in tree production acting as a serious barrier.

The permit system for selling timber is complicated and obtaining a permit is often expensive. Farmers have little knowledge about the procedures and are prone to manipulation by brokers, who tend to organise all the permits. In some districts, the permit system is not functioning adequately leaving room for illegal practices to flourish.

The extension system providing advice does not appear to be functioning effectively. Faced with large jurisdictions, extension officers often cannot adequately cover all communities they are supposed to serve. Furthermore, they tend not to have the necessary technical and managerial knowledge to support farmers with their production and marketing issues and to coordinate collective action successfully.



The capacity and cohesion of local farmer groups have a strong influence on the likely success of community forestry. The social capital within a farmer group – the relationships among the group's members – can constrain, or enhance, adaptation, innovation and participation.

Ref: Race, D. & Sumirat, B. (2015) Exploring the implications of social inequalities in community forestry: Emerging lessons from two forests in Indonesia. *International Journal of Sustainable Development*, 18 (3): 211-228.

OPPORTUNITIES FOR IMPROVED CBCF SYSTEMS

Conversely, the opportunities for these same rural communities within the project districts are displayed in Table 5. These ranged from possessing strong social networks to untapped market demand. Varying socio-economic and environmental conditions between study sites made for some stark contrasts.

Given that large areas of land owned by farmers are planted with trees, opportunities exist for improving silvicultural management and the quality of timber in CBCF systems. In addition, land is still available that is suitable to support community forestry. In some of the project districts, wet paddy land has been converted into dry farmland that could be used for tree planting. Several government programs have distributed tree seedlings to communities or established community tree nurseries.

In timber marketing, the high and increasing demand for timber in commercial markets presents opportunities. Some effective timber trader associations and cooperatives cover parts of the project districts, whose success factors could be studied further and emulated.

“Communities in the study areas generally display interest in planting trees and an awareness of the contribution they could make to boosting household income,” said SDA researcher Dede Rohadi, “... this is a vital foundation for initiating group activities.”



Multiple stems are a sign of poor silvicultural management.

Farmer groups and cooperatives need to define a common goal and work out a suitable collaborative mechanism before engaging in collective action. There are NGOs in some of the project districts (e.g. in Pati and Sumbawa) that could be used to establish and facilitate new CBCF groups. Certification systems exist in some districts (e.g. Gunungkidul [LEI] and South Konawe [FSC]) that could help strengthen farmer organisations.

While numerous programs are designed to support rural development in Indonesia, there is a need for building the capacity of extension officers and local government officials, in order to mobilise these programs so they address the specific needs of communities in a more tailored way. Farmers mainly need capacity building and organisational support, rather than provision of free inputs, which is the focus of most programs.

With effective farmer organisation comes the recognition of how social structures in communities might reflect and support all segments of the community in their tree growing.

TABLE 5: Opportunities for improving rural communities in study areas.

Livelihood capital	Gunung Kidul	Pati	Bulukumba	South Konawe	Sumbawa
Human	<ul style="list-style-type: none"> • Most families are self-sufficient 	<ul style="list-style-type: none"> • Households pursue a diverse mix of enterprises to meet their needs 	<ul style="list-style-type: none"> • Willingness of timber traders/processors to establish partnership schemes that improve the wellbeing of the community 	<ul style="list-style-type: none"> • Eagerness of women, in particular, to participate in learning opportunities that lead to increased incomes 	<ul style="list-style-type: none"> • Eagerness of community to improve their wellbeing
Social	<ul style="list-style-type: none"> • Strong social networks that provide mutual support • Local micro-credit groups exist 	<ul style="list-style-type: none"> • Government support for land rehabilitation and social assistance programs 	<ul style="list-style-type: none"> • Land status is clear and there are no conflicts • Community Empowerment Board for Neighbourhoods (LPMK) exists and can perform a facilitating role to enhance collective action • Farmer groups exist and can be further strengthened • Some active women's groups exist 	<ul style="list-style-type: none"> • Farmer groups exist and some are active (although often dominated by men) 	<ul style="list-style-type: none"> • Networks exist and the PSDHBM program and cooperative have provided good examples to build on (PSDHBM = Community-based Forestry Resources Management)
Financial	<ul style="list-style-type: none"> • Government subsidy programs • Local industries to buy raw materials • Access to small local credit 	<ul style="list-style-type: none"> • Sengon production provides flexible income generation (small and large amounts) • Off-farm employment opportunities 	<ul style="list-style-type: none"> • There is a market demand for wood, particularly for phinisi ships 	<ul style="list-style-type: none"> • Timber market has a high demand and clear procedures, especially through the cooperative (KHJL) 	<ul style="list-style-type: none"> • Market demand exists
Environmental	<ul style="list-style-type: none"> • Large areas of community forest available 	<ul style="list-style-type: none"> • Conditions suitable for sengon production 	<ul style="list-style-type: none"> • Land available and suitable for tree production (timber, fruit) 		<ul style="list-style-type: none"> • Conditions are suitable for more intensive agroforestry systems

Source: adapted from Table 8, Social dimensions analysis, van de Fliert. [2013].

WHY SUCCESS HAS PROVEN SO ELUSIVE IN IMPLEMENTING CBCF

When analysing all aspects of the constraints and opportunities as a whole, a gap in the delivery of CBCF in Indonesia becomes visible. Those most in need, the poorest smallholders, are missing out.

Traditionally, the development of forest policy has largely been a 'top-down' process. While a shift away from developing policy solely by the staff of the central government has led to greater consideration of local approaches to forest management, a lack of clarity still exists – in socio-economic, technical and policy terms – of what constitutes 'pro-poor' CBCF.



High and increasing demand for timber presents many opportunities.

Indonesia has a rapidly developing economy and increasing wealth per capita, but many in rural communities remain disadvantaged and marginalised from the country's growing wealth. The constraints and opportunities analysis indicates that women in general and the poorest and least educated smallholders are unable to take advantage of current CBCF policies and programs to develop commercially-oriented forest enterprises.

These two groups have the most limited knowledge of how to manage their trees and the least capital with which to 'add value' to forest products. Yet in the push for more intensive farming of land for higher value products, such as rubber or palm oil plantations, it is the Indigenous and poorest smallholders who are under the most pressure to sell their land to trans-migrants or industrial plantation companies. Smallholders often report they are faced with little choice – either they become entrenched in poverty or sell their land with the hope they could develop other livelihood options.

CBCF policies require an adjustment in focus so they are less easily undermined by more lucrative land uses and wealthy stakeholders. Community forestry projects may inadvertently entrench existing inequalities within a rural community if the planning and management processes or support for silvicultural training and marketing are dominated by the more powerful members within a community. The risk is that the poor members of a community will end up only experiencing further disadvantage.



CHAPTER 3

WHAT ARE THE IMPLICATIONS OF THE SOCIAL AND COMMUNITY DIMENSIONS?



Three findings emerged from the Social Dimensions Analysis that have implications for adapting community-based commercial forestry (CBCF) to benefit a wider range of smallholders.

Limiting factors restricting tree growing were identified as:

- CBCF takes second place to agricultural pursuits and is undertaken sporadically and opportunistically;
- Smallholders have a lack of knowledge of silviculture and marketing dynamics, which leads to a cycle of under-investment;
- Gender bias leaves gaps in women's participation in silviculture and marketing.

Another social project team drilled down further to explore how 'wealth' differences between smallholders within a village might affect their take-up and deployment of community forestry. The Forestry Livelihoods project team developed a framework that demonstrated how differences in a smallholder's assets, whether held as knowledge, income or social networks, skewed the type of CBCF they pursued.

The research concluded that the wealthier a farmer, the more likely they were to benefit from existing CBCF programs.



CHAPTER 3

WHAT ARE THE IMPLICATIONS OF THE SOCIAL AND COMMUNITY DIMENSIONS?

THE FARM FOREST AS A BACK UP

To recap, Social Dimensions Analysis (SDA) research found that community-based commercial forestry (CBCF) plays a significant role in the livelihoods of many smallholders in the five project districts. While every farm is unique in terms of its area and enterprise composition, it is common for smallholders to have a mixed farming system comprising of three land uses: yard land (the area immediately around the house), wet land (the irrigated area, for rice production), and dry land (rainfed area for cropping and grazing). Typically, community forests are planted on the yard land and dry land, so that the produce for households and financial returns from community forests has the potential to act as a major source of food, fibre and income for many farm families. In Central Java, of overall household income, community forestry comprises an average of 25-32% (IDR 8 million-16 million per year, A\$890-1,780/year), with the average household income ranging between IDR 32 million-55 million (A\$3,550-6,100/year).¹⁷

Trees are typically planted in the yard around a house.



As elsewhere throughout Java, the yard land of smallholders resembles an artificial forest, a dense irregular planting of mixed species that serve multiple functions: household food, animal husbandry, shade and shelter, produce to be sold at markets, and beautification. Given the proximity of such forests, they often yield non-timber forest products (NTFPs) that are used on a regular basis by the farm family (see Case Study 3). Research estimates that NTFPs contribute an average of 64% compared with timber products' contribution of 36% of the total revenue from a smallholder's farm forest.¹⁸



Smallholders reported that by maintaining a high density of foliage – either among ground level crops or the tree canopy – they can reduce the impact of soil erosion after heavy rainfall, lower the air temperature, and inhibit the growth of weed. Sengon is well suited as its open canopy allows light and a range of NTFPs crops to be grown at different layers underneath.



The commercial value of NTFPs does not always represent the full value of each crop or product for the farm family, particularly as many NTFPs are used within the household to support their daily livelihoods. For example, corn is harvested, dried and stored, and in turn consumed by the farm family or sold commercially. Other crops, such as cassava, are harvested and sold directly to the processing factory by the farmers themselves, or sold to local traders who assemble a bulk load before selling to the factory.



Most fruit crops (including durian, jengkol, mango, rambutan and bananas) are harvested by farmers and sold as fresh fruit to local markets or traders. Project team leader Digby Race observed that “smallholders engaged in community forest activities in Central Java exhibit a high level of competency in relation to the cultivation, harvesting and post-harvest handling of a wide range of NTFPs.”

Smallholders grow a wide diversity of food crops, fruit and livestock, serving multiple functions and providing resources year round.

Smallholders also shared information that reflected a complex farm system, whereby they managed the integration and succession of many species so that food crops, medicinal plants, and fodder for livestock could be harvested on a weekly basis (short term); fruit and estate crops could be harvested on an annual basis (medium term); and timber trees could be harvested on a five yearly basis (long term).

By and large, however, SDA research found that commercial harvesting from smallholders' forests appeared to be largely sporadic and opportunistic. While the commercial sale of timber and NTFPs rarely represents the largest source of annual income for smallholders, their farm forest fulfils a vital function as a 'living savings account' to dip into for a special event. Like most families, smallholders occasionally need access to relatively large amounts of finance to cover, for instance, medical or education expenses, to purchase expensive capital items like a vehicle, or to expand and upgrade housing.

CASE STUDY 3

The role of NTFPs in commercialising community forest timber

Fodder and non-timber forest products (NTFPs) can contribute significantly to a smallholder's income. NTFPs grown on community forest lands consist of three types of crops (cassava, maize, sweet potato), two types of medicinal plants (cardamom, ginger), fodder grasses, seven types of estate plants (cocoa, coffee, cloves, coconut, kapok, pepper, vanilla), and seven types of fruit trees (jengkol, mangosteen, petai, bananas, breadfruit, durian, rambutan).

From the project team's research, the average contribution of NTFPs to farm income is about 64%. The split of this share is 47% from the fruit trees, 38% from the estate plants, 12% from the crops, and 3% from medicinal plants and fodder.

Crops, medicinal plants, and fodder grasses are harvested on a daily, weekly and monthly basis, while fruit trees and estate plants are harvested annually. Such variation means NTFPs can be harvested in rotation to meet short term, medium, and long term needs, particularly as most NTFPs can be stored in a dry form.

NTFPs play an important role in commercialising community forestry by offering income sources in the long gaps of five or more years between timber harvests.



Woman harvesting cassava.



Forests play an important role in the lives of smallholders, especially poor families. Even when community forestry is a mainstream policy agenda, it can be difficult for forestry to transform the lives of poor families. While the benefits of community forestry are generally increasing in range (e.g. timber, non-timber forest products, environmental services) and scale, there often remain challenging issues in the distribution of benefits. The existing local institutions, policies and programs, and commercial markets, can favour the privileged members of a community, making it difficult for forestry to be an effective pro-poor strategy.

Ref: Gilmour, D., Malla, Y. & Nurse, M. (2004) Linkages between community forestry and poverty. Regional Community Forestry Training Centre (RECOFTC): Bangkok, Thailand.

BUILDING KNOWLEDGE, CHANGING PERCEPTIONS

The SDA research discovered that even for farmers who had many years of practical forestry experience, most have a limited understanding of the commercial value of their 'living savings account.' Compounding this narrow knowledge base is that farmers rarely feel confident in their ability to measure and calculate the quality and volume of different products in their forests (e.g. matching timber to different market specifications), and so commonly defer to valuations calculated by middlemen, such as market brokers.

Another limiting factor was most smallholders' lack of knowledge of the silviculture necessary to grow the best quality forestry products. They do not know how to recognise superior plant seeds or seedlings. Pests and diseases are rarely spotted or controlled effectively leading to slower tree growth and high plant mortality, with pest outbreaks spreading to neighbouring trees and forests. Silviculture is usually geared towards short term secondary products, such as fuelwood for household use or fodder for livestock, rather than aimed at the more valuable timber market.

Few smallholders appeared confident in their understanding of how different approaches to thinning forests would affect their forests. Typically, they used traditional approaches or those recommended by 'outsiders' (e.g. forest agency staff or company staff). Unfortunately, this can leave farmers in a compromised position, either following ad-hoc, unscientific approaches or increasingly dependent on 'outsiders' for advice.

When combined, these limitations undermine farmers' confidence to invest in commercial forestry. They perpetuate the view that forestry is more suited to being set to one side, as an eddy away from the main stream of a smallholder's regular agricultural pursuits; a side show only to be visited opportunistically when the need for a lump sum arises.



Existing silviculture is geared towards short term, low quality products, like fuelwood.

The end result is a self-fulfilling feedback loop leading most smallholders into a cycle of under-investment in forestry. That is, low financial returns from community forestry reinforce the smallholders' view that the commercial side of forestry does not warrant increased investment – of their time, land area or finance. In turn, their limited investment leads to smallholders using inferior genetic material, poor silvicultural practices and displaying a weak grasp of the dynamics of commercial markets.

As project team leader Digby Race commented: “For many smallholders, the commercialisation process for forest products remains much of a mystery, so growers tend not to invest their time on silviculture that enhances tree growth and timber quality.”

Sengon, as already highlighted, is a timber tree that is particularly well suited to farm forests and can be readily sold into commercial markets in Central Java. Project research indicated, however, that most smallholders are yet to acquire the knowledge and skills to optimise the financial returns from growing sengon trees.

“Many smallholders are still persuaded to sell the timber from their sengon trees as soon as possible, with the result that a large proportion of logs are sold as ‘reject’ grade rather than ‘super’ grade because of small log diameters,” said Hugh Stewart, a key researcher in the project.



Women are often outside existing communication networks when it comes to the delivery of information and training on community forestry.

An integrated approach is required that fills smallholders' marketing and silvicultural knowledge gaps, changes their perceptions of commercial forestry and breaks the cycle of under-investment.

A key researcher in this aspect of the project's work, Setiasih Irawanti, said:

“Considerable scope exists to build the capacity of Indonesia's existing network of forestry extension staff to support farmers so that:

- Improved genetic seeds and seedlings can be readily identified and purchased;
- Recognition of early indicators of pests and diseases occurs, and effective treatments applied;
- The range of silvicultural options is known, and how different options influence the growth rates and quality (grades) of timber trees; and
- There is greater understanding of how various silvicultural options relate to the product specifications in commercial markets.”

GENDER BIAS

Much of the information and training for community forestry is being delivered via the extensive network of farmer forest groups operating across Indonesia. While building the capacity of farmer forest groups makes good sense, the SDA research demonstrated that in many of the project districts, women played a very limited role. Within local farmer forest groups, women are not usually first hand recipients of the information and training relating to community forestry.

At first glance, this may not appear a large impediment to the development of CBCF as men usually undertake much of the silviculture on behalf of a smallholder family. The SDA research revealed, however, that it is often the women of a farm family that negotiate the sale prices and have oversight of the commercial transactions for CBCF. An important finding, this serves to demonstrate that a widespread social disconnect exists in how information and support is provided for CBCF (i.e. to men via local farmer forest groups), and how farm families interact with forestry markets (i.e. via women).

Government, local NGOs and corporates ought to revise their strategies for supporting community forestry accordingly. As project researcher Nurhaedah Muin explained, “These organisations need to ensure that they provide opportunities to both men and women to participate in relevant capacity building activities, and are networked more broadly into CBCF expertise.” Given that men dominate most local farmer forest groups, it may require initiating a parallel network for farming women, along with a focus on understanding market dynamics and emerging commercial opportunities.



Research in India and Nepal found that the gender composition of local forest management groups affected forest conservation outcomes. Groups with a high proportion of experienced women on the executive committee (the principal decision-making body) had greater improvement in forest condition. The beneficial impact of women's participation in decision-making was attributed to women having greater opportunity to use their knowledge of forests, their contribution to forest protection, their strong compliance with rules, and greater cooperation among women.

Ref: Agarwal, B. (2009) Gender and forest conservation: The impact of women's participation in community forest governance. *Ecological Economics*, 68 (11): 2785-2799.

IMPLICATIONS OF DIVERSITY

Achieving socio-economic benefits for local communities from forestry involves managing a diverse range of interests that are often seeking different outcomes. Managing the tensions embodied in social pluralism and the disparities in power and knowledge between different members of a community lies at the core of overcoming entrenched disadvantage.

Clarifying the wealth status between different types of smallholders and their varying levels of access to knowledge and capital was seen by the researchers as an essential next step in order to ensure CBCF policies and programs became better targeted to enhance the livelihoods of all smallholders.

The Forestry Livelihoods project team set out to explore the component parts that go to make up a rural livelihood. As an organising principle of a rural livelihood's constituent parts, the project team adopted the useful definition: "... the assets (natural, physical, human, financial and social capitals), the activities and socio-economic processes and structures that sustain peoples' lives".¹⁹ The concept of the 'sustainable livelihood framework' was adapted by the project team, as shown in Figure 3. It highlights the complexity of smallholders' livelihoods.

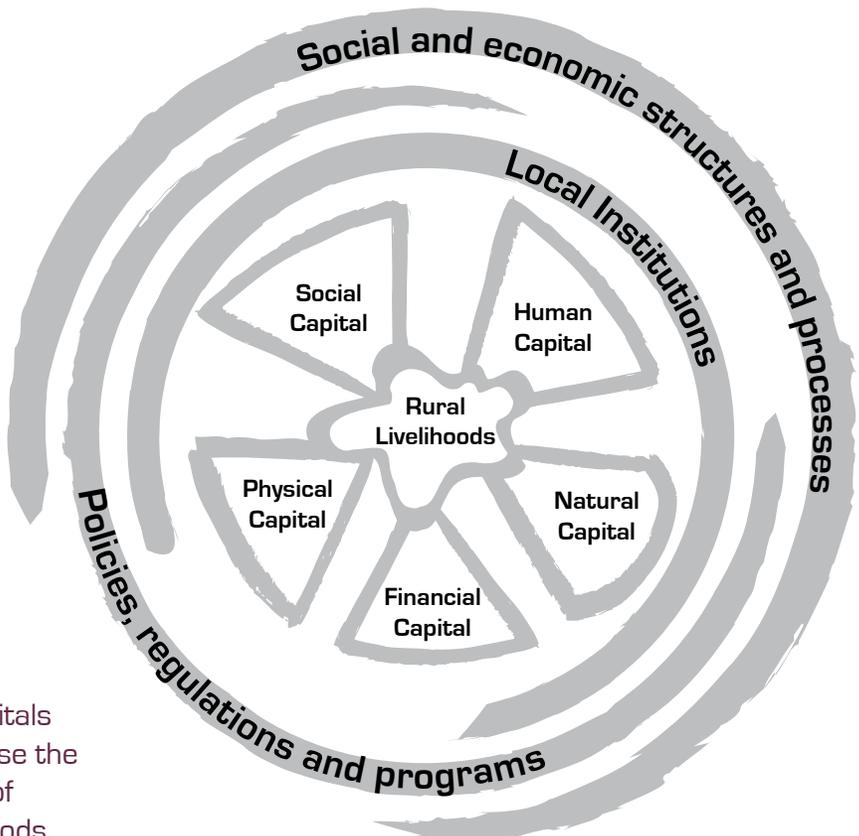


FIGURE 3:
The five capitals
that comprise the
foundation of
rural livelihoods.

Source: adapted by Digby Race from DFID 1999, refer Figure 2, Forestry livelihood framework, Oktalina et al. (2015).

RESEARCH METHODOLOGY

In developing a 'Forestry Livelihood Framework', the project team conducted interviews within 10 villages in the five project districts, involving 300 people covering a range of approaches to community forest management. The district locations for the study were Gunungkidul, Pati, Bulukumba, South Konawe and Sumbawa. The respondents were purposely selected to include a mix of wealth classes among local smallholders. The criteria for determining the wealth of different farmers were developed by the local community via focus group discussions on local indicators of wealth. The data was collected using several techniques, namely focus group discussions, a household survey and in-depth interviews with key people.

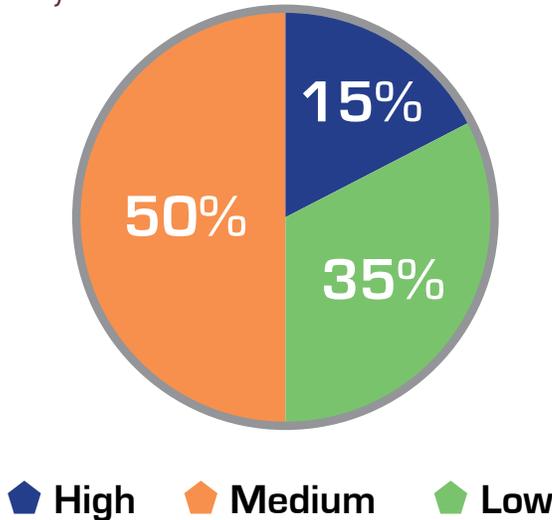
Land ownership was the only criterion nominated by the local community in all study sites, reflecting the importance of land as an asset for farmers. Most of the farmers involved in this study were classified as of 'medium' wealth, except in the villages of Payak (Pati district) and Lambakara (South Konawe district), where 'low' wealth farmers were more prevalent. Smallholders with 'low' and 'medium' levels of wealth represented about 85% of the total sample population. The proportion of 'high' wealth farmers was the smallest category overall, except in Semamung (Sumbawa district) which involved quite a high percentage of 'high' wealth farmers (40%).

TABLE 6: Source of income from CBCF for smallholders by wealth category in the 10 different villages.

Location	Percentage contribution of community forest to farmer' livelihood in wealth category		
	High	Medium	Low
Gunungkidul			
Dengok	5.5	2.1	10.2
Jepitu	40.3	32.6	6.5
Katongan	15.3	34.0	30.1
Pati			
Giling	8.1	42.6	13.3
Gunungsari	49.4	29.3	20.3
Payak	50.3	24.7	30.4
Bulukumba			
Benjala	2.3	11.7	17.6
Maleleng	23.4	24.0	21.6
South Konawe			
Lambakara	4.0	9.8	32.7
Sumbawa			
Semamung	9.3	1.7	6.3
Average of total	20.8	21.3	18.9
Source: adapted from from field data in location reports, refer Table 6, Forestry livelihood framework, Oktalina et al. [2015].			

MAPPING LIVELIHOOD ASSETS

FIGURE 4: The proportions of 'low', 'medium' and 'high' wealth smallholders involved in the study.



Source: adapted from field data in location reports, refer Figure 4, Forestry livelihood framework, Oktalina et al. [2015].

The livelihoods framework describes the interaction between the capabilities, assets, activities and social structures of people in fulfilling their needs.

Assets were defined as:

- Human assets – knowledge, skills, labour and abilities;
- Natural assets – access to, or control of, natural resources such as forests, land, crops and water;
- Financial assets – savings, income sources and access to credit;
- Physical assets – houses, vehicles, household contents and production equipment, as well as access to energy, water, sanitation, transport and technology;
- Social assets – social networks and partnerships that exist within a community.²⁰

In managing CBCF, smallholders use a range of assets such as land, tools and mechanical equipment, knowledge and skills, infrastructure and financial support.

The Forestry Livelihoods project team found that between each wealth category, the dominant assets used by smallholders for community forestry were different.

In undertaking their CBCF, 'high' wealth farmers mostly used physical and human assets, while 'medium' wealth farmers were more reliant on their physical and financial assets. In contrast, 'low' wealth farmers relied more on their social assets, drawing on their networks, peer group information, labour exchange and close relationships for managing community forests. Crucially, short rotation forest crops, such as sengon, often have more appeal to 'low' wealth farmers with few financial reserves, as compared with long rotation species, such as teak, even if the latter may ultimately deliver higher commercial returns (see Case Study 1, Chapter 2).

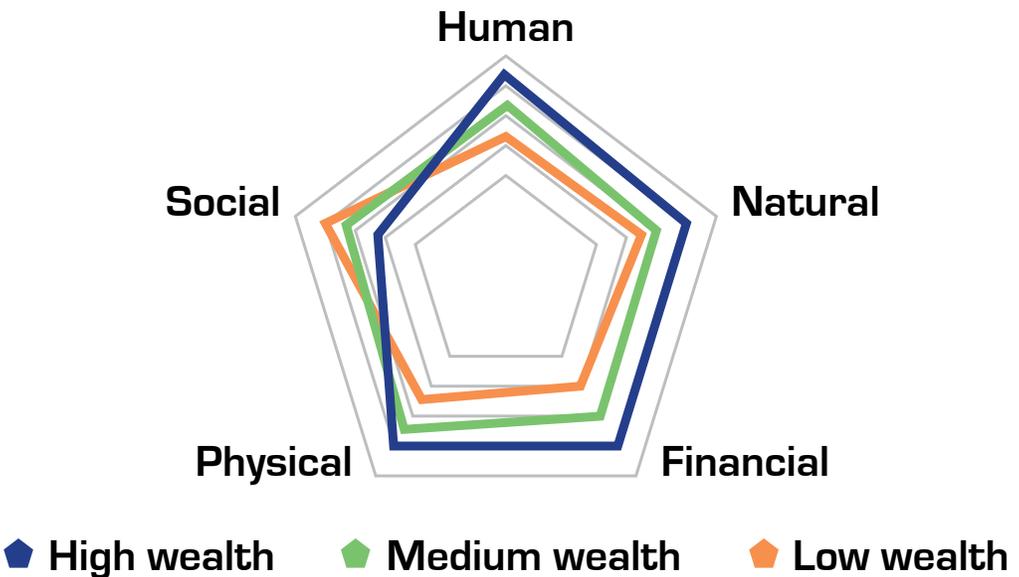
Of further interest, the researchers found that social and physical assets were generally of high importance in all wealth categories. Mutual cooperation where farmers help and work with each other is common at the village level in Indonesia. It is regarded as a traditional trait of the people and is referred to as *gotong royong*.

Understanding the strength of different assets among smallholders in a village can assist in the design of effective support programs. Forestry Livelihoods project leader, Silvi Nur Oktalina, pointed out how an assessment of the strength of assets available to individual farmers, or farming groups, could be helpful in determining what intervention or support might be advanced for developing CBCF.

“For example, ‘low’ wealth farmers have more limited financial assets than ‘medium’ or ‘high’ wealth farmers. As such, CBCF that generates commercial and/or subsistence products in the short term may have greater appeal to ‘low’ wealth farmers than forest systems that require a long rotation before tangible benefits are generated.”

A pentagon graph illustrating the particular strengths and weaknesses in the five livelihood assets displayed at different ‘wealth’ levels within a village is shown in Figure 5.

FIGURE 5: Example of strength of assets for different wealth levels among smallholders.



Source: adapted from Figure 12, Forestry livelihood framework, Oktalina et al. (2015).

Research by the Forestry Livelihoods team confirmed that the average contribution of CBCF to the total income of the farmers was 20%, including two villages where the average contribution of CBCF to household income was above 30% (Gunungsari and Payak in Pati district) as a result of a focus on short rotation species like sengon.

“In most locations, timber comprised the largest proportion of income from CBCF for farmers of ‘high’ and ‘medium’ wealth”, said team leader Silvi Nur Oktalina. “In contrast, in most locations, agricultural crops intercropped with trees comprised the largest proportion of income from CBCF for farmers of ‘low’ wealth.”

Generally, the research once again highlighted that community forestry products are diverse, consisting of timber, agricultural and estate crops, and a variety of non-timber products, such as foliage for livestock and medicinal plants. Agricultural crops provide the highest contribution to the incomes of ‘low’ wealth farmers (48%), but is a lower contributor to the incomes of ‘medium’ wealth (32%) and ‘high’ wealth (27%) farmers. Estate crops contribute on average about 21%, 13% and 10% for ‘high’, ‘medium’ and ‘low’ wealth farmers respectively. The main products from community forests in the form of timber contributes about 20%, 55% and 40% for ‘high’, ‘medium’ and ‘low’ wealth farmers respectively. Other community forest products, such as understorey plants and leaves can contribute about 19%, 6% and 13% for ‘high’, ‘medium’ and ‘low’ wealth farmers respectively.

Most Indonesian smallholders, however, usually regard CBCF as a back-up income source.

“Community forestry holds the potential to deliver so much more, such as income diversification, expanded local employment, and supporting their daily needs with agricultural crops or forage,” said key researcher Achmad Rizal Bisjoe. “In addition, community forests fulfil a number of environmental functions for the wider landscape, such as improved ecology, hydrology and erosion control.”

How to achieve a cultural shift that moves a smallholder’s tree growing front and centre is addressed in the next chapters.



Standardising tools for certification assessment would ease the burden for smallholders.



CHAPTER 4

IDENTIFYING MARKET PATHWAYS



The Market Pathways project team's objective was to critically evaluate the dominant market pathways adopted by smallholders for community-based commercial forestry (CBCF). This chapter summarises the results of the team's evaluation.

The evaluation's main component consisted of a 'value chain' analysis of CBCF. By definition, a value chain (i.e. market pathway) describes the full range of activities necessary to bring a product or service from conception and production through to marketing and delivery to the final consumer.

Another important issue to be explored was whether group marketing approaches (e.g. farmer cooperatives) were likely to prove worthwhile commercially.

Of the four market pathways identified it appeared that the farmer group approach could provide the most benefit to growers whether for short or long rotation species. The main reasons are the potential strength of a farmer group in developing direct marketing arrangements with a processor; the capacity of a group to understand local and regional wood markets (e.g. timber specifications and prices) so as to be able to negotiate fair prices; and the capacity of a group to participate in the certification process for timber.

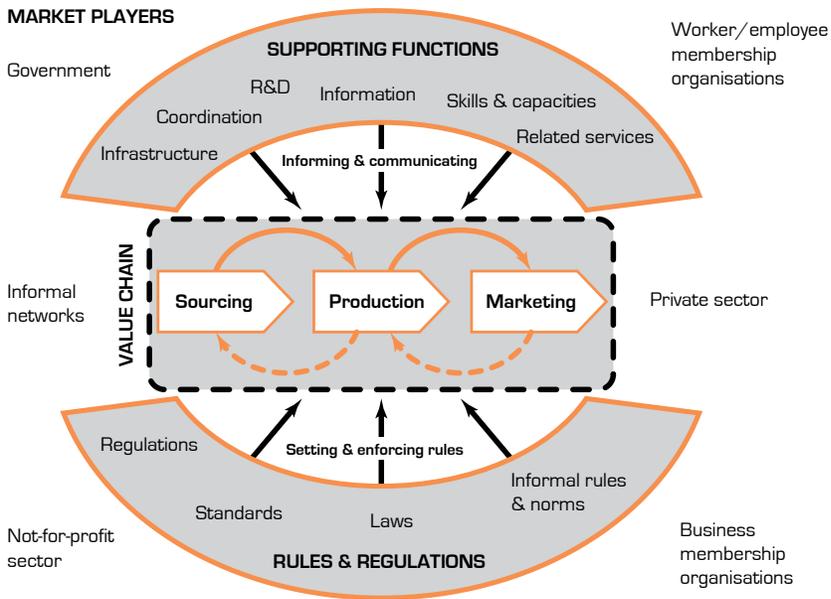
Middlemen, who were often farmers themselves, were found to have a crucial linkage role in most value chains. Most smallholders do not have sufficient knowledge or capital to sell their timber directly to timber depots or processors.

During field work, it became evident farmers neither monitored growth rates of their trees nor practised anything other than the most basic silviculture. Improving a farmer's knowledge on different timber grades and prices, and how these are linked with the silvicultural management of their trees is seen as essential to achieving better log quality and boosting net returns.



CHAPTER 4 IDENTIFYING MARKET PATHWAYS

FIGURE 6: Market framework for value chains.



Source: adapted from ILO2009, refer Figure 2.1, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

PROFILE OF A MARKET PATHWAY

The Market Pathways research focus was to collect information on regional markets in order to determine how each market pathway for CBCF operated, to develop maps of the value chains for CBCF, and analyse the costs and revenues for the main actors along each value chain.

By definition, a value chain describes the full range of activities necessary to bring a product or service from conception and production through to marketing and delivery to the final consumer. In theory, the value of a product should increase as the product passes through each and every stage of the value chain. Only this way can the various businesses in a value chain generate a profit and flourish in the long term.

Value chain analysis is a means of identifying market opportunities for small scale farmers to assist in the alleviation of poverty. ²¹ Knowledge of how value chains function could allow farmers to make more informed decisions about participation in markets for forest products. Also, value chain analysis can provide policy makers with a better understanding of how markets operate and could be organised to improve the livelihoods of smallholder forest growers.

This knowledge could be used to assist smallholder forest growers to increase:

- The total amount and value of products that they sell into the value chain; and
- The profits per product sold so they not only gain more absolute income, but also more income relative to the other actors in the value chain.

As with previous project teams, the Market Pathways team's analysis took place in the project's same five study districts of Indonesia – Gunungkidul, Pati, Bulukumba, South Konawe and Sumbawa. The term market pathway will be used in preference to 'value chain' in this chapter.

Starting in 2011, the research was conducted on timber grown by smallholders under their *hutan rakyat* (HR, private forest) system. The research concentrated on two important commercial species grown by farmers for different markets – teak (*Tectona grandis*) grown on 15-30 year rotations and sengon (*Paraserianthes falcataria*) grown on 5-7 year rotations. Other tree species grown by smallholders at the field sites were bitti (*Vitex cofassus*), sonokeling (*Dalbergia latifolia*), jabon (*Anthocephalus cadamba*), gmelina (*Gmelina arborea*) and mahogany (*Swietenia mahagoni*).

For each study district, the project team prepared a regional market profile for the main timber species grown, traded and processed. Finding information on log prices proved challenging, as no universal indices for log measurement and corresponding prices existed within the project's regions. Data was collected primarily by interviews.



Discussing the role of brokers in a project workshop.

ACTORS IN THE MARKET PATHWAY

Actors identified in the market pathways included individual tree growers, groups of growers, market brokers or middlemen, timber depots, and processing industries (sawmill, plywood factory, furniture industries, *phinisi* boat industry).

Market brokers play a lynchpin role in the CBCF and three types can be defined:

- *Penebas* - a broker who buys trees still standing in the forest and employs their own labour to harvest, transport and sell the logs to the next point of the market chain;
- *Blantik / perantara / informan / peluncur* - a broker who only provides information to *penebas* about farmers who are willing to sell their trees; and
- Wood depot - a company broker who usually has more capital and buys wood from *penebas* and sells it on to wood processors.

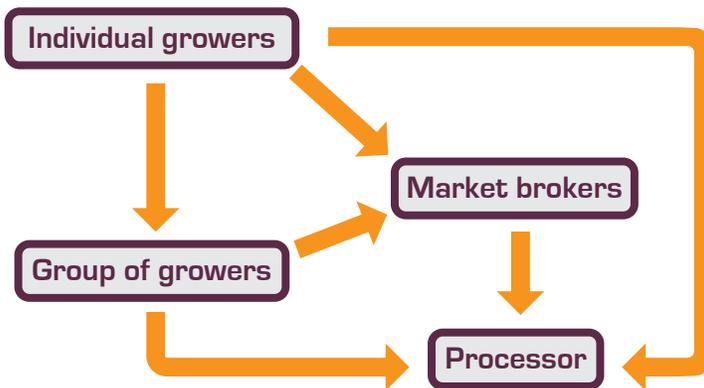
For each actor in the market pathway, information was collected on the type of timber product (e.g. standing tree, harvested log), the amount of the timber product (e.g. number of trees, cubic metres), the cost to produce the product (e.g. Indonesian rupiah [IDR] per cubic metre), the amount of added cost to prepare the product for sale, and the selling price. From this information, the profit and market margin for each actor in the market pathway was estimated.

Despite the team's best endeavours, there are gaps in the data, mainly related to data from the processing industries. Some businesses cited 'corporate confidentiality' as the rationale for not providing detailed pricing information. While not unreasonable, this stance highlights a challenge when researching market pathways that extend to the corporate sector.

FOUR MARKET PATHWAYS IDENTIFIED

The field work revealed that the market pathways were more complex than first thought. Originally, the project proposal identified one dominant marketing chain for each study district, but in practice the Market Pathways' research identified four general market pathways for CBCF (Figure 7).

FIGURE 7: The four market pathways studied by the project



Source: adapted from Figure 2.3, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

From the data collected and analysed, it was not possible to state that a particular market pathway was most applicable for a specific region or species. Many factors influence the success or otherwise of each market pathway. “While research identified one dominant marketing chain for each study location, in practice there were often multiple market pathways within a single location,” commented team leader, Hugh Stewart.

Some generalised strengths and limitations for each of the CBCF market pathways studied are provided in Table 7.

TABLE 7: Strengths and limitations of the four CBCF market pathways.

CBCF	Strengths	Limitations
[1] Grower-Broker-Processor	A good market pathway where (a) the growers have poor market understanding and (b) multiple brokers exist with whom to negotiate.	Individual growers are vulnerable when there is limited competition amongst brokers.
[2] Grower-Group-Processor	Growers able to build critical mass of supply, stronger negotiating position. Group should be able to negotiate better prices due to larger volumes and better capacity.	Grower groups need to acquire a degree of market knowledge and expertise to provide benefits to individual growers.
[3] Grower-Group-Broker-Processor	Growers able to build critical mass of supply, stronger negotiating position. Group should be able to negotiate better prices due to larger volumes and better capacity.	Market chain is long: many transactions with all actors needing to take a profit for the chain to work sustainably. Groups may have difficulty in maintaining uniform supplies from large number of growers.
[4] Grower-Processor	Market relationship is short, fewer transactions required.	Lack of market knowledge by grower could be exploited if monopoly market exists.

Source: adapted from Table 6.1, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

MARKET PATHWAY 1 (GROWER-BROKER-PROCESSOR)

Under this scenario, middlemen, or brokers, purchased trees from farmers, harvested the trees, processed the trees into logs or square planks and sold the products to timber depots or to processors. As traders in logs and timber, brokers were the main actors who determined farm gate prices in timber transactions.

Brokers were usually farmers who had more capital and knowledge in marketing. For example, in Gunungkidul, brokers were usually tree growers who had acquired capital to take on harvesting. To act as a broker, they needed to know the market, have the industry connection and the capital to hire the tree fallers and truck.

While brokers had different names in different locations – *pengepul* in Gunungkidul, *penebas* in Pati, *pelele* in Sumbawa, and *peluncur* in Bulukumba – in all districts, brokers had similar roles in the market pathways.



The pathway used by smallholders that connects them to markets plays an important role in determining the nature and extent of benefits they derive from commercial forestry. When smallholders sell forest products infrequently (e.g. high-value timber), they can be unaware of the potential commercial value, legal procedures, harvesting and transport costs, and the availability and cost of different contractors. Experienced and skilled market brokers ('middlemen') can provide a critical link for smallholders to access the benefits of valuable distant markets. Rather than selling their forest product to a market broker, smallholders could contract brokers to work on their behalf, paying them a percentage of the total product sold.

Ref: Race, D., A.R. Bisjoe, R. Hakim, N. Hayati, Julmansyah, A. Kadir, Kurniawan, P. Kusumedi, A.A. Nawir, Nurhaedah, D.U. Perbatasari, R. Purwanti, D. Rohadi, H. Stewart, B. Sumirat & A. Suwarno (2009) Partnerships for involving small-scale growers in commercial forestry: lessons from Australia and Indonesia. *International Forestry Review*, 11 (1): 88-97.

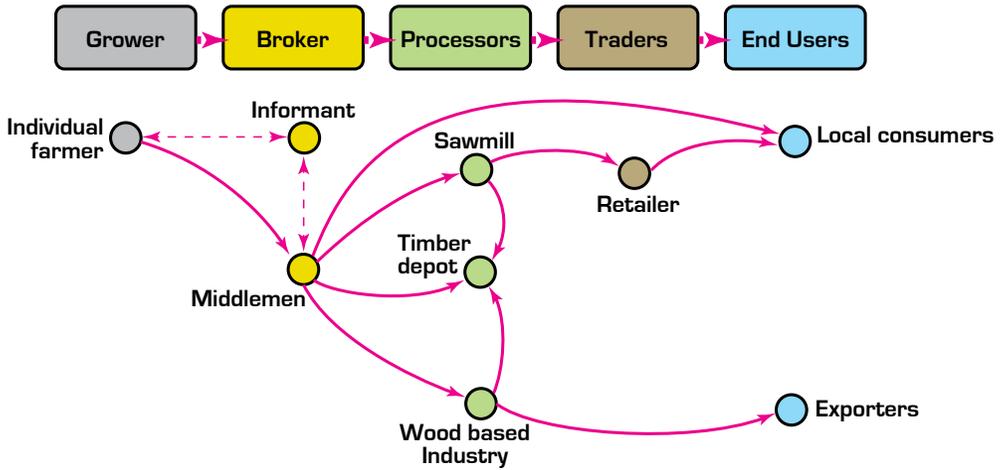
The number of brokers varied between districts. In Gunungkidul, three to five *pengepul* usually operated within a village. A smaller number was recorded in Sumbawa (two to three *pelele* within a village). In Pati, however, a number of *penebas* were recorded within a hamlet, leading to a relatively large number of brokers operating in a single village. It seemed that the number of brokers was proportionate to the intensity of market transactions in the locality. In Gunungkidul and Pati, another layer of market brokers existed who merely traded information between log brokers and farmers about who had trees to sell and what timber prices were on offer.

The market pathways were complex and rarely had simple pathways between the various actors. For instance, in Sumbawa, brokers sold squared planks to either a timber depot, a sawmill or directly to local households. Figure 10 demonstrates two complex and intricately differing market pathways for teak and sengon in the districts of Pati and Sumbawa, although both conform in broad outline to the schematics of Market Pathway 1.

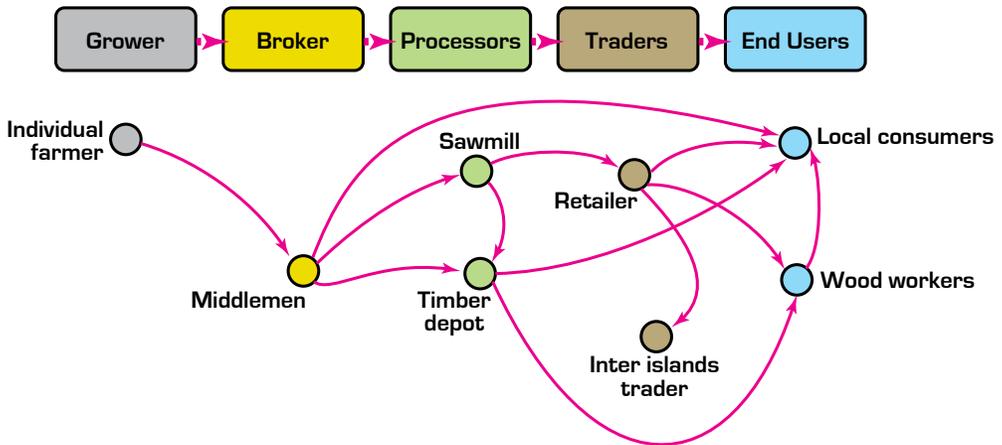
The profit share of brokers was not always greater than that of growers. An example of the costs incurred by a *pengepul* in Gunungkidul is provided at Table 8. In this case, costs were incurred for wages, meals, fuel for a chainsaw, rent of a chainsaw, timber transport documents, phone calls, electricity and permit. The cost of the required timber transport document was 14% of the total cost of harvesting and transporting logs to the log yard, and there were additional costs for a permit to transport logs to furniture industries in the Bantul District.

FIGURE 8: Comparison of Market Pathway 1's expression for sengon in Pati compared with teak in Sumbawa.

Value chain for sengon in Pati



Value chain for teak in Sumbawa



Source: adapted from Figures 5.3 & 5.4, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

TABLE 8: Costs to the market broker of harvesting, transportation and marketing of teak logs, Gunungkidul.

Cost components	Volume	Unit	Unit price (IDR)	Total cost (IDR)
Harvesting & transport costs				
				Costs per day
Wages	8	Worker days	50 000	400 000
Meals (including cigarettes)	1	Day	150 000	150 000
Fuel for chainsaw	8	Litre	5000	40 000
Chainsaw rental	1	Day	200 000	200 000
Timber transport documents	1	Package	150 000	150 000
Transportation	2	Trip	100 000	200 000
Miscellaneous	1	Package	50 000	50 000
Total			1 190 000	
				Costs per cubic metre
Harvesting output = ~14 cubic metres per day, which was transported in two loads to the log yard				
Total harvesting and transport cost				85 000 IDR / m3
Marketing costs at the log yard				
				Costs per cubic metre
Phone calls	Phone calls (1 month) cost IDR 75 000, 112 m3 of logs marketed			670
Electricity	Electricity (1 month) cost IDR 53 000, 112 m3 of logs marketed			473
Wages (unload, load)	Wages (1 week) cost IDR 400 000, 28 m3 of logs handled			14 286
Permit	Single transaction for 28 m3 of logs			3929
Transport (to Bantul district)	Single trip cost IDR 700 000 for 7 m3 of logs			100 000
Total marketing costs at the log yard				119 357 IDR / m3
Total costs for harvesting, transportation and marketing				204 357 IDR / m3
Source: adapted from Table 5.3, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).				

When the end product of the market pathway was sawn timber as at Sumbawa, the Market Pathway team’s analysis suggested that all three actors in the chain received similar shares of the profits. For the one case in Pati that involved a timber depot in the market pathway, the profit share of the timber trader was the lowest of the four actors involved. Where the end product had a high value (e.g. for furniture), the data indicated that the brokers and processing industries earned substantially more profit than the growers. The profit share for brokers was highest at Gunungkidul, which may have resulted from the high selling price of the timber and low operational costs compared to other districts.

Farmers who gained the greatest share in profits were those who grew the fast-growing species, like sengon, on short rotations, compared with farmers who grew slower-growing teak on longer rotations. The field data from Pati indicated that the growth rate of sengon was approximately 10 cubic metres per hectare per year for six years, resulting in approximately 60 cubic metres per hectare of logs available for harvesting.

MARKET PATHWAY 2 (GROWER-GROUP-PROCESSOR)

In this scenario, the farmers' market pathway was a farmer cooperative, which on-sold the timber to either processors or end consumers. Three cases occurred in the project districts – in Gunungkidul, South Konawe and Pati. Teak was the timber in the first two cases, while sengon was the species at Pati.

At Gunungkidul, farmers sold their timber to the cooperative *Koperasi Wana Manunggal Lestari* (KWML). KWML had obtained certification under the Indonesian Ecolabelling Institute (LEI) scheme. During 2012, KWML only recorded three sales of certified timber to European furniture makers. By the time project research was conducted, KWML was no longer buying and selling timber due to lack of demand for the certified timber. Instead, it was providing sawmilling services to locals.

In South Konawe, farmers sold their timber as squared planks to the cooperative *Koperasi Hutan Jaya Lestari* (KHJL) – see Case Study 2, Chapter 2. The planks were marketed to Javanese timber buyers producing certified furniture products. KHJL paid for transportation to Port Kendari and other significant transaction costs relating to permits and administration.

Of particular interest is that despite a high initial investment in certification, neither cooperative could find buyers for their premium priced, LEI certified timber. It would seem cheaper sources of Forest Stewardship Council (FSC) certified wood had emerged elsewhere in Java, undercutting demand for the cooperative's certified products.

Another relevant piece of data emerged when considering why the cooperative selling price of teak at South Konawe was so much higher than in Gunungkidul. The price difference reflected the grade of teak on offer – in South Konawe, the teak was derived from older aged forests, while in Gunungkidul the teak was dominated by small diameter trees from younger stands.

In Pati, growers sold their timber through Trees-4-Trees to a company selling controlled wood under the FSC certification scheme. The farmer group (*Sekar Ngelo Mandiri*) harvested the trees and cut logs to dimensions specified by the company. The company paid a price premium of IDR 100,000 (A\$11) for each cubic metre of certified sengon timber. The price premium was divided between the growers, the farmers group and Trees-4-Trees.



Although its market-driven elements are often emphasised, forest certification actually encompasses much more: certification encourages collaboration, facilitates conflict resolution, builds confidence and trust, promotes partnership, and promises a premium price. While the concept of forest certification was not initially widely supported in Indonesia, the formation of the Lembaga Ekolabel Indonesia (LEI), an independent accreditation body, in 1998 has seen support for forest certification increase. While forestry in Indonesia continues to face some foundational challenges – forest conversion to agriculture, overlap of land tenure, unclear property rights, risky market and investment conditions, social conflicts – there is growing evidence that certification can make a practical difference to improving forest management by some companies.

Ref: Muhtaman, D.R & Prasetyo, F.A. (2006) Forest Certification in Indonesia (pp: 33-68). In: B. Cashore, F. Gale, E. Meidinger & D. Newsom (eds) *Confronting Sustainability: Forest Certification in developing and Transitioning Countries*. Yale School of Forestry and Environmental Studies, Yale University: New Haven, CT, USA.

MARKET PATHWAY 3 (GROWER-GROUP-BROKER-PROCESSOR)

This scenario involved farmers in Gunungkidul selling standing trees to a farmer group, which then sold the timber to brokers who marketed to processors. The farmer group, called *Jati Pandowo*, was established by a timber broker, who bought FSC certified teak, and sold it to certified furniture producers in Yogyakarta.

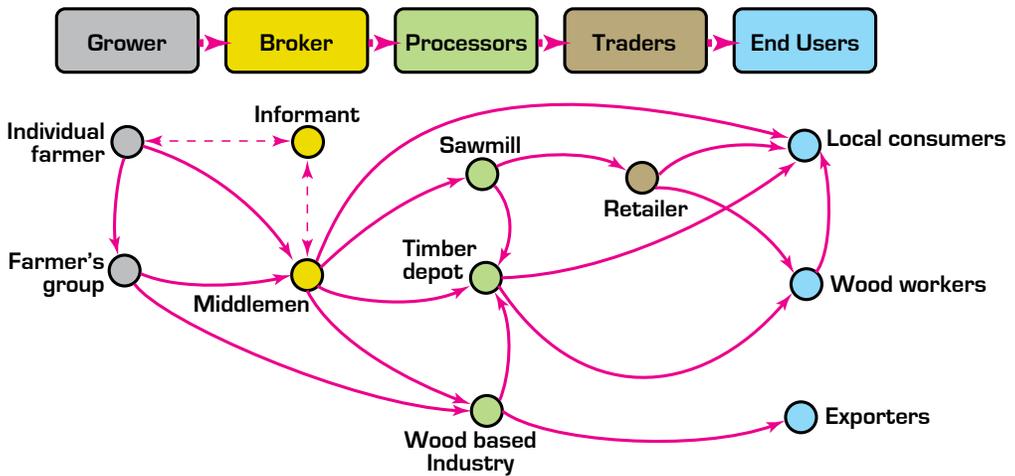
The stumpage price received by the farmers was the same as in Market Pathway 1. Most of the profit margin went to two brokers who did the timber harvesting for the farmer group.

The market broker, *CV. Dipantara*, only achieved 55% of its target for timber purchased from the community. This low performance resulted in high transaction costs and consequently ended up with the trader recording a loss on this series of trades.

The last market actors in this market pathway were furniture makers in Yogyakarta. Data analysis indicated that the company achieved its profit target of 10% of production costs.

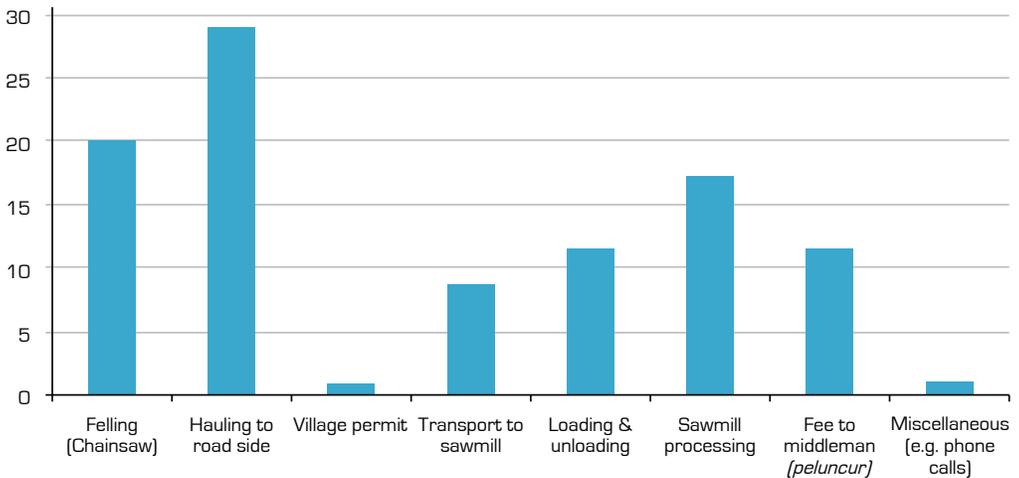
Figure 9 shows how adding a farmer group as an actor in the market pathway reinforces its complexity. It leads to numerous marketing options for farmers and brokers.

FIGURE 9: Showing the links and market pathways of the different business models studied.



Source: adapted from Figure 5.7, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

FIGURE 10: Cost components (%) of harvesting and processing logs into sawn timber for phinisi industry in the Bulukumba district.



Source: adapted from Figure 5.8, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

MARKET PATHWAY 4 [GROWER-PROCESSOR]

In the one research study for Market Pathway 4, farmers sold their timber directly to the processor. This was in Bulukumba where individual growers sold bitti (*Vitex cofassus*) trees directly to traditional *phinisi* boat makers.

Once again, however, brokers played a role in this value chain. The *phinisi* builders were usually helped by their own brokers (*peluncur*) to search for trees of suitable form to match *phinisi* components. The brokers then helped cut the timber into the required dimensions. Figure 10 shows how nearly half the costs in the harvesting and processing of bitti logs into suitable timber for the *phinisi* industry are borne by brokers in felling the trees and hauling the trees to the roadside ready for transportation to the sawmill.

Data results indicated that the proportion of profit gained by growers and processors was similar.

The district of Bulukumba has 27 *phinisi* builders from small to large in operational scale. Bitti usually makes up the frame component. Other timber species used in *phinisi* construction include teak, gmelina (*Gmelina arborea*), and iron wood (*Eusideroxylon zwageri*) – see Case Study 4.



Farmer in Bulukumba District with a bitti tree, which he sells directly to *phinisi* boat builders.

CASE STUDY 4

Expanding local timber sources for coastal boat builders



Traditional phinisi cargo boats ply the trade routes between the islands of the Indonesian archipelago.



Building a phinisi boat is still very labour intensive and can take up to six months.

The Market Pathways project team looked at ways of helping expand tree growing to support a thriving boat building industry in a coastal village in southern Sulawesi, Indonesia.

Increasingly, the builders of Indonesia's traditional, wooden, raised prow *phinisi* boats in the Bulukumba district are having to import the timber from further afield as demand and pressure on local sources grows. There are some 10 producers who are making between 2-5 boats per year, replicating a design that has changed little over the past 200 years. Sturdy and stable, the *phinisi* boats are the cargo workhorses for transporting goods between the 17,000 islands dotted throughout the Indonesian archipelago. Now, international buyers from Japan and Korea are commissioning the construction of *phinisi* boats for tourist ventures like diving expeditions.

"While the design has remained consistent, the construction techniques have evolved over the years – with some use of mechanical tools and synthetic glues – yet the traditional essence of the *phinisi* boats remains the same," remarked project leader Digby Race.

The project team visited local farmers within 10-20 kilometres of the coast, who are active in growing timber for the *phinisi* boat industry. Farmers have on average only 2 hectares each of land, and the *phinisi* boat industry needs hundreds of farmers to invest in growing the range of species required from fast growing sengon species to slower growing teak.

"The *phinisi* boat industry illustrates how commercial timber-based industries evolve over time and respond to changing socio-economic conditions," said Dr Race. "It also provides a positive example of how forest farmers, processors and retail markets are linked in the value chain with mutual benefits."

WHY BROKERS DOMINATE

In all four market pathways, individual smallholders sold their timber in the form of standing trees. The number of trees sold by an individual farmer in a single transaction was mostly determined by the amount of cash required. As already discussed, farmers often sold trees when they had an urgent need for a cash injection – this type of harvesting was known as *tebang butuh*, or ‘slash for cash.’ Consequently, there was no standard size or age of trees when farmers harvested and sold trees of a given species in a given locality. Sometimes, growers sold their timber en masse on a stand basis.

In particular, poor farmers faced pressure to sell their timber before the trees reached their most profitable size.

As it can take a considerable time to improve the capacity of smallholders to understand markets, middlemen are playing a crucial role in marketing timber from growers. Many of the market brokers are themselves farmers and the research found that their profit share was not always greater than that of growers. Where brokers are most fortunate is that they gain their profits over a short time horizon, sometimes as little as several days, whereas growers must wait at least 5-7 years in the case of sengon, and up to more than 20 years for teak.

“Given that most farmers do not have sufficient knowledge or capital to sell their timber directly to timber depots or processors, any interventions should be carefully designed so as not to undervalue the role of the middlemen as marketing channels for farmers’ timber,” said Market Pathways team leader Hugh Stewart. “It could be argued that increasing the number of middlemen in a timber production area may even lead to a more competitive timber market for growers.”

A case in point was Gunungkidul, where the market for teak was well established with prices for different grades of logs well known, and many brokers operating.

In this situation, the best immediate intervention would be providing training for farmers about the market. In contrast, in Sumbawa where the market was not as well established and there were relatively few brokers to buy timber from farmers, a better intervention may be to develop a farmer group to deal directly with industry. This would act as one way of reducing the risk for poorer landholders in a market that was not particularly competitive.



Timber broker indicating how he measures tree volume and value.

PREFERRED PATHWAY FOR OPTIMISING FARMER RETURNS

Arguably, the Market Pathway 2 (grower–group–processor) could provide the most benefit to growers whether for short or long rotation species. The main reasons are the potential strength of a farmer group in developing direct marketing arrangements with a processor; the capacity of a group to understand local and regional wood markets (e.g. timber specifications and prices) so as to be able to negotiate fair prices; and the capacity of a group to participate in the certification process for timber.

Hugh Stewart remarked: “Although Market Pathway 2 scenario could possibly be developed for all regions studied, it is unlikely to be applicable in all situations. Where it is preferred, it may take some time to develop to its full potential.”

Market interventions, such as linking farmer groups with processing companies through supply contracts, could potentially motivate farmers to invest more in their timber plantations. Research found that there was a need for more regional processing. For example, only a small proportion (less than 10%) of the timber produced by smallholders in Gunungkidul was processed in the district. More regional processing would potentially improve log prices to growers because of reduced transportation costs.



Community-based forestry enterprises can generate a range of benefits for local communities, such as: wages and other benefits of employment, direct profit sharing, investment in public infrastructure and programs, and capital investment in the enterprise – allowing the enterprise to consolidate, expand or vertically integrate. Some community-based forestry enterprises have also demonstrated a stronger environmental stewardship, than either private or public forestry enterprises. Successful community-based forestry enterprises require the same business acumen and management, access to markets, and profitable operations, as any other viable business.

Ref: Antinori, C. & Bray, D.B. (2005) Community forest enterprises as entrepreneurial firms: Economic and institutional perspectives from Mexico. *World Development*, 33 (9): 1529-1543.

OPACITY OF PRICING

The project team found the discovery of log prices challenging. There were no universal indices for log prices relevant to the project districts, and difficulties were faced in obtaining basic information about log specifications related to price information.

For any set of prices for logs, the basic information required are the species, log grade, log size (diameter, with the point of measurement specified and whether under-bark or over-bark, plus minimum length), unit of sale (e.g. Rupiah per cubic metre), and point of sale (e.g. standing trees or on truck). This information was only obtained for two of the project districts (Gunungkidul and Pati) on two different timber species.

The lack of information presented problems when comparing log prices between different species, markets and regions.

During the research, it became apparent that many methods and units were used when measuring the amount of wood either in the forest or after harvesting. Units included the number of trees, cubic metres of standing trees, cubic metres of squared planks, truck loads of wood. While various actors in the market pathways used conversion factors to allow them to transact their business, there was a lack of clarity and consistency in determining an agreed price for the wood in question.

“More uniformity in the way wood was measured and estimated along the market pathways would benefit smallholder forest owners,” commented team leader Hugh Stewart.

A lack of uniformity in log pricing disadvantages the farmer.



GUNUNGKIDUL LOG PRICES AND RETURNS FOR TEAK

Gunungkidul provided a good example of the reliance of smallholders on the middlemen setting log prices. As in most districts, farmers sold their teak trees to brokers on the basis of numbers of trees, not volume of trees or logs.

Based on interviews with farmers, all private forest owners sold trees in the form of 'stumpage' – that is, they sold the standing tree and the buyer harvested the trees.

The prices of logs paid to farmers in Rupiah [IDR] per cubic metre were inferred from a sample of logs bought by a broker who provided information on the number of trees, volume and price.

By triangulating prices inferred from interviews with brokers and farmers in Gunungkidul, it was estimated that the prices farmers received for teak logs ranged from IDR 60,000 to IDR 2.25 million (A\$7-250) per tree. On average, the price was estimated to be IDR 566,000 (A\$65) per tree, which was equivalent to IDR 848,000 (A\$95) per cubic metre.

Based on information from the Gunungkidul District Office of Forestry, the price of teak logs from private forests or *butan rakyat* in 2012 varied from IDR 0.5 million (A\$55) to more than IDR 5 million (A\$550) per cubic metre across six log grades, with the grades ranging in size from less than 13 centimetres diameter to more than 54 centimetres in diameter (see Table 9).

The prospects for the timber market in Gunungkidul are positive. In recent years prices for teak have tended to increase at a rate of about IDR 100,000 (A\$11) per cubic metre per year.

TABLE 9: Prices of logs teak derived from private forests in the Gunungkidul district, 2012.

Log grade and dimension	Price (IDR per cubic metre)
A1 <13 cm diameter	500 000 – 700 000
A1 13–22 cm diameter	1 000 000 – 1 400 000
A2 23–30 cm diameter	2 000 000 – 2 400 000
A3 >30 cm diameter	3 000 000 – 3 500 000
A4 >45 cm diameter	>4 000 000
A5 >54 cm diameter	>5 000 000

Source: adapted from Table 5.1, Evaluation of the dominant market pathways, Stewart, Rohadi et al. (2015).

IMPROVING SILVICULTURE

Another market intervention would be to improve a farmer's knowledge on different timber grades and prices, and how these are linked with the silvicultural management of their trees.

During field work for the project, it became evident farmers neither monitored growth rates of their trees nor practised anything other than the most basic silviculture.

Information on forest growth is necessary to conduct financial analyses of forestry. This would allow farmers to be better informed when making decisions about the best use of their land; or, if they chose to use their land for forestry, the best species to plant given their circumstances and the expected markets when the trees were ready for harvesting. It would also allow farmers to better understand the trade-offs between selling trees earlier than planned to satisfy an urgent need for cash, versus selling trees when they reach the planned rotation age designed to maximise the profit from the investment. Evidence from interviews was that farmers often sold trees under the most profitable age or size to meet a need for cash.

Wealthy farmers who have better access to markets and information could consider longer rotations, as well as speciality species to produce high value timber, or even taking on new species. Poorer farmers tend to have lower economies of scale and less capital. They are driven by circumstance to consider a combination of short rotation, commodity species, (e.g. sengon). Providing access to micro-finance could break this poverty trap, so that they do not have to sell their trees before they reach their most profitable size in order to obtain urgently needed cash.

Indonesian farmers tend not to thin trees to waste, which is a silvicultural method common to industrial forestry to concentrate growth on the best trees. This increases the value of the forest in markets that offer price premiums for better grades of logs. In Gunungkidul, for instance, there was a strong price signal for good quality teak logs. The price for the best grade of logs was more than 10 times the price of the lowest grade of logs. Despite this, farmers interviewed expressed the general view that all trees had some value, so thinning to waste made no economic sense to them.

The next chapter looks at methods for helping farmers to understand how applying best practice silviculture in timber management may potentially lead to higher profits.



CHAPTER 5

INCREASING FARMERS' KNOWLEDGE AND CONFIDENCE



Project research, as discussed in chapters 2-4, identified that improving smallholders' understanding of timber market requirements, tree and forest management and harvesting options could provide bedrock knowledge and skills for enhancing their livelihoods, as well as contributing to Indonesia's commercial timber sector.

In response to this central concern, the project team aimed to develop a learning approach for smallholders involved in CBCF that would enhance the quality of the timber produced and the value they received from participating in the commercial timber market.

During 2014, seven Master TreeGrower (MTG) courses were rolled out in the five project districts. Each short course followed a similar five part structure, which included a review of landholder interests in tree growing, exploration of local market opportunities, training in tree and forest measurement, education in tree growth and forest management, and discussion of future support needs. Written evaluations show that participants felt the course had greatly improved their understanding of many aspects of CBCF, particularly their knowledge of tree pruning and thinning for improved wood quality.

The MTG model represents a very different 'bottom up' approach to that generally adopted by Indonesian forestry extension agents. Innovative techniques included an early focus on market specifications and prices, and passing on measurement techniques and silvicultural science – knowledge that was previously the preserve of the forestry profession.



CHAPTER 5

INCREASING FARMERS' KNOWLEDGE AND CONFIDENCE

PAST EXTENSION APPROACHES

Following the success of the 'green revolution' in increasing crop yields in the 1960s, the predominant model of agricultural and forestry extension in Indonesia over the later part of the last century involved government extension officers working out of regional Rural Extension Centres. The extension focus across the full range of agricultural systems consisted predominantly of technology transfer, particularly with reference to the dissemination of improved genetic material, promoting the use of fertilisers and techniques for controlling pests and diseases.

Since 2000, there has been a transfer of responsibility for extension from the central to the provincial governments leading to a wide range of approaches across the country. A stated intention was to replace the traditional top-down approach with a more "linear research-extension-client farmer relationship with a bottom-up, participatory approach responsive to farmer needs."

This shift from a predominantly technology transfer extension model to one that recognises the need for extension programs to include human and social capital development, was occurring across the developing world and reflected the growing recognition that it was the market, rather than technology, that drove adoption and innovation. In Indonesia, this change saw the formation of farmer field schools and youth programs aimed at increasing the capabilities of farmers and their groups to develop appropriate solutions to their problems.

The extent to which participatory extension models have been applied to CBCF in Indonesia is less clear. Although forest farmer groups and cooperatives are quite common, their involvement in extension is often limited to acting as a vehicle for distributing incentives and disseminating management prescriptions - rather than seeking to work with farmers to develop forestry management options that reflect their particular interests. While teak, sengon, mahogany and some of the other tree species are highly regarded by smallholders for their timber potential, the previous research reports in this project have highlighted that farmers also value these trees for other non-wood reasons such as the protection and maintenance of agricultural crops and stock (shade, shelter, fodder production, natural pest control); conservation or enhancement of soil and water resources (soil erosion control, maintenance of organic matter, water filtration); biodiversity (flora and fauna conservation); and aesthetic or cultural values.

To understand farmer investment in timber plantations, it is important to acknowledge the complex range of social and economic factors that might be expected to affect the appropriate location or management of trees on farms. Woodlots, for example, might be planted on land unsuitable for agriculture or in excess to current food production or cash-cropping requirements. In some cases, the primary purpose of a plot of trees might simply be to signify land ownership and productive intent, rather than the commercial return from a future harvest. On farming plots, trees might be planted as a boundary marker, to stabilise irrigation check-banks and terraces, or, as an overstorey to provide shade for sun-sensitive crops. Around the homestead, trees provide shade and shelter for the family and livestock, and a ready supply of fuelwood or fodder for children to collect.

Understandably, given the time frames involved in growing high value logs, farmers who plant trees might have given very little thought to future market specifications and prices when considering the planting design or early management of their trees. Even when the trees approach marketable size, farmers may not be interested in maximising the cash value of their forest. For example, it has been suggested that most teak growers in Java view their standing trees as a form of living savings account that can be drawn on when and as required.

The challenge facing the project team was to develop a learning model for smallholders that would enhance the quality of the timber produced and the value they receive from participating in the commercial timber market.



The location of trees serves many purposes: in this case, as a boundary marker and a living fence.

CASE STUDY 5

Bigger is not always better

Farmers often assume that the quality of wood is only based on the size of the tree. While it is superficially true that the larger the tree, the more a farmer often makes in total, size does not, unfortunately, always equal quality.



This tree's poor form means it will never meet timber market standards.

This was brought home to the project team when visiting a wood processor in Pernek, Moyo Hulu district, Sumbawa. *CV Makasar Utama* performs simple log processing of teak into planks, which are then divided based on their suitability as flooring, decking, and parquetry. The manager Mr Acep, pointed out many defects in the timber supplied by smallholders from local villages caused by inadequate tree management. He showed the project team samples of decay resulting from poor pruning, knots from large branches, short lengths resulting from poor log shape.

"There are market standards that need to be fulfilled," said Mr Acep. "If the wood is not good enough, it is definitely going to be rejected by the market."

When *CV. Makasar Utama* was starting up, they found that up to 40% of the total volume of timber they sent to buyers failed to meet market standards.

"It is difficult to explain to farmers about the market standard," said Mr Acep. "It can't only be viewed from the size of the tree."

The defects in sawn timber reduce a log's strength and beauty, slow down processing and directly affect the value of the end product. The best grade timber can be sold for more than twice the price of the lower grades. A good clean straight log can produce more than twice the volume of sawn timber and at a much lower cost of production. As a result, the sawmiller can pay the farmer much more for a well-managed tree.

ALTERNATIVE LEARNING APPROACH

Observers have raised concerns regarding the quality of logs and timber being produced by smallholders and the apparent missed opportunity to increase the financial rewards received by growers. Although other concerns include closed or uncompetitive timber markets, and limited access to capital and obstructive regulations, a number of researchers have over the past decade concluded that the greatest opportunity for enhancing farmer returns lies in remedying poor silvicultural management (particularly the lack of effective pruning and thinning).

Drawing on past experience based on the Australian Master TreeGrower (MTG) program developed by Rowan Reid and colleagues at the University of Melbourne in 1996, the team chose to design and test a flexible participatory learning model that could be presented as a short course for a group of farmers in each of the project's five study districts.

At the outset, the project team worked closely with local partners to conduct a 'skills and knowledge' appraisal of all the farmer forest groups involved in the four market pathways models of CBCF.

As identified by the project team, the overwhelming knowledge and skill gaps among smallholders related to:

- How the local/provincial forestry market operates: via demand for different products, specifications of different products (grades, log length), scope for alternate products, and alternate strategies for negotiating in the market place;
- How to measure and describe tree and timber volume and quality: via measuring tree and diameter, height/length and volume, assessing stocking rate and describing forest attributes such as mean diameter, basal area and competition levels; and
- How smallholders can guide and influence the growth and development of their forests: via choices of species and germplasm, planting configuration and by actively managing their trees as they grow.



Master TreeGrower founder, Rowan Reid, with Silvi Nur Oktalina and Dwiko Permadi.

ADAPTING THE AUSTRALIAN MASTER TREEGROWER PROGRAM

A review of the Australian MTG model in collaboration with relevant local training providers settled on a five part framework for the farmer learning approach for delivery to Indonesian smallholder timber growers in the five project districts.

The key elements of an effective approach were identified by the project team. (e.g. information needed, source of information, credibility and reliability of information, how information is interpreted and used by farmers). While the nature and format of the 'learning approach' was to maintain commonality across the five varying project districts, course delivery was, however, expected to adapt to suit local needs, aspirations, physical conditions, market types and social issues. The course format was furthermore designed to take into account the results of previous project research and the skills and knowledge appraisal.

The participatory 'farmer-first' curriculum focused on the following five aspects:

1. **The role of landholders in community forestry:** The design and management of personally appropriate community forestry systems that reflect landholder and stakeholder interests;
2. **Markets for forest products and services:** Product specifications and prices, harvesting and marketing options, marketing agreements, certification systems, regulation, cooperative marketing;
3. **Measurement of trees and forests:** Training in use of a diameter tape (DBH, volume, basal area, etc.), measurement of commercial products (growth, volume, value, etc.) and forest values (carbon, soil); modelling growth;
4. **Management of trees and forests:** Nursery production, establishment, pruning, weed control, planting methods, pest and disease, coppice management; thinning, tree growth & competition, risk management, interactions with agriculture and other systems and cooperative management;
5. **Appropriate design and farmer networking:** The design of appropriate forestry management plans for each farmer and the role of farmer groups and peer mentoring in providing ongoing support.

MASTER TREEGROWER COURSE DELIVERY

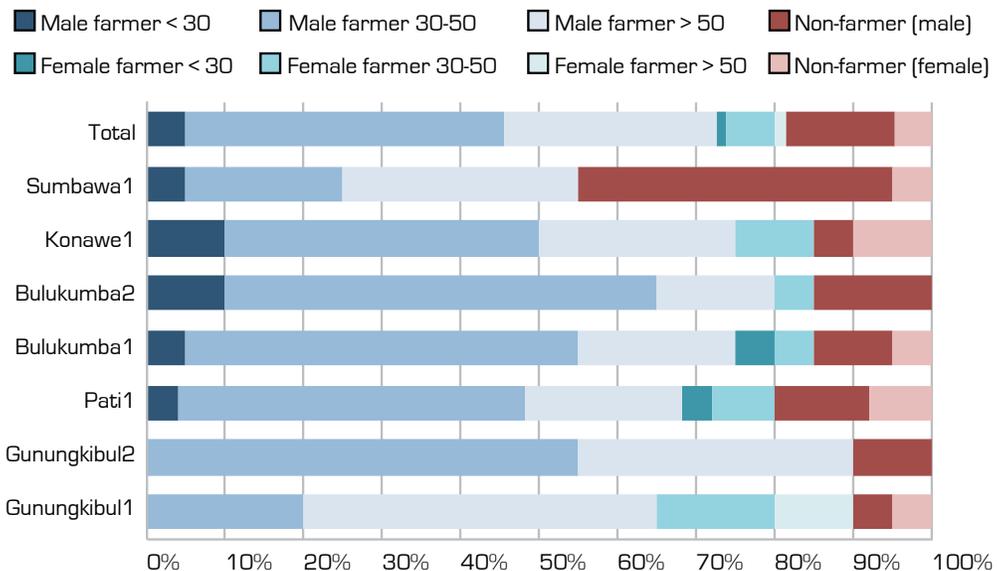
The first Indonesian MTG course was presented to a group of farmers in the Gunungkidul region in March 2014. Following each day of the course, the project team reviewed the day's activities and discussed plans for the following day.

At the end of the course the participants filled out an evaluation form providing their views about the value and relevance of the program and suggestions as to how it might be improved.

After the first MTG course, the team leaders prepared guidelines for the design and delivery of future MTG courses and provided training materials including powerpoint presentations, measurement tapes and pruning gauges. The Australian Agroforestry Foundation also provided MTG hats and signs for all participants. Six further Master TreeGrower courses were then delivered within each of the five project districts and the data collected by members of the project team. The content and format of each program was designed to reflect the tree species and local CBCF market pathway.

One hundred and forty-five people participated in the seven regional courses. The majority (81%) were farmers and of these 11% were female. Local government extension agents and local partners selected the participants on the basis of their interest in the project, their tree growing activities and their involvement with local farmer groups. Non-farmers (18%) included government extension agents, forest officers, industry members and those involved with related non-government organisations. Of the non-farmer participants, 26% were female. The varying mixes of participants from region to region are shown in Figure 11.

FIGURE 11: The mix of participants in each of the regional MTG courses showing their gender, age and whether or not they were primarily farmers.



Source: adapted from Figure 4.2, Overcoming constraints to CBCF, Reid and Syafii. (2015).

Six of the MTG courses were presented over a period of four days and only one was extended to include a fifth day. While initially committing to a five day program, the project team decided to reduce the course to four days, thus reducing the amount of time allocated to the development of individual appropriate tree growing management plans and the ongoing information and support needs of the local community. For their part, the majority on the project team thought a five day course would exceed farmers' interest.

Although the content was adapted to suit local conditions, all the courses had a strong emphasis on the core elements of markets, measurement and management. In each course most days began with a review of the previous day's activities and classroom lessons before heading out into the field for practical sessions in the afternoon.

Other than in the first course, which provided training for the project team, the final element (farm visits, graduation and the future) was limited to less than half a day and largely focused on the presentation of gate signs and certificates.

EVALUATION BY COURSE PARTICIPANTS

Consistent across all the courses was adherence to the five part conceptual framework, which provided a starting point for review of the overall program and its impact.

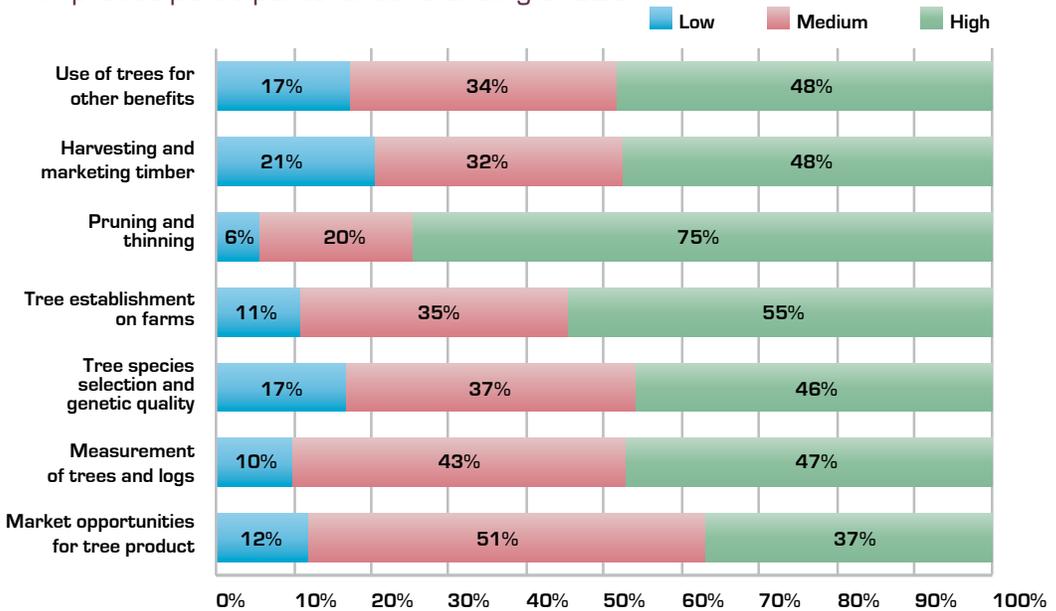
At the completion of each course participants were asked by the course coordinators to complete a written survey. Additional information gathered by the project team included photographs of each day's activities, informal interviews of both participants and presenters (some documented in videos), observations and reflections of the local coordinators and articles in the local and regional press. A day long review workshop was conducted in Yogyakarta involving the project team, which provided further data for the evaluation of the project.

A key question in the written survey at the conclusion of each MTG course asked participants to rate the degree to which their involvement in the MTG course had improved their knowledge of a number of aspects of CBCF. The results across all courses are presented in Figure 12.

Another question in the written survey asked participants to identify the three most significant or useful experiences or lessons they had experienced during the course. The aim was to draw out the key learning experiences. The course framework provided a structure for summarising these responses into the appropriate categories in the MTG framework:

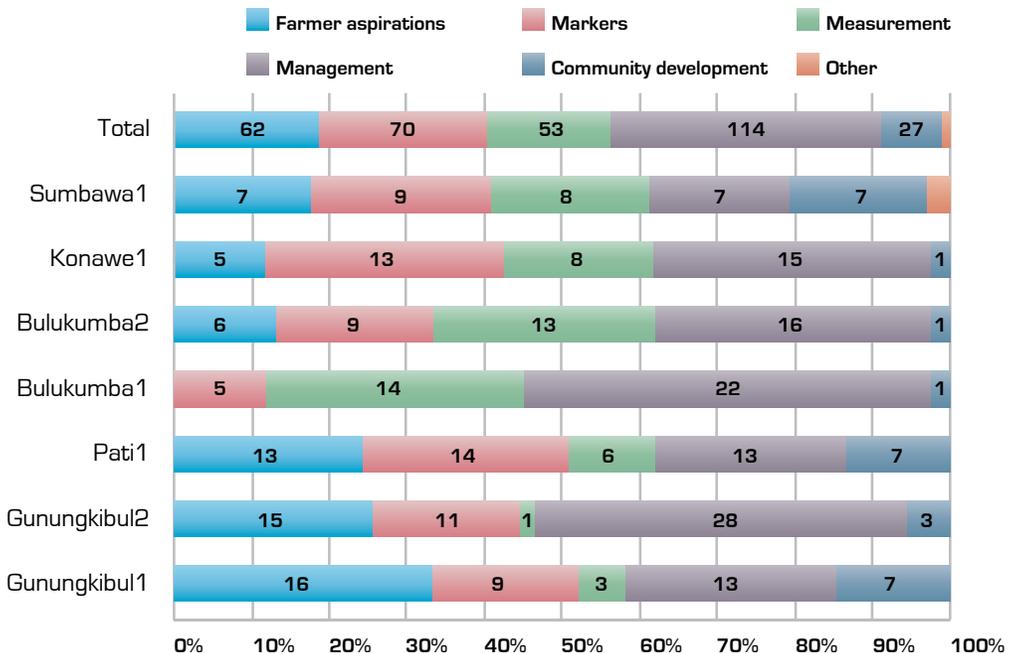
1. Personal aspirations, opportunities and knowledge;
2. Market information and networks;
3. Measurement skills and knowledge;
4. Management skills and knowledge;
5. Community development and networks.

FIGURE 12: The degree [%] to which involvement in the MTG course had improved participants' understanding of CBCF.



Source: adapted from Figure 5.1, Overcoming constraints to CBCF, Reid and Syafii. (2015).

FIGURE 13: The most significant learning experience as identified by MTG course participants.



Source: adapted from Figure 5.21, Overcoming constraints to CBCF, Reid and Syafii. (2015).

KEY FACTORS ARISING FROM PARTICIPANTS' SURVEY AND TEAM REVIEW

The following discussion identifies some of the key factors that appear to contribute to a successful learning approach for farmers.

PUTTING FARMERS FIRST

Previous project research demonstrated that Indonesian smallholder forest owners have a wide range of reasons for wanting to own or manage a forest. They also use a variety of criteria when making forest management decisions or judging forest values. Because of this, the MTG team regarded the participant introductions undertaken on the first day of each course as an important exercise.

As the landholders introduced themselves, the plan was to encourage them to share their motivations and interests in tree growing. The session facilitator would then categorise their responses under four headings: agricultural values, conservation values, aesthetic value and production or commercial values. Although participants were clearly aware that the focus of the course was on commercial timber production, it was anticipated that this exercise would demonstrate that all interests are valid and that participants have very different motivations and expectations.

MTG founder and team leader, Rowan Reid, describes the underlying objective of the Australian Master TreeGrower program as supporting farmer involvement throughout every stage of planning and tree management. This necessarily requires that forestry, as taught within the MTG course, must “reflect the diversity of interests, resources and aspirations of the farming community.” To achieve this, Reid argues that, “farmers need to know how to design and manage forests to meet their own needs while producing the tree products and environmental services sought by the market and the wider community.”

An effective farmer education and extension program is one that is seen, by the landholder themselves, as directly relevant to their own interest and aspirations. Reid points out that courses that focus on timber production alone tend to be less attractive to farmers.

MARKET DRIVEN APPROACH TO CBCF EDUCATION AND EXTENSION

The second stage of the Master TreeGrower framework focused on the market opportunities available to smallholder tree growers, which is defined as including any tree-related product or service that might be traded with another party to provide financial gain, whether it be in the form of currency or in-kind.

The market component not only provided a list of product specifications and prices, but also gave landholders an understanding of the harvesting, marketing and processing methods, the cost structures facing traders and processors, and the factors likely to affect specific product markets in the future. In addition, each of the MTG courses included visits to processing plants and presentations by industry players as a means of either initiating or strengthening the relationship between farmers and the industry player who might purchase their products.

Approaching industry players is not a usual part of Indonesian community forestry extension. At the review workshop, some course coordinators reported that participants had commented that they only ever learnt the price of wood from the broker and that they really valued the access to first-hand information about markets for forest products. A leading extension specialist in the project team, Syafrudin Syafii, remarked that seeing the relationship between wood quality and price "... had opened the participants' eyes to the importance of management." As the courses proceeded, it became clear that having an early focus on the market supported the subsequent training in tree measurement and management.

Courses also recognised that the landholder themselves could act as the 'purchaser' of their own products or services, thereby saving money for the household. Examples include for the personal use of firewood, building materials, medicine, food, fodder or even fertilisers that the landholder would otherwise need to spend time or money obtaining from an alternative source.

In the survey evaluation, participants were asked to rate the degree to which their involvement in the MTG course had improved their understanding of the market opportunities for their tree products. Across all courses, 37% of participants gave a high response, whereas only 12% gave a low score. A village head acknowledged in his survey response what was at stake: "Plant a tree based on market demand."



Economic development and urbanisation can offer new commercial opportunities for smallholders to supply high value markets. To successfully engage with dynamic markets, smallholders may need to transform the way they organise their business, and create higher levels of social capital to strengthen internal and external relations with group members, service providers and market chain actors. Smallholders may also need to learn new skills and integrate multiple technical, organisational, financial and marketing innovations. Such changes need not be led by government agencies or other organisations, but are possible if smallholders have supportive leadership, take on new responsibilities and are willing to learn new skills so they can engage with high value markets.

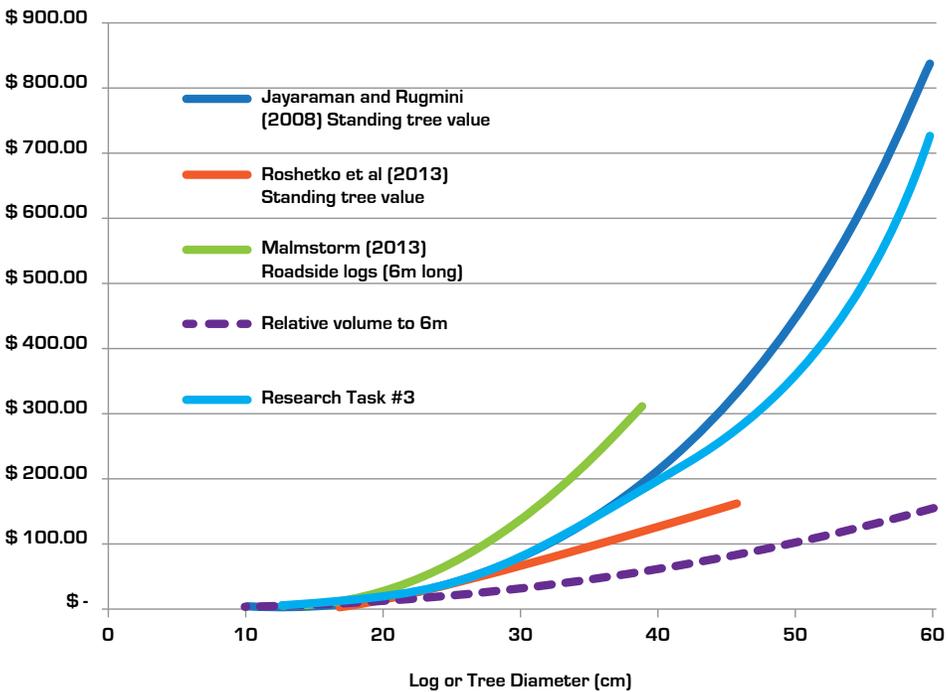
Ref: Kaganzi, E., Ferris, S., Barham, J., Mulema, A.A., Sanginga, P.C. & Njuki, J. (2009) Sustaining linkages to high value markets through collective action in Uganda. *Food Policy*, 34 (1): 23-30.

TEACHING FARMERS HOW TO MEASURE TREES AND FORESTS

In each course, participants were given a measurement tape and some basic instruction on how to measure their trees. Overall, the MTG measurement tape was very highly rated by the participants, with 68% of all participants making the tape the most highly valued piece of equipment they had received during the course.

Reviews of log prices for teak in Java have concluded that diameter was the main factor that determined the value of farm grown logs.²² They noted that increasing the breast height diameter from 16.8 to 20.4 centimetres would increase the value of a standing teak tree by over three times despite the increase in volume being less than double. Figure 14 provides a comparison of the relationship between log diameter and value.

FIGURE 14: A comparison of the relationship between log diameter and value for teak.



Source: adapted from Figure 3.1, Overcoming constraints to CBCF, Reid and Syafii. (2015).

At the review meeting, the project team discussed the value of the measurement exercises and the provision of a diameter tape to farmers. They concluded that farmers, mostly with very little conventional education, were generally able to understand and use the tape to measure diameter, height and volume and could use this knowledge to predict prices. One mentioned that the tape provided a “really important link” between the discussion around markets and management. Another farmer explained the link: “I can estimate my timber volume and estimate the price.” A third farmer felt that the multi-functions of the MTG tape and the ability to measure basal area provided farmers with the “confidence to thin.”

Whether farmers fully understood the concept and assessment of basal area and its role as a measure of competition was less clear. Nonetheless, the members of the project team felt that there was value in farmers knowing that such a measure existed and that, with additional guidance and support, many farmers would gain the ability to use it as a guide to their forest management decisions.

SILVICULTURAL EDUCATION RATHER THAN TECHNICAL TRAINING

Each of the MTG courses included information on tree management. In practice, log diameter is only one factor affecting teak log value. Poor stem form, heavy branching, epicormic shoots, pruning history, heartrot, fluting, wood colour and the presence of nails or fencing wire have all been noted as factors that can reduce the value of a teak log.

While there was a recognised need for pruning and thinning existing forest, the courses also provided information on species selection, the role of genetic improvement, tree establishment options and harvesting methods as appropriate to each region.

Sessions on silviculture emphasised the value of pruning to improve timber quality and the potential for thinning to enhance diameter growth. The participants were given a simple pruning gauge that could be used to guide the timing and extent of pruning.



Eko Hardiyanto demonstrating how to use the measuring tape. MTG participants valued the measuring tape highly as providing an “important link” between markets and management.

Many researchers have in the past expressed frustration at the reluctance of Indonesian timber growers to thin their trees in order to encourage diameter growth and therefore reduce the rotation length and enhance the market value of their trees. During each course, presentations and field tours sought to demonstrate the impact of thinning on tree growth. Farmers were also trained in how to use the diameter tape to measure basal area and the value of this as a guide to determining when and how to thin.

However, inter-tree competition can be a difficult concept to understand, even for many professional foresters, so it is unlikely that many of the farmers fully grasped its intricacies during a short course. Nonetheless, the value of thinning was specifically mentioned by 42 of the 145 participants (nearly 30%) in their written surveys, and government officers showed interest in the thinning principles and methods introduced. In the survey results, participants wrote that they had gained an understanding of the link between silvicultural management (particularly pruning and thinning) and the market value of their trees. A member of the project team, Devi Silvia, reflected in the review: “The course had changed the farmers’ paradigm from ‘plant and leave’ to ‘plant and manage’.”

On the use of genetically improved planting stock by farmers, much of the project team’s review focused on how many of the smallholders could either not afford to purchase improved stock or were not convinced that the differences warranted the additional expense. Coverage of tree establishment options and methods was rated highly by participants.

MASTER TREEGROWER HAT AND SIGN – WHAT’S IN A NAME?

Early in the course, all participants and course coordinators were given a Master TreeGrower hat. On course completion, participants received a certificate and a Master TreeGrower sign at a small graduation ceremony amongst participants and facilitators.

Team leader, Rowan Reid, says his choice of the term ‘Master’ is deliberate in that it seeks to encourage landholders to actively participate in the design of their own forestry projects to ensure they reflect their own needs, aspirations, resources and risk profile.

At the review, researcher Bugi Sumirat reported that many of the participants were “... very proud of their hat and sign.” Some of the team also felt that giving the course a name like the Master TreeGrower helped them promote the course as something quite different to what had been delivered in that region in the past and highlighted that the course was part of an international program with links to Australia and Africa.

One member noted that the impressive name gave women more ability to “... seek permission from their husbands” to attend.

Participants valued the sign more than the hat, but less than the pruning gauge and diameter tape.

CASE STUDY 6

Learning from past experience and changing for the better

For some farmers, deciding whether or not to continue to manage their teak farms or selling them to buy paddy or crop fields is a difficult choice. Mr Nurdin, one of the farmers in Semamung Village, Sumbawa, was aware that growing teak could result in big profits. His trees, however, were not in good condition, and the length of time until harvest was causing him unease.

When the project team visited, Mr Nurdin, expressed his doubt, saying how he planned to sell the farm, and switch to managing paddy or crop field. While the teak trees on his land were almost ready for harvest, most were crooked and branching.

“We are poor farmers,” recalled Mr Nurdin. “A few years ago when we needed money, we cut down the trees and left it the way it is.”

Improper logging and poor silviculture had led to his farm’s run-down condition and his considering making a fresh start. MTG task leader Rowan Reid said the alternative was to learn from experience and adapt: “Past is past, but there are always things that we can do to make change for the better.”

Rowan offered two solutions to overcome Mr Nurdin’s problem. First, cut out all trees on the land and start planting again from new seeds. Second, examine the condition of the trees, pruning branches on those that were not crooked, leaving their major stems to grow better. Trees of poor form could be harvested and sold, providing space for the managed trees to add girth.

Mr Nurdin and the farmers gathered at his place had never practiced the key silvicultural techniques of thinning and pruning. With the aid of two simple MTG tools, the measuring tape and pruning gauge, Rowan invited the farmers to directly practice the techniques of thinning and pruning.

“You only have to work on thinning and pruning once in a year,” Rowan told the farmers. “It’s easy to put into practice, and by doing so, the timber from your trees will be higher in quality.”



MTG participant demonstrating how pruning can improve a tree’s timber quality.

IMPACT ON FARMER AND EXTENSION OFFICER BEHAVIOUR



On course completion, participants received a MTG hat, sign and certificate.

The best measure of success for the MTG course as a learning approach will be how it affects the behaviour of participants and others within their communities.

Participant farmers were asked in the survey to indicate how they thought their involvement in the MTG course might change what they did in the future. By far the greatest number of responses (82 of 132, about 60%) suggested they were keen to apply the knowledge and skills they had learnt on their own land. “Improve maintenance of trees to get that good quality wood,” as one farmer wrote.

The survey specifically asked participants to rate the value of the MTG course to their community. The response was very clear with 71% giving a high rating. “What I have gained in my training I will teach to others,” sums up the thrust of many comments. One Pati farmer went further: “I hope we will be coaching like this in the future.”

Rural extension workers across the world have noted the enthusiasm of MTG course participants in sharing their skills and knowledge with others in their community. It has led to the Peer Group Mentoring program being run by the Australian Agroforestry Foundation, which trains, then pays, MTG 'graduates' to mentor others in their community and help develop and run farmer groups.

Another significant role of the MTG course arose in providing training in an alternative extension model for government and industry extension agents. Of the 18% non-farmer participants, many responded that the MTG course had provided some guidance as to how they might improve their communication with farmers.

The Indonesian government expects that under CBCF hundreds of thousands of rural families will establish and actively manage trees on their farms for timber production. While only a few will ever participate in a MTG course, it is feasible that the course will touch and influence large numbers through the enhanced knowledge and skills of extension agents involved in the program and the farmer-to-farmer communication and mentoring support that participants are keen to provide within their communities.

In Australia, independent researchers who reviewed the Master TreeGrower program argued that this 'kick-on' factor was a significant consideration in their calculated cost benefit-cost investment ratio for the program of 11:1.²³ In Indonesia, the much higher population density within rural communities and the high participation of landholders in farmer groups suggest that the kick-on effect may prove significantly greater.



LEARNING FROM THE MTG EXPERIENCE IN BULUKUMBA

So successful was the MTG course in Bulukumba that the District Forestry and Plantation office has now adopted the concept as part of the regular extension and training services offered to smallholders to enhance CBCF. A recent evaluation of the MTG courses conducted in the Bulukumba district by members of the project team from FORDA Makassar found that the MTG course delivered a significant improvement in farmer's knowledge of forestry. Furthermore, the MTG course had contributed towards farmers more actively managing their trees to improve their timber quality.

The FORDA Makassar office recommended that the relevant authorities draw up standard manuals of MTG, adapted from the MTG courses in Australia. These would provide the implementation guidelines for scaling up the program and spreading it more widely throughout Indonesia.

The project team made several suggestions for broadening the scope and spread of MTG courses in Indonesia:

- Involving farmer forest groups in disseminating MTG knowledge;
- Addressing local culture, which gives a greater role to the farmer male as the head of household in managing the forest;
- Actively involving forestry extension staff in assisting farmers to more easily understand the MTG approach; and
- Involving forestry agencies in implementing the MTG course on a wider scale.



CHAPTER 6

FINDING THE BEST COMMERCIAL MARKET PATHWAY



Lessons learnt during the Market Pathways research (refer to Chapter 4) showed that the production of timber certified under the Forest Stewardship Council (FSC) system involved high establishment and operation costs for the certification process. A possible pathway for smallholders to engage with certification could be via aggregation through a farmer group such as a cooperative, which would offer economies of scale, critical mass and market bargaining power.

Understanding the costs and benefits of market aggregation combined with group certification for these smallholder growers could provide important knowledge for NGOs and governments seeking interventions to improve livelihoods in rural communities. Filling this information gap was the Market Pathways team's objective in this second stage of their research.

The Market Pathways team investigated the feasibility of forest certification and chain-of-custody certification for smallholder growers. Four case studies within the project districts of Sulawesi and Java were considered analysing whether or not certification provided stronger market access and a price premium for logs, as well as environmental and social benefits.

Certification of forests owned by smallholders remained challenging due to the complexity of achieving certification and maintaining the required management systems, plus the initial and recurrent costs. The cost of certification was high and appeared unachievable for smallholder growers unless heavily supported and subsidised by external parties [e.g. NGOs, companies]. The project team made a series of recommendations for streamlining and standardising methodology and government policy so as to improve information transfer and reduce the initial and recurrent costs of certification.



CHAPTER 6

FINDING THE BEST COMMERCIAL MARKET PATHWAY

WHAT IS CERTIFICATION?

Introduced in the early 1990s, the primary purpose of forest certification was to address environmental concerns about deforestation and forest degradation and to promote the maintenance of biological diversity, especially in the tropics.²⁵ It quickly evolved as a potential instrument to promote sustainable forest management. Certification recognises responsible forest management through independently verified compliance with a set of underlying ecological, social and economic principles, criteria and indicators.²⁶

Certification refers to the process, normally performed by an independent party, of verifying that a forest management system or a product adheres to a given standard. A standard consists of assessable criteria encompassing various combinations of social, environmental and economic dimensions depending on the certification scheme. This may or may not translate into labelling, which is the act of providing the information on certified attributes.

Thus, the certification process begins in the forest and continues along the entire production chain or chain-of-custody, with the end goal of assuring consumers that they are buying a product produced from sustainably managed forests.

Two types of certification are generally recognised:

- **Forest management** certification deals with the management of forests and production of forest products (wood and non-wood) up to the point at which they leave the forest; and
- **Chain-of-custody** certification takes the movement of forest products from certified forests, through the production chain and ultimately to the end consumer.

Unlike forest management certification, chain-of-custody certification does not assess the environmental credentials of the production processes that forest products go through before they reach the consumer. It simply provides a link between sustainable forest management and the consumption of forest products.²⁷

RELEVANCE OF CERTIFICATION TO SMALLHOLDER FOREST GROWERS

Wooden furniture is one of Indonesia's four largest non-oil and gas exports and Indonesia is one of the main furniture producers in Asia.²⁸ Smallholder forests are important sources of wood for the furniture manufacturing industry in Indonesia.

While forest certification emerged as a private, voluntary, market-driven instrument, governments are increasingly imposing mandatory requirements for certification of wood products. Certification of forests and forest products continues to gain traction among international environmental NGOs and the consumer market place.



The global area of certified forests is increasing, with 438 million hectares certified in 2014. About 90% of the total area of certified forests is in temperate and boreal regions, with the remaining 10% in tropical and sub-tropical regions.

Ref: Food and Agriculture Organisation (FAO) (2015) *Global Forest Resources Assessment*. FAO: Rome, Italy.

Smallholders frequently face disadvantages in the market, especially because of small volume production, which makes it difficult to attract buyers and negotiate good prices. Greater knowledge of the costs and benefits of certification would assist smallholder forest growers to make decisions on whether or not to participate in forest certification schemes. Potentially, certification could assist smallholder forest growers to increase:

- The total amount and value of products that they sell into the chain-of-custody for forest products; and
- The profits per product sold, so they not only gain more net income, but also more income relative to other actors in the chain-of-custody.

A potential way of overcoming high individual certification costs could be through organising smallholder farmers into group certification schemes, although this option has, to date, been comparatively understudied.



Chain of custody requires certification of every stage from source to end product.

CERTIFICATION SCHEMES IN INDONESIA



Village farmer forum in Gunungkidul: aggregation could offer the best market pathway for smallholders to access group certification.

In Indonesia, three mandatory and voluntary certification schemes operate in the smallholder forestry sector:

- Forest Stewardship Council (FSC) scheme, a global scheme that is voluntary;
- Indonesian Ecolabelling Institute (LEI, *Lembaga Ekolabel Indonesia*), a scheme that is voluntary; and
- Indonesian Timber Legality Assurance System (SVLK, *Sistem Verifikasi Legalitas Kayu*) that is required by Indonesian law for all wood product exporters from Indonesia.

In general, tree growers, whether large or small, when seeking to obtain forest management certification have to demonstrate that they meet a series of requirements spelt out in the 'standards' document relevant to the particular certification scheme.

The tree grower must provide evidence of compliance with the standard through regular independent audits. As a result, certification schemes impose obligations on growers that don't exist when a grower simply sells logs to a trader or processor. While requirements vary between schemes, examples of common principles are:

- Long term tenure and rights to use the land and forest resources must be clearly defined, documented and legally established;
- Forest management operations are expected to maintain or enhance the long term social and economic wellbeing of forest workers and local communities;
- Forest management must aim to conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest;



- A management plan - appropriate to the scale and intensity of the operations - must be written, implemented, and kept up to date; and
- Regular monitoring has to be undertaken to assess the condition of the forest, yields of forest products, chain-of-custody, management activities and their social and environmental impacts.

Where actors all along the forest management production chain can show they are clearly linked - from harvesters to log carters, sawmills, wholesale distributors, wood product manufacturers and retailers - then chain-of-custody certification is achieved. This unbroken chain of certified organisations enables an end product to become labelled as being made from certified material.

The three most important market benefits of certification for forest products industries are listed as ensuring market access, improving public image and granting price premiums. Price premiums have, however, proved difficult to realise, especially for commodity products such as pulp and structural lumber. Furthermore, there is little evidence to verify that consumers' expressed willingness to pay a price premium will materialise in the market place. False expectations regarding price premiums for certified timber have led to many disappointed community groups.

FOREST STEWARDSHIP COUNCIL (FSC)

The Forest Stewardship Council (FSC) is an independent, non-government, non-profit organisation established in 1993 to promote the responsible management of the world's forests. It sets standards, and provides trademark assurance and accreditation services to companies and organisations interested in sustainable forestry. Products carrying the FSC label are independently certified to assure consumers that they come from forests that are managed to meet the social, economic and ecological needs of present and future generations.

Under the FSC scheme in 2014, 276 certificates were valid in Indonesia, comprising 233 for chain-of-custody (CoC), five for forest management/controlled wood and 38 for forest management/CoC. Industries manufacturing furniture held 87 of the CoC certificates. The FSC-certified forest in Indonesia in 2014 totalled 2 million hectares.²⁹

Several FSC guidelines are relevant to smallholder forest growers. First, the FSC defines a small producer in terms of the area of their forest or the volume of timber harvested each year. A small or low-intensity managed forest (SLIMF) can qualify for streamlined auditing procedures that reduce the cost of the audit. The procedures also allow for desk-based audits in years where a small producer has not harvested timber. FSC has eligibility guidelines for SLIMFs that certification bodies use to determine whether or not a forest qualifies as a SLIMF. The FSC has introduced new group certification policies to address the hurdles that occur where certifying communities consisting of a number of growers.

Second, the FSC recognises that small producers frequently face disadvantages in the market, with their low volumes making it difficult to attract buyers and negotiate good prices. Consequently, FSC in 2011 introduced new labels to differentiate between products from industrial operations and products from small producers. For example, smallholders can add a label to their products stating, "From well-managed forests of small or community producers."

Third, FSC chain-of-custody (CoC) requires laying down a detailed information trail about the path taken by products from the forest to the consumer including each stage of processing, transformation, manufacturing, and distribution. The CoC is designed to provide a credible guarantee to consumers that products sold with a specified FSC certificate code are originating from well-managed forests. This has implications for the role of middlemen in the sale of trees or logs from smallholder forests.

INDONESIAN ECOLABELLING INSTITUTE (LEI) SCHEME

A non-profit membership-based organisation, the Indonesian Eco-labelling Institute (LEI) develops forest certification systems that promote sustainable management of forest resources in Indonesia. It has broad support within the nation among the forest industry, Indigenous people's groups, the forest science community, as well as social and environmental non-governmental organisations.

LEI's certification includes schemes for community forest certification and chain-of-custody certification for industries that process forest products such as furniture, plywood, sawn wood and pulp and paper. In 2013, 32,683 hectares of community forests were certified under the LEI scheme, out of a total area of 1.87 million hectares of all types of forests certified by LEI.³⁰



Certifiers pay the highest premiums for logs of the largest size and highest quality.

INDONESIAN TIMBER LEGALITY ASSURANCE SYSTEM (SVLK, *SISTEM VERIFIKASI LEGALITAS KAYU*)

The Indonesian Timber Legality Assurance System (SVLK, *Sistem Verifikasi Legalitas Kayu*) is a mandatory scheme that aims to assure the international timber market of the legality of the nation's timber products.

To implement SVLK, all timber exporters are audited annually to determine whether the timber they export meets the requirements of the timber legality system. SVLK has been developed in response to increasingly rigorous timber legislation in key markets, including the European Union's Timber Regulation (No. 995/2010, effective since March 2013), Australia's Illegal Logging Prohibition Bill and the US Lacey Act.

The European Union is a key market for Indonesian forest products with the total average annual value of timber and paper exports from Indonesia reaching IDR 16 trillion (A\$1.6 billion), approximately 15% of Indonesia's exports. Indonesia is a major exporter of timber and timber products globally, with their total estimated at IDR 120 trillion (A\$11 billion).³¹

LESSONS LEARNT FROM FORESTRY MARKET PATHWAY ANALYSIS

Lessons learnt from Gunungkidul and South Konawe project districts during the Market Pathways research (refer Chapter 4) showed that the production of timber certified under the Forest Stewardship Council (FSC) system involved high costs in introducing and maintaining the certification process. In South Konawe, this investment turned out to be risky, because the farmer group lost their market for certified timber to a lower cost supplier of certified timber. Market Pathways team leader Hugh Stewart commented: “It would appear that unless the buyers of the timber fund the costs of certification, farmers would revert to traditional markets for non-certified timber.”

The Market Pathways researchers found it difficult to discover reliable information on growth rates of smallholder forests. Part of the issue was that different systems of measurement were used in different regions and within regions. This has significance for growers seeking certification of their forests as most schemes require that the annual sustainable harvest of the forest is not exceeded.

Market interventions, such as linking farmer groups with processing companies (e.g. by developing supply contracts between farmer groups and companies) could potentially motivate farmers to invest more in their timber plantations. Another market intervention would be to improve farmer’s knowledge on different timber grades and prices, and show how these are linked with the silvicultural management of their trees (refer Chapter 5). These matters are relevant as certification requires developing a written forest management plan, including coverage of silvicultural and marketing practices.

CRITERIA FOR CASE STUDY ANALYSIS

A possible pathway for smallholders to engage with certification could be via aggregation through a farmer group such as a cooperative. This route achieves economies of scale, critical mass and market bargaining power. At the conclusion of its original field work, the Market Pathways project team recommended that: “Arguably, CBCF 2 (grower–group–processor) could provide the most benefit to [smallholder] growers whether for short or long rotation species. The main reasons are the potential strength of a group in developing direct marketing arrangements with a processor, the capacity of a group to understand local and regional wood markets (e.g. timber specifications and prices) so as to be able to negotiate fair prices, and the capacity of a group to participate in the certification process for timber.”

Teamleader Hugh Stewart added: “Although it is possible that CBCF 2 could be developed for all regions studied, it is unlikely to be applicable in all situations and, where it is preferred, it may take some time to develop to its full potential.”



Millions of smallholders around the world grow trees for household use and commercial markets, but they often face considerable barriers to creating viable community-based forest enterprises. Strategies to help build the commercial forest enterprises of smallholders include:

- Acquiring a better understanding of the value chain so local communities can maintain a viable position;
- Strengthening the capacity of grower organisations so they can coordinate and aggregate supplies, and improve efficiency and market power;
- Developing strategic business partnerships along the value chain [e.g. community-company agreements, involvement in government programs];
- Fostering local business services, so that local people can build and share their expertise and knowledge [e.g. market information, administration for harvest permits, harvesting and transporting];
- Investing in the education and training of farmer groups, so members build their personal expertise to analyse assets, constraints and opportunities;
- Reforming the policy and regulatory environment so that smallholders can have equal, simple and transparent access to commercial markets as corporate entities.

Ref: Scherr, S.J., White, A. & Kaimowitz, D. (2003) Making markets work for forest communities. *International Forestry Review*, 5 (1): 67-73.

Understanding the costs and benefits of market aggregation combined with group certification for these smallholder growers could provide important knowledge for NGOs and governments seeking interventions to improve livelihoods in rural communities. Filling this information gap was the objective of four case studies undertaken by the Market Pathways project team as part of this second stage of their research.

The four case studies provided the opportunity to investigate the three certification schemes applying in Indonesia (as already canvassed). They were spread across smallholder forest project districts in Java and Sulawesi. The research focused on two important commercial species grown by farmers in Indonesia for different markets – teak (*Tectona grandis*) and sengon (*Paraserianthes falcataria*). Primary data was collected through interviews with key actors along the production chain.

CASE STUDY 7

Wood trading business with FSC group certification

The wood trading business *CV. Dipantara* achieved FSC certification under the group SLIMF (Small Low Intensity Managed Forests) category, which covers forest management and stump-to-forest gate chain-of-custody. The company faced many challenges including the high transaction cost of obtaining and maintaining certification; the long period of time to obtain certification; difficulties in maintaining smallholder commitments to comply with the FSC certification requirements; difficulties in matching supply and demand for logs when dealing with a group of many smallholder forest growers with diverse circumstances and expectations; complexity in calculating the annual allowable cut; and difficulty in adhering to the annual allowable cut (e.g. members cutting above the annual allowable cut to meet short term cash needs).

The Tropical Forest Trust (TFT) was instrumental in *CV. Dipantara* obtaining the group certification, which took five years. *CV. Dipantara* said that the most difficult part of the preparation was conducting studies on the environmental and social aspects of the forest management system proposed for certification. There was a strong incentive to increase the size of the group scheme, so as to reduce the annual cost of surveillance audits. In theory, a group scheme softens the administrative burden and cost of initially obtaining, then maintaining certification. In reality, *CV. Dipantara* could not bring many farmer groups within the scope of the FSC certificate as it lacked the resources and capacity to collect the prerequisite inventory and other data from the groups.



Microfinance can be an important mechanism for building the entrepreneurial capacity of smallholders who seek to do more than just sell the raw products from their forests. Microfinance includes various services, such as short and long term loans, equity financing and leasing, saving accounts, insurance, and various payment options. Most small scale forestry enterprises operate alongside other farming activities or services, so there can be flow-on benefits for smallholders' other enterprises. Microfinance services are most successful when tailored to the needs of individual households, rather than being specifically tied to supporting tree crops or forest enterprises in isolation.

Ref: Food and Agriculture Organisation (FAO) (2005) *Microfinance and forest-based small-scale enterprises*.
FAO Forestry Paper #146: Rome, Italy.

CASE STUDY 8

Farmer cooperative with LEI and SVLK certification

NGOs facilitated the establishment of the KWML farmer's cooperative. Its forests were certified under the community forest scheme operated by the Indonesian Eco-labelling Institute (LEI), and KWML obtained SVLK. The market for certified timber was, however, short-lived. Although the LEI timber certification scheme had not achieved the expected benefits of improving market access for smallholder growers, KWML, with the support of NGOs, decided to maintain this process of certification as it had attracted interest and support from government and donor agencies. KWML held the view that some of the government funding for the village was obtained because the village demonstrated it was actively pursuing sustainable forestry.

To date, NGOs and the government have provided all funds for the LEI certification. Whether or not the cooperative will continue with LEI certification would seem dependent on continued external support (either donor or government funding).

KWML is not seeking to obtain FSC certification as the cooperative lacks confidence that it will lead to improved market access for smallholder growers. Furthermore, the cooperative had concerns about the way in which FSC is implemented. In some cases, for instance, the actual cut in FSC certified forests had exceeded the annual allowable cut.

As a strategy to increase the demand for certified timber, KWML had proposed to local government that government procurement policies specify only certified timber.

CASE STUDY 9

Manufacturer with FSC group certification

In 2013, the manufacturing company *PT. Albasia Bhumiphala Persada* achieved FSC certification for controlled wood products, under which it bought non-certified but 'controlled' logs from smallholder growers in the Pati district. So it could market its products as 'FSC Pure' in specialty markets in Europe, its growers needed to hold FSC certification. To achieve this, the company had formed a partnership with the NGO, Trees-4-Trees, to jointly fund the costs of FSC forest management/chain-of-custody certification for smallholder growers from the Pati district.

This was to occur under a group scheme for Small and Low Intensity Managed Forests (SLIMF), with Trees-4-Trees acting as the group manager. The total contribution from the company was still under negotiation at the time of writing. An informant from Trees-4-Trees reported that the market focus on certification favoured FSC and SVLK.

CASE STUDY 10

Farmer cooperative with FSC group certification

Smallholder growers sold their teak logs to the farmer cooperative (KHJL), under a FSC certificate (forest management/chain-of-custody certification) obtained in 2005. A local NGO (JAUH) and the Tropical Forest Trust (TFT) supported the preparation process. TFT provided a loan for the preparation costs, which was paid back within three years after the cooperative earned some profits from timber sales. Certified logs were sold from 2005-2010.

As required under the FSC scheme, KHJL was reassessed in 2010. The audit found that the management system applied under the FSC certification had provided social and environmental benefits to the community. It also observed that the cooperative's operations provided new knowledge and technology for local people; the wage standard of KHJL's employees exceeded the minimum standard wages for the district; and, under the silvicultural management plan, KHJL had applied low intensity selective logging that could be considered as providing environmental protection.

The management plan stipulated uneven-aged silvicultural management for both monoculture and mixed-crop teak smallholder woodlots, typically ranging in size from 0.1 to 1 hectare. The KHJL membership agreement doesn't allow clear cutting so as to avoid even-aged monocultures of teak that would be deleterious to maintenance of high conservation values of the forest as required under the FSC standard. Prior to certification, teak was deemed ready for harvest when it reached 20 centimetres diameter. Under the management plan developed during the certification process, the minimum allowable size for harvesting is 30 centimetres diameter, which adds value to members' forests because of the higher prices paid for larger log sizes.

Annual surveillance audits have been conducted since 2010. However, the FSC certificate was terminated on 30 March 2015, with no information available from the FSC website regarding the reason for the termination.

ANALYSIS OF FINDINGS

The merits of the three certification schemes vary for different actors and can change significantly due to external factors, such as market perception of retail products carrying a certain type of certification.

“The cost of certification was high and appeared to be unaffordable for smallholder growers unless heavily supported and subsidised,” remarked Market Pathways researcher Dede Rohadi.

The challenge is how best to bring smallholders within the certification fold, which was originally designed as an industrial forest market instrument. Although FSC has responded by introducing group schemes and the SLIMF (Small Low Intensity Managed Forests) category that aims at making certification affordable for smallholders, the burden of FSC certification on smallholder growers remains onerous. Stark evidence for this was seen in the termination in 2015 of the FSC certificate held since 2005 by the farmer cooperative (KHJL) in the South Konawe district.

EVIDENCE OF PRICE PREMIUMS

There was evidence of smallholder growers in Java receiving price premiums for certified logs of teak and sengon in three of the case studies:

- In case study 7 in Gunungkidul district, teak logs (20-39cm diameter) produced under the FSC certification scheme were purchased by a furniture manufacturer (*PT. Jawa Furni Lestari*) with price premiums to growers in 2014 of 10% compared to prices for non-certified, graded logs. In the same case study, there were strong price incentives in the market for smallholder growers to produce certified logs of larger sizes and higher quality;
- In case study 8, also in Gunungkidul district, the market for teak logs certified under the LEI scheme was short-lived because of a lack of markets for LEI-certified products. The small volume of logs sold by smallholder growers when the market was active attracted price premiums of 5-10%, compared to the price of non-certified timber;
- In case study 9 in Pati district, a processor (*PT. Albasia Bhumiphala Persada*) purchased sengon logs certified as controlled wood under the FSC system, at a price premium typically IDR 100 000 (A\$11) per cubic metre for logs loaded onto the company's truck at the village log yard. This translated to a price premium of 15% to 30% across the various log grades.

In case study 10 in South Konawe district, a farmer cooperative (KHJL) bought trees from its members, harvested and cut the trees into squared planks and transported the timber to Port Kendari to sell to buyers from Java. The timber was traded under the FSC scheme from 2005-2010. Sales then ceased due to lack of demand. A price premium for certified logs could not be ascertained because there were no comparable sales of non-certified logs.

LOG PROCESSORS AND CERTIFICATION

The project team collected information from two processors of logs. One was a furniture manufacturer *PT. Jawa Furni Lestari*, which had achieved FSC chain-of-custody certification and SVLK (Case Study 7); and LEI certification and SVLK (Case Study 8).

The other processor was a manufacturer of building products *PT. Albasia Bhumiphala Persada*, which had achieved FSC chain-of-custody certification (Case Study 9).

PT. Jawa Furni Lestari obtained certification to build trust with its customers and to gain market access. Complying with chain-of-custody acted as a means of countering furniture market domination by FSC-certified products.

In Case Study 7, *PT. Jawa Furni Lestari* had concerns that some smallholder growers supplying teak logs were not adequately complying with the FSC standard in their chain-of-custody labelling, and in ensuring all logs were sourced within the forest management unit covered by the FSC certificate. Furthermore, the smallholder growers' supply of FSC-certified logs was not constant.

In Case Study 8, smallholder timber plantations were certified under the LEI scheme. The log buyer *PT. Jawa Furni Lestari* stopped buying LEI certified teak logs after several years, claiming that the European furniture market had expressed a strong preference for FSC-certified timber.

In Case Study 9, furniture manufacturer *PT. Albasia Bhumipbala Persada*, based its decision to buy FSC-certified logs on marketing research, which indicated that FSC-labelled products would provide access to larger markets in Europe, attract a small price premium, and would enhance the company's corporate image. Most of the company's product (95%) was sold in Asia, where FSC was not demanded. The company only processed sengon as it's a plantation species and therefore accepted in European markets. Logging of native forest species fails to comply with FSC standards.

SMALLHOLDER EXPERIENCES AND IMPEDIMENTS TO CERTIFICATION

Achieving certification and maintaining the required management systems faced significant barriers and added a dimension of complexity within the smallholder forestry sector.

The initial and recurrent costs of certification were high and appeared unachievable for smallholder growers unless heavily subsidised by external parties (NGOs, companies). The scope of the study did not allow data collection of sufficient detail and rigour to reliably estimate the cost of certification per unit volume of wood sold by smallholder growers.

The issue of the annual allowable cut was challenging for participants in FSC group schemes. The FSC standard requires that, "The rate of harvest of forest products shall not exceed levels, which can be permanently sustained" (FSC, 2013a). Specific challenges included calculation of the annual allowable cut, monitoring growth, monitoring the cut from individual and group forests, and matching farmers' needs for short term cash from harvesting trees with the allowable rate of harvest. Smallholder growers perceived compliance with the annual allowable cut as a major impediment when considering participation in the scheme.

The project team identified a number of research needs and opportunities that are listed in Table 10 and further discussed in the concluding part of this chapter.

TABLE 10: Research opportunities identified by the forest certification project team.

1.	Develop a matrix of information comparing the benefits of different certification schemes for different actors along the chain-of-custody, to disseminate this information to the forestry sector in Indonesia and to regularly review it.
2.	Develop methods and templates to conduct the community assessment that meets the FSC standard. This work could build on the results from the ACIAR project FST/2008/O30, particularly the social dimension analysis.
3.	Develop guidelines for smallholder growers and their group schemes about how to estimate and apply the concept of the annual allowable cut under the FSC certification system.
4.	Establish several case studies to monitor volumes of sales and prices for certified logs over a period of several years, plus ongoing costs for maintaining certification.
5.	Survey middlemen to understand their views about, and interest in certification of forest products under chain-of-custody schemes.
6.	Determine the extent to which it would be practical to harmonise amongst different certification systems the varying coding systems used to track the chain-of-custody of logs.
7.	Develop systems for the transfer of information between buyers of certified logs and smallholder growers on the log specifications that will realise highest prices, and the transfer to smallholder growers of knowledge about silvicultural practices to produce such logs.
8.	Review policy across government agencies that regulate forest growing and timber marketing in light of the requirements of certification schemes, to identify any opportunities to reduce the regulatory burden on the smallholder forest sector.
Source: adapted from section 7, Exploring forest certification, Stewart et al. (2015).	

COMPARATIVE INFORMATION ON DIFFERING CERTIFICATION SCHEMES

The case for certification would be improved if different actors along the chain-of-custody understood the costs and benefits of the varying certification schemes.

The business case for certification has a social dimension that includes capacity building. This was highlighted in case study 10 where the certified entity – the farmer cooperative KHJL – had provided new knowledge and technology for local people as a result of achieving FSC certification. Economic benefits arising from certification also included higher wages for employees of the cooperative compared to the minimum standard wages in the district. Such benefits ought to be highlighted.

One furniture manufacturer said that the mandatory SVLK scheme that applies to exports of timber products from Indonesia was not respected among its customers in Europe. As the benefits of a certification scheme are very much dependent on the market response, the most appropriate model for applying certification could be through voluntary processes. Mandated certification, such as currently applied under SVLK for export of Indonesian timber, may create risk to smallholders as it can become a market barrier or impose high transaction costs in timber marketing.

The Market Pathways researcher Setiasih Irawanti concluded: “Develop a matrix of information comparing the benefits of different certification schemes for different actors along the chain-of-custody, then disseminate this information to the forestry sector in Indonesia and regularly review it.”



Calculating the annual allowable cut is a major challenge for smallholders.

STANDARDISING METHODOLOGY FOR CERTIFICATION APPLICATION

The FSC system demands considerable work and expense for smallholders to present their case for certification. A response is to increase the size of the scheme, but this adds extra burdens in conducting environmental and social studies. *CV. Dipantara* (case study 7) said that the most difficult part of FSC preparation was conducting studies on the environmental and social aspects of the forest management system proposed for certification. This is an even greater issue for smallholders who seek to grow multi-purpose, mixed species forests integrated with agricultural enterprises.

Achieving uniformity in approach would provide a more reliable basis for estimating the full cost of obtaining certification for smallholder growers, as well as possibly lowering costs.

The project team authors recommended: “Develop methods and templates to conduct the forest inventory and social and environmental assessments that meet the FSC standard” (Hugh Stewart, Dede Rohadi and Setiasih Irawanti).

PROVIDING CONSISTENCY IN CHAIN-OF-CUSTODY TRACKING

The various certification schemes impose a range of obligations on forest growers and other actors in the value chain.

The project team authors also recommended: “Determine the extent to which it would be practical to harmonise the varying coding systems used to track the chain-of-custody of logs among different certification systems.”

CLARIFYING THE ROLE OF MIDDLEMEN

Market brokers play a central role in market pathways for CBCF and, consequently, in overseeing the chain-of-custody for logs sold by smallholders. But it is not clear whether or not they are interested in certification and willing to bear the cost. If brokers are unwilling to become certified as log traders, fewer marketing options will be available for smallholder growers who produce logs from certified forests.

Project researcher Achmad Rizal Bisjoe recommended: “Survey middlemen to understand the views of about, and interest in, certification of forest products under chain-of-custody schemes.”

REDUCING GOVERNMENT RED TAPE

Given that certification schemes impose social, economic and environmental obligations on forest growers, there would seem merit in reviewing policy across government agencies that regulate forest growing and timber marketing. The rationale is that where certification is held, some government policies and regulations may prove unnecessary. If that were the case, and government was willing to remove red tape, a further incentive for actors in the forestry sector to seek certification would exist.

The project team authors recommended: “Review policy across government agencies that regulate forest growing and timber marketing in light of the requirements of certification schemes, to identify any opportunities to reduce the regulatory burden on the smallholder forest sector.”

INCREASING KNOWLEDGE ON LOG PRICES AND SILVICULTURE

The log trading business *CV. Dipantara* found it challenging to match supply and demand for logs when dealing with a group of many smallholder forest growers. This situation arises when the motivations and expectations of diverse smallholder growers are not aligned, which is usually the case. Further, many smallholder timber growers practice ad hoc ‘slash for cash’ in their timber plantation management, which is difficult to predict.

The field work revealed that the outcomes for smallholder forest growers from certification depend on many variables, including the type of certification achieved, their market knowledge, their ability to grow logs that attract the highest prices, and the marketing arrangements for their forest products. For example, there were strong price incentives in the market for smallholder growers of certified forests to produce logs of larger sizes and higher quality. This requires knowledge of the log specifications and supply schedules sought by processors, as well as knowledge of the silvicultural practices to produce such logs economically.

The project team authors recommended: “Develop systems for the transfer of information between buyers of certified logs and smallholder growers on the log specifications that will realise highest prices, and the transfer to smallholder growers of knowledge about silvicultural practices to produce such logs.”

GREATER CERTAINTY IN WHAT CONSTITUTES THE 'ANNUAL ALLOWABLE CUT'

Finding a methodology for implementing sustainable production is central to the FSC standard requiring that, "The rate of harvest of forest products shall not exceed levels, which can be permanently sustained." ³² This has led to the concept of the 'annual allowable cut', which is estimated from inventory and assigned to a specific FSC certificate. Compliance with the annual allowable cut was challenging for participants in FSC group schemes where there were deficiencies in inventory and monitoring systems, and where participants had different needs in the timing of harvests and hence cash from their smallholder forests.

The project team authors recommended: "Develop guidelines for smallholder growers and their group schemes about how to estimate and apply the concept of the annual allowable cut under the FSC certification system."

LONG TERM DATA MONITORING TO ESTABLISH COSTS AND BENEFITS

Data from the case studies on volumes of log sales and prices for certified logs were patchy. Consistent and longitudinal data is important to demonstrate the business case for certification for smallholder growers, so that the potential funders of certification (e.g. the growers, their cooperatives, NGOs and industry partners) can understand the costs and benefits of certification and make an informed decision to invest in the schemes.

A final recommendation of the Market Pathways team is to ensure more research is done on the cost and benefits of certification for smallholders. Some would argue that certification benefits rich farmers to the detriment of smallholders; or that price premiums will never cover certification management costs. These question marks hanging over certification will only be put to rest where more case studies are established that monitor sales and prices for certified timber, plus the thorough analysis of initial and ongoing costs.

Project researcher Aneka Prawesti Suka recommended: "Future research should establish several case studies to monitor volumes of sales and prices for certified logs over a period of several years, plus ongoing costs for maintaining certification."



CHAPTER 7

HARNESSING EXPERIENCES AND LESSONS OF PARTNERS



Since the end of the Suharto era in the late-1990s, forest management policy has shifted to include an emphasis on active participation by local communities in forest management.

Non-government organisations (NGOs) have been widely promoted as being more efficient and flexible than the state in reaching the poorest people, as well as more effective in achieving economic growth and acting as a catalyst for democratisation. In **PART 1** of this chapter, recent research by Yustina Murdiningrum examined the extent to which NGOs' contribution to community forestry actually matches smallholders' rural livelihood needs, particularly the poorest.

The analysis of two NGO case studies explored the match between NGOs' CBCF contributions and culturally appropriate actions that might improve rural livelihoods. Rather than adopting 'bottom up' participatory processes, which reflect the goals of community development, Murdiningrum's research found that NGOs can often focus on service delivery, without addressing social justice issues relating, for instance, to equity and gender. She asks, in the end, whether or not NGOs' agendas are primarily driven by external donors, rather than the local context.

Another frequent partner in delivering CBCF projects are large and small corporations. Indonesian government policy explicitly obliges (although not necessarily regulates) natural resource industries to engage in the practice of 'corporate social responsibility.' In **PART 2** of this chapter, parallel research by Kristiana Wahyudiyati considered to what extent corporates committed to community development when they pledged to pursue corporate social responsibility (CSR) processes.

In theory, the CSR pathway should involve meaningful collaboration with local communities and a long term commitment to effect social change. Again, Wahyudiyati's research discovered that corporates largely respond to outside drivers beyond the local context. Maintaining profits and a brand image as a 'good corporate citizen' can take primacy over community development. The question she poses is: do corporates like the NGOs dance to different agendas? To what extent are they paying lip service to CSR in order to polish their public image and gain a social licence to access forest resources?



CHAPTER 7

HARNESSING EXPERIENCES AND LESSONS OF PARTNERS

PART 1: NGOs as exemplary agents for facilitating community forestry

NGOs are regularly cited as an important player in shaping Indonesian forest policy and practices, particularly in relation to enhancing the benefits from forestry for rural communities.

The World Bank has defined NGOs as “private organisations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development.”³³ The World Bank interacts with two broad categories of NGO, advocacy and operational NGOs. Advocacy NGOs lobby for change, while the primary purpose of operational NGOs is the design and implementation of development-related projects.

Aid agencies expect NGOs to supplement the limitations of state institutions. In particular, they are asked to address under-development and environmental issues and play a leading role in building grassroots channels, implement field-based development using participatory approaches, be cost effective and adaptable, ensure program sustainability, protect the environment from activities that hamper sustainability, practise good governance, counter state power in protecting human rights, and assist in overcoming discrimination.

RESEARCH CASE STUDIES

Yustina Murdiningrum's research focused on understanding the role of operational NGOs, and included the study of PERSEPSI and Trees-4-Trees in her research, both of which are active supporters of community forestry in Central Java, Indonesia. Two villages were selected as case studies in Central Java, which were at different stages of farm forestry development and had contrasting soil fertility.

- **PERSEPSI and Selopuro Village**

Before PERSEPSI and its donor the World Wildlife Fund (WWF) implemented its forest certification program, the forested areas in Selopuro Village had existed for some 50 years and there was a general acceptance that the smallholders had long practised sustainable forest management. Faced with an infertile terrain, the smallholders in Selopuro Village had long relied on trees to support their daily needs for firewood, fodder and wood for building, as well as a cash back-up during emergencies and difficult times.

Their forest enterprises were typically owned by individuals or families with limited managerial capacity and little marketing skill or knowledge. While the farmers had their own organisations, these were for managing agricultural activities and for coordinating the government's tree plantation programs. For timber marketing, the smallholders depended on timber brokers as intermediaries to harvest and transport the timber to the buyers.

- **Trees-4-Trees and Bageng Village**

At Bageng Village, most smallholders had not planted trees for commercial aims and had no particular interest in developing forest-based enterprises. Located at a high altitude on Muria Mountain, the villagers had greater access to fertile agricultural lands and more options to plant diverse crop species.

Trees-4-Trees targeted their assistance at the early stage of a forestry enterprise conducting a number of activities including a social impact assessment, grower training, restructuring of smallholder organisations, assistance in harvesting, and directly connecting the tree growers to buyers.

MATCHING EXTERNAL EXPECTATIONS AND SMALLHOLDER NEEDS



At Begang Village, Trees-4-Trees environmental objective was to control erosion.

At a macro level, Trees-4-Trees and PERSEPSI were both trying to implement sustainable development by linking developmental and environmental agendas.

Both NGOs simultaneously sought to improve smallholders' economic benefits gained via tree planting or certification, while encouraging local communities to maintain the sustainability of their forests for future generations. A key NGO and government objective at Bageng Village, for instance, was to establish tree planting in critical areas that prevented soil erosion.

This section looks at to what extent did these two NGOs match their objectives with the needs of the farm families they sought to help.

At Bageng Village the tree planting objectives of Trees-4-Trees were challenging to achieve, as most farmers had a wide range of crop options available to them due to the land's fertile soils. As a result, growing trees was not a high priority. This was especially the case where farmers had less than 2 hectares, as they much preferred to plant short term crops that they could regularly harvest for their subsistence needs. Moreover, they regarded planting diverse crops with different harvesting times as safer than establishing a monoculture of trees.

Farm families with access to more than 2 hectares were more enthusiastic about following the Trees-4-Trees program. With more land, they could afford to move beyond subsistence farming to planting trees as an alternative source of income. Smallholders generally were, however, more interested in planting trees as a shade canopy for their coffee crop than to stop erosion.

THE INACCESSIBILITY OF CERTIFICATION

In theory, selling timber through PERSEPSI's forest certification or Trees-4-Trees ought to reduce the long chain for timber marketing and generate higher prices for the smallholders. The carrot dangled in front of smallholders is gaining access to new markets for certified timber in the broader global economy, as well as earning higher profits from the price premium of their certified products. The intended goals of forest certification are not only to produce environmental, but also social and economic benefits, by increasing the returns to forest growers using sustainable forest management practices.

The NGOs 'ecological modernisation model' is based on the idea of 'sustainability pays.' The model aims to provide opportunities for smallholders to profit from protecting the environment by integrating ecological criteria into the production process. Consequently, the NGOs regarded supporting farmer tree growers to access certified, global timber markets as an ideal way of enhancing economic returns for the smallholders from their forest enterprises and, at the same time, protecting the environment.

It is difficult, however, for Javanese smallholders to meet global market demand. Manufacturers seeking certified timber require a regular supply of large quantities of high quality certified timbers. Yet on their part, smallholders prefer to grow trees not merely for profit, but also for ecological and social benefits, and as an economic 'safety net' or long term investment.

Their livelihood strategies are more motivated by subsistence behaviour that prioritises risk-adverse strategies (safety first) in their economic activities. They tend to minimise their consumption (e.g. only buy basic goods, and consume foods that are produced from their lands) rather than maximise production (e.g. by increased production factors, production inputs and knowledge of their market). Having prioritised forestry as part of their 'safety net', the smallholders believe that any harvesting of trees should only occur when they have urgent or occasional financial needs, instead of seeking to maximise the timber production or profitability. Consequently, they usually provide an inconsistent supply of small quantities (less than a truck load), made up of various species, sizes and qualities of timber.

A mismatch would seem to exist between local smallholder timber sources and global demands. Manufacturers seeking certified timber are not only concerned with the quantity of supply, but also its quality and regularity of delivery - see Case Study 11.

CASE STUDY 11

It's hard to change old ways

"Why have the efforts of PERSEPSI in developing forest enterprises not proven enough to bring about sustained positive changes?", asks Yustina Murdiningrum. "My research revealed considerable gaps between the expectations and goals of PERSEPSI on the one hand and the ability, capability and preferences of the smallholders on the other."

Several efforts were made by PERSEPSI to overcome the financial and technical limitations of the smallholders in achieving the standards required by forest certification.

First, they aggregated smallholder forest producers by creating peak bodies to coordinate forest enterprise activities at the village level. Second, they improved the smallholders' competitive position in the market by establishing a Certified Wood Management Unit that replaced timber brokers in timber harvesting and transportation activities. PERSEPSI also trained board members of the peak bodies in forest mensuration. Third, it improved administrative systems, such as forest management planning, tree inventories and land inventories.

Initially, this improved the smallholders' coordination of their forest enterprises. Moreover, the granting of certification to the Selopuro Forest Management Unit attracted external technical and financial assistance. For example, donors gave funds to establish home industries such as handicrafts and furniture made of timber waste. The district government advanced funds to build a water tank for community use.

However, when PERSEPSI's role ended, the smallholders returned to the way they had formerly managed their forests. They no longer use peak bodies to organise their timber enterprise activities. As a result, there is little coordination of planting, maintenance, harvesting, transporting, and marketing of trees. The home industry program has wound up, as the workers were not satisfied with their level of income and faced difficulties in meeting the required product standard.

Only once have the smallholders sold their certified timber through the Certified Wood Management Unit and even then only a small amount. After obtaining certification in 2010, the forest management unit in Selopuro village, together with Sambirejo village, produced 35 cubic metres of logs, with just 13.6 cubic metres of logs meeting the demand for certified timber. Since then, the tree growers have reverted to using timber brokers, who value their logs as 'uncertified' and pay at a lower price than that of 'certified' timber.

MORE TOP DOWN THAN BOTTOM UP

Community participation can potentially build a sense of belonging and strengthen a community's bonds, as well as its capacity to help itself in creating a better future. Self-initiated, bottom-up participation is still viewed as the ideal approach of community development, but promoting such participation can prove a time- and resource-consuming process.



When it comes to tree planting, it can be challenging to align the objectives of agencies, companies, NGOs and smallholders.

“It needs local communities’ initiative, strong motivation, leadership, and independence of funding,” commented Yustina Murdiningrum. “During my research, the local communities in Bageng and Selopuro villages did not exhibit enough of these factors needed for spontaneous participation.”

“Sometimes the main aim of an NGO adopting a participatory approach is to mobilise the community for service delivery efficiency, rather than to improve the people’s ability to participate in their own development more meaningfully and to foster long term social change.”

Research found that not all the participants in the NGOs programs were equally well-informed. For example, it is common for staff of an NGO to provide information at farmer organisation meetings held in the middle of the day. Poorer smallholders who worked longer hours in the fields, and could not afford to pay people to work in their fields when meetings occurred, had less opportunity to go to the midday meetings. Also, women tended to be poorly informed as they were rarely able to attend midday meetings, with many women working away from the village at that time.

Even though PERSEPSI conducted women's empowerment programs prior to the introduction of the forest certification program, they did not bring about a significant change in enhancing the participation of women in management groups. As noted elsewhere, in Indonesian culture men typically play a more active role in formal meetings outside the household and women are only likely to attend the meetings if they do not have a husband, or their husband was unable to be involved.

SOCIAL EQUITY

By focusing on technical solutions, operational NGOs tend to sidestep social equity (i.e. poor, gender and ethnic disadvantage) and social justice issues that are often closely related to environmental and development initiatives.

Before implementing the forest certification program, PERSEPSI conducted a livestock subsidy program to help the poorest of the poor as well as a women's empowerment program. However, these programs were not connected to the forest certification program, and were funded by different donors, so there was limited participation by the same people in the different programs.

As already highlighted, where not specifically targeted, poor smallholders may not benefit much from either any certification program or tree planting activities. In optimising economic benefits for smallholders, those most likely to take up opportunities to maximise production and profits are the wealthier farmers with relatively large properties of more than 4 hectares. For most smallholders, any motivation to plant trees competes with their interest in planting short term food crops. Trees take a minimum of 6 years to reach their harvest time (e.g. sengon), while short term crops (e.g. cassava, maize, sugar cane) provide income within a year of planting offering the necessary cash flow to support a farming family's daily needs.



Programs to promote CBCF need to be designed so that both men and women are actively engaged.

DEPENDENCY OF NGOS ON DONORS

To survive as organisations and have the capability to implement their programs, NGOs usually depend heavily on funding from a small number of donors. Instead of operating without limitations in exercising their vision and operating goals, the NGOs are obliged to compromise with government policies and the interests of their donors. This compromised environment can limit the NGOs in their roles as change agents, which, ideally, would be participatory, community-oriented, flexible, innovative, cost-effective, democratic and sustainable project implementers.

Instead, the dependent relationship with donors results in the NGOs' agendas being shaped by donors' concerns and interests. As this project's research has demonstrated, the consequential, top-down development approach can make NGOs less responsive to the local people's issues and values.

Funding from donors for most NGOs is usually for time-bound and task-specific projects, making it difficult to guarantee program sustainability. Since the donors focus on measurable outputs, the NGOs tend to prioritise short term quantifiable outputs, rather than long term qualitative outcomes, such as data that informs about progress in addressing challenging social issues such as the gap between the rich and poor, gender equity or improvement in community participation. The PERSEPSI Case Study 11 (above) highlights how failing to fund long term trusted relationships between NGO staff and smallholders can lead to a program's cessation.

If donors took greater interest in evaluation and adaptation on a long term basis, NGOs might be more likely to improve their commitment to addressing critical community development issues at the local level.

PART 2:

Corporate social responsibility as practised



Many farmers join forestry planting programs because they want an asset to pass down to their children and grandchildren.

For over 20 years, the Indonesian government has expected forestry companies holding logging and plantation concession rights to provide funding for community development to alleviate the poverty of rural families. In 2007, the Limited Liability Company Law stated that companies operating in Indonesia's natural resource sectors must implement "corporate social and environmental responsibility" activities and allocate funds for these activities. Community-corporate partnerships guided by corporate social responsibility are expressly regarded as a means of delivering community development.

Definitions of what constitutes corporate social responsibility (CSR) are broad and vague, depending on your values and ethical stance. As declared by Archie Carroll, an expert on the subject, to show ethical responsibility is to conduct business morally - to do what is right, just and fair.³⁴ For its part, the World Business Council for Sustainable Development (2001) defines CSR as "the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as of the community and society."³⁵ In general, CSR principles are described in terms of ethical values, being a good corporate citizen, integrating social and environmental concerns, and improving community welfare.

Research by Kristiana Wahyudiyati sought to investigate the parameters of what corporates and communities saw as the defining characteristics of CSR under their partnership agreements. Two forest companies and one mining company in South Kalimantan were involved in her research:

- A large Singaporean owned forestry company that has an industrial plantation concession of 268,000 hectares, producing woodchips for the pulp industry. The company applies two different CSR programs;
- A small Indonesian owned forestry company holding use rights of 700 hectares to grow mahogany for its furniture industry. The company does not have a concession and relies on local people's private land to plant the trees; and
- A Thai owned mining company with a contract area of 11,500 hectares. As part of its community development program, the company expects input and feedback from the community, which are agreed upon and synthesised into a community action plan.

THE LARGE FORESTRY COMPANY

To meet production targets, the forestry company entered into legal agreements with smallholders to plant a pulp species, *Acacia mangium*, on unproductive land. The company's approach is described in its promotional literature as two CSR programs, namely ***Developing forests with communities*** and ***Managing people's forests***. The first program covered a joint planting regime between the company and groups of communities. The second program focused on managing non-productive forest owned by smallholders located near the industrial timber plantation, with a benefit-sharing mechanism. These projects were carried out under an agreement with local *koperasi* (cooperatives).

Several inter-linked factors contributed to the forestry company's approach to CSR, although there weren't clear links to community development. The company's focus to CSR were maintaining business profitability, securing future resource supplies, ensuring a cooperative relationship with local communities that surrounded the company's operations, as well as projecting a positive media image. It appears that the forestry company's understanding and perceptions of CSR were largely framed around public relations and keeping government and other stakeholders happy.

Despite the company's narrow approach to CSR, many smallholders were willing to continue the planting program. First, the plantation could be handed down to their children and grandchildren. Second, planting forest tree species can provide shade and fresher air for their villages. Third, forest timber plantations can act as a good source of fresh water. Fourth, many still believed that planting tree species could provide cash income in the future. The opinions of most of the program's participants were mainly positive, although they wanted the large forestry company to improve communication, and provide more information and guidance.

CASE STUDY 12

Why would farmers trash their forest in favour of palm oil?

Much to the frustration of the large forestry company, 300 hectares of acacia planted on villagers' lands was cut down and the lands were sold to a palm oil cooperative. The forestry company explained that they had spent a lot of money to grow acacia, but did not blame local villagers, instead reporting that the palm oil cooperative had induced the villagers to convert acacia into palm oil.

For their part, the villagers complained the acacia was not growing well and had been severely burned during the dry season. They were worried that the profit they gained upon harvesting would be very little. In addition, the forestry company had already broken several commitments such as offering loans from the third year of planting and regular provision of fertiliser – neither of which had occurred. The final trigger for sale was a need for cash so the farmers could visit relatives.

To provide the cash, a local cooperative responsible for developing a palm oil plantation, approached the farmers asking them to supply original certificates as proof of land ownership, so the cooperative could then apply on their behalf for a loan from a bank. To guarantee loan repayment, the bank made it a condition that they hold onto the land ownership certificates for 11 years.

A final rationale for conversion to palm oil plantations was their promise to deliver more regular cash injections to smallholders. They can be harvested at the age of four years, and from then on, harvesting can occur twice a year.

THE SMALL FORESTRY COMPANY

The research study examined CSR practice in a furniture production company, which exported overseas. It formed a small forestry company and entered into two forms of partnerships with local farmers to grow mahogany:

- The company provides seedlings and covers operational and maintenance costs. At harvest time, profits are shared between the company and the farmer, with the agreed share of 60-40 after deducting costs;
- The company provides only fertilisers and has sole rights to the harvest. All profits to individual farmers are calculated based on the number of trees planted and volume of timber produced per tree.

By contrast with its profitable processing industry in East Java, the small forestry company had a very limited number of employees at its operation in South Kalimantan. Only two staff worked in the office that handled the forestry company's management and dealing with local communities. "CSR implementation was largely a vehicle to enhance its economic performance," Kristiana Wahyudiyati commented.

Villagers interviewed argued that the primary aim of CSR was to boost the supply of mahogany for the furniture company, which consisted of two factories and about 300 workers. Key strategies to 'encourage' mahogany growers to sign up included free fertiliser, and a Muslim religious tour and factory visits for local leaders and district government agency staff. But not all leaders were impressed, with one commenting: "We are not interested in selling our mahogany to the company; there are many local buyers available in the district who can buy our timber at a higher price than that offered by the company."

There was a substantial impediment to the seedling grant strategy organised by the company. Some farmers cut down the young mahogany saplings and planted rubber trees, citing as reasons for the switch, the frequency of latex harvest, the ease of market access, and speedy financial transactions. Villagers commented that the forestry company did not keep to its agreement to buy their mahogany timber at market price – see also Case Study 12.

Effective community development is a two way process, resulting in mutual benefit and shared responsibility. In their CSR practice, both the large and small forestry companies "need to appreciate that CSR is fundamentally about forging strong, trusting and mutually beneficial relationships between corporations and communities," concluded Kristiana Wahyudiyati.

THE MINING COMPANY

The CSR practices of the mining company were found to be better organised compared to those of the forestry companies. The motivation shown by a senior manager in always encouraging the staff to engage in CSR helped in ensuring its successful implementation. Appointed staff members were asked to always monitor, control, and evaluate CSR activities, ensuring that goals were achieved.

The mining company practised CSR in a wide range of community development programs, with the intention of fulfilling the local community's needs in order to obtain a social licence. The company sought input from the community that was synthesised into a community action plan. CSR activities included road construction, fresh water treatment, school building construction, scholarships for primary students, and skills training and micro-economic development.

There was, however, no follow-up evaluation of the programs, or further guidance given either from the company or funded through a local farmer group or cooperative. For example, local communities asked for seedlings for banana planting, but after their supply, the company provided no advice on how to maintain banana trees, how to treat disease outbreaks, and where the villagers could market the bananas. As a result, no long term relationship was built.

Producing some 3 million tonnes of coal per year, the mining company's operation had adversely affected the region's environment, creating huge craters, noise, dust and affecting the water supply. The mining company was well aware that it was crucial to their continued operation in the region to counteract these negative impacts by projecting an image as a 'good corporate citizen.' The company's 'successful' CSR programs were extensively advertised and promoted to the local media, and in their lavishly produced annual report.

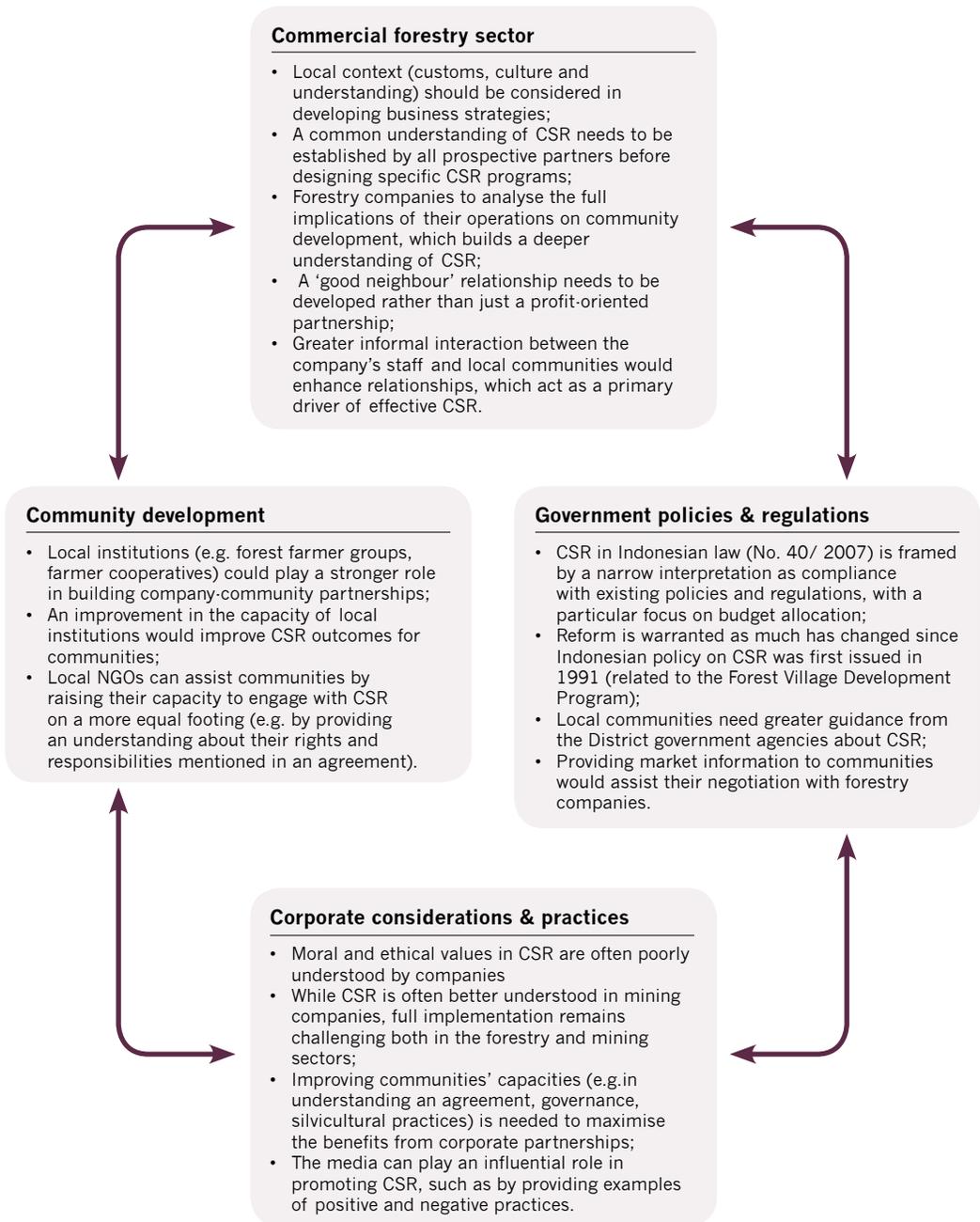
Many smallholder interviewees for this research saw the CSR programs, however, as "cosmetic actions." As an Indigenous person, who had lived in the mining area for decades, wrote in a local newspaper: "Reclamation is just sweet talk and lip service, in fact, the mining companies left tens of lakes full of polluted dark water."

ENHANCING CORPORATE SOCIAL RESPONSIBILITY

The need for profit often conflicts with CSR. But implementing CSR is not simply about sharing profits, opportunities and benefits from natural resource extraction, but also involves long term commitment, continuous communication and creating strong trust between companies and communities. The major findings from the research on CSR by Kristiana Wahyudiyati are presented in Figure 15.

From the interviews, it was found that companies' perceptions of CSR are often framed by a narrow interpretation, revolving around public relations and sponsorship. Several inter-linked factors contribute to a forestry company's approach to CSR, namely maintaining business profitability, securing future resource supplies, maintaining a cooperative relationship with local communities, and building and maintaining a positive media image.

FIGURE 15: Four focal areas for improving CSR in Indonesia's forestry sector.



Source: adapted from Conclusions, Enhancing corporate social responsibility, Wahyudiyati. {2014}.

Extractive industries, such as forestry and mining, often operate in the context of specific 'affected' communities. Consequently, companies are well-placed to identify and develop tangible approaches to CSR that are beneficial to local communities.

Government has mandated CSR as policy for the commercial forestry and mining sectors in Indonesia. It has not, however, followed this up with the necessary administration and regulation to ensure compliance.



In a review of the Indonesian government's People's Plantation Forest (HTR) program, several factors were identified to enhance participation by smallholders, which included:

- Simplifying the application process for smallholders to join the HTR program;
- Clarifying the land tenure where the HTR program was eligible;
- Allowing the trade of long-term leases (e.g. leases could be inherited or sold);
- Providing flexibility in the planting design (e.g. allow intercropping with food or cash crops);
- Ensuring the support funds and services allocated for the implementation of the HTR program reached smallholders.

Ref: Obidzinski, K. & Dermawan, A. (2010) Smallholder Timber Plantation Development in Indonesia: What is Preventing Progress? *International Forestry Review*, 12 (4): 339-348.

Building partnerships without continuous monitoring and guidance from companies is a recipe for failure. Farmers strongly expected more than a partnership based on delivering short term benefit. Close communication and better collaboration with farmer groups, NGOs and other stakeholders, such as local government, would more likely result in a well-maintained relationship.

Rather than being a formulaic procedure, CSR as a concept should become more nuanced and interpreted within a local setting, as well as adapted over time. Companies need to take a wider view using CSR beyond image building to encourage communities to develop their enterprise capacity and improve their livelihoods.



CHAPTER 8

MAKING CBCF WORK IN THE BEST INTERESTS OF SMALLHOLDERS



Establishing a vibrant community-based commercial forestry (CBCF) sector is widely viewed by Indonesian policy makers as a core strategy for assisting smallholders to build productive and sustainable farming systems that include a diverse and resilient ‘package’ of commercial opportunities. While small scale forestry is commonly an integrated component of family farms, most smallholders fail to realise the commercial potential of the trees they plant or appreciate the market specifications that affect log quality and value.

The following discussion draws on the key findings and recommendations from the previous chapters, summarising the outcomes of research undertaken as part of the four year project – *Overcoming constraints to community-based commercial forestry in Indonesia*.

The chapter concludes with the recommendation that 8 core elements be considered to improve the development of CBCF for smallholders in Indonesia.



CHAPTER 8

MAKING CBCF WORK IN THE BEST INTERESTS OF SMALLHOLDERS

SOCIO-ECONOMIC AND AGROFOREST CHARACTERISTICS OF CBCF

[Refer Chapter 2]

Many types of community forestry systems exist across Indonesia, with differences in objectives, land tenure (private or state land), natural or planted forests, silvicultural approaches, and the products and other benefits farmers receive. While each village has its own unique socio-cultural heritage, ecological condition and economic dynamics, there is generally a strong interest among smallholders to become involved in some form of CBCF.

 Tree growers are clustered where the strongest market demand arises

The opportunities for CBCF vary greatly across Indonesia, but where a strong market demand for timber arises, smallholders exhibit a corresponding trend to incorporate additional trees in their farming systems (e.g. in Pati, Bulukumba and South Konawe). However, the successful development of CBCF in Indonesia faces some common challenges, which include:

- Smallholders often have a weak understanding of market dynamics;
- Consequently, their silviculture does not always relate to market demand;
- Extension support is often too focused on just the technical aspects of silviculture; and
- Local farmer groups can have a limited organisational capacity.



In every region where there is a strong market demand for timber, most smallholders are interested in gaining a better understanding of market dynamics and silviculture.

▶ Adjusting CBCF program delivery to take into account traditional gender roles

An added cultural dimension affecting CBCF is the traditional separate gender roles ascribed to men and women in Indonesia. Much of the government and NGO support for CBCF is directed to the existing village-based farmer forest groups, which are predominantly comprised of men.

Tree production is the domain of the men in a farming household, with men having a greater role in the selection of species, times of planting and harvesting, and the overall silvicultural practices. Reflecting long-held cultural traditions, men are also more actively involved in community-based activities and meetings.

Women, on the other hand, have a greater role in harvesting and utilisation of non-wood products from forests (e.g. collecting fodder for livestock). They control financial aspects of wood production, like the negotiation of prices with timber traders, and the overall financial management of the household. As a result of this gender bias, rural women often miss out on receiving commercial information and support that might enhance their ability to negotiate better prices for their family's forest products. Improving the access to the latest commercial and technical information and training is important for both men and women. The local farmer forest group is a vital institution for improving the access to information and sharing experiences among men and women. Building the capacity of local farmer forest groups to actively engage men and women involved in CBCF will be important if it is to achieve its potential and increase farm incomes.

STRENGTH OF ASSETS HELD BY SMALLHOLDERS

[Refer Chapter 3]

While the constraints and opportunities for CBCF in Indonesia are broadly known, a lack of clarity – in socio-economic, technical and policy terms – still surrounds what constitutes ‘pro-poor’ CBCF. Indonesia has a rapidly developing economy and increasing wealth per capita, yet many in rural communities remain disadvantaged and marginalised from the country’s growing wealth. In service delivery, it is often ‘low wealth’ smallholders who miss out on the benefits of rural development initiatives. The lack of clarity about the varying wealth status levels of smallholders makes it difficult to target policies and programs to enhance the livelihoods of those who need it most – those who already have the least of everything.

Timber as a cash flow injection on a needs basis

When considered on an average weekly basis in most CBCF systems, the contribution of forest products (timber and non-timber) to a farmer’s household income is relatively small. However, it plays a crucial default role as a ‘savings account’ for meeting household needs where a large sum of money is required at short notice. As such, CBCF bridges a gap, helping build the resilience of farming households. The downside is that needs-based harvesting of trees for a cash injection, is unlikely to correspond with the optimum timing for commercial timber production. What this means is that smallholders frequently miss out on achieving the best possible financial returns from CBCF.

Getting a better grasp on the complexity of smallholders’ livelihoods

To understand the role and contribution of CBCF to smallholders’ livelihoods, the project more deeply explored the concept of rural livelihoods – the components, processes and outcomes. This ultimately involved developing a Forestry Livelihood Framework based on a methodology that maps the different ‘assets’ held by smallholders according to their differing levels of wealth (see Chapter 3). Assets were divided into human (e.g. knowledge, and skills), natural (e.g. forests, land and water), financial (e.g. savings and income), physical (e.g. houses and vehicles), and social (e.g. networks and partnerships).

The livelihoods framework provides a useful way to understand the complexity of smallholders’ livelihoods. The research found that in terms of CBCF, ‘high’ wealth farmers mostly used physical and human assets, while farmers of ‘medium’ wealth used mostly physical and financial assets. In contrast, ‘low’ wealth farmers relied more on their social capital for undertaking CBCF (e.g. close relationships with their peers for information and labour exchange). Moreover, short rotation forest crops (e.g. sengon) often have more appeal to ‘low’ wealth farmers. They lack the financial reserves to invest in long rotation species (e.g. teak). Understanding the differing levels of assets held by smallholders could assist in designing more effective support programs.



While the contribution of forest products makes up only a small part of most farmers' income, this could be boosted by better extension delivery.

▶ Designing more effective extension

With an increased understanding of the socio-economic and agroforest characteristics at the district level, comes an ability to design more effective support programs. For example, the Forestry Livelihood Framework could be used to assess and measure the assets for different smallholders and the external processes affecting their lives, and how these combine to influence their preferences for CBCF (e.g. the appeal of short-rotation species for 'low' wealth farmers).

Armed with this knowledge, regional extension services could be tailored so that a range of expertise is available for a mix of smallholders to access, such as by answering: how timber species can be integrated with agricultural crops? How do different silvicultural options link to market requirements? What capacity building do farmer groups most need? What financial training about CBCF can be given to farm women?

MARKET PATHWAYS USED BY SMALLHOLDERS

[Refer Chapter 4]

Research identified that smallholders use four different market pathways, or value chains, to sell their forest products. All CBCF market pathways offer advantages and limitations, with each pathway appealing to smallholders in different circumstances

The most common market pathway for smallholders with commercial timber is to sell their trees 'standing' to market brokers (middlemen). However, smallholders can aggregate their resource and sell via a growers' cooperative; via a growers' cooperative that in turn sells to a market broker; or sell directly to processors. Even within a single locality, there may be several market pathways operating simultaneously – providing benefits for smallholders in different circumstances.

While the market pathways used by smallholders are broadly understood, access to markets for many smallholders is still largely determined by their local social networks, which are not necessarily constructed for optimum business transactions. Furthermore, the social networks of 'wealthy' smallholders tend to be different to those of 'poor' smallholders, even when living in the same village. How to optimise the different market pathways that smallholders use to sell their commercial forest products remains to be fully understood.

Adoption of the MTG program could provide a pathway for improving silvicultural and marketing performance.



Lack of uniformity in log measurements and therefore log values

It is important to appreciate the profitability, capital investment and risk derived at each stage in the market pathway, as it is not always desirable or feasible for smallholders to become involved in the harvesting or processing stages of the forestry sector. Simply understanding the prices paid, or received, at each stage of a market pathway does not necessarily give an accurate indication of profitability for those involved. While information on log prices is relatively easy to obtain, the research found no universal indices for log measurement (i.e. quality, size) in the study regions, making it difficult to compare log 'values'.³⁶

Lumpy nature of harvesting results in farmers turning to brokers

Commercial forest production is generally not the largest contributor to the household income of farmers. As already highlighted, smallholders often dip into their stock of timber on an 'as needed' basis. This produces little imperative to gain a detailed understanding of commercial timber markets and alternative market pathways. Understandably, lacking knowledge, growers sell their trees directly to a local broker, who lives in or near the village and who has business connections to larger regional or national markets or processing industries. The danger is that this can lead to farmers becoming highly dependent on the prices offered by the local broker.

Preferred market pathway for optimising farmer returns on their forest

Nonetheless, the research identified some advantages for small scale growers in aggregating their timber resource to efficiently achieve a critical mass before selling to a processor. This market pathway [#2] involves farmers combining to harvest and sell via a farmers group, such as a cooperative. The main reasons are the potential strength of a growers' cooperative or group in developing direct marketing arrangements with a processor, the capacity of a group to understand local and regional wood markets (e.g. timber specifications and prices) so as to be able to negotiate fair prices, and the capacity of a group to participate in the certification process for timber. This market pathway is emerging in Pati where a substantial market demand for timber exists.

Increasing understanding of the multiple market pathways

By recognising the multiple market pathways that operate at the district level, extension agents could provide regular and up-to-date information to smallholders about the options available in their district (e.g. an illustrated poster explaining the different market options could be displayed and discussed in each village; extension agents could encourage smallholders to share their market experiences).

ENHANCING SMALLHOLDERS' KNOWLEDGE OF FOREST MARKETS AND SILVICULTURE

[Refer Chapter 5]

Much research, by this project and others, has confirmed that most smallholders tend to view CBCF as a 'savings account' and harvest their trees when needed, often deciding to sell trees at short notice. In effect, the trees planted by smallholders are left to grow without any of the active management (thinning and pruning) required to enhance the quality or quantity of the timber produced. The decision to sell trees is generally made irrespective of the trees' longer term potential or the market dynamics, with smallholders usually accepting whatever price is offered by the local broker. It is common for smallholders to sell trees of variable age and quality within a single transaction, and subsequently receive modest prices from brokers or processors.

New extension program on silviculture designed

Smallholders often adopt silvicultural practices acquired from their neighbours, and follow these regardless of the preferences of processors. This project designed and delivered a novel pilot forestry extension course to over 120 smallholders – the 'Master TreeGrower' (MTG) initiative.³⁷

The program focused on developing farmers' understanding of timber market specifications, improving tree growth and management, and exploring commercial management options that reflected their particular interests and resources. The participants were taken to local timber processors to gain a better understanding of market requirements and the marketing chains. Silvicultural practices taught during the MTG Indonesia course were designed to link to local market demands and the quality of timber preferred. The project's expectation is that this will lead to better financial returns to smallholders.

Tailored to suit the needs of smallholders

The pilot 'MTG Indonesia' approach to farmer education and extension is novel in that it does not set out to 'train' smallholders about how to adopt and replicate the silviculture practices used by industrial or government forestry. As demonstrated by the previous research, the tree growing objectives, resources and knowledge of smallholders and industrial foresters are very different.

The MTG Indonesia course covered a consistent five part structure that included a review of smallholder interests in tree growing, exploration of local market opportunities, training in tree and forest measurement, education in tree growth and forest management, and discussion of future information and support needs. The course also aimed to encourage smallholders to share their experiences and consolidate their personal networks. This was seen as a means of encouraging greater confidence among smallholders to explore new market pathways.



A disconnect exists between global expectations and the reality that most smallholders only supply wood in low volumes of variable quality on an irregular basis. However, thoughtful development of CBCF may bridge this gap.

▶ Including the training of extension agents within MTG Indonesia courses

The Indonesian government expects that CBCF's implementation will lead to hundreds of thousands of rural families establishing and actively managing trees on their farms for timber production.

To achieve this objective, organisations supporting CBCF should consider adapting and expanding the delivery of the MTG Indonesia course to smallholders interested in CBCF. Training forestry extension agents in MTG principles and practice would have a multiplier effect. Extension agents would then be in a position to assist smallholders to increase their understanding of different market requirements and trends, and how these options relate to their silvicultural practices.

COMBINING THE COOPERATIVE MARKET PATHWAY WITH CERTIFICATION

[Refer Chapter 6]

Project research found some evidence that certified timber had attracted prices 10-30% higher prices for logs at log yards for growers than uncertified timber. Yet the market for certified timber was small and specialised (e.g. usually requiring logs of large size and high quality), compared with the wider forest market. Evidence was also advanced that products manufactured with certified timber were receiving prices 5% higher than comparable products without certified timber.³⁸

The biggest challenge for smallholders before they make a greater investment in certified forestry is that it is a complex and expensive process. For most smallholders, the cost of certification set-up alone acts as a barrier making access unaffordable. Ongoing compliance adds a further cost burden beyond the reach of most smallholders.

Group certification to reduce set up and ongoing costs

Three different forest certification schemes are available in Indonesia. Certifiers, like the Forest Stewardship Council, have moved to spread and reduce unit costs by introducing group certification schemes. The project analysed four case studies looking at whether or not group certification represented a feasible market pathway. But the burden of certification on smallholder growers still seems to be onerous. To date, the supply of certified timber from smallholders is largely due to the costs being covered by manufacturers or NGOs seeking to gain access to 'certified' markets and promote a positive brand image.

Standardising methodologies and reducing red tape

Standardising methods for applying for certification would remove a significant impediment. Government agencies at the district level could become involved in developing a clear, simpler process (e.g. an illustrated poster explaining the different forest certification options and requirements could be displayed and discussed in each village; extension agents could initiate a process to collate and standardise the reporting for smallholders to participate in forest certification schemes).

SMALLHOLDER EXPERIENCES WHEN PARTNERING WITH NGOS AND CORPORATES

[Refer Chapter 7]

High expectations are placed on non-government organisations (NGOs) to partner in CBCF as a supplement to state agencies, ensuring good governance, environmental outcomes, social justice and participatory approaches. Another frequent partner in delivering CBCF projects are large and small corporations. Indonesian government policy explicitly mandates natural resource industries to engage in the practice of 'corporate social responsibility' – although it does not necessarily regulate compliance. In theory, both these types of partners ought to engage in meaningful collaboration with local communities and demonstrate a long term commitment to effect social change.

Matching NGOs and smallholder expectations

Project research analysis explored the match between NGOs' CBCF contributions and adopting culturally appropriate actions that might improve rural livelihoods. Adopting a 'bottom up' process that reflects the goals of the community can be challenging, as there can be over-riding pressure to focus on technical service issues, thereby reducing any focus on social justice issues relating, for instance, to equity and gender.

This mismatch is further exacerbated by the yawning gap between smallholders and global expectations. A disconnect occurs between the low volume, irregular supplies of low quality wood that a farmer can offer and the market demands of overseas buyers for large volumes, high quality wood and consistent supply.

NGO agendas largely shaped by their donors

On the NGOs part, their agendas are to a large degree shaped by donors' concerns and interests. Funding from donors is usually focused on short term quantifiable outputs, rather than long term complex social issues, such as the gap between the rich and poor, gender equity or community 'ownership' in development initiatives. If donors could be persuaded to take a greater interest in evaluation and adaptation on a long term basis, NGOs might be more likely to strengthen their commitment to addressing critical community development problems at the local level.

▶ Narrow interpretation of CSR

Project research found that several inter-linked factors contributed to the corporates' approach to implementing corporate social responsibility (CSR), few of which had anything to do with community development. Perceptions of CSR were largely framed by a narrow interpretation. CSR was seen as a process for maintaining business profitability, securing future resource supplies, ensuring a cooperative relationship with local communities that surrounded the company's operations, as well as projecting a positive media image.

Extractive industries, such as forestry and mining, often operate in the context of specific 'affected' communities. Consequently, companies are well-placed to identify and develop tangible approaches to CSR that are beneficial to local communities.

▶ Implementing CSR involves two way collaboration for mutual benefit

The need for profit often conflicts with CSR. But implementing CSR is not simply about sharing profits; rather it involves long term commitment, continuous communication and creating strong trust between companies and communities. Effective community development is a two way process, resulting in mutual benefit and shared responsibility.

Farmers interviewed for the project strongly expected more than a partnership based on delivering short term benefit. Close collaboration with farmer groups, NGOs and other stakeholders, such as local government, would more likely result in a well-maintained relationship.

Just as terracing involves teamwork, effective community development- whether by an agency, NGO or corporate - demands a collaborative two way process with smallholders.



SUMMARY OF 8 ELEMENTS TO CONSIDER

1. Indonesia has a diverse socio-economic and physical topography – no two rural villages are the same. Even within a single village, there is usually a wide variation in capacity and willingness of individual families to commit their land and time to commercial forestry. Careful assessment is needed of the capacity and interests of smallholders who are the target of policies and programs to promote CBCF. A shallow understanding of how policies and programs will affect particular segments of smallholders may lead to ineffective implementation or adverse impacts.
2. Achieving the anticipated benefits from CBCF will require investing in the range of assets (or capitals) that comprise the livelihoods of smallholders – physical, financial, environmental, human and social – so that individual families and their surrounding community have the capacity to make informed decisions. In some communities, this may mean supporting the training of small scale growers and expanding their networks with markets. In other communities, this may mean supporting the start-up of micro-finance options or out-grower arrangements for smallholders with limited financial reserves.
3. Forestry extension has evolved from simply sharing technical aspects of traditional silviculture with interested growers. Today, silviculture needs to closely reflect the goals of individual smallholders and the demands of the commercial market within which they hope to trade. Given Indonesia's rich diversity, not all smallholders will have the same goal for their forestry enterprise, nor are all commercial markets the same. Forestry extension staff need to carefully assess the local and regional market opportunities for the smallholders they work with, then translate this knowledge into appropriate silvicultural training that achieves the goals of smallholders.
4. Efficiencies of uniformity and scale can prove beneficial in the commercial forestry sector as in other sectors. However, smallholders are not always seeking to maximise profits from their tree planting, and can be willing to offset financial profits from forestry enterprises if this contributes to other livelihood or landscape goals. Commercial contracts that emphasise regular and uniform supplies may not appeal to the majority of smallholders. Some form of aggregation and coordination of supplies produced by smallholders – via cooperatives, market brokers, out-grower schemes – is likely to be beneficial for most small scale growers with infrequent harvests.
5. For adoption by smallholders, forest certification schemes need to be clear and simple, as well as avoid excessive bureaucracy if they are to involve a large number of smallholders. It may be more efficient for an NGO or a specialist market broker to administer and coordinate the involvement of large numbers of smallholders in a certification scheme, rather than directly by large scale processors.
6. All partners in forestry initiatives must be well-informed about the different roles, responsibilities, costs, inputs, risks and anticipated benefits. All partners need not have the same objectives; rather each partner needs to understand the motivation of the other partners. For the forestry initiative to be mutually-beneficial, a transparent strategy is required.
7. In influencing the development of CBCF, clear and complementary roles need to be defined for the different tiers of government, and across the multiple agencies at each tier. These roles need to align policies, regulations and support programs. Agencies working directly with smallholders to promote CBCF (e.g. district forestry office) need their own capacity building, so they can provide strong support for local farmer forest groups to better understand the range of silvicultural options, the different markets for CBCF products and services, and how corporate social responsibility might be applied to CBCF.
8. Local farmer forest groups are vital institutions for building the knowledge and skills of smallholders investing in CBCF. Building the capacity of local farmer forest groups will form an important factor in determining whether CBCF can achieve its full potential, and provide ready access to local experiences, commercial and technical knowledge, and market pathways for men and women. Highly capable farmer forest groups can also play a strong role in fostering partnerships for its members with government agencies, NGO organisations and the private sector. Farmer forest groups could facilitate the participation by smallholders in forestry 'certification' markets, such as by efficiently coordinating the administration, auditing and sales for members.

END NOTES

- ¹ The World Bank (2008) *World Development Report 2008: Agriculture for Development*. The World Bank: Washington, D.C., USA
- ² Westoby, J. (1987) *The Purpose of Forests*. Basil Blackwell Inc: New York, USA.
- ³ Center for International Forestry Research (CIFOR) (2013) *Annual Report 2013: Forestry in the Global Landscape*. CIFOR: Bogor, Indonesia.
- ⁴ Food and Agriculture Organisation (FAO) (2010) *Global Forest Resources Assessment*. FAO: Rome, Italy.
- ⁵ Bull, G. & White, A. (2002) *Global Forests in Transition: Challenges and Opportunities for Communities, Commerce and Conservation*. Presentation at Global Perspectives on Indigenous People's Forestry, Vancouver, June 6, 2002.
- ⁶ Margono, B.A., Potapov, P.V., Turubanova, S., Stolle, F. & Hansen, M.C. (2014) Primary forest cover loss in Indonesia over 2000–2012. *Nature Climate Change*, 4 (August): 730-735
- ⁷ Poffenberger, M. (2006) People in the forest: community forestry experiences from Southeast Asia. *International Journal of Environment and Sustainable Development*, 5 (1): 57 – 69.
- ⁸ Obidzinski, K. & Dermawan, A. (2010) Smallholder Timber Plantation Development in Indonesia: What is Preventing Progress? *International Forestry Review*, 12 (4): 339-348.
- ⁹ Van Noordwijk, M., Suyanto, S., Budidarsono, S., Sakuntala, N., Roshetko, J.M., Tata, H.L., Galudra, G. & Fay, C. (2007) *Is Hutan Tanaman Rakyat a new paradigm in community-based tree planting in Indonesia?* Working paper #45, World Agroforestry Centre: Bogor, Indonesia.
- ¹⁰ Irawanti, S., Ginoga, K.L., Suka, A.P. & Race, D.H. (2014) Commercialising Community Forest in Indonesia: Lessons about the barriers and opportunities in Central Java. *Small-scale Forestry*, 13 (4): 515-526.
- ¹¹ Cernea, M.M. (1991) The social actors of participatory afforestation strategies (pp: 340-393). In: M.M. Cernea (ed) *Putting People First: Sociological variables in rural development* (2nd edition). Oxford University Press: Oxford, UK.
- ¹² Fisher, R.J. (2003) Innovations, persistence and change: Reflections on the state of community forestry. In: RECOFTC and FAO (eds) *Community forestry: current innovations and experiences*. Regional Community Forestry Training Centre (RECOFTC): Bangkok, Thailand.
- ¹³ Gilmour, D., Malla, Y. & Nurse, M. (2004) Linkages between community forestry and poverty. Regional Community Forestry Training Centre (RECOFTC): Bangkok, Thailand.
- ¹⁴ Hoblely, M. (2007) Forests – the poor man's overcoat: foresters as agents of change? Paper presented at the Australian National University (3rd April): Canberra, Australia.
- ¹⁵ Gilmour, D. (2016) Forty years of community-based forestry: A review of its extent and effectiveness. FAO: Rome, Italy.
- ¹⁶ Race, D., A.R. Bisjoe, R. Hakim, N. Hayati, Julmansyah, A. Kadir, Kurniawan, P. Kusumedi, A.A. Nawir, Nurhaedah, D.U. Perbatasari, R. Purwanti, D. Rohadi, H. Stewart, B. Sumirat & A. Suwarno (2009) Partnerships for involving small-scale growers in commercial forestry: lessons from Australia and Indonesia. *International Forestry Review*, 11 (1): 88-97.
- ¹⁷ Irawanti, S., Ginoga, K.L., Suka, A.P. & Race, D.H. (2014) Commercialising Community Forest in Indonesia: Lessons about the barriers and opportunities in Central Java. *Small-scale Forestry*, 13 (4): 515-526.
- ¹⁸ Irawanti, S., Ginoga, K.L., Suka, A.P. & Race, D.H. (2014) Commercialising Community Forest in Indonesia: Lessons about the barriers and opportunities in Central Java. *Small-scale Forestry*, 13 (4): 515-526.
- ¹⁹ Ellis, F. (2000) *Rural Livelihoods and Diversity in Developing Countries*. Oxford University Press: Oxford, UK.
- ²⁰ Department for International Development (DFID) (1999) Sustainable Livelihoods Guidance Sheet. DFID: London, UK.
- ²¹ International Labor Organisation (ILO) (2009) *Value chain development for decent work: A practical and conceptual guide*. Geneva: International Labor Organisation.

- ²² Roshetko, J.M., Rohadi, D., Perdana, A., Sabastian, G., Nuryartono, N., Pramono, A.A., Widayani, N., Manalu, P., Fauzi, M.A., Sumardamto, P. & Kusumowardhani, N. (2013) Teak agroforestry systems for livelihood enhancement, industrial timber production, and environmental rehabilitation. *Forests, Trees and Livelihoods*, 22 (4): 241-256.
- ²³ Bauer, M. & Gordon, J. (2003) Evaluation of the agroforestry and farm forestry program: an overview of all projects – stage 1. Rural Industries Research and Development Corporation: Canberra, Australia.
- ²⁴ Wakka, A.K., Bisjoe, A.R.H., Muin, N., Hayati, N., Sumirat, B.K. & Purwanti, R. (2015) Report on Research and Capacity Building of Private Forest Farmers in the Context of Community-Based Commercial Forestry. Unpublished research report. FOERDIA: Makassar, Indonesia.
- ²⁵ Cashore, B., Gale, F., Meidinger, E. & Newsom, D. (eds) (2006) *Confronting Sustainability: Forest Certification in developing and Transitioning Countries*. Yale School of Forestry and Environmental Studies, Yale University: New Haven, CT, USA.
- ²⁶ Romero C., Putz F.E., Guariguata M.R., Sills E.O., Cerutti P.O. & Lescuyer G. (2013) *An overview of current knowledge about the impacts of forest management certification: A proposed framework for its evaluation*. Occasional Paper #91, Center for International Forestry Research (CIFOR): Bogor, Indonesia.
- ²⁷ Crawford, H. (2006) *A review of forest certification in Australia*. Forest and Wood Products Research and Development Corporation: Canberra, Australia.
- ²⁸ Melati, Purnomo, H. & Shantiko, B. (2013) *Making research work for small-scale furniture makers*. Center for International Forestry Research (CIFOR): Bogor, Indonesia.
- ²⁹ Forest Stewardship Council (FSC) (2014) *Global FSC certificates: type and distribution*. Forest Stewardship Council: Bonn, Germany.
- ³⁰ The Indonesian Ecolabel Institute (LEI, *Lembaga Ekolabel Indonesi*) (2014) LEI's certified forests (as at June 2013). <http://www.lei.or.id>
- ³¹ ITS Global (2011) *The Economic Contribution of Indonesia's Forest-Based Industries*. ITS Global: Melbourne, Australia. Pp: 49.
- ³² Forest Stewardship Council (FSC) (2013) *Harmonised Certification Bodies' Forest Stewardship Standard for the Republic of Indonesia*. Forest Stewardship Council: Bonn, Germany.
- ³³ World Bank (1998) *Involving Nongovernmental Organizations in Bank-Supported Activities: Good Practice statement* 14.70. World Bank: New York, USA
- ³⁴ Carroll, A.B. (1999) Corporate Social Responsibility: Evolution of a definitional construct. *Business and Society*, 38 (3): 268-295.
- ³⁵ World Business Council for Sustainable Development (WBCSD) (2001) Corporate Social Responsibility: Meeting changing expectations. WBCSD Publications, Geneva, Switzerland.
- ³⁶ Stewart, H. & Rohadi, D. (2015) *Evaluation of the dominant market pathways of community-based commercial forestry being implemented on smallholder private forests*. Research report on research task #3 for project FST/2008/030, Australian Centre for International Agricultural Research (ACIAR): Canberra, Aust.
- ³⁷ Reid, R. & Syafii, S. (2015) Design, delivery and evaluation of an alternative farmer learning approach to enhancing the capacity of smallholders to participate in Community Based Commercial Forestry in Indonesia. Research report on research task #4 for project FST/2008/030, Australian Centre for International Agricultural Research (ACIAR): Canberra, Aust.
- ³⁸ Stewart, H., Rohadi, D. & Irawanti, S. (2015) *Exploring forest certification for smallholder forest growers in Indonesia*. Research report for project FST/2008/030, Australian Centre for International Agricultural Research (ACIAR): Canberra, Aust.

KEY UNPUBLISHED RESEARCH REPORTS PREPARED BY THE PROJECT TEAM

- van de Fliert, E. (2013) **Social Dimensions Analysis of Community-based Forestry in Indonesia**. Report on Research Task #1 (FST/2008/030).
- Oktalina, S.N. et al. (2015) **Forestry Livelihood Framework**. Report on Research Task #2 (FST/2008/030).
- Stewart, H., Rohadi, D. et al. (2015) **Evaluation of the dominant market pathways of community-based commercial forestry being implemented on smallholder private forests**. Report on Research Task #3 (FST/2008/030).
- Reid, R. and Syafii, S. (2015) **Design, delivery and evaluation of an alternative farmer learning approach to enhancing the capacity of smallholders to participate in Community Based Commercial Forestry in Indonesia**. Report on Research Task #4 (FST/2008/030).
- Stewart, H., Rohadi, D. and Irawanti, S. (2015) **Exploring forest certification for smallholder forest growers in Indonesia**. Report on additional study of forest certification experiences (FST/2008/030).

Community-based commercial forestry (CBCF) is seen worldwide as a way of reversing the loss of forests. Indonesia reportedly has one of the highest rates of tropical deforestation on earth. Moreover, half of Indonesia's farming community of 40 million people live in poverty, suffering from inadequate food and shelter. Linking reforestation with commercial opportunities for rural communities seems a logical strategy. Although Indonesia has moved to invest heavily in CBCF, raising the farmer's knowledge about the true value of their trees and linking them to viable markets is proving far from straightforward.

Over the past 10 years, a multi-disciplinary team of over 30 Australian and Indonesian researchers has addressed this knotty problem in 10 villages, across five districts within Indonesia. In this book, project team leader Dr Digby Race and his colleagues have drawn together the threads of their research and presented it in plain English. The book contains vital, easily accessible information for anyone engaged in CBCF forestry extension and policy-making, not only in Indonesia but throughout the developing world.

The project team adopted a 'bottom up' approach in both their background research surveys and the subsequent delivery of practical recommendations. The team concluded that the avenue for 'adding value' to the trees planted in almost every farmer's field consisted of a two-pronged approach. First, by focusing on improving farmers' silvicultural knowledge, specifically the beneficial effects of thinning and pruning in improving their trees' quality. Second, by introducing the farmers to potential purchasers within their district and giving them a better understanding of how commercial markets work.

Training for farmers was based on an adapted version of the Australian Master TreeGrower program. Independent evaluation found that it resulted in a significant improvement in a farmer's knowledge of forestry as well as more active management of their trees.

The project team also looked at whether aggregating farmers in groups for certification of their trees would deliver a better price for their wood and access to wider markets. The team then turned their research lens on the effectiveness of smallholder groups partnering with NGOs and companies to aid their tree growing and community development.



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