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Overcoming constraints to community-based commercial forestry in Indonesia

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- *Koperasi Hutan Jaya Lestari* in South Konawe,
- *CV. Dipantara* in Gunungkidul, *CV. Sumber Anugrah* and *CV. Kembang Sengon* in Pati,
- *PT. Jawa Furni Lestari* in Yogyakarta.

2 Executive summary

Indonesian government policy aims to foster a vibrant community-based commercial forestry (CBCF) sector as a strategy to assist smallholders build productive and sustainable farming systems, stimulate forest-based industries, and reduce degradation and loss of natural forests. However, many smallholders produce and sell poor quality wood to industry and so fail to realise the full commercial potential of the trees they plant.

Tens of thousands of smallholders manage more than 3.5 million ha of planted forests across Indonesia with two of the most important commercial tree species being teak (*Tectona grandis* L., grown on 15-30 year rotations) and sengon (*Paraserianthes falcataria*, grown on 5-7 year rotations). While small-scale forestry is a common component of family farms, for example comprising about 30% of farm income in Java, most smallholders don't understand the market specifications and corresponding log quality and value.

The aim of this project was to analyse the dominant business models used in CBCF in Indonesia, so 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 practice to improve wood quality, uncertainty about how to assess the quality and volume of timber in a 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 through the 'Master Tree Grower' training course that improves the silviculture skills of smallholders, enabling them to produce high-quality timber and receive higher prices from the private sector.

By carefully explaining the link between market specifications and silviculture to smallholders, many growers were readily able to adjust their silviculture to efficiently produce timber of higher quality. The project team has worked with smallholders in the Bulukumba district for many years, who in turn have adopted silvicultural practices to produce high quality wood that has attracted a price increase of 16% over the past 2 years from local processors. The sustained supply of higher quality of farm-grown wood in Bulukumba has enabled the private sector processors to break into an export market.

Also, a recent market opportunity that has emerged for smallholders is for certified timber, with examples that this had attracted prices 10-30% higher prices for logs at log yards for growers than uncertified timber. While the market for certified timber is currently small and specialised (e.g. usually requiring logs of large size and high quality) compared the wider forest market, it illustrates the changing prospects for CBCF in Indonesia.

3 Background

While rural communities have historically had a strong dependence on forests in most parts of the world (Charnley & Poe 2007, Sands 2005), it was in the 1970s that community forestry was articulated as a strategy to address the detrimental impacts of deforestation on the livelihoods of rural communities in some developing countries in Asia (e.g. India, Nepal & the Philippines) (Gilmour & Fisher 1991, Hobley 1996, Malla 2000). The concept was soon popularised by international aid agencies and governments in many other countries in Asia, Africa, and Central and South America, and later expanded to include options for commercialisation of forest products as a means of addressing rural poverty (Alden Wiley 2002, Gilmour *et al.* 2004, Hobley 2007, Pagdee *et al.* 2006).

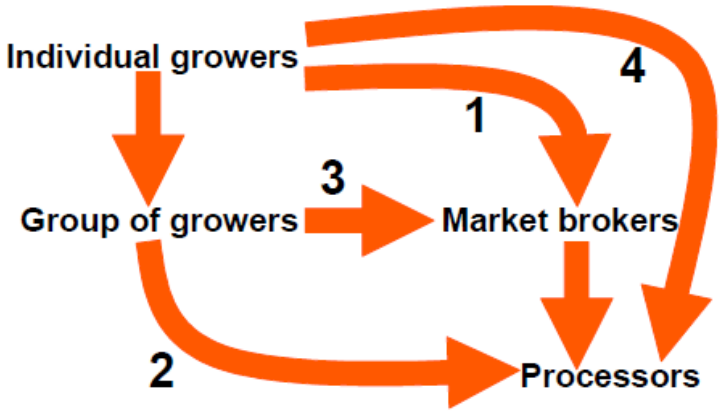
The global trajectory of community-based forestry indicates it is of increasing importance to the wider forestry sector. Indications of this importance are that: nearly 1 billion people rely on some form of forest products for their daily livelihoods, an increasing area of forest is under community-based control or management (more than twice the area of industrial forests), and an increasing array of policy and administrative mechanisms seek to foster community-based forestry. The experience of community-based commercial forestry (CBCF) in Indonesia reflects many of the broad international trends, with CBCF occurring on private land, community-owned land and state-owned land (leased to communities).

The Indonesian government continues to increase its investment in CBCF as a strategy to achieve the twin goals of alleviating rural poverty and building a sustainable forest industry. One of the government's main initiatives to encourage CBCF is the *Hutan Tanaman Rakyat* (HTR) program, which aims to establish 5.4 million ha of commercial forestry with 360,000 farm families by 2016 via long-term leasing of State-owned plantations.

While the HTR program is one of the major community forestry initiatives in Indonesia led by government, the private sector also has its own CBCF initiatives – established and refined over the past 20 years (Mayers & Vermeulen 2002; Nawir & Santoso 2005; Race & Desmond 2002). 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 *Acacia* and sengon species for commercial markets (Mendham & Hardiyanto 2011). Similarly, a private company operating in South Sulawesi sources fast-grown timber from farmers (via market brokers) for the domestic plywood market. Another more recent entity – Trees 4 Trees (www.trees4trees.org), was recently established in Indonesia by furniture manufacturers and their global network of retailers, which sources all of its supply from smallholders in an integrated supply chain that connects small growers with global markets.

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 *hutan rakyat* (HR). Exploring the dominant market pathways used by smallholders involved in CBCF was an important research component of the project, with the main pathways simplified as shown below (Fig. 1):

Figure 1: Market pathways studied by the project



The dominant market pathways studies by this project were:

1. Individual growers selling to market brokers (middlemen), who on-sell to processors;
2. Individual growers forming a group to aggregate their resource (e.g. growers' cooperative) and selling to processors;
3. Groups of growers selling to market brokers, who on-sell to processors; and
4. Individual growers selling directly to processors.

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 (e.g. van Noordwijk *et al* 2007). 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. Thousands of smallholders manage more than 3.5 million ha of planted forests across Indonesia with two of the most important commercial tree species being teak and sengon. 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 (Irawanti *et al.* 2014).

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 (Cernea 1991, Fisher 2003, Gilmour *et al.* 2004, Hobley 2007). 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 (Race *et al*. 2009). Other research has also 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. uncertain 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).

The commercial prospects for smallholders and their surrounding communities from forestry are often challenging – with more profitable returns from oil palm and rubber in some districts, and considerable deficiencies in local institutional capacity – that limit the benefits from commercial forestry. This is the context in which the research project – *'Overcoming constraints to community-based commercial forestry in Indonesia'* [FST/2008/030] has operated over the past four years (2011-15).

4 Objectives

The overall aim of this project was to undertake in-depth analytical research of the dominant business models used in CBCF in Indonesia, so to refine existing models and underpin approaches to better inform farmers about their livelihood investment decisions. Using the information from this research, the project then designed a novel approach to rural extension so that farmers were better informed about the markets and silviculture suited to CBCF. The project was framed by four key objectives, outlined below.

Objective 1: To conduct a 'social dimensions' analysis of the community context in which the three CBCF models operate, and design a framework for assessing the livelihood outcomes for the rural communities involved in CBCF initiatives ('forestry livelihoods' framework).

1.1: To conduct an in-depth 'Social dimensions' analysis in the project's initial phase, so that the community profiles and segments are understood by the project team and partners, and that any important gender and age-specific issues are identified (Research Task 1);

1.2: To review international literature relating to rural livelihood assessment (e.g. DFID model), forestry development, and cost-benefit analyses to construct a 'forestry livelihoods' framework (Research Task 2); and

1.3: To conduct training workshops with local partners in the five field locations, so that the 'forestry livelihoods' framework is field-tested and adapted to the local context.

Objective 2: To critically evaluate the dominant business models of CBCF being implemented by government and the private sector (Research Task 3).

2.1: To undertake comprehensive analysis of the selected dominant models of CBCF, with each model having a 'value chain' assessment, analysis of the operating context, how implementation can be refined, and evaluation of the current and predicted commercial and livelihood impacts (economic, livelihood – families & communities) as guided by the 'forestry livelihoods' framework; and

2.2: To conduct interactive workshops with selected organisations so that the key findings are interpreted and used to refine the selected models of CBCF explored in detail by the project, and to inform other approaches to CBCF.

Objective 3: To increase the capacity of the farmer forest groups participating in CBCF initiatives, so farmers are able to make better investment decisions (Research Task 4).

3.1: To work closely with local partners to conduct a 'skills and knowledge' appraisal of all the farmer forest groups involved in the selected CBCF models in the five study locations (aiming to involve about 400-500 smallholders in each location), and design an effective 'learning' approach for increasing the capacity of the farmer forest groups; and

3.2: To provide training to the local project partners who responsible for working with the target farmer forest groups, on how to deliver the new 'learning approach' with farmer forest groups so that farmers can adjust and optimise their investment in the selected CBCF models.

Objective 4: To engage and influence priority stakeholders to create the optimum conditions (e.g. governance requirements) for the effective implementation of the selected CBCF initiatives.

4.1: To engage the project's range of primary stakeholders in the process of critical analysis and optimisation of the three models of CBCF, via an integrated outreach strategy targeted at relevant senior policy-makers, senior company staff, project officers and leaders and members of farmer forest groups; and

4.2: To communicate with the project's wider policy and scientific community, via publication of 4 scientific articles and co-hosting of a major international symposium in Indonesia – promoting the activities and results of the project, along with relevant research from other countries, such as an IUFRO research forum with published proceedings.

5 Methodology

The project focused its field activities in five districts across Central and Eastern Indonesia, where there was a high interest in CBCF for a wide range of stakeholders (i.e. where major investment in CBCF has occurred or is expected to expand) (see Fig. 2, below). The five study sites also included a range of bio-physical, socio-economic and commercial characteristics, so to inform CBCF being developed across a diverse suite of situations in Indonesia. The five study sites were located in:

- Gunungkidul (Yogyakarta),
- Pati (Central Java),
- Bulukumba (South Sulawesi),
- Konawe Selatan (South-East Sulawesi), and
- Sumbawa (West Nusa Tenggara).

Figure 2: Locations of field locations

The Social Dimensions Analysis (Research Task #1)

The Social Dimensions Analysis (Research Task #1) was the initial research activity of the project and required the team to construct a profile of CBCF across the five study districts. Data was collected and analysed at the farm family level for most socio-economic variables, and at the hamlet (*'dusun'*) level (collection of households, sub-village) for wider industry and social variables. In order to investigate the topics relevant for the Social Dimensions Analysis, a range of information sources and data collection methods were identified (listed in Table 1, below). Detailed guidelines and recording sheets were designed for consistency in data collection across the five study sites, as different members of the project team were responsible for collecting data at each study site.

Table 1: Information sources and data collection methods

Information source	Data collection method
District level government: • Head of Forestry Offices (*Dinas Kehutanan*) • Extension agencies (*Badan Penyuluhan*) • Watershed Management Institute (*BPDAS*) • Forest Planning Unit (*BPKH*) • *Perum Perhutani* • Sustainable Community Forest Working Group (POKJA HRL)	Individual interviews Secondary data collection
Traders: • Middlemen • Traders at village and district level • Trader collectives	Individual interviews Secondary data collection
Managers of timber companies	Individual interviews Secondary data collection
Forestry extension officer	Individual interviews Secondary data collection
NGOs • Managers • Field staff	Individual interviews Secondary data collection
Village government	Group interview with several leaders Secondary data collection
Community leaders (hamlet heads, farmer group leaders, managers of farmer cooperatives)	Group interview Individual follow-up interview, if required Secondary data collection
Field and village environment	Transect walk, including observations and informal interviews with villagers
Farmer groups: • Male farmers who are farmer group members • Male farmers who are not farmer group members • Female farmers	Focus group discussion (3 groups per site), involving matrix ranking, scenario flow diagrams, problem/solution tree and gender analysis
• Forest farm families	In-depth household interview with 15 families per site

The selection of hamlets and villages was conducted using criteria determined by the project team, which included:

1. an importance of community-based forestry for the livelihoods of local people; and
2. feasibility to conduct the Social Dimensions Analysis, as determined by a willing community, accessible locations, support from local governments.

To obtain a rich and representative output across the different potential sites in the five districts, diversity with regards to social-cultural conditions, tree species produced and CBCF models applied was ensured. In all, 10 villages within the five districts (listed in Table 2, below) were included in the data collection for the Social Dimensions Analysis (Research Task #1) and the Forestry Livelihood Framework (Research Task #2).

Table 2: Overview of villages where data collection was conducted

District, Province	Sub-district	Village, Hamlet	Dominant tree species	Dominant CBCF market pathway model
Gunung Kidul, D.I.Yogyakarta	Playen	Dengok, Dengok 4, 5, 6	Teak, mahogany	Grower - Broker - Processor Grower - Group - Processor
	Girisubo	Jepitu, Manukan	Teak, mahogany, acacia	Grower - Broker - Processor
	Nglipar	Katongan, Jeruklegi	Teak, mahogany, acacia	Grower - Broker - Processor Grower - Group - Broker - Processor
Pati, C. Java	Gunungwungkal	Giling	Sengon	Grower - Broker - Processor
	Cluwak	Payak	Sengon	Grower - Broker - Processor
	Telogowungu	Gunungsari	Sengon	Grower - Broker - Processor
Bulukumba, S. Sulawesi	Kajang	Malleleng	Teak	Grower - Broker - Processor Grower - Processor
	Bontobahari	Benjala	Bitti wood[1], teak, mahogany, white teak[2], mixed trees	Grower - Broker - Processor Grower - Processor
Konawe Selatan, SE Sulawesi	Laeya	Lambakara	Teak, sengon, jabon wood[3], white teak[2]	Grower - Group - Processor
Sumbawa, NTB	Moyohulu	Semamung	Teak	Grower - Processor

Source: Social Dimension Analysis report (van de Fliert 2013).

The smallholders who participated in the focus group discussions and household interviews were selected using criteria that were conveyed to the hamlet and farmer group leaders, who in turn invited the community members to participate. The selection of focus group participants was determined on farmer group membership and gender. Within each group, it was ensured that farmers from different wealth categories, as measured by land ownership (or tenancy), were represented. Three wealth categories were applied: those managing less than 0.5 ha of land, those with 0.5-1 ha of land and those with more than 1 ha of land. Where applicable, an attempt was made to include proportionate numbers of land owners and tenants. Focus group discussions were facilitated by one member of the project team while another team member took notes and recorded other data.

For the in-depth household interviews, five farmers were selected from the non-farmer group members and ten from the farmer group members who participated in the focus group discussions, also ensuring a diversity of wealth categories across each group. As far as possible, farmers were visited in their homes for the household interviews to ensure privacy, and both husband and wife were encouraged to participate in the interview.

Interviews were conducted by two members of the project team, with one taking the lead in interviewing the farmers and the other in recording answers in the data collection sheets. Interviews generally lasted between one to two hours. Interviews mostly conducted in local languages by members of the project team proficient in those languages, although some interviews were conducted in Indonesian (*bahasa Indonesia*) with respondents proficient in the national language by team members who did not speak

the local language. Some interviews and group discussions were audio-recorded; however, not all team members had adequate equipment to do so.

The field work was organised in two phases in each district. In the first phase lasting about one week, the interviews at district level offices and relevant organisations were completed, which helped to inform the selection of the villages to be included in the study. A pilot round of data collection was then completed in one of the sites during this first phase, serving to consolidate the methodology and data collection skills among the team members. After an initial analysis and adaptation of the guidelines for data collection to local conditions, the teams returned to the field for another week to conduct the in-depth data collection in the remaining villages.

The methodology for the Social Dimensions Analysis was designed during a one-week workshop on 24-29 October 2011 in Yogyakarta and Pati, and another week of team training, pre-testing and finalising of data collection guidelines on 17-20 January 2012 in Gunungkidul. The guidelines contained a detailed description of data collection procedures and recording sheets. Data collection and analysis was conducted in the period February – June 2012 and finalised with an analysis workshop with the whole team on 10-13 June 2012 in Mataram. Area reports in Indonesian were finalised in July 2012 and translated into English in March 2013.

Data collection was conducted by area teams, involving staff from UGM and CIFOR in Gunungkidul, FORDA Bogor and Trees 4 Trees in Pati, FORDA Makasar and CIFOR in South and Southeast Sulawesi, and WWF and the Sumbawa District Department of Forestry and Estate Crops in Sumbawa. The overall design of the methodology used for the Social Dimensions Analysis was coordinated by A/Prof Elske van de Fliert (University of Queensland), and the field work was coordinated by Ms Silvi Nur Oktalina (University of Gadjah Mada).

The Forestry Livelihood Framework (Research Task #2)

The Forestry Livelihood Framework (Research Task #2) adapted the extensively used ‘sustainable livelihood framework’ (DFID 1999) and drew on the data collected for the Social Dimensions Analysis, as described above. The Forestry Livelihood Framework research was based on data collected via a structured survey conducted in 10 villages across five districts (as noted in Table 2, above), with responses from 300 people covering a range of characteristics and involvement in community forestry. The village selection was based on the Social Dimensions Analysis so that there was continuity in the collection of research data.

By reviewing published literature that has critiqued DFID’s (1999) ‘sustainable livelihood framework’ and drawing on the project team’s experience of CBCF in Indonesia, a method for the Forestry Livelihood Framework research developed during 26-27 November 2012 at CIFOR in Bogor, followed by pre-testing of the initial survey in Gunungkidul during 29 December 2012 to 4 January 2013. A focus group discussion was held in Makassar during 10-12 January 2013 to finalise the data collection guidelines and survey. Once all the field data had been collected, a report writing workshop was conducted in Yogyakarta during 23-24 May 2013.

The research for the Forestry Livelihood Framework was divided into four stages:

1. The preparation stage:
    - To explore the interests and problems of the community associated with livelihood and socio-economic challenges faced by the people in relation to their community forest. The data source used was the result of the Social Dimensions Analysis (Research Task # 1);

- To conduct a literature review related to livelihood frameworks as a theoretical basis for analyzing people's livelihoods in relation to forestry;
- To define the purpose of the research, limitation issues, operational definitions, and methods to be used in the field;
- To complete the administrative permissions required by the relevant agencies.

2. Implementation stage:
   - To collect secondary and primary data in accordance with the designed method.
3. Analysis and conclusions stage:
   - To undertake analysis and interpretation of the collected data;
   - To compile and report the results of the analysis.
4. Communication of key findings to the interested stakeholders.

The unit of sampling for the Forestry Livelihood Framework research was the household level. Respondents were primarily selected based on the locally-defined wealth criteria. There were 30 respondents interviewed per village with a total of 300 respondents, representing a wide range of wealth levels (high, medium and low). The respondents were purposely selected based on the wealth class they were identified as belonging to, so the sample across the wealth classes reflected the local community. The criteria of wealth were defined by the local community in the focus group discussions held in each village, with the local indicators of wealth in part informed by the government's wealth criteria. The overall proportion of the 300 respondents for this research based on the three wealth categories is shown in Figure 3, below.

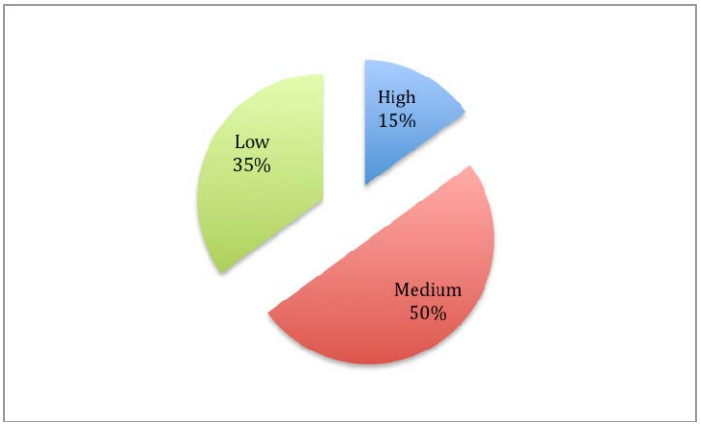


Figure 3: Respondents based on wealth categories

The wealth criteria used for each village was different, as presented in Table 3.

Table 3: Wealth criteria used at each village

District	Village	Criteria
Gunungkidul	Dengok	Landownership, house, vehicle, livestock, number of trees
	Jepitu	Landownership, house, vehicle, livestock, occupation, savings, children education
	Katongan	Landownership, house, vehicle, income
Pati	Giling	Landownership, house, vehicle, occupation, savings, children education, income
	Payak	Landownership, income
	Gunungsari	Landownership, house, vehicle, savings
Bulukumba	Maleleng	Landownership, house, vehicle, livestock, occupation, savings, children education, income, number of trees, social status

	Benjala	Landownership, house, vehicle, livestock, occupation, productive family numbers
South Konawe	Lambakara	Landownership, house, vehicle, livestock, occupations, income, education, ownership of electronic appliances
Sumbawa	Semamung	Landownership, house, vehicle, children education, ownership of electronic appliances

Source: Village focus group discussions, 2013

The data were collected using several techniques, namely focus group discussions, a household survey and in-depth interviews with key people. The conversation used during the data collection process was a mix of local language and Indonesian. A process of triangulation was used to verify the data. Each focus group discussion was framed by the three objectives described in Table 4, below.

Table 4: Topic and objectives for focus group discussions

Topic	Objective
Community wealth categories	Identify criteria of wealth according to 3 categories: high, medium and low. The community determined the wealth criteria via group discussion, with the criteria determined according to the local context.
Community grouping based on wealth indicators	Group the community members based on the wealth categories, then potential respondents were identified so to be proportionally representative of the wider village population.
Community ranking of capitals related to CBCF	Identify and rank the 5 capitals (human, physical, natural, financial and social) as they relate to CBCF.

The output from the focus group discussions were used for determine the respondents for the household survey. The total respondents in each village are 30 respondent proportionally based on wealth class. From the focus group discussions it was decided to select at least 30 respondents in each location of the study site based on wealth criteria for interview. The total of 300 respondents consisted of 60 people from Bulukumba, 30 people from Konawe Selatan, 30 people from Sumbawa, 90 people from Pati and 90 people from Gunungkidul. In this survey two questionnaires were used, namely a 'contribution' questionnaire to measure the contribution of community forest to total income and the 'For-Live' questionnaire to identify the specific assets used by farmers to manage community forest.

Data analysis of livelihood assets was completed using a descriptive statistic method. Tables and diagrams were used to explain the data. A scoring technique was used to measure the dominant assets used by community and then visualized using pentagon diagrams. The scoring technique was done by giving rank to every criterion at the beginning. The community participation in the focus group discussions defined the ranks so it indicated the local conditions of each community, as perceived and expressed by the community. The rank of each criterion was given a percentage weight. The total score was calculated by multiplying the scores with the weight of each criterion, and then expressed as a percentage. The method to analyse the livelihood assets was multi-criteria analysis (Mendoza & Macoun 1999). Multi-criteria analysis is a decision making process developed for complex multi-criteria problems that include qualitative and/or quantitative aspects in the decision making process. Using a pentagon to illustrate the relative strength of each asset is design to allow easy identification of overall strengths and weaknesses of specific assets used by the participating farmers to manage CBCF (see

Figure 4, below). The pentagon diagrams make it quick to identify what livelihood assets need enhancing to optimise CBCF.

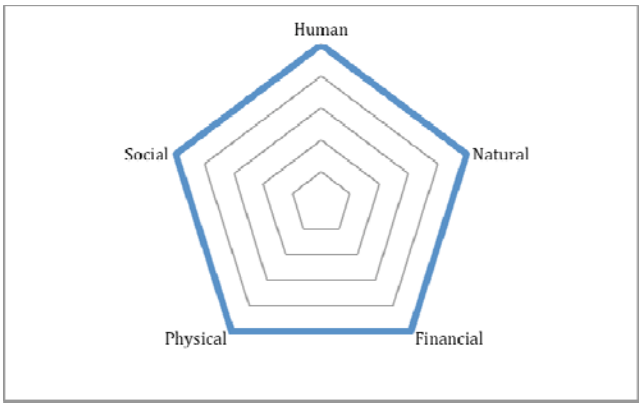


Figure 4: Maximum scoring of livelihood assets

Farmers' livelihood assets at a village level were illustrated in the form of a pentagon, with the pentagon showing the variation in strength of each asset in that community. The midpoint of the pentagon means no use of specific assets for their CBCF activities, while the outermost point indicates the maximum use of specific assets. Asset mapping can describe the dynamics between individual and collective assets at a specified time and contribution to livelihoods (Jakobsen, 2013). By knowing the level of assets used then it can be determined what further action might be needed to enhance farmers' livelihoods (e.g. inform how to enhance extension activities and wider support). The Forestry Livelihood Framework research was coordinated by Ms Silvi Nur Oktalina (University of Gadjah Mada).

The Value Chain Analysis (Research Task #3)

The Value Chain Analysis (Research Task #3) focused on timber grown by smallholders on privately owned land primarily for commercial markets (commonly referred to in Indonesia as *Hutan Rakyat* or *HR*) in the project's study sites. Other community-based forest management approach, such as forests managed by local communities on state-owned land (*Hutan Tanaman Rakyat* or *HTR*) and forests grown on community-owned (leased) land (*Hutan Kemasyarakatan* or *HKm*) were also observed, but since they were not yet producing timber in the project's study sites (they were at the initial stage of development), their cases were not covered in the Value Chain Analysis. The field work for the Value Chain Analysis was conducted in eight villages (that were a sub-set of those selected for the Social Dimensions Analysis and Forestry Livelihood Framework research, noted above) that covered four dominant market pathways used by smallholders involved in CBCF in Indonesia. Each market pathway was analysed as a 'case study', with some villages having more than one market pathway, as presented in Table 5, below.

Table 5: Case study market pathways for the Value Chain Analysis (Research Task #3)

Project location	*Village*	*Market pathway*			
		CBCF 1	*CBCF 2*	*CBCF 3*	*CBCF 4*
Gunungkidul	Katongan	**Case study 1**		**Case study 3**	
	Dengok		**Case study 2**		
Pati	Payak	**Case study 4**	**Case study 5**		
	Giling	**Case study 4**	**Case study 5**		
Bulukumba	Benjala	**Case study 6**			**Case study 7**

	Malleleng	**Case study 6**		**Case study 7**
Konawe Selatan	Lambakara	**Case study 8**	**Case study 9**	
Sumbawa	Semamung	**Case study 10**		

CBCF 1 = market pathway 'Grower-Broker-Processor';

CBCF 2 = market pathway 'Grower-Group-Processor';

CBCF 3 = market pathway 'Grower-Group-Broker-Processor';

CBCF 4 = market pathway 'Grower-Processor'.

The research for each case study was conducted either at the administrative level of a village or combined villages at each project location. Villages are comprised of hamlets so data was collected within one hamlet, and in some cases two hamlets, at each village. In each hamlet, forest growers were usually organised within farmer groups, yet within a group a forest grower could still sell their logs individually, through collective marketing by the group, or by both means.

Consistent with the objectives for the Value Chain Analysis (see Objective 2.1, noted above), information was collected from primary sources (by way of in-depth interviews) and secondary sources (published market/price information) for the purposes of:

- understanding regional markets to inform the operating context for CBCF,
- verifying the value chain maps for the market pathways of CBCF,
- analysing the costs and revenues for the main actors in CBCF,
- analysing the outcomes of group marketing (e.g. grower cooperatives) compared with marketing by individual forest growers, and
- understanding the role of forest management certification and chain-of-custody certification in the value chain.

The methodology for the Value Chain Analysis involved designing a questionnaire and pre-testing it prior to data collection. Dr Hugh Stewart (ANU) facilitated several meetings amongst the project team (at Makassar on 7 July 2012 and at Bogor from 8-10 July 2012) to design a credible and robust methodology for the Value Chain Analysis. The design and location of fieldwork for the methodology was informed by the considerable work done previously by the project team for the Social Dimensions Analysis (Research Task 1).

The final methodology for the Value Chain Analysis was discussed among the project members in a workshop organised by CIFOR in 26-27 November 2012. After that, data collection started in all case study sites at the five districts. Project members at their respective case study sites collected the data. For example, the UGM team assisted by CIFOR colleagues undertook data collection in Gunungkidul. The FORDA Bogor team collected the data in Pati. In Sumbawa, the WWF Nusa Tenggara team collected the data, whereas in Bulukumba and Konawe Selatan the FORDA Makassar team assisted by the team from CIFOR collected the data. Data collection was completed by April 2013.

A summary of sources of data and methods of collecting the information for the Value Chain Analysis is presented in Table 6, below. An example of how data was collected is shown by the study in Pati – CBCF 1 and CBCF 2 – focused on sengon, the dominant species cultivated by farmers in the region. Four growers from Payak village and two from Giling village were interviewed, including growers who sold individual trees and those who sold stands of trees. Other actors interviewed at the two villages included market brokers, chainsaw operators and truck drivers. Staff at two wood depots located in Temanggung (one of the main destinations for wood harvested in Pati) were interviewed as well as staff at two wood industries at Temanggung that received logs from the wood depots.

Table 6: Sources of data and methods of collection for the Value Chain Analysis (Research Task #3)

Source of data	*Method of collection*	*Source of data*	*Method of collection*
Community leader / key person (head of hamlet, head of farmer group, head of cooperative, etc)	Group meeting followed by individual interview: • cooperative activities • farmer group activities	Cartage contractor	Individual interview Secondary data collection
Forest grower	In-depth interview at the household level	Wood processing industry	Individual interview Secondary data collection
Broker (e.g. *penebas*, *blantik*)	Individual interview Secondary data collection	Industry association	Individual interview Secondary data collection
Harvesting contractor (with chainsaw)	Individual interview Secondary data collection	District / provincial level services	Individual interview Secondary data collection

Field guides for collecting primary data from interviews for the Value Chain Analysis were prepared for interviews with village officials, community leaders, farmers, brokers, wood processors, forestry extension staff and non-government organisation staff. These guides, plus generic questions developed for value chain analysis (M4P 2008, 2012) were used to prepare the interview guides for the Value Chain Analysis.

The key questions that framed the interviews included:

1. What are each actor's costs and what are the required investments or capital for entering the value chain?
2. What are each actor's revenues and net profits in the value chain?
3. How are investments, costs, revenues and profits changing over time?
4. What are the expectations of different actors (for themselves and for other actors) about the amount of profit and risk associated with their participation in the value chain?
5. What are the costs and benefits of forest management certification and chain-of-custody certification for forest products for forest growers and other actors in the value chain?

The focus of the value chain analysis was the market pathway of CBCF and within each one, the forest grower. Thus, the units of analysis for the case studies were the market pathways of CBCF that existed in the project locations.

The end-point of the analysis was a calculation of the costs, revenues, profits and margins for the different actors along the various stages of the value chain for each market pathway of CBCF in the case studies. The spreadsheet developed for these calculations was adapted from a template provided in *'A toolbook for practitioners of value chain analyses'* (Table 29, p. 104, M4P 2008). In analysing results, most emphasis was placed on the potential benefits to the forest grower rather than other actors in the value chain.

In the Value Chain Analysis it was not possible to collect information from all the actors identified in the value chains in the various case studies. There was particular, though not unexpected, difficulty in collecting information from processing industries due in part to the normal commercial issue of corporate confidentiality of financial data. Where these gaps in data occurred, it was not possible to estimate the data from secondary sources, or from expert opinion within the industry.

There was little opportunity to collect information from the end-point of value chains – the retailers of finished timber products. Further resources would be required to capture this data that is highly dispersed in nature.

A recurrent issue was that data related to costs and revenues was in different units. The analyses of the value chains required that costs, revenues and calculated profits were expressed in a consistent unit – for example, Indonesian rupiah (Rp) per cubic metre of round log sold by a grower. This meant that information had to be collected, or estimated, about conversion factors for specific products between stages along the value chain. It is possible that errors were introduced during this part of the research.

The additional 'forest certification' study

Following the project's Mid-term Review by ACIAR's Forestry Program Manager (Tony Bartlett), the project requested additional resources to undertake a limited additional study of experiences of 'forest certification' in Indonesia (request approved in May 2014). With ACIAR's additional support, the project nominated Drs Hugh Stewart (ANU), Dede Rohadi (CIFOR) and Setiasih Irawanti (FORDA Bogor) to conduct further analysis of 'forest certification' in a small number of localities were the project already had strong connections to CBCF stakeholders – yet localities that provided some diversity of markets and species (see Table 7, below). The 'forest certification' study was conducted around four case studies.

Table 7: Overview of the case studies of certification schemes

Case	*Province / District*	*Sub District / Village*	*Species*	*CBCF model*
1	Yogyakarta / Gunungkidul	Nglipar / Katongan	Teak	[3] Grower-Group-Broker-Processor
2	Yogyakarta / Gunungkidul	Playen / Dengok	Teak	[2] Grower-Group-Processor
3	Central Java / Pati	Gunungwungkal / Giling	Sengon	[2] Grower-Group-Processor
4	Southeast Sulawesi / Konawe Selatan	Laeya / Lambakara	Teak	[2] Grower-Group-Processor

The 'forest certification' study was based on experiences of CBCF grown of privately-owned land by smallholders involved in 'forest certification' schemes. The study focussed on two important commercial species grown by farmers for different markets – teak and sengon. Teak is the timber species mostly cultivated by farmers in private forest areas in the Gunungkidul district. Teak is typically grown on a 15-30 year rotation, in a single species plantation, mixed species plantation or in agroforestry. In contrast, sengon is a fast-growing species and is managed on 5-7 year rotations, and is usually grown in a single species plantation or as agroforestry.

The case studies provided the opportunity to investigate three certification schemes – the Forest Stewardship Council (FSC) scheme, the *Lembaga Ekolabel Indonesia* (LEI) scheme, operated by an Indonesian national NGO authorized for issuing timber certificates and the *Sistem Verifikasi Legalitas Kayu* (SVLK) scheme or Indonesian Timber Legality Assurance System (TLAS). Details of the case studies, identified by the name of the village of the smallholder forest growers, are provided below.

Case study 1	***Katongan village, Gunungkidul district, CBCF market pathway 3***
Actors in the value chain	Growers, farmer group (KTHR Jati Pandowo), market broker (CV. Dipantara), local processors, regional manufacturer (PT. Jawa Furni Lestari, Yogyakarta)
External supports	Governments, NGO (The Forest Trust)
Timber species, production system	Teak, agroforestry
Harvesting, products, marketing	Selective cutting, logs, sell by trees
Land tenure	Private lands
Timber transport documents	SIT[1], SKAU[2], SKSKB[3]
Harvesting pattern	Selective cutting
Certification systems	FSC (SLIMF[4]), SVLK

[1] SIT stands for *Surat Izin Tebang* or harvesting permit, issued by the head of village for every smallholder's timber that enters the market. This regulation has not applied anymore.

[2] SKAU stands for *Surat Keterangan Asal Usul* or letter of timber origin. The SKAU is issued by the head of village.

[3] SKSKB stands for *Surat Keterangan Sahnya Kayu Bulat* or letter of timber legality that issued by the District of Forestry Offices. The SKSKB is applied to timber derived from state forest (harvested under concession or other legal rights).

[4] SLIMF stands for Small or Low Intensity Managed Forest, an FSC timber certification scheme for smallholder timber plantations.

Case study 2	***Dengok village, Gunungkidul district, CBCF market pathway 2***
Actors in the value chain	Growers, farmer group or cooperative (KWML), regional manufacturer (PT. Jawa Furni Lestari, Yogyakarta)
External supports	Governments, NGOs (Shorea, Arupa and PKHR)
Timber species, production system	Teak, agroforestry and single species
Harvesting, products, marketing	Selective cutting, logs, sell by trees
Land tenure	Private lands
Timber transport documents	SIT, SKAU, SKSKB
Certification systems	LEI, SVLK

Case study 3	***Giling village, Pati district, CBCF market pathway 2***
Actors in the value chain	Growers, farmer group (*Sekar Ngelo Mandiri*), regional processor (PT. Albasia Bhumiphala Persada, Temanggung)
External supports	Governments, universities, NGO (Trees4Trees)
Timber species, production system	Sengon, agroforestry
Harvesting, products, marketing	Selective cutting, logs and square planks, sell by trees
Land tenure	Private lands
Timber transport documents	SIT, SKAU, SKSKB
Certification systems	FSC, SVLK

Case study 4	***Lambakara village, Konawe Selatan district, CBCF market pathway 2***
Actors in the value chain	Growers, farmer group or cooperative (KHJL), industries, exporters
External supports	Governments, NGO (*Jaringan Untuk Hutan,* JAUH; The Forest Trust)
Timber species, production system	Teak, single species
Harvesting, products, marketing	Selective cutting, square planks, sell by trees
Land tenure	Private lands
Timber transport documents	SIT, SKAU, SKSKB
Certification systems	FSC, SVLK

The primary data for the study was collected through semi-structured, in-depth interviews. The strategy was to collect information from key actors in the value chain. Thus, interviews – seven in total – were conducted with two NGOs that had promoted and facilitated certification for growers and farmer groups, one market broker that had achieved FSC certification, one farmer group that had achieved FSC certification[1], one farmer group that had achieved LEI certification, one manufacturing industry that had achieved FSC and LEI certification and one manufacturing industry that had achieved FSC certification.

Key questions included:

- What were the processes involved in achieving certification?
- How long did it take from initial preparations to the first assessment and from initial preparations to receiving the certificate?
- What were the costs of achieving and maintaining certification?
- Who funded the preparations and assessments required to achieve certification?
- What were the main interventions required to achieve certification (e.g. inventories, formalising of verbal arrangements, institution building)?
- What were the problems faced during certification?
- What have been the differences since receiving certification?
- What are the negative and positive impacts of forest certification?
- What volumes of certified wood have been sold at what prices compared to uncertified wood?
- What further research and support is necessary to make certification work effectively?

The primary data was supplemented by a review of literature on certification and review of related key government policies. The online databases of the Forest Stewardship Council (FSC) and the Indonesian Ecolabelling Institute were reviewed to extract certificates relevant to the actors in the case studies, and reports of assessments, audits and surveillance of the actors in the case studies.

In the 'forest certification' study, it was not possible to collect information from all the actors identified in the value chains for each case study. Nor was it practical to collect information from community stakeholders in the certification process – these views are routinely canvassed during certification assessments and surveillance audits. Information on volumes of certified products sold was incomplete. To achieve this would require detailed research in partnership with growers and manufacturers of certified products. This was beyond the scope of the current study.

[1] *Interview conducted during the collection of data for Research Task #3, ACIAR Project FST/2008/030.*

The 'Master Tree Grower Indonesia' initiative (Research Task #4)

As part of the data collection for the Social Dimensions Analysis, Forestry Livelihood Framework and Value Chain Analysis, hundreds of farmers and other stakeholders involved in CBCF in 10 villages were interviewed providing data on farmers' skills and knowledge. Drawing from this experience the project members met in August 2013 in Bogor and again in March 2014 in the Gunungkidul area to collate their findings and identify the skills and knowledge gaps that should be addressed by the project's Research Task #4 – the design and piloting of an effective approach to enhance farmers' understanding of CBCF. More importantly, the research team discussed the goal of the farmer-learning model and the need for it to be flexible enough to adapt to the diverse range of people, markets and environments to be found across the five research sites.

The overwhelming gaps in knowledge and skills amongst smallholders, as identified by the research team, related to:

1. how the local/provincial forestry market operates: demand for different products, specifications of different products (grades, log length), scope for alternate products, and alternate strategies for negotiating in the market place;
2. how to measure and describe tree and timber volume and quality: 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
3. how smallholders can guide and influence the growth and development of their forests through choices of species and germplasm, planting configuration and by actively managing their trees as they grow.

During a training workshop held in Gunungkidul in March 4-6, 2014, the research team and invited stakeholders reviewed the Australian Master Tree Grower (MTG) model and settled on a 5-step framework for the 'farmer learning' model for delivery to smallholder timber growers in the targeted research regions. The team also refined a research plan for the collection of both qualitative and quantitative data from participants, observers, stakeholders and the members of the research team themselves for use in the evaluation.

The research objective was to maintain a commonality in the programs across the five project research sites whilst allowing for adaptation to suit local needs, aspirations, physical conditions, market types and social issues. The key elements that were to remain a constant across each course were:

- to deliver the program in partnership with key regional and national stakeholders in CBCF and with the endorsement of local authorities within each region;
- to invite a group of approximately 20 landholders (targeting those actively involved in community forestry) to participate in the course;
- to deliver a participatory curriculum that 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 (diameter at breast height, 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

The first Indonesian Master Tree Grower course was presented to a group of farmers in the Gunungkidul region in March 2014. Following each day of the course the research team reviewed the day's activities and discussed plans for the following day. Whilst initially committing to a five-day program the team, against the recommendations of the international task leader, 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.

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 Master Tree Grower course the team leaders prepared guidelines for the design and delivery of future Master Tree Grower courses and provided training materials including Powerpoint presentations, measurement tapes and pruning gauges. The Australian Agroforestry Foundation also provided Master Tree Grower hats and signs for all participants. Six further Master Tree Grower courses were then delivered within each of the five project sites and the data collected by members of the research team (see Table 8:). The content and format of each program was designed to reflect the local nature of the CBCF industry. An outline of the program along with the results, including the participant feedback forms, observations, publicity, photographs and other data, were collated by the local research team members and submitted via an online Dropbox.

Table 8: The Master Tree Grower Indonesia courses delivered by Research Task #4.

Location and Date	Lead agency
Gunungkidul 1 Dengok, Special Region of Yogyakarta March 10th-13th 2014	Gadjah Mada University (UGM)
Sumbawa April 28th - May 2nd 2014	World Wildlife Fund Indonesia (WWF Indonesia)
Bulukumba, Malleleng Village, May 7th-11th 2014	The Forest Research and Development Agency (FORDA) Makassar Forestry Research Institute
Pati District, Payak Village May 19th-22nd 2014	The Forest Research and Development Agency (FORDA) Bogor
Bulukumba, Benjala Village, May 20th -24th 2014	The Forest Research and Development Agency (FORDA) Makassar Forestry Research Institute
Konawe Selatan Lambakara Village, June 2nd-6th 2014	The Forest Research and Development Agency (FORDA) Makassar Forestry Research Institute and CIFOR
Gunungkidul 2 28th May – 1st June 2014	Gadjah Mada University (UGM)

One hundred and forty-five people participated in the seven Master Tree Grower courses. The majority (81%) were farmers (n = 118) and of these, 11% were female (n = 13). 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 (19%) 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 number or type of participants in each course was similar, although two courses had no female farmers participating and one of these courses had no female participants at all.

The approach taken to select the participants varied. In most cases the nature and purpose of the Master Tree Grower course was explained to local extension agents (both government and NGO) and community leaders who were then asked to invite landholders who they considered would be suitable and possibly in a position and capable of sharing their knowledge and experience with others. Some landholders, on hearing about the proposed course, did seek to participate and were generally accepted if places were available.

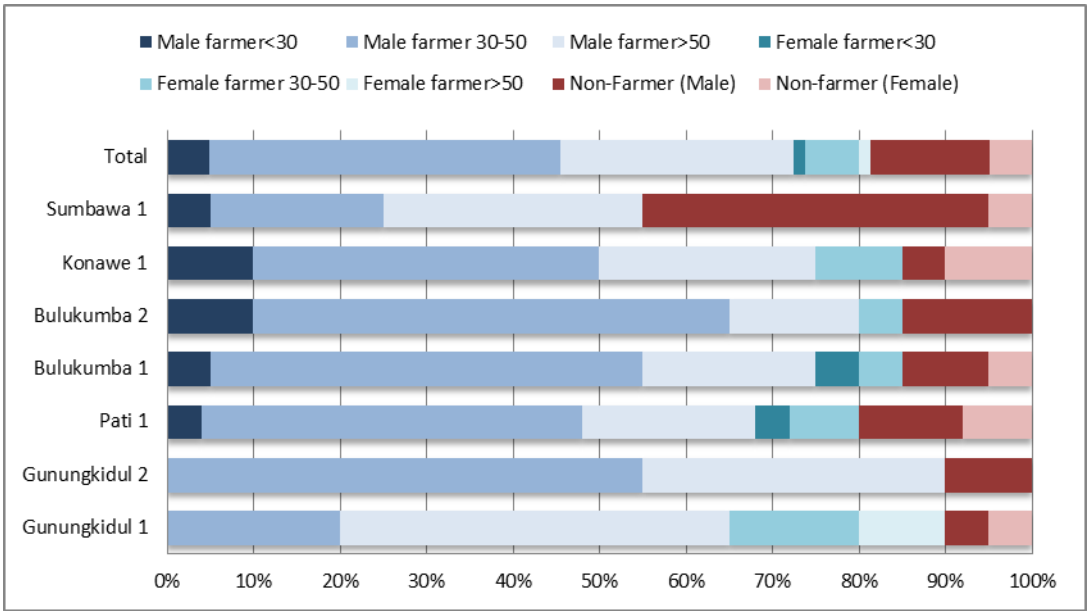


Figure 5: The mix of participants involved in each of the regional Master Tree Grower courses showing their gender, age and if they were primarily farmers.

Six of the Master Tree Grower courses were presented over a period of four days and only one was extended to include a fifth day. Whilst the content was necessarily adapted to suit local conditions, species, markets and opportunities, all the courses did have 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.

The degree to which time was spent on the introductory and concluding elements, as outlined in the proposed program, varied depending on the interests and understanding of the purpose of these components by the individuals involved in coordinating and presenting each program (see Table 9, below). Other than in the first course, which provided training for the research 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.

Table 9: Approximate breakdown of the content delivered in each of the regional Master Tree Grower courses.

	The 5-part learning approach framework					
Course	Introduction	Markets	Measurement	Management	Conclusion	Total
Gunungkidul 1	1 day	1 day	½ day	½ day	1 day	4 days
Gunungkidul 2	½ day	½ day	1 day	1 ½ days	½ day	4 days
Pati (Payak Village)	¼ day	1 ½ days	1 day	1 day	¼ day	4 days
Bulukumba 1 (Benjala Village)	½ day	1 day	1 day	1 day	½ day	4 days
Bulukumba 2 (Malleleng Village)	½ day	1 day	1 day	1 day	½ day	4 days
Sth Konawe (Lambakara Village)	½ day	1 day	1 day	1 day	½ day	4 days
Sumbawa	1 day	1 day	1 day	1 day	½ day	4 ½ days

Evaluation of the 'Master Tree Grower Indonesia' initiative

At the completion of each course participants were asked by the course coordinators to complete a written survey. Additional information gathered by the research 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 Research Task #4 workshop was then conducted in Yogyakarta on the 25th August 2014 involving the research team, which provided further data for the evaluation of the project.

Team members from FORDA Makassar conducted a follow-up evaluation of the Master Tree Grower courses previously held in Bulukumba (22-23 April 2015) and Konawe Selatan (28-29 May 2015), as a precursor to assisting the Bulukumba district forestry office funding and coordinating a Master Tree Grower course during the 18th – 22nd May 2015.

An independent evaluation of the Master Tree Grower Initiative was conducted by Dr Muktasam Abdurrahman (University of Mataram) during April 2015, who recorded several positive impacts of changes made by farmers who participated in the Sumbawa course. Dr Muktasam's report was completed and submitted to ACIAR in May 2015.

6 Achievements against activities and outputs/milestones

Objective 1: To conduct a Social Dimensions Analysis of the community context in which the four CBCF models operate, and design a framework for assessing the livelihood outcomes for the rural communities involved in CBCF initiatives (Forestry Livelihoods Framework).

No.	Activity	Outputs/ Milestones	Completion of milestone	Comments
1.1	Conduct Social Dimensions Analysis (SDA)	Draft & final reports (A + PC)	Draft SDA report completed by Dec. 2012 & final SDA report completed by May 2013. Report to be available via ACIAR website.	SDA process & report informed subsequent research stages of the project. SDA report revealed common barriers & needs for CBCF, and site-specific elements.
1.2a	Literature review of rural livelihood frameworks	Review report (A)	Initial framework discussed with researchers from 5 study sites completed during Nov. 2012 & revised following field testing by Dec. 2013, with additional literature review completed by Jun. 2014.	Literature review identified the SLF (DFID 1999) as the most useful basis for this research, which led to the Forestry Livelihood Framework concept being tested & developed at each of the study sites.
1.2b	Conduct analysis using the Forestry Livelihood Framework (FLF)	Assessment report (PC)	Fieldwork conducted during Feb-March 2013, and data analysis in Aug. 2013. Report drafted by Sep. 2014 & finalised May 2015.	The FLF used to explore the strengths & weaknesses of the capitals used by smallholders in relation to CBCF. Smallholders' capitals assessed according to their wealth status.
1.3	Prepare discussion paper on FLF	Discussion paper (PC + A)	Draft report circulated to stakeholders by Sep. 2014 & finalised May 2015.	Discussion paper incorporated into FLF research report.
1.4	Conduct training workshops with local partners in 5 locations	Training workshops (PC)	Training workshops completed in field locations by Dec. 2014.	Training workshops provided critique of FLF & stimulated discussion about the implications of the results (e.g. how to refine extension approaches to enhance CBCF).
1.5	Finalised FLF published	Publication of finalised FLF (PC + A)	FLF report finalised in May 2015. To be made available via ACIAR website.	FLF report to inform other CBCF program managers & policy-makers about the strengths & limitations of smallholders involved in CBCF across different wealth categories.

PC = partner country, A = Australia

Objective 2: To critically evaluate the dominant business models (market pathways) of community-based commercial forestry (CBCF) being implemented by government and the private sector

No.	Activity	Outputs/ Milestones	Completion of milestone	Comments
2.1	Conduct Value Chain Analysis (VCA) in each study location	Assessment reports (A + PC)	Methodology designed and documented by Nov. 2012. Fieldwork at 5 study sites conducted during Dec. 2012 – Apr. 2013. Data analysis & report writing workshop conducted at Yogyakarta in May 2013. Preliminary results presented to Annual Project meeting at Bogor, Sep. 2013. Individual reports have been prepared for the five project locations (mainly in *bahasa Indonesia*), with compilation of a consolidated report in English completed in Nov. 2014 for review, and finalised in Mar. 2015.	Value Chain Analysis informed stakeholders about the financial value generated at key stages of the different CBCF models. More competitive markets generally translated into higher wood prices for smallholders (e.g. in the districts of Gunungkidul & Pati). Market pathways are typically complex (many actors, different roles, variable prices), however in general the market pathway most advantageous for smallholders is the 'grower-group-processor' business model. Also, market brokers (middlemen) often provide the vital links in the value chain for CBCF, particularly when produce timber of variable quality & volumes.
2.2	Conduct training workshops with local partners	Training workshops (PC)	Training workshops were conducted in the 5 study locations by May 2015.	Training workshops to assist landholders and farmer groups explore markets and management options for CBCF.
2.3	Review of improved CBCF models	Review report (A + PC)	Final report on VCA circulated in Mar. 2015.	Review report will inform CBCF business models throughout Indonesia.
2.4	Analysis of the 'forest certification' market based in Pati	Report that details the operating context & options for optimising 'forest certification' for processors & smallholders (A + PC)	Field work for 'forest certification' conducted with small-scale growers, processors & others stakeholders in Pati during Aug. 2014 &draft report on 'forest certification' submitted in Nov. 2014. The report was reviewed & then finalised in May 2015. Report to be made available via ACIAR's website.	The 'forest certification' report was written in English and the key findings translated into bahasa Indonesia for wider communication to a range of stakeholders (via project newsletter, policy brief). Forest certification is an important business model for CBCF, with experiences in Pati thought to be particularly informative.

PC = partner country, A = Australia

Objective 3: *To increase the capacity of the farmer forest groups participating in CBCF initiatives, so farmers are able to make better investment decisions*

No.	Activity	Outputs/ milestones	Completion of milestone	Comments
3.1	Conduct 'skills & knowledge' appraisal of farmer forest groups	Appraisal report (A + PC)	Appraisal undertaken as part of SDA report & completed by May 2013	Appraisal informed design of 'learning approach'.
3.2	Design 'learning approach' for farmer forest groups	Design of new 'learning approach' documented (A + PC)	Design of 'learning approach' completed by Nov. 2013	Design has informed thinking about improved approaches for enhancing the skills & knowledge of farmer forest groups, with review & adaptation of Master Tree Grower (MTG) training courses used in Australia, Kenya & Uganda.
3.3	Conduct training with targeted farmer forest groups	Training workshops (PC)	All MTG training courses conducted by Jul. 2014	Training workshops were adapted to the local conditions (markets, species) of each study site. Each training course was reviewed & informed subsequent courses.
3.4	Evaluate 'learning approach'	Evaluation report of 'learning approach' (A + PC)	Final report of the 'MTG Indonesia' initiative completed by Jan. 2015, with report to be made available via ACIAR's website. Independent evaluation report commissioned & completed by May 2015.	Independent evaluation noted the positive impacts of the MTG Indonesia training courses & suggested further investment in the MTG approach with a coordinated national approach (national meeting proposed for Sept. 2015).

PC = partner country, A = Australia

Objective 4: To engage and influence priority stakeholders to create the optimum conditions (e.g. governance requirements) for the effective implementation of the selected CBCF initiatives

No.	Activity	Outputs/ milestones	Completion of milestone	Comments
4.1	Project Team / Project Leader (PL) to meet with Project Advisor every 12 months	Meet with Project Advisor / PL every 12 months (A + PC)	Meetings conducted every 12 months, with PL visiting key researchers every 6-9 months	Annual review & feedback from stakeholders used to enhance project's performance throughout project period (2011-15).
4.2	Prepare project newsletter & distribute	Project newsletter (A + PC)	Project newsletter prepared by FORDA Bogor & circulated every 6 months (8 newsletter published by the project)	Newsletters informed project partners & interested stakeholders about project activities & progress.
4.3	Prepare policy briefs	3 x policy briefs (A + PC)	Five policy briefs prepared & circulated by Jun. 2015	Policy briefs were prepared in relation to the value chain analysis, farmer learning approach & summary of key findings, designed to inform relevant policy-makers & program managers of CBCF initiatives.
4.4	Conduct 'roundtable' briefings with senior staff	3 x 'roundtable' briefings (PC + A)	Regular briefings conducted by project team with senior staff of MoEF & District agencies throughout project period.	Interactive briefings held with senior staff to interpret & translate project's results into policy context. The project choose to present key project findings at numerous opportunities with senior staff of MoEF (e.g. coordinated agency seminars & conferences), rather than organise separate project-specific 'roundtable briefings'.
4.5.1	Conduct meetings with farmer forest groups	Annual meetings conducted (PC)	Annual meetings held with invited stakeholders in Bogor (2011), Makassar (2012), Bogor (2013) & Yogyakarta (2014).	Interactive annual meetings involved a range of stakeholders (usually 20-40 stakeholders), including agency & private sector staff, and experienced smallholders representing different FFGs.
4.5.2	Conduct interactive seminars, workshops & forest walks with farmer forest groups	Multiple interactive meetings held with farmer forest groups in 5 study sites (2 per site), that translate the key findings of the research into the local context (PC + A)	A minimum of 10 interactive meetings were conducted with farmer forest groups & other stakeholders to present & discuss the key findings, with all meetings completed by May 2015.	The key findings across all 4 research tasks were compiled (see Policy brief *'Summary of key findings'*) & then communicated to national & local (i.e. at the 5 study sites) stakeholders.

4.6	Prepare video on 'forest farmers' experiences	Video on 'forest farmers' completed (A + PC)	*'Growing Java'* video completed & distributed by Aug. 2013. Also *'Making Timber Plantations Attractive for Smallholders'* video completed by CIFOR by May 2015 (available via CIFOR website).	Lessons from farmers' experiences with CBCF shared with wider audience & key findings from project shared with wider audience.
4.7	Publication of research articles	4 x research articles (A + PC)	The project has published four articles in international peer-reviewed journals & two articles in national journals as at June 2015, with a further 3 articles *in press*.	Research articles published in international (x 4) and national (x 2) peer-reviewed journals & anticipated to inform wider audience of researchers about CBCF (articles listed in 10.2).
4.8	Co-hosting of international symposium amongst relevant researchers (eg. IUFRO forum)	International meeting of relevant researchers conducted & key findings published (PC + A)	While the original proposal was to contribute to an international meeting (e.g. IUFRO forum), the project team presented many of the key findings at INAFOR 2013 (Jakarta) & Forest Asia Summit (Jakarta, May 2014), National Agroforestry Seminar (Nov 2014) and have been accepted for multiple presentations at INAFOR 2015 (Oct) & IUFRO *Small-scale Forestry* International Conference in Brisbane (Oct 2015).	Lessons from this project able to be discussed & shared amongst relevant researchers, with a high-quality publication capturing the operating context & key findings of the project to be published late-2015 (edited by D. Race & G. Wettenhall, anticipated to be published by Dec. 2015).

PC = partner country, A = Australia

7 Key results and discussion

The key results and corresponding discussion for the project's research is presented below under each key research task. An expanded presentation of the project's results and discussion is available in the individual research reports, which are expected to be accessible via ACIAR's website.

The Social Dimensions Analysis (Research Task #1)

While there are specific characteristics, constraints and opportunities for CBCF in each of the project's study locations, the Social Dimensions Analysis also identified common attributes and issues. An overview of the characteristics of the dominant CBCF system in each district studied by the project is presented below:

Attribute	Pati	Bulukumba	Konawe Selatan	Sumbawa	Gunungkidul
CBCF market chain	Grower – Broker – Processor	Grower - (Broker) - Processor	Grower – Grower cooperative - Processor	Grower - Processor	Grower – Broker - Processor
Main tree species	Sengon (albizia)	*Malleleng village:* Teak *Benjala village:* Bitti wood, teak, mahogany, white teak, mixed bush	Teak (dominant) sengon, jabon wood, white teak (recent introductions)	Teak	Teak, acacia, mahogany
Production system	Agroforestry, monoculture, farmer managed	Malleleng: Agroforestry Benjala: Monoculture on sandy soils	Monoculture (dominant), agroforestry	Monoculture	Agroforestry
Social organisation for CBCF	None	Farmer group	Farmer group (KHJL) in charge of inventory, logging, permit processes, transport to TPK KHJL & industry contacts	None	None
Marketing system	By individual tree or by lot (group of trees)	*Malleleng:* by tree or lot *Benjala:* by tree (through prior visits by surveyors to assess suitability for boat construction)	By tree	By lot	By tree

Attribute	Pati	Bulukumba	Konawe Selatan	Sumbawa	Gunungkidul
Type of product	• Farmer: tree • Village trader: logs • Depot: logs and beams • Village industry: construction materials • Export industry: block board, bare core, veneer, plywood	Logs, mixed products	Beams, planks	Logs	Logs
Land status	Owner (with certificate or owner transfer letter)	Owner	Owner State forest with usage permits ('*IUPHHK-HTR*')	Owner (mostly without certificate)	Owner
Regulations	Letter of Timber Origin (*'SKAU'*)	Government regulations Kajang customs (Malleleng only)	Internal farmer group regulations Forest Stewardship Council certificates Letter of Timber Origin (*'SKAU'*) Timber Legality Verification System (*'SVLK'*)	Local government regulation Permit for Use of Community Forestry Timber (*'IPKTM'*) of Sumbawa District since 2006	Logging Permit (*'SIT'*) Letter of Timber Origin (*'SKAU'*) Information Letter for Legality of Round Timber (*'SKSKB'*)
Silviculture system	Selective cutting, need-based cutting, whole lot cutting	Malleleng: Traditional agroforestry Benjala: Monoculture/traditional	Traditional practices (no pruning), needs-based harvest based on quota	Non-intensive cultivation; grafting	Cutting by selection (needs-based)
Contribution of timber towards income	Variable (Rp 1.5-7M/yr)	Small	Minor contribution, about 6% of household Income	Minor contribution (although large potential)	Small
Certification system/scheme and certifier (in the villages where study was conducted)	None	None	Forest Stewardship Council (Smartwood) Timber Legality Verification System (*'SVLK'* – by Sucofindo)	None	None

The research revealed some overall constraints, broadly categorised under 'timber production', 'timber marketing' and 'farmer organisation', as presented below.

a. Constraints to timber production

- Land holdings are, for the larger part, small not allowing for efficient timber production (i.e. low 'economies of scale').
- The contribution of timber to the household income is relatively small when considered on an average weekly basis in most CBCF systems, but it plays an important role as a 'savings account' for meeting household needs that require large sums of money at once (e.g. medical operations). However, needs-based harvesting of trees, which is

commonly practised by households with insufficient cash flow, may not correspond with the optimum for commercial timber production and, hence, maximum financial returns.

- Farmers have limited knowledge about optimum silvicultural techniques, including the use of improved varieties, and therefore tree plantations tend not to be managed according to 'best practice' forestry, resulting in relatively low yields and/or low quality of wood.
- Seedlings of improved varieties are not always available to or not affordable for farmers, despite several government programs that distribute seedlings or have established community nurseries.
- The extension (advisory) system does not appear to be functioning effectively to support profitable CBCF systems. Extension officers often cannot adequately cover all communities they are supposed to serve, as their jurisdiction is often large. Also, extension staff tend not to have the necessary technical and managerial knowledge to support farmers with their production and marketing issues associated with CBCF.
- Certain diseases have become a problem in monoculture plantations (especially rust disease on albizia), leading to increased production cost and/or a loss of production.
- Theft of non-timber forest products (NTFP) constrains optimal production and, hence, undermines the profitability of the CBCF system.

b. Constraints to timber marketing

- The marketing of timber in most project areas is dominated by local or regional brokers ('middlemen'), while farmers have limited knowledge about timber volume assessment methods and prevailing market prices, which puts them in a weak bargaining position. This is aggravated when many farmers sell timber on an ad-hoc needs basis. Farmers are aware that they do not always get a fair price for their trees, but tend to appreciate the convenience that comes with the dependency on traders, such as not having to worry about harvesting the trees, organising permits and transporting the logs to processors.
- The permit system associated with the sales of timber is complicated and the process of obtaining the permit is often expensive. Farmers have little knowledge about the procedures and are therefore prone to being manipulated by traders, who tend to organise all the permits. Where the permit system is not functioning adequately, it leaves room for illegal practices.
- Development plans by local governments have not specifically encouraged the development of small scale industries at the local level in several of the project sites. More prominent support from the government in the form of area development plans that facilitate a specific niche market outlet would favour the livelihoods of smallholder timber farmers.

c. Constraints relating to farmer organisation

- While many CBCF initiatives started off with the establishment and management of farmer groups or cooperatives, it has proven difficult to sustain effective farmer organisations over time. Reasons for this are various, depending on the location or specific group, and include:
  - Conflicts between the management board and the members regarding the management of group funds or benefits; and
  - Weak or ineffective management of the group, which is often the result of not everyone feeling the need for a group and the lack of a common goal of group members. The needs-based harvesting system tends to encourage individualism in the industry.
- Unrepresentative membership in forestry groups, resulting in isolated group activity in the community and no spread of knowledge, benefits or innovations. This relates to groups that were established by mainly selecting the better-off members in the community who own larger pieces of land and can afford risk to invest in new practices.

They are, however, not seen as a replicable example by the poorer segments of the community.
- Limited involvement of women in forestry groups, despite the major role women play in most project areas with the sale of timber and NTFPs.
- Ineffective or non-existing financial service providers to support farmer groups or cooperatives in CBCF. While in general smallholder farmers have difficulties accessing credit schemes in Indonesia, the long-term return of investment cycle in tree production provides a serious barrier.

Despite a wide range of constraints, several opportunities were identified by the project that could be further explored to enhance CBCF, including:

a. Opportunities for the improvement of timber production

- Large areas of land owned by farmers are currently planted with trees but not yet managed optimally, so there is potential for improvement in silvicultural management and better quality timber.
- There is still land available that has suitable bio-physical conditions to support community forestry. In some areas of the study sites wet paddy land has been converted into dry farmland that can be used for tree planting.
- Several government programs have distributed tree seedlings to communities or established community tree nurseries.

b. Opportunities for the improvement of timber marketing

- There is a high and seemingly increasing demand for timber in commercial markets.
- There are some effective timber trader associations and cooperatives covering parts of the project's study area that should be studied further. The success factors should be used as input in the design of similar CBCF systems in other areas.

c. Opportunities for the improvement of farmer organisation

- There are many programs by the Ministry of Forestry providing policies and funding support to develop CBCF systems. However, community groups may need support to facilitate access to the range and most appropriate programs.
- There is generally an awareness of the importance of, and interest in, planting trees among the communities in the project study areas, which is a vital foundation for initiating group activities. Farmer groups and cooperatives should define a common goal and work out a suitable collaborative mechanism before engaging in collective action.
- Some active farmer groups and effective cooperatives exist that can serve as an example.
- There are NGOs in some of the project areas (e.g. Pati, Sumbawa) that can be used to establish and facilitate new CBCF groups.
- Forest certification systems exist in some of the project's study areas (e.g. FSC in Pati) that could be used to strengthen local farmer organisations (e.g. often certification becomes more efficient and cost-effective for small-scale growers if undertaken as a group, which would in turn encourage neighbouring growers to coordinate their activities), with lessons that can be shared and adapted to other areas.

While for each of the project's study areas a range of specific conclusions are presented in the Social Dimensions Analysis report, the text below provides an overarching summary of the key points of discussion:

a. Communities in the project's study areas experience a range of limitations to their livelihoods, such as low education, dry and sloping land of limited area (e.g. Sumbawa), restricted access to markets (e.g. Konawe Selatan), input and service providers, and limited opportunities (& incentives) to learn and engage in collective

action. While numerous programs are designed to support rural development in Indonesia, there is a need for the building of capacity of service providers, such as extension officers and local government officials, to effectively implement such programs to address the specific needs of communities in more tailored ways to build on the existing resources (physical and human) and opportunities in a specific location. Farmers mainly need capacity building (e.g. silvicultural expertise) and organisational support (e.g. group coordination), rather than provision of free physical inputs, which is what many programs tend to focus on. With effective farmer organisation comes the recognition of social structures in communities, which need to be reflective and supportive of all community segments seeking to be engaged in CBCF.

b. CBCF plays an important role in the livelihood of farm families in the project's study areas. While timber and NTFPs are not necessarily the largest source of annual income, they serve an important function of providing a substantial amount of money when large expenditures are needed in the household, and complement the seasonal returns from many agricultural enterprises. The downside of this, however, is that farmers do not always prioritise the careful management of the forest crops, as often financial returns are many years away. Strengthening of production skills and management knowledge, as well as business analytical skills, is needed among farmers to maximise their output from CBCF systems.

c. In order to formulate appropriate support for the improvement of CBCF systems and measure the impacts of such support (interventions), an analytical framework should be holistic in its assessment of the contribution of forestry to the livelihoods of rural communities – reflecting the complex and multi-faceted way CBCF contributes to the livelihoods of farm families. As such, it was proposed that the recognised 'sustainable livelihood framework' (DFID 1999), with assessment across the five capitals that comprise rural livelihoods, would be a useful way to assess the contribution and potential of commercial forestry to rural livelihoods. The 'sustainable livelihood framework' was subsequently adapted by the project team for the Forestry Livelihood Framework research.

The Forestry Livelihoods Framework (Research Task #2)

The smallholders surveyed for the research underpinning the Forestry Livelihood Framework were mostly farmers with 'low' and 'medium' levels of wealth (see Table 10, below), representing about 85% of the total sample population. Generally, the largest proportion of farmers involved in the development of the Forestry Livelihood Framework were classified as of 'medium' wealth, except in the villages of Payak (Pati district) and Lambakara (Konawe Selatan district), where 'low' wealth farmers were more prevalent. The proportion of 'high' wealth farmers was the smallest category, except in Semamung (Sumbawa district) which involved quite a high percentage of 'high' wealth farmers (40%) (see Table 10).

Table 10: Proportion of farmers in different wealth categories

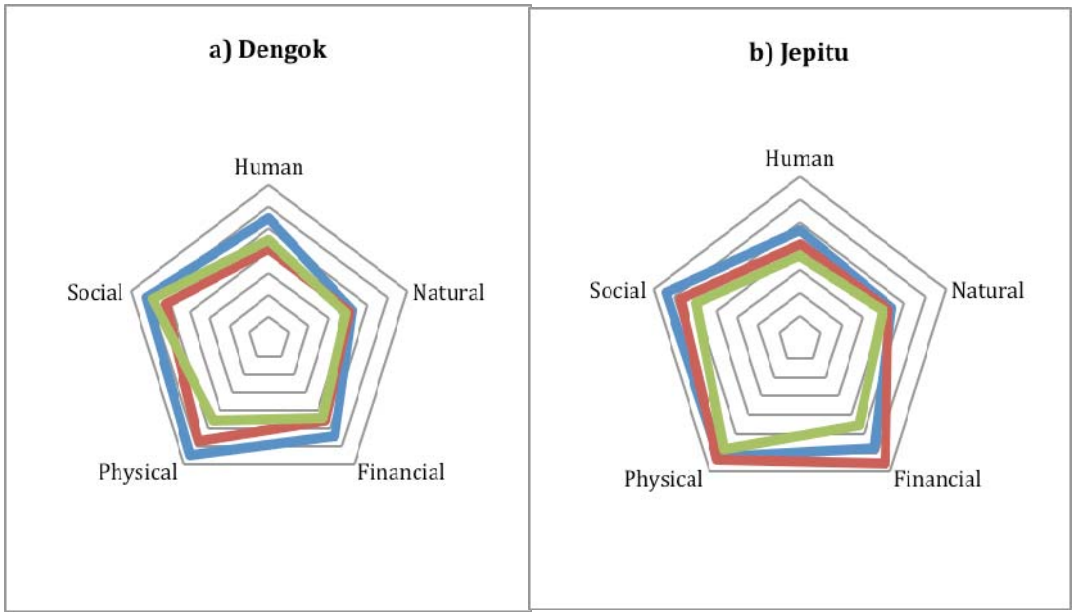
Location	Proportion of farmers in different wealth categories (%)		
(district/village)	High	Medium	Low
Gunungkidul			
Dengok	13	54	33
Jepitu	10	80	10
Katongan	10	57	33
Pati			
Giling	18	41	41
Gunungsari	6	48	46
Payak	1	29	70

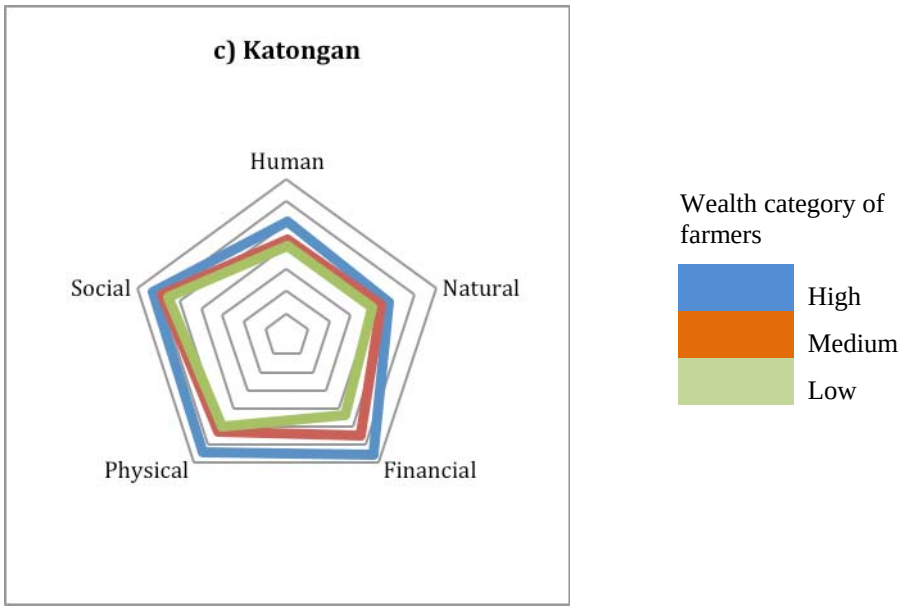
Bulukumba			
Benjala	8	65	27
Malleleng	29	47	24
Konawe Selatan			
Lambakara	20	20	60
Sumbawa			
Semamung	40	57	3
Average across all sites	**15**	**50**	**35**

Source: Compiled from field data in location reports, 2013

Typically, all famers have a mix of assets (capitals) that they draw on to fulfil their livelihoods. Even for farmers investing in CBCF, they will use a mix of assets to optimise the contribution of CBCF to their livelihoods. These assets can be broadly categorised into human, natural, financial, physical and social capital. Using the methodology described above, it is possible to measure the various livelihood assets used by farmers (not just those involved in CBCF). However, the importance of each livelihood asset for individual farmers in each research location can be different, so caution is required when aggregating and comparing data from different villages. The results from the Forestry Livelihood Framework research that assessed the assets of smallholders involved in CBCF were presented in pentagon diagrams in the associated research report, with some included below.

Figure 6: Livelihood assets of smallholders involved in CBCF in Gunungkidul district:
a) Dengok village; b) Jepitu village; c) Katongan village





In each wealth category of farmer, the dominant assets used for CBCF activities were different yet their social and physical capitals were generally the more prevalent across all farmers. 'High' wealth farmers mostly utilised their physical and human assets and 'medium' wealth farmers were more dominant in using physical and financial assets. However, 'low' wealth farmers relied more on social capital in managing their community forest. Mutual cooperative amongst farmers in Indonesia is referred to *gotong royong* and means the reciprocal help farmers provide to each other. This is the type of social capital that is commonly used by 'low' wealth farmers in relation to their involvement in CBCF.

The results from the FLF research provided evidence that community forestry has an important role to play in terms of supporting farmers' livelihoods. Results reveal that the average contribution of community forests to the total household income for all farmers in a single village ranged between 6% (Semamung) to 35% (Payak). The contribution of community forestry to household income differed considerably between farmers of different wealth within the same village, and between villages (Table 11, below).

Table 11: Community forestry contribution to the farmers' household income

Location	Percentage contribution of CBCF to farmers' livelihood for different wealth categories		
	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
Malleleng	23.4	24.0	21.6
Konawe Selatan			
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: Compiled from field data from location reports, 2013

The more extensive use of community forest land (land used for community forestry may also include agricultural enterprises, such as when trees are mixed with estate crops or other agricultural crops) also tended to have higher contribution of the community forest to the total income of farmers (full details available in the Forestry Livelihood Framework research report, Oktalina 2015). At all the study sites, except in Sumbawa, timber had highest contribution to the total income of farmers from community forests. However, the community forests at all the study sites in addition to producing timber they were also sources of other commercial commodities such as agricultural crops, estate crops and other forest products such as foliage, herbs, and fodder. These other products contributed significantly to the total income of farmer at the study sites.

Table 12: Farmer land ownership

Location	Land ownership according to wealth class (ha)		
	High	Medium	low
Gunungkidul			
Dengok	1.04	0.52	0.25
Jepitu	1.70	1.60	0.60
Katongan	0.72	0.65	0.28
Pati			
Giling	0.87	0.87	0.22
Gunungsari	1.44	1.10	0.29
Payak	2.90	2.58	0.47
Bulukumba			
Benjala	1.38	1.08	0.89
Malleleng	0.70	1.65	0.38
Konawe Selatan			
Lambakara	1.27	0.41	1.04
Sumbawa			
Semamung	3.89	1.99	0.03
Average of total	**1.59**	**1.24**	**0.45**

Source: Compilation data from location report, 2013

Agricultural crops provided the highest contribution to the income of farmers with ‘low’ wealth (48%), while for farmers with ‘medium’ wealth these crops contributed 32% and for ‘high’ wealth farmers 27%. Timber from community forestry contributed about 20%, 55% and 40% of incomes respectively for ‘high’, ‘medium’ and ‘low’ wealth farmers. The income from other community forest products, such understory plants and foliage, contributed about 19%, 6% and 13% to incomes for ‘high’, ‘medium’ and ‘low’ wealth farmers (full details available in the Forestry Livelihood Framework research report, Oktalina 2015).

The results from the Forestry Livelihood Framework research clearly indicate that CBCF makes a vital contribution to the livelihoods of farmers. While CBCF is not the only source of income for farmers, it is one of a number of income sources and is commonly used as a ‘savings account’ for the family. For example, the income from CBCF is often relied upon when relatively large amounts of funding are required such as for school fees, weddings or health expenses. A traditional approach to encourage farmers to increase their investment in CBCF is to focus on increasing yields and upgrade their marketing. However, limited land ownership has also become a problem for the expansion of CBCF, as the size of land ownership directly affects the economy of scale that farmers can achieve with CBCF.

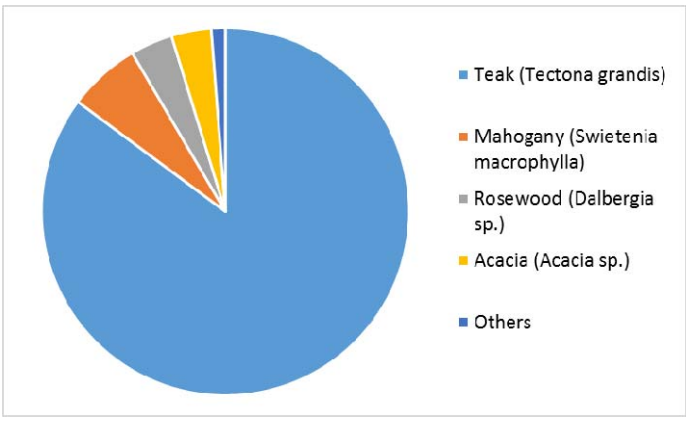
The Value Chain Analysis (Research Task #3)

The Value Chain Analysis research was conducted by combining data from primary and secondary sources, and the results are presented in sections on regional markets, national markets, log prices, and forest growth and silviculture, to enable the analysis of the selected value chains (market pathways). The dominant business models of CBCF reviewed by this project were based on forest products grown on smallholders' private land (HR). A comprehensive presentation of the Value Chain Analysis' results and discussion is provided in the full report (Stewart et al. 2015), previously submitted to ACIAR.

Markets for CBCF in Indonesia are highly regionalised, with a wide variation in characteristics and dynamics of forest markets across Indonesia. The Value Chain Analysis provides a regional market profile for the main timber species grown, traded and processed, information on the amounts of products produced and processed, and prices paid. An example of the information prepared in the Value Chain Analysis, is information about the district of Gunungkidul. Teak is the timber species mostly cultivated by farmers in private forest areas in the Gunungkidul district. Other cultivated timber species may include mahogany (*Swietenia macrophylla*), rosewood (*Dalbergia sp.*), and acacia (*Acacia sp.*).

The total private forest (*hutan rakyat*) area in Gunungkidul was about 35 000 hectares, equivalent to 23% of the total district area (*Badan Pusat Statistik Kabupaten Gunungkidul* 2012). Timber production from private forests during 2009 to 2012 was relatively stable and in the range of 94 000 to 105 000 cubic meters per year. During 2009 to 2012, teak logs were 85% of the total log sales by volume from private forests in Gunungkidul (Figure 7).

Figure 7: Proportion of timber sold (volume) from private forests in Gunungkidul, 2009–2012



Note: Timber production data was derived from a Gunungkidul case study report (Oktalina et al. 2014) and statistical data (*Badan Pusat Statistik Kabupaten Gunungkidul* 2012).

Most of the timber was processed outside the Gunungkidul district, as indicated by the small size of processed wood produced in the district. Records indicated Gunungkidul had only six wood processing companies with production in 2011 of 6000 cubic meters. All other timber was either processed in the neighboring districts within the Yogyakarta province, in the Central Java province, or in the East Java province.

To provide a context for the scale of these regional markets, statistics from the Ministry of Forestry showed that the national timber (log) production increased from 32.2 million cubic metres in 2007 to 47.4 million cubic metres in 2011, an annual increase of about 12%.

The bulk of production came from industrial timber plantations (*Izin Usaha Pemanfaatan Hasil Hutan Kayu-Hutan Tanaman* or *IUPHHK-HT*). The logs were mainly produced for the pulp and paper industries. In 2011, the production from private forest (*Hutan Rakyat*) was about 2.8 million cubic metres.

Although it has fluctuated, the production from private forests as a proportion of the national timber production has tended to increase in recent years. In 2008, the production of timber from private forest was approximately two million cubic metres, or about 6% of the total national wood intake by the forest industries. The intake from private forest increased to 3.2 million cubic metres, or about 9% of the national wood intake by 2009.[2] During 2008 to 2011, about 328 units of large scale wood based industries operated in Indonesia with a production capacities for different products of 11.9 million cubic metres of plywood, 2.4 million cubic metres of veneer, 5.2 million cubic metres of sawn timber, 0.5 million cubic metres of laminated veneer lumber (LVL), 15.4 million cubic metres of wood chip, and 0.5 million cubic metres of wood pellet energy.[3]

The discovery of log prices proved to be challenging. Price information was obtained from various sources but there were no universal indices for log prices relevant to the case study regions. There were difficulties in obtaining basic information about log specifications related to price information. For any set of prices for logs, the basic information required is: species, log grade, log size (diameter, with the point of measurement specified and whether under-bark or over-bark; and minimum length), unit of sale (e.g. Rp per cubic metre), and point of sale (e.g. standing trees or on truck). This information was only obtained for two of the case study regions (Gunungkidul and Pati) on two different timber species, which meant that it was difficult to compare log prices across different species, markets and regions.

During the research, it became apparent that there were many methods and units used when measuring the amount of wood either in the forest or after harvesting, in order to agree a price for the wood in question. Units included: number of trees, cubic metres of standing trees, cubic metres of squared planks, truckload of wood. Various actors in the value chain used conversion factors to allow them to transact their business, but there was a lack of clarity and consistency in the way the amounts of wood were measured and estimated along the value chains investigated in the research.

Table 13: Prices of logs teak derived from private forests in the Gunungkidul district, 2012

Log grade and dimension	*Price (Rp 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: Gunungkidul District Office of Forestry.	

The research focussed on two important commercial species grown by farmers for different markets – teak and sengon. Other tree species at the field sites were bitti (*Vitex*

[2] *http://dishut.jabarprov.go.id, accessed on 27 February 2014.*

[3] *http://www.rotanindonesia.org/, accessed on 27 February 2014.*

coffasus), sonokeling (*Dalbergia latifolia*), jabon (*Anthocephalus cadamba*), gmelina (*Gmelina arborea*) and mahogany (*Swietenia macrophylla*). Bitti, for example, was highly regarded for boat building due to its durability, strength, excellent steam bending and working properties.

During field work for Research Task 3, information was collected on the activities carried out by farmers in the establishment and management of their forests. However, it was not always possible to obtain information from farmers on the growth rates of their forests because most of the farmers interviewed did not collect this type of information. In the Gunungkidul district, a reason given was the long time between planting the forest and selling trees. At the time of sale, farmers did not have information on the size and age of trees that were sold – the information they had was the total number of trees sold and the selling price per tree.

The difficulty of collecting information on growth rates was compounded in forests such as teak that were often managed using coppice for regeneration after harvesting, leading to forests of mixed age (e.g. Bulukumba district). In such forests, detailed records and sophisticated inventory are required to reliably estimate forest growth and increment. 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 are 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.

Evidence from interviews in the Gunungkidul district revealed that the management of private forests did not involve intensive silviculture (e.g. use of genetically-improved tree seeds, use of fertilisers). Lack of capital was a reason given for the lack of investment in intensive silviculture. On the other hand, farmers in the Bulukumba district were applying fertilisers in the cultivation of teak and bitti.

Information collected from farmers showed that there was considerable variation (a factor of more than five) in the reported growing costs for the same species in different regions and between species. While difference would be expected for different species and regions, the scale of the differences was unexpected and requires further verification. A common theme to emerge from interviews with smallholder owners of forests was that farmers would not thin trees to waste. This is a silvicultural method common to industrial forestry designed to concentrate growth on the best trees in a forest, thereby increasing the value of the forest in markets where there are price premiums for better grades of logs. Such markets existed in the case study regions. Farmers expressed the view that thinning to waste was not sensible because all trees had some value.

Despite best endeavours in the field, there were some gaps in the data. As expected, the main gaps related to data from the processing industries. There, issues of corporate confidentiality and industry competitiveness meant that some of the businesses approached to participate in the research were not willing to provide the detailed information required to complete the analyses. This stance is not unreasonable on their behalf, but it highlights one of the risks (and weaknesses) of this type of research when the value chains extend to the corporate sector.

Another limitation of these analyses is that the cost and price information was an ‘average’ estimated by the researchers across various log grades and across different individuals in a group of actors (e.g. farmers). In the absence of detailed forest inventory and log

tracking systems from the forest to the processing facility, it is necessary to use the best estimates made by researchers from their primary data. In further research, it might be possible to refine such an analysis by concentrating on a specific log grade that had a well-defined and transparent value chain. The general value chains for sengon in Pati (Fig. 8) and teak in Sumbawa (Fig. 9) are provided below.

Figure 8: Value chain for sengon in CBCF 1, Pati

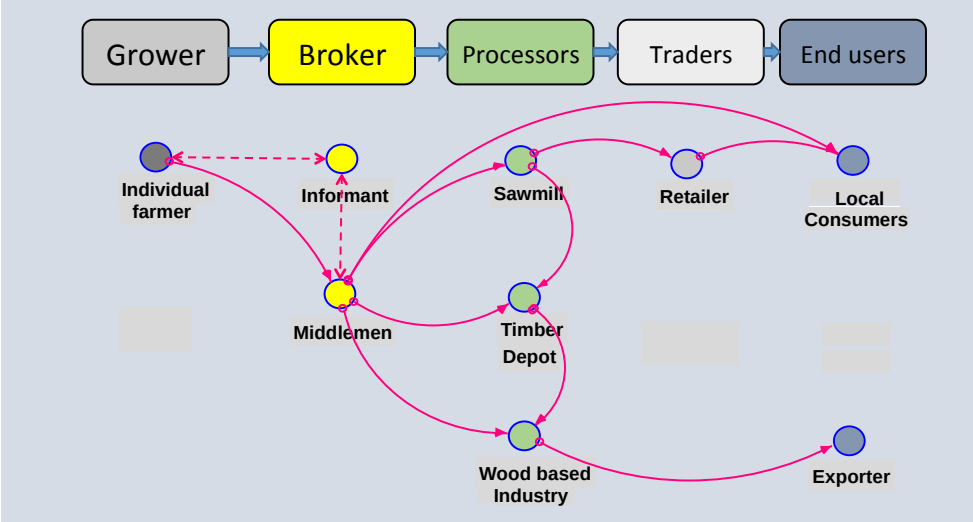
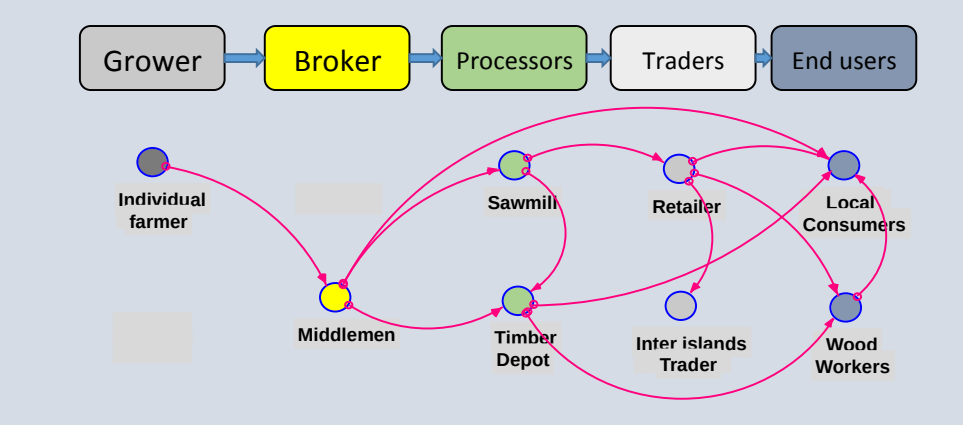


Figure 9: Value chain for teak in CBCF 1, Sumbawa



The value chain analysis required the active involvement of about 15 researchers from many of the partner organizations. One challenge encountered by the research team was that in 2011 when the project proposal was prepared, there was only one dominant marketing (value) chain identified for each study location. However, as researchers' commenced fieldwork for data collection it became apparent that there were often multiple value chains within a single location. This required much more time in each study location by the team to fully understand the specific value chains and collect the necessary data. Field data for the research was collected by many parties from many localities and was reliant on many primary sources. This led to difficulties in synchronizing and standardizing data. Results for smallholder growers (e.g. growth rate and yield) appeared in some cases to vary considerably compared to industry expectations for industrial forests.

There is no single market pathway that offers the best outcome for growers in all settings; the outcomes for all actors are very contextual. Many factors influence the success or otherwise of each market pathway. This was evident where most sites had multiple market pathways used by growers, suggesting that each pathway specific benefits to

participating growers and the other actors. Some generalized strengths and limitations for the CBCF market pathways studied are provided in Table 14, below.

Table 14: Strengths and limitations of CBCF market pathways at the study sites

CBCF	*Strengths*	*Limitations*
[1] Grower-Broker-Processor	A good market pathway where 1) the growers have poor market understanding but 2) there are multiple brokers to negotiate with.	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 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 maintain 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.

The results of value chain analyses were probably more reliable for the upstream actors, who were growers and middlemen. For the downstream actors – the processing industries – there was more chance of errors in the data because it was necessary to make more use of conversion factors and estimates and it was more difficult to verify the information. The analyses provided information on the financial position of an actor relative to other actors in the value chain. Data on investment, costs, revenues and profits showed that in CBCF1, for example, farmers incurred relatively low unit costs in timber plantations and earned higher percentage profits compared to middlemen, except for the case in Gunungkidul. However this does not necessarily suggest that costs and margins are shared unequally in the value chain, because the time factor between making the investment and receiving profits has not been considered. For example, farmers had to wait for 5–7 years (for sengon), and up to 20 years (for teak), before receiving a return on their investment whereas middlemen could transact their interests in a parcel of timber within days. In the value chain, each actor needs to form his or her own view about the equality of the profit share taking into account the amount of capital invested, the time lag between the investment and profits, and the risk of the investment.

Middlemen were usually farmers who had more capital and knowledge in marketing. For example, in Gunungkidul, middlemen were usually growers who had acquired capital to take on harvesting. To be a middleman, they needed to know the market, have the industry connection and have the capital to hire the tree fallers and truck. As it can take a considerable time to improve the capacity of growers to understand markets, middlemen are playing a crucial role in marketing timber from growers. Any interventions should be carefully designed so as not to undervalue the role of the middlemen in the value chain, even though there may be a perception that they are receiving an unreasonably high proportion of the profits from timber production. Further, increasing the number of middlemen in a timber production area may lead to a more competitive timber market for growers.

The analyses could be improved if it was possible to collect information on the total costs, revenues and profits per actor per year for several years, rather than presenting the costs per unit (e.g. Rp per cubic meter of product). The former approach would indicate the scale of the business of various actors, and would allow an estimation of annual income as well as unit profit. For instance, an actor with a low unit profit might earn a high annual

income, and vice versa. Any future data collection should investigate the availability of this type of information.

The analyses carry the caveat that only direct costs and returns have been estimated, not capital investment. Information on capital investment (e.g. by middlemen to buy a chainsaw or by a processor to install a new sawing system) would provide another measure to use in judging fairness of the profits received by various actors in the value chain. Equally, the value of the land used for tree growing is another dimension of a capital investment in the value chain.

Another useful measure is the internal rate of return or net present value of the investment. Preliminary information on the investment in growing sengon and bitti suggested considerable differences in the returns for farmers for these two species. As seen from data in Appendix 9.2, under the CBCF 1, the revenue of growing and selling sengon was Rp 385,766 per cubic meter, while under CBCF 4 the revenue of bitti was Rp 664,451 per cubic meter. Farmers normally have to wait more than 20 years to harvest bitti, whereas they only need to wait around 5-7 years to harvest sengon. A full analysis of the forestry investment by farmers (i.e. a discounted cash flow analysis over the entire growing period) would be required to understand the relative profitability of growing these two species.

The considerable variation in growing costs observed in the value chains needs to be verified. If this difference is absolute, there may be the potential for efficiency gains in forest silviculture. It may be possible, for example, for farmers in different regions to learn from each other's production techniques.

Poor farmers often have to sell their timber before the trees reach their most profitable size, due to an urgent need for cash. Poor farmers need to have better access to loans to fulfil their urgent need for cash. Farmer cooperatives could play an important role in developing credit schemes for their members, especially to help the poor farmers. Government institutions or development agencies could assist farmers groups to work out ways to provide this type of micro-finance.

The main factor that determined the price received by farmers was log size. The Value Chain Analysis found that farm gate log prices from the case studies tended to be at the lower end of price ranges inferred from regional markets. These low farm gate prices may reflect the situation that farmers generally harvest their timber before their trees have grown to the most profitable sizes. Another factor that may have led to relatively low farm gate prices was weak bargaining position of farmers in timber selling transactions due to their urgent need for cash.

Results for grower groups were variable in terms of the profit share of the groups and the amount of timber successfully transacted by the groups. It would appear that there is scope to strengthen the capacity of farmer groups to collectively market timber. For example, for CBCF 3 at Gunungkidul, group capacity remained low, as key activities such as harvesting and processing trees into different grades of logs were conducted by only a few members, who acted as middlemen. On the other hand, however, the farmer cooperative provided additional benefit to farmers through share of the cooperative profit, which was distributed as a dividend to members at the end of the year.

Lessons learnt from Gunungkidul and Konawe Selatan showed that the production of timber certified under the FSC system involved high costs for smallholders the certification process, relative to the returns. In South Konawe, the group organised the harvesting and only dealt with certified timber, so by controlling the harvesting they had control of the requirements of certification. There was much more work for growers in dealing with certified timber. It would appear that unless external parties (e.g. NGOs, the buyers of the

timber) fund the costs of certification, as the case in Pati, farmers would revert to traditional markets for non-certified timber.

The 'forest certification' study

As discussed above, the 'forest certification' study was an additional research activity undertaken by the project team mid-way during the project (as requested by ACIAR), as it became apparent that 'forest certification' provided a potential market niche for farmers. The project team reviewed experiences of three certification schemes – FSC, LEI and SVLK – operating in Gunungkidul, Pati and South Konawe.

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

- In case study 1 in Gunungkidul district, teak logs (20-39 cm diameter) produced under the FSC certification scheme were purchased by a furniture manufacturer (PT. Jawa Furni Lestari) with a price premium to growers in 2014 of 10% compared to prices for non-certified, graded logs, and a price premium of approximately 30% compared to local logs (non-certified and non-graded) (Table 16). 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. Although detailed data was not available, an informant said that the price differential between non-certified, graded logs and FSC certified logs was up to 25% for large diameter classes;
- In case study 2, 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; and
- In case study 3 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 Rp 100 000 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.

Table 15: Price differences between local logs, non-certified but graded logs (NC) and FSC certified logs (all teak) sold by CV. Dipantara, Gunungkidul, 2014

Diameter	*Log price (Rp per m3)*			*Price difference (Rp per m3)*			*Price difference (%)*		
class (cm)	*Local*	*NC*	*FSC*	*NC-Local*	*FSC-NC*	*FSC-Local*	*NC-Local*	*FSC-NC*	*FSC-Local*
20-29	2 200 000	2 600 000	2 850 000	400 000	250 000	650 000	18	10	30
30-39	3 000 000	3 600 000	4 000 000	600 000	400 000	1 000 000	20	11	33

There were many challenges experienced by actors involved in the production of certified logs and products – 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, and competition in the market for certified logs. One company (*CV. Dipantara*) consulted for this research estimated that the costs of certification, with the process initially focussed on 35 farmer groups whose forests collectively comprised the forest management unit, were:

- Rp 100 million for the preparation for the main assessment audit;
- USD 13 000 (say Rp 130 million) for the main assessment audit; and
- USD 8500 (say Rp 85 million) for the annual surveillance audit to maintain the certificate.

Preparation of the farmer groups for the main assessment audit was a lengthy and costly process. The purpose was to ensure that the farmer groups would comply with the requirements of the FSC group certification scheme when the main assessment audit was conducted. Activities completed in this stage covered among others the introduction of the FSC scheme to the community, baseline studies on social and environmental aspects, group establishment, mapping and tree inventory in the forest management unit, establishment of a forest management plan (measuring standing stock, calculating the annual allowable cut, and establishing the harvesting plan), and establishing the log yards. All of these activities and processes were documented and presented to the FSC auditors when the auditors conducted field work to assess the merits of the company's application for certification.

The main competitor in the market place was the state-owned company, *Perum Perhutani*. It supplied FSC certified teak logs that were generally of better quality than those supplied by *CV. Dipantara* because the logs were from older plantings and thus were larger and had less sapwood. *CV. Dipantara* also said that its sales in 2013 were reduced when *Perum Perhutani* reduced its prices of certified logs to alleviate a stockpile.

Another industry informant (*PT. ABP*) from case study 3 explained their company's experience with forest certification, with the key points being:

- during the global financial crisis that started in 2008, a significant proportion of the wood processing industry in Indonesia collapsed. Interest in certification fell away due to its cost;
- the government stepped in during 2009-2012 by specifying certified products in government building contracts;
- post-2012 the government stopped the stimulation policy and interest amongst Indonesian companies in certification decreased;
- most of the company's product is sold in Asia, where FSC is not demanded. Only 5% is sold in Europe, which is the target for 100% FSC certified products. The company wants to expand this market and is continually seeking markets that will accept the FSC certification costs as part of product pricing (e.g. doors in United Kingdom);
- consumers will not pay a premium for FSC certified products; in general, they will buy a cheaper product. It is the large companies scared of radical market campaigns by activists that push certification. Consumer push is required to elevate the profile and proportion of certified timber products in the market;
- despite the small proportion of FSC products currently sold in its total output, the company is committed to producing certified products. It only processes sengon because it is a plantation species and thus accepted in the markets (Europe) it is targeting for FSC labelled timber;
- the company achieved FSC certification for controlled wood products in 2013, but the market would not pay premiums for these products;
- company marketing research has shown that the market will bear a 5% premium for 100% FSC certified products. The company is seeking 7.5% – but this does not cover the cost of certification for their current sales volumes. However, the company pursues production of certified products because it enhances its reputation, and potentially provides access to larger markets allowing the company to increase its sales volumes and decrease its cost of certification per unit of product sold;
- the company wants to aggressively pursue sources of FSC certified timber to build its business in FSC certified products for speciality markets in Europe. It will continue to work with Trees4Trees and support group certification of smallholder growers subject to how the market for FSC certified products develops; and

- FSC and certifying organisations have done a reasonable job in minimising costs of auditing, but the preparation work and on-going administration is costly.

The 'Master Tree Grower Indonesia Initiative' (Research Task #4)

An objective of the project was to develop and deliver an alternative learning model to support landholder engagement in community based commercial forestry in Indonesia. It was also a learning experience for those involved in developing and delivering the program. All the members of the research team contributed to discussions about the design of the program and participated, as either coordinators or observers, in the first course in Gunungkidul. The meeting agreed to a basic framework for the regional courses to follow which allowed those involved to adapt the content in order to reflect the geographical, social and commercial environment within the region where each course was to be delivered.

The seven Master Tree Grower courses delivered during this project involved different landholders and, often, different presenters working in different locations, although they did all follow to a large extent the framework devised by the research team. Furthermore, the research did not involve the direct comparison of the Master Tree Grower course against any other extension or education model. Nonetheless, the project did engage 118 smallholder farmers, 27 community leaders, more than 50 presenters and members of the researcher team in what was for them an untried learning model. Having done so, it is the impressions, responses and reactions of the participants - as noted by their observed engagement with the program and their written survey results - and the feedback received from the various researchers, presenters and other observers that provides a basis for exploring the impact and value of the Master Tree Grower model.

Consistent across all the courses was to be the adherence to the five-point conceptual framework. This framework provides a structure by which to begin a review of the overall program and its impact and helps identify some of the key factors that appear to contribute to a successful learning approach for farmers. On the final day of each Master Tree Grower course the project conducted, participants were asked to complete a written survey that included a number of 5-point Likert scale questions as a means of gauging the value of this effort. The results from some of the questions explored with participants in the Master Tree Grower courses are presented below. As with the other research components of the project, a full discussion of the Master Tree Grower Indonesia courses is provided in a research report, available from ACIAR's website.

One question asked of all participants in the Master Tree Grower courses to rate the degree to which their involvement in the Master Tree Grower course had improved their knowledge of a number of aspects of CBCF (see Figure 10, below).

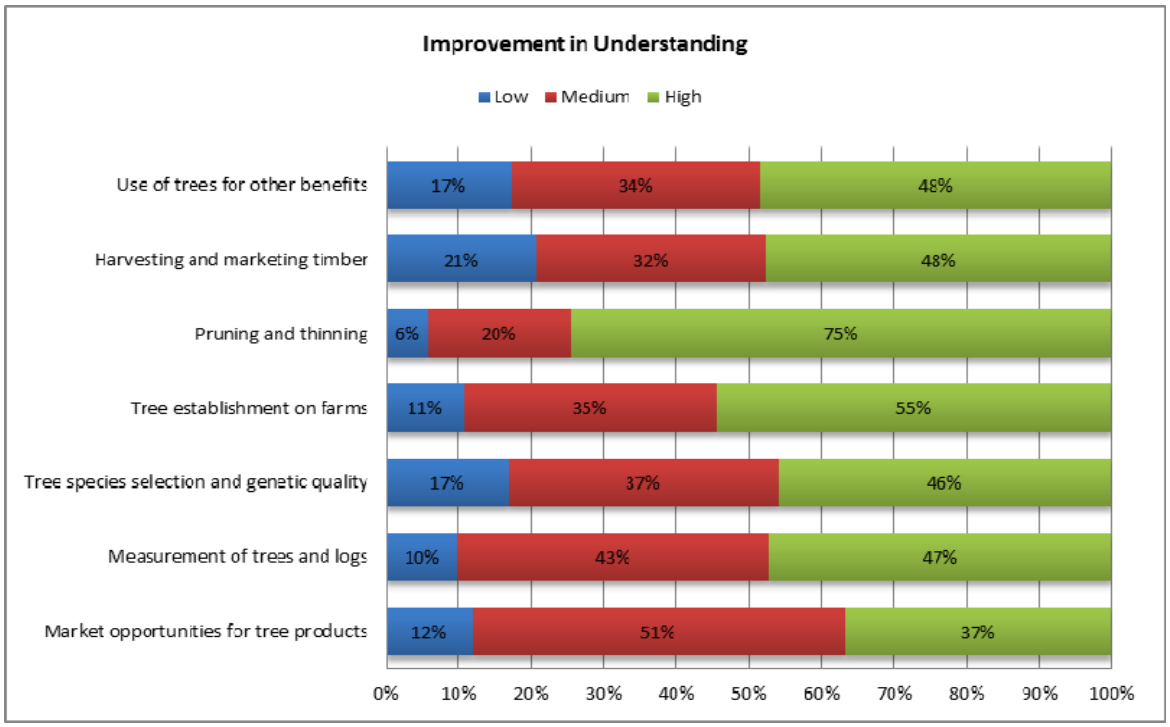


Figure 10: Participant responses to level of improved knowledge

Another question of participants explored the extent their understanding of markets had improved (see Figure 11, below). Several other questions explored the change in understanding in forest measurement and silviculture.

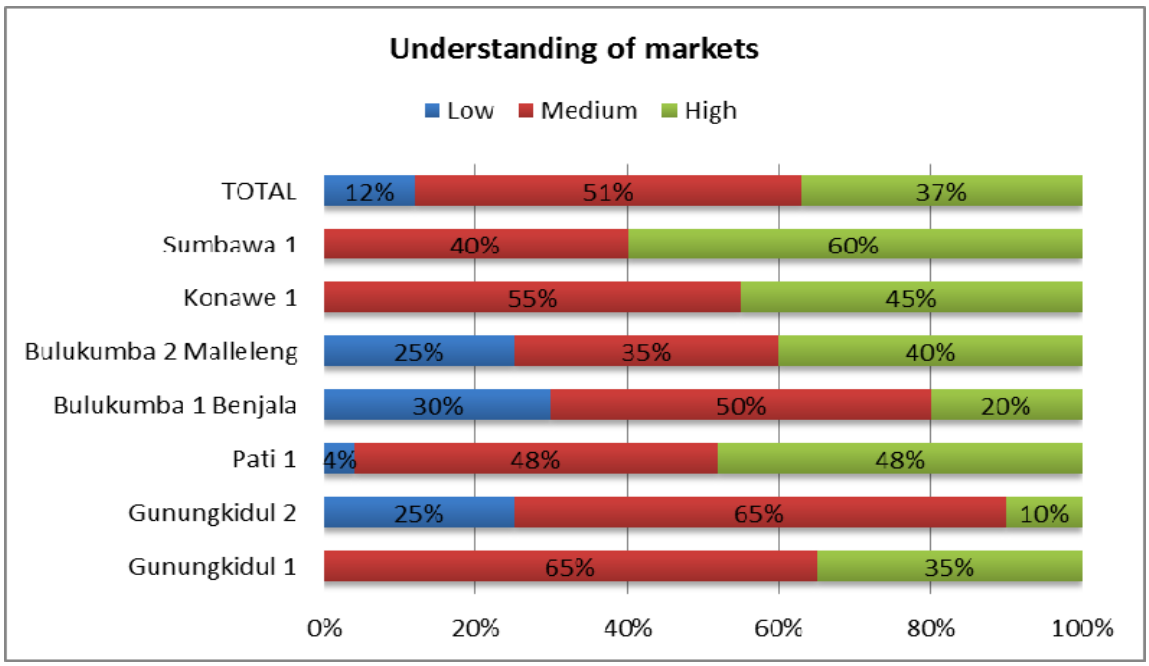


Figure 11: Participant responses on understanding of markets

Another question of the survey asked participants to identify the three most significant or useful experiences or lessons for themselves during the course. The aim of the question was to draw out the key learning experiences. The written responses were translated from *Bahasa Indonesia* into English using Google® translator and allocated to one of the 5 categories. If a response did not neatly fit these categories, or the intention of the writer

was not clear, it was allocated to a final category called “Other”. Figure 12 (below) provides a range of the type of responses (not direct quotes) under the category they were allocated overall and for each course.

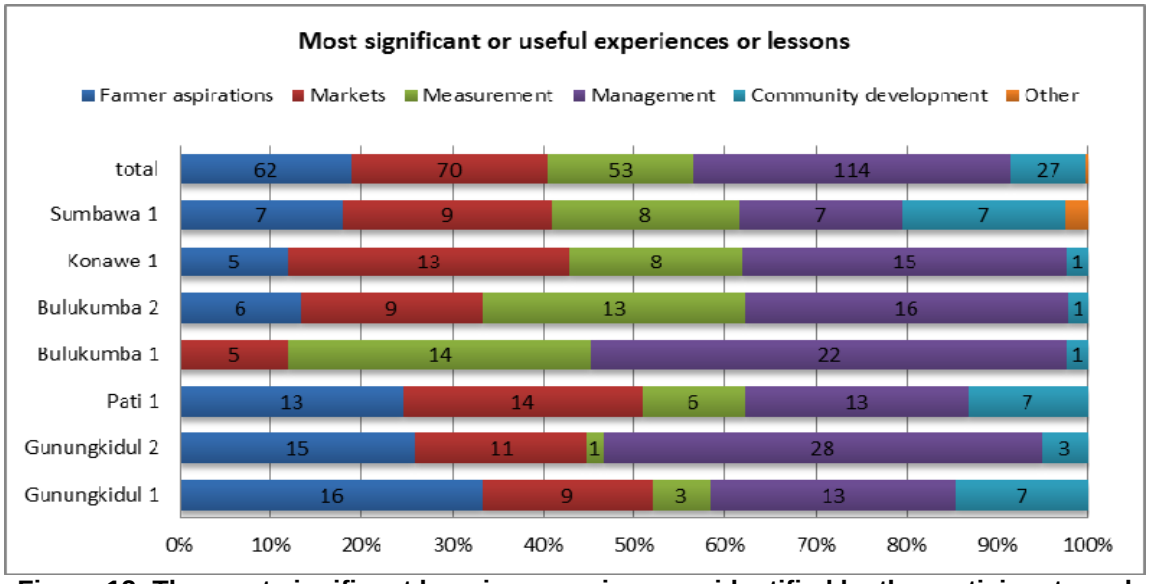


Figure 12: The most significant learning experience as identified by the participants and allocated to the appropriate component in the Master Tree Grower framework.

Lastly, participants were asked to indicate how they thought their involvement in the Master Tree Grower course might change what they do in the future. Their responses were translated into English using Google® translator and categorised in one of the following categories:

1. They expected no change in behaviour
2. They would be apply new knowledge and practices on their own land
3. They would share their new knowledge and practices with other famers

Where the intention was not clear or the response did not confer with one of these categories it was allocated to “Other”.

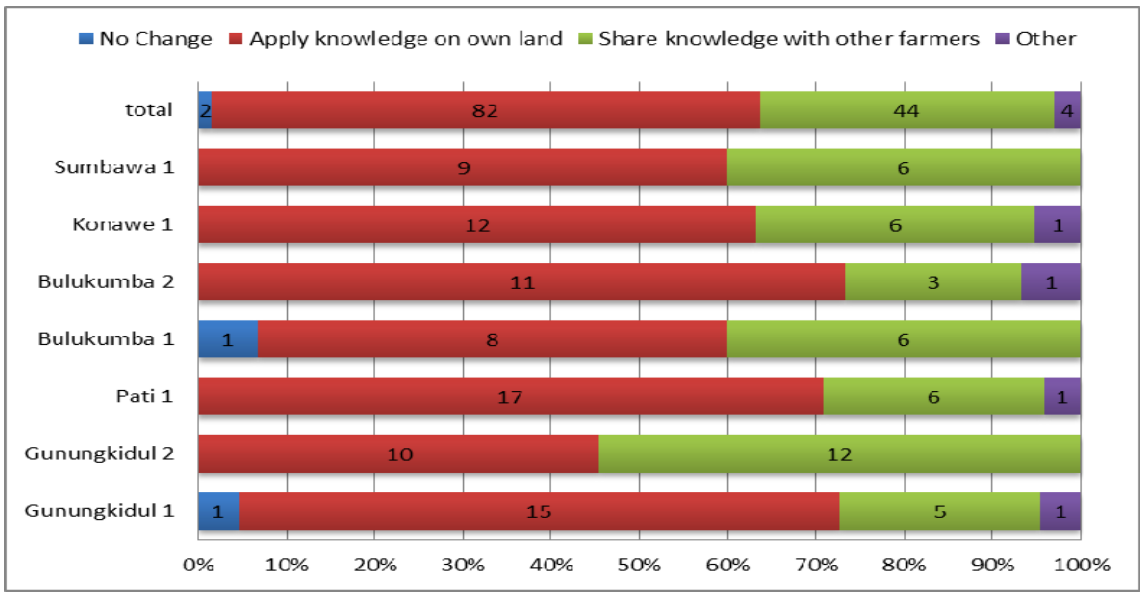


Figure 13: Categorised responses of participants when asked to indicate how they thought their involvement in the Master Tree Grower course might change what they do in the future.

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 2014). Whilst it is clear that the Master Tree Grower courses delivered across Indonesia largely achieve this goal, some of the course coordinators may have not emphasized the legitimacy of farmer interests as clearly as others or included content that was not seen as directly relevant to the participants. Reid (2008) points out that courses that focus on timber production alone, without making it clear how the information or tools provided could be used to inform the design and management of forestry options that address other interest, tend to be less attractive to farmers.

The second stage of the Master Tree Grower framework specifically focuses on the market opportunities available to forest growers. Reid (2008 and 2014) argues that, in the context of smallholder tree growers, the concept of a forestry market should include 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.

As outlined in the Value Chain Analysis (Research Task #3, Stewart, Rohadi et al. 2015) market chains, cost structures and prices for forest products in Indonesia are dynamic, complex and variable. Recognising this the aim of the market component of the Master Tree Grower course is not only to provide a list of current product specifications and prices but to also give landholders an understanding of the harvesting, marketing and processing methods, the cost structures facing traders and processors and the factors that are likely to impact specific product markets in the future (Reid 2008). In addition to providing participants with the current available information about products and prices each of the Master Tree Grower courses included visits to processing plants and presentations by industry players. This aimed to initiate or strengthen the relationship between farmers and the industry player who might purchase their products.

During the planning workshop the research team reported that the idea of taking farmers to the market early in a community forestry extension program was unusual in Indonesia. This lack of familiarity with a market-focused approach may have meant that this component was not as well covered as it might have been. To be effective it is important to have a sawmill operator or wood buyer who can explain the quality specifications that are important to them. In some regions such presenters may not have been available.

However, it is clear from the research that having an early focus on the market did support the subsequent training in tree measurement and management. At the review workshop some of the course coordinators reported that participants had told them that they only ever knew the price of wood from the middleman and that they really valued the access to first-hand information about markets for forest products. One member of the team said that seeing the relationship between wood quality and price had “opened the participant’s eyes to the importance of management”. When asked to nominate the three most significant experiences or learnings from the course, more than 20% of the responses (70 of 327) were directly related to the marketing of products.

At the review meeting the research 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. Whether farmers understood the concept and assessment of basal area and its role as a measure of competition was less clear. Nonetheless the members of the research team did feel that there was value in farmers knowing that such a measure existed and that, with additional guidance and support, felt that many farmers would be able to use it as a guide to their forest management decisions.

Each of the Master Tree Grower courses included information on tree management. Whilst there was, because of the recognised need, an emphasis on pruning and thinning existing forests the courses also provided information on species selection, the role of genetic improvement, tree establishment options and harvesting methods as appropriate to each region.

As in the literature, there was much discussion within the research team with respect to the use of genetically improved planting stock by farmers. Whilst some felt that the participants understood that advanced clones would probably grow faster and display better form and uniformity, there was a view that many landholders could either not afford to purchase improved stock or were not convinced that the differences warranted the additional expense.

Similarly, the coverage of tree establishment varied across the courses reflecting the interests and needs of the participants. Overall the participants rated the improvement in their understanding of establishment options and methods as high (1.4 on a scale of 0-2) although in three courses the rating was very high (over 1.5) suggesting that the response reflects the local interests of the group. For those who already had established trees there was little they could do with the knowledge about genetic quality or tree establishment, which might explain why there appears to be some correlation between these data.

The literature review highlighted the importance many researchers and extension agents place on pruning and thinning trees to improve their market value and this was reflected in the content of all the MTG courses. The members of the research team tended to agree suggesting that farmers did not appreciate the link between timely pruning and wood quality or the need to thin in order to promote diameter increment.

Having been introduced to the market specifications for commercial timber and taught basic tree measurement each course ran sessions on silviculture that 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. It is important that participants are encouraged to question the information they are provided and it is incumbent on those leading the program to try and convey the principles underlying any ‘rules’ or ‘prescription’ presented during the program and seek to facilitate discussion and debate within the group about the possible advantages and disadvantages (rather than simple acceptance).

During the Master Tree Grower courses, it became apparent that many timber growers in Indonesia are reluctant to thin their trees as it is perceived as ‘wastage’, but not appreciating that thinning is usually undertaken 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 would fully grasp the concepts during a short course. Nonetheless, thinning was specifically mentioned by 42 of the 145 participants in their written surveys.

Rather than follow the prescriptions or wait for instructions, farmers would need to be able to make their own judgements as to the most appropriate species, planting design and management plan for their own circumstances. Based on the literature and their own experience it was clear to the members of the research team that most Indonesian farmers who have planted commercial timber species have little understanding of how trees and forests grow or ways in which growth can be directed though timely silvicultural interventions. The Master Tree Grower model seeks to address this problem by taking a

market-first approach to farmer extension. By beginning with a discussion of the local product specifications for forest products the program aims to encourage farmers to make a clear decision about what type of logs they would like to produce and develop a vision for their future forest.

The best measure of success for the Master Tree Grower course as an effective learning approach for smallholders will be seen in its impact on the knowledge and behaviour of participants in relation to CBCF and others within their communities. The degree to which the Master Tree Grower course has equipped the participants with the knowledge and skill they require to act on these intentions is difficult to determine at this time. One hundred and ten (of the 143) participants rated the Master Tree Grower course as being of much value or very valuable to them as a tree grower resulting in a very high mean score (> 1.5 on a scale of 0-2). This result was consistent across all courses. Interestingly, the participants rated the value of the Master Tree Grower to other participants in their course slightly lower (1.6 compared to 1.8 on the 3-point scale) which may suggest the program addresses participants' individual needs and interests better than even those involved might have expected.

This enthusiasm amongst a large percentage of the participants to share their newly acquired knowledge and skills with others suggests that the participants not only see value in the content provided by the Master Tree Grower course but also recognise their potential to influence others within their community. Rather than establishing demonstration forests that illustrated best-practice forestry management the landholders themselves would be the demonstration and, through their own actions, illustrate that CBCF could be adapted to suit the particularly interests and aspirations of each landholders (Reid 2014).

This project also highlights another very significant role of the Master Tree Grower course: providing training for government officers, industry members and farmers in an alternative extension model that they might be able to incorporate into their own work. The research team were encouraged to invite a small number of government and industry extension agents to participate in the courses. Overall 18% of the participants were non-farmers and many gave responses that suggested that their involvement had provided some guidance as to how they might improve their communication with farmers.

The Indonesian government is keen to encourage community-based commercial forestry (CBCF) as a strategy to achieve the twin goals of alleviating rural poverty and building a sustainable forest industry. The expectation is that hundreds of thousands of farm families will establish and actively manage trees on their farms for timber production. Whilst it is impossible to envisage that this many farmers would all participate in a 5-day Master Tree Grower 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.

Of the 145 participants of the seven Master Tree Grower courses, 118 were farmers (81%). As shown above, many of these expressed a desire to share their knowledge within their community and some are expected to play a leadership role within their local farmer groups. With the participation and support from their peers and the local extension agents, industry members and professionals who were also involved, it is reasonable to expect that each locally delivered Master Tree Grower course will have a direct impact on the knowledge and practice of hundreds of farmers within their communities.

In Australia, independent researchers (Bauer and Gordon 2003) reviewing the Master Tree Grower 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. 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 be significantly greater. Follow-up evaluation in each region a year or so after the course was delivered could explore the extent to which neighbours and community members not involved in the Master Tree Grower course received some information and support.

The project designed and delivered a learning approach for supporting the development of CBCF that was clearly new to the members of the research team, the local government officers within each region and the farmers themselves. Along with the 145 participants in the 'Master Tree Grower Indonesia' courses, a wide mix of staff from government, industry and NGOs as presenters that are directly involved in community forestry within their region. As a group these people will have a direct influence on hundreds of other people involved in the sector especially if provided with ongoing training and support in association with additional Master Tree Grower courses within their region.

Engagement and influence priority stakeholders to create the optimum conditions for the effective implementation of the selected CBCF initiatives (Project objective 4).

The project team pursued an active engagement strategy with a wide range of local stakeholders at each of the five study sites. Indeed, much of the research activity for the project explicitly required close involvement with local stakeholders, such as to obtain and analyse market costs and prices, and to deliver the Master Tree Grower courses. The high level of engagement with local stakeholders enhanced the quality of the data the project team was able to obtain, as well as ensured the research results were of value to local stakeholders in CBCF. The regular seminars and workshops held by the project team were well-attended by stakeholders, and towards the end of the project local partners initiated additional seminars and training courses to extend the project's impact.

Several presentations were held with senior national-level policy makers working for the MoEF where the project's policy briefs were discussed and hardcopies distributed. One of the biggest issues identified by the project that was constraining CBCF in Indonesia is the multiple permits and regulations required by different agencies and tiers of government for smallholders to participate in the commercial forestry market. The onerous permit and regulation system faced by smallholders is unintended, and discussion at such meetings often reaching a consensus that the whole permit and regulation system needs to be simplified and streamlined. At this stage, the project has no evidence that any such changes have occurred.

The project team also sought to communicate with the wider policy and scientific community, via publication of scientific articles and co-hosting of a major international symposium in Indonesia. Details of the articles published in peer-reviewed scientific journals are presented below (section 10.2). The project leader made enquiries to IUFRO about hosting a relevant meeting or 'working group' conference in Indonesia, however the most relevant 'working group' (Small-scale Forestry) had a schedule of international conferences already confirmed for several years in advance. The project team then decided to submit abstracts to the next IUFRO Small-scale Forestry Conference to be held in Brisbane during mid-October 2015, and to the INAFOR 2015 Conference to be held in Jakarta during early-October 2015. Several presentations have been accepted for full oral presentations at both Conferences, with two Indonesian researchers expecting to given presentations at the IUFRO Small-scale Forestry Conference (additional funding received by the Conference Organisers from ACIAR is gratefully acknowledged to enable their participation).

8 Impacts

8.1 Scientific impacts – now and in 5 years

The project's research has generated considerable knowledge which has been captured primarily in five research reports, policy briefs, conference presentations and published peer-reviewed journal articles. Much of this information has been distributed to scientific and policy-maker networks in Indonesia and internationally. Anecdotal feedback and independent citation data indicates this knowledge is being used to inform extension and research staff operating at the district and provincial levels, and among policy-makers and researchers at the national and international levels.

Oral presentations by members of the project team remain an important way to convey the key findings of the research to the wider scientific community. The project team has a strong history of being invited to present information at the local to the international levels, with several presentations still to be made in 2015 (i.e. at the INAFOR Conference & IUFRO Small-scale Forestry Conference, both scheduled for October 2015). Some of the notable presentations included:

- Silvi Nur Oktalina (UGM) presented findings about women's participation in community forest based on her research in Gunungkidul at the IUFRO joint conference of 3.08 and 6.08, held at Kyusu University, Japan (September 2013);
- Rowan Reid (UMelb) presented insights about the Master TreeGrower program at the World Agroforestry Congress in Delhi, India (10-14 February 2014); and
- Dede Rohadi (CIFOR) presented some findings from the project at the Forest Asia Summit in Jakarta (5th May 2014), an event attended by 1,500 participants.

In addition, the project team has had six articles published in peer-reviewed journals (listed in section 10.2) and another three articles *'in press'* that are expected to be submitted to international peer-review journals in 2015. The oral presentations and publication of articles are expected to continue to generate interest in the project's findings for several years to come. As such, while difficult to assess at this point, the scientific impact of the project is anticipated to continue to increase during the next 4-5 years.

8.2 Capacity impacts – now and in 5 years

The project's overall approach to data collection and analysis, and communication of results, has been highly interactive with local forest farmer groups and their partner organisations (e.g. district agencies, NGOs, processors). The participatory approach adopted by the project has already enhanced the capacity of the farmers involved by increasing their:

- awareness of constraints and opportunities related to CBCF;
- ability to identify alternate or improved market options for CBCF;
- knowledge about how market specifications relate to different silvicultural options; and
- awareness about the important roles men and women fulfil in CBCF.

An important component of the project was to explore ways to enhance the learning process for farmers about CBCF. As described above, the project team designed and delivered seven Master Tree Grower courses to 118 farmers (81% of participants), of which 13 were female farmers. An overwhelming majority of participants said that the

Master Tree Grower courses have given them the knowledge and skills to improve the quality of their CBCF. An independent evaluation of the Master Tree Grower courses, focused largely on the course conducted in Sumbawa, found substantive evidence that farmers had enhanced and expanded their investment in CBCF as a result of what they had learned from the Master Tree Grower course (Muktasam 2015).

The project also involved other stakeholders in the design and delivery of the Master Tree Grower courses, with an initial course aimed at Training of Trainers (TOT). The TOT explicitly involved communicating the relevant findings from the other research components of the project to a range of extension and industry staff, who were subsequently involved in facilitating all the Master Tree Grower courses. A total of 30 trainers (including 7 women) completed the TOT, providing significant numbers of expert trainers available for development programs on CBCF across the five study locations. This pool of expertise is expected to provide tangible benefits for the development of CBCF in these locations over the next few years.

The project team is regularly assisted at the district and village levels by local forestry staff (e.g. from *dinas kehutanan*), who invariably become involved in the research process. Many of these staff have reported that they have learned new information about local community forestry operations (commercial, socio-cultural & technical aspects), which has improved their capacity to deliver a relevant extension/advisory service.

Also, project members have reported an improved capacity to undertake research (e.g. collect and analyse empirical data). For example, the NGO partner Trees4Trees provided training for their staff in techniques for interviews, household questionnaires and focus group discussions, as used for the Social Dimensions Analysis and FLF research. In addition, for the project members actively involved in the VCA and 'forest certification' studies, many are now confident of how to conduct research on assessing the value of CBCF for smallholders' livelihoods, and how to design a value chain analysis.

The project has conducted several training workshops to build the capacity of the project team, which included a Report Writing Workshop in Yogyakarta in May 2013 and two Scientific Writing Workshops in Bogor in August/September 2013 and October 2014. The first workshop was attended by the whole project team of around 20 participants, while the Scientific Writing workshops were attended by around 15 and 8 participants, respectively. The workshops provided important contributions to the improvement of research capacity of the participating scientists and their organizations. Project members who attended the Scientific Writing workshops have prepared substantial drafts of three articles, with expectation that these will be finalised and submitted to peer-review journals by December 2015. All articles have multiple co-authors from the project team.

8.3 Community impacts – now and in 5 years

Evidence is emerging that the project has had a range of positive impacts, which are expected to increase over the next 5 years. For example, results from a survey of participants in the seven Master Tree Grower courses revealed very positive feedback about the value of this approach. Participants relished the opportunity to learn about the commercial markets for teak and other forest products, practice forest measurement techniques related to market specifications for teak (DBH, height, grade/quality), and explore a range of silvicultural management options. The surveys revealed that after the course farmers were more confident about their management practices, better able to grow trees suited to local markets and were more willing to engage with other growers to share knowledge. In Sumbawa, an independent evaluation found that some farmers had improved the quality of their planted trees (pruning, thinning) and others had expanded

the area planted to trees as a result of their participation in the Master Tree Grower courses (see evaluation report by Muktasam 2015).

The courses typically aim to build the capacity within the local farming community in relation to: timber inventory (which count the number of trees, measure tree diameter at breast height, tree height estimate), felling trees, measure the length and diameter of the tree, estimate the quality of a tree trunk, measure the diameter of each log, fill the timber delivery documents, etc.

Although it is difficult to accurately quantify the impact of the project on smallholders, the project team believes it is actively contributing to the awareness, skills and knowledge about CBCF for a large number of farm families in the five study locations (see Table 17, below), and is therefore contributing to improving the economic/enterprise opportunities of nearly 20,000 people.

Table 17: Influence of project on farm families in the five study locations

District	Village	Members of farm families
Gunungkidul	Dengok	1,350
	Jepitu	3,610
	Katongan	3,330
Pati	Giling	3,440
	Payak	78
	Gunungsari	1,555
Bulukumba	Malleleng	1,720
	Benjala	2,900
South Selatan	Lambakara	435
Sumbawa	Semamung	1,485
Total: Farm families comprise **19,903** people in study villages		

Source: van de Fliert (2013) SDA report, Table 4: Geographical and demographic characteristics of study sites, p.10 (Research Task #1).

Based on an average of 5 members per farm family, the project is working in villages where there are approximately 4,000 farm families. Given all districts have reasonably active markets for forest products, forests play an important role contributing to the household incomes of farm families, and there is some type of local farmer forestry organisation, we have estimated that about 50% of these farm families (i.e. 2,000 farm families) have members participating in project activities delivered with local organisations and farmer forestry groups. This number is consistent with the figure targeted in the project's original proposal.

8.3.1 Economic impacts

The project has consistently applied the logic that by improving the knowledge and skills of farmers, they in turn will translate their enhanced knowledge and skills into improved CBCF practices and market pathways. Subsequently, if farmers acquire the experience that CBCF can be a profitable enterprise, then they will sustain their investment (land, time) so that commercial forestry becomes an integrated component of their farming portfolio, and downstream processors can increasingly rely on high-quality farm-grown wood being available. As such, the positive change made with smallholders involved in CBCF can lead to an expanded, profitable and sustainable forestry sector.

The VCA research found that log prices at the village level vary significantly according to their grade or quality and location. The price of teak (slow growth species) ranged from Rp 500,000 to Rp 5,000,000 per cubic metre, while the price of sengon (fast growth species) ranged between Rp 395,000 and Rp 1,115,000 per cubic metre. Log grade was largely

determined by log diameter and the intensity of defects (due to dead knots, disease attack, and crooked form). The differences in timber prices due to grade or quality provide an incentive for farmer tree growers to produce better quality timber. The project team appreciated that if farmers could be shown how and why to apply better silvicultural practices (e.g. timely pruning and thinning), then many farmers would choose to adopt practices that would increase the economic benefits derived from CBCF.

Information recently shared with the Project Leader (D. Race) supports the project's original logic, in that the improved quality of timber produced by smallholders in Bulukumba has attracted a 16% increase in prices over the past two years paid for farm-grown wood by a processor in South Sulawesi (PT PAL 2015). This increase in prices has flowed through to approximately 80 smallholders. In turn, the increased quality and volume of timber supplied by smallholders has enabled PT PAL to expand its reach and sell into international markets, which typically demand products of higher quality. This evidence illustrates how the project's logic can create positive links all along the value chain in the CBCF sector. While acknowledging that this is just one example of the positive economic impacts generated by the project, it provides some evidence of how this approach could create economic benefits from CBCF for the 2,000 smallholders who were actively engaged in the project, and be extended beyond the 10 study sites to the wider population of the five provinces of about 50 million people.

By extrapolating this example to the sample population of farmers that the project has worked with, those growing sengon (often ready to harvest in 5-6 years) in Bulukumba, Gunungkidul and Pati could be expected to improve the wood quality and volume from their sengon plantings to double the returns to smallholders from CBCF within 5 years (using improved silviculture and genetic material). That is, if the 1,800 farmers with whom the project worked with in these three districts produced an MAI of 1 m^3/year that was of additional value of Rp. 500,000 (about Au$55), then the project would contribute to generating an increase of Rp. 900 million/year in farm income for these farm families (about Au$100,000/year) within the next 5 years. This calculation is based just on the districts of Bulukumba, Guniungkidul and Pati, where sengon is commonly grown. The other two districts – South Konawe and Sumbawa – teak is the dominant species grown amongst the farmers the project worked with. As teak has a slower growth rate (>20 years), the economic impact for teak farmers will take longer to occur, but may generate a higher economic impact (given the higher prices paid for high-quality teak).

Given the regionalised nature of Indonesia's forestry sector (as discussed above in relation to the VCA research), this project recognised the need to foster change in multiple locations – as positive change in one location may not readily translate to positive change in another location, due to different farming systems, growth rates, markets and processing capacity. Within the limitations of the project's budget and scope, the project became active in 10 villages in five districts, across five Provinces. While there were some generic characteristics across all study sites, there were important features of CBCF specific to each site. As such, the project took account of the uniqueness of each location when undertaking its research, including the nature of the regional markets and the ensuing commercial opportunities for farmers.

There are encouraging signs for CBCF in some of the locations were the project was active. For example, only a small proportion (<10%) of the timber produced from private forests in Gunungkidul was processed in that district. However, greater capacity for regional processing is emerging in areas where the supplies of farm-grown timber were increasing and, where sustainable, this additional processing capacity would potentially improve log prices to growers because of reduced transportation costs.

Another emerging feature in some regional markets is the demand for 'certified' timber. The project found evidence that certification is providing stronger market access and a

price premium for smallholders growing sengon in Pati. The economic impact for smallholders growing 'Sustainable Forest Management'-certified sengon is that companies can be willing to provide an advance payment of 30% of the timber value. In addition, because timber is processed into certified products, farmers receive an additional price of Rp. 100,000/m^3 (about Au$10/$m^3$) for their timber.

8.3.2 Social impacts

The information published from the project's Social Dimension Analysis and Forestry Livelihood Framework has increased awareness and understanding about the socio-cultural aspects of CBCF, particularly amongst staff involved in extension (advisory) services. Also, the project's interactive research approach appears to have fostered an active and open dialogue amongst many of the important stakeholders in CBCF, such as between farmer groups and the local extension and processing partners (government, NGO, private sector). For example, the project team has established an ongoing forum in Bulukumba where stakeholders regularly come together to discuss aspects of CBCF, often leading to resolution of issues (e.g. understanding of permit requirements) and exploring new opportunities (e.g. sharing information about supply needs and prices). In addition, the Sumbawa district forestry agency has proposed to revise some of the forestry regulations (PERDA IPKTM 2006) based on the project's key findings.

There is increasing evidence of the positive social impacts of the project's Master Tree Grower courses, with a large majority of participants – both farmers and other stakeholders – reporting that they had increased the knowledge about CBCF. Increased knowledge is often a precursor to enhanced confidence, so it is assumed that for participants who increased their knowledge will make better informed decisions about CBCF. The project continues to receive very positive feedback about the impacts from the seven Master Tree Grower courses, including that the district forestry service in Bulukumba has initiated the delivery of further courses fully funded by local partners (delivery of these courses commenced in May 2015).

Further evidence of the positive impacts from the Master Tree Grower courses includes:

- the Sumbawa Extension Agency has allocated IDR 50,000,000 (Au$5,000) for scaling-out the approach to farmer groups in the district;
- another ACIAR-funded project (the *'Kanoppi'* project) has adopted the course approach to build the capacity of farmer groups in Sumbawa; and
- the Bulukumba district forestry agency (Dinas), in partnerships with FORDA Makassar, co-funded and delivered several more courses during mid-2015 to interested farmer forest groups.

8.3.3 Environmental impacts

The project produced and distributed information on how CBCF can be enhanced and further developed, and so is expected to assist rural communities manage forested areas under their control on an environmentally sustainable basis. Although this project has had a socio-economic focus to enhancing the benefits to smallholders' livelihoods, some environmental impacts are anticipated. For example, in Sumbawa community forestry plays an important environmental role as a buffer between 'protected' (conservation) and 'production' forest areas, with community forestry practiced as a blended 'conservation-production' forest, with species and silviculture strongly determined by the needs and preferences of the local community.

8.4 Communication and dissemination activities

The participatory process adopted by the project team for data collection in the five study locations generated considerable interest in the project amongst members of the local farmer forest groups, forest traders, district forestry staff (Dinas), and local NGOs. This approach appears to have been an effective means of communicating with, and distributing information to, interested stakeholders. As data was collected and analysed, the project team would frequently convene seminars and workshops with local partners in each of the study locations to interpret and verify their analysis, and discuss the results.

The project produced and disseminated a bi-lingual 2-page newsletter about every 6 months, with a total of 8 newsletters published over the project's 4 year period. The newsletter was published in hardcopy and electronically, with ongoing public access made available at: www.puspijak.org/aciar. The project newsletter was largely produced by Ms Aneka Prawesti Suka (FORDA Bogor). The Project Leader periodically prepared and circulated a *Project Communiqué* (a short & informal email) as a means of keeping team members informed.

Most of the project's research has been document in the five reports listed below, with all of the research reports submitted to ACIAR with the intention that these be made available via ACIAR's website:

- Social Dimensions Analysis (2013) – report on Research Task #1, van de Fliert, E.
- Forestry Livelihood Framework (2015) – report on Research Task #2, Oktalina, S.N.
- Value Chain Analysis (2015) – report on Research Task #3, Stewart, H. et al.
- Master TreeGrower Indonesia (2015) – report on Research Task #4, Reid, R. et al.
- Forest certification study (2015) – report on additional study of forest certification experiences, Stewart H. et al.

The project produced five 'policy briefs' (included in Appendix 11.1), which were:

'Towards commercialization of community forest timber: Barriers, opportunities, and policy advice' (2013), by Setiasih Irawanti, FORDA Bogor, Policy Brief Vol. 7 (9) 2013,

'Changing the mindset of community forest farmers through MTG program' (2014), by Setiasih Irawanti & Aneka Prawesti Suka, FORDA Bogor, Policy Brief, Vol. 8 (4) 2014,

'Increase forestry trade chains to develop community forest business' (2014), by Setiasih Irawanti, Nunung Parlinah & Aneka Prawesti Suka, FORDA Bogor, Policy Brief, Vol. 8 (10) 2014,

'Making timber plantations an attractive business for smallholders' (2015), by Dede Rohadi, Tuti Herawati, Christine Padoch & Digby Race, CIFOR Info Brief #114, March 2015,

'Enhancing Community-based Commercial Forestry in Indonesia – Summary of key findings' (2015), by the Project Team, FORDA Bogor Vol. 13 (1), June 2015.

The project team was also active in giving presentations at national and international conferences, as listed below:

Irawanti, S. (2012) Timber and NTFPs as incentives for development of sengon community forest in Pati, Presented at Exposure of Puspijak Research & Development in Support the Development of Forestry Sector in Central Java, Semarang 2 October 2012.

Irawanti, S. (2012) Overcoming Constraints to CBCF in Indonesia, Project Overview: ACIAR-FST/2008/030, Presented at Workshop on International Cooperation, Puspijak, Bogor, 5 November 2012.

Herawati, T. & Rohadi, D. (2013) Policies on smallholder timber trade in Indonesia: Disparity between the concepts, practices and impacts. Presented at the 2nd INAFOR Conference, Jakarta, 27-28 August 2013.

Irawanti, S. (2013) Important Role of NTFP in Commercialization of Timber from Community Forests. Presentation at the 4th National Seminar on Agroforestry at Banjarbaru, South Kalimantan, 26 October 2013.

Oktalina, S.N. (2013) Women's participation in community forestry. Presentation at the IUFRO joint conference (3.08 & 6.08) at Kyusu University, Japan, 10th September 2013.

Race, D. (2013) Optimising community-based commercial forestry: Lessons from the farmers and forests of Indonesia. Presented at the 2nd INAFOR Conference, Jakarta, 27-28 August 2013

Reid, R. (2014) The Master TreeGrower and Peer Group Mentoring programs: building farmer and community capacity. Presentation at the World Agroforestry Congress in Dehli, India, 10-14 February 2014.

Rohadi, D. (2014) Making Timber Plantation as an attractive business to smallholders. Presentation at the Forest Asia Summit, Jakarta, 5th May 2014.

Rohadi, D. & Herawati, T. (2013) The Value Chain of Smallholder Plantation Timber: How much room do we have for improving the farm gate price? Presentation given to the international symposium on 'Value chains of furniture, other forest products and ecosystem services, organised by CIFOR: 14 February 2013 (paper being revised for publication by FORDA).

Sumirat, B.K., Nurhaedah Muin & Achmad Rizal H. Bisjoe (*in press*) *'The importance of identifying social capital for strengthening farmer forest groups development in Indonesia'*. Accepted by the Conference Committee for presentation at the XIV World Forestry Congress, Durban, South Africa, to be held September 7th – 11th 2015.

Sumirat, B. K., Abdul Kadir Wakka, Achmad Rizal H. Bisjoe & Nur Hayati (*in press*) *'Connecting farmers to wood markets through training to support CBCF in Indonesia'*. Accepted by the Conference Committee for presentation at the XIV World Forestry Congress, Durban, South Africa, to be held September 7th – 11th 2015.

Wakka, A.K., Bisjoe, A.R.H., Hayati, N. & Muin, N. (2014) *'Pendekatan Master TreeGrower dalam Usaha Meningkatkan Pengelolaan Hutan Rakyat di Kabupaten Konawe Selatan, Provinsi Sulawesi Tenggara'.* Presentation at The National Seminar of Indonesian Community Forest Management (KOMHINDO) in cooperation with the Forestry Faculty, University of Hasanuddin, Makassar, September 4th - 5th 2014.

Other reports about/by the project included:

Greenhill, M.P., Wibisono, M.G., Sumirat, B.K., Suka, A.P., Bisjoe, A.R., & Irawanti, S. (2015) *Institutions Assisting Forestry Farmers: An Indonesian case study*. CSIRO, Australia.

Wettenhall, G. (2012) Expanding local timber sources for coastal boat builders. *Australian Forest Grower*, Spring 2012: pp.33 & 36.

Digby Race and Gib Wettenhall are editing a 200-page publication based on the project for distribution to forestry extension staff, anticipated to be available December 2015. ACIAR has provided additional funding for the printing of 500 copies of the publication.

The project was also responsible for producing video material, including:

- *'Growing Java: Experiences of farmers growing trees in Indonesia'*, 25-minute video released in 2013 by John Walker & co. The video is available for free download/viewing via ACIAR's website.
- CIFOR's Science@10 – *'By enhancing value chain, is community based commercial forestry improved?'* by CIFOR. The video is available for free download/viewing via CIFOR's website.
- *'Making Timber Plantation Attractive for Smallholders',* 9-minute video released by CIFOR in June 2015. The video is available for free download/viewing via CIFOR's website.

The project has generated considerable interest in the Indonesian media, such as:

Publication of the project result and dissemination process in Sumbawa – Lombok Post (daily newspaper in West Nusatenggara), "DISHUTBUN Sumbawa Sambut Positif Master TreeGrower, March 19, 2014.

Publication of the project results and dissemination process in Sumbawa – Tribun (daily newspaper in Sumbawa), "Marak Ilegal Logging, Sumbawa Butuh Perda IPKTM", July 09, 2013.

Publication of the project results and dissemination process in Sumbawa – Gaung NTB (daily newspaper in Sumbawa), "Masyarakat Butuh Revisi Kebijakan Kayu Tanah Milik", July 10, 2013.

Publication of the project results and dissemination process in Sumbawa – Radar Sumbawa (daily newspaper in Sumbawa), "IPKTM Perlu Dievaluasi", July 09, 2013.

Kudus district newspaper 'Jawa Pos Radar Kudus', Tuesday May 27, 2014, *"Melihat Pelatihan Peningkatan Kapasitas Petani Hutan Rakyat"* / Seeing The Training of Community Forest Farmers Capacity Building.

Pati district newspaper 'Muria', Tuesday, May 27, 2014, "Petani Hutan Dilatih Peningkatan Kapasitas / Community Forest Farmers Trained for Capacity Building".

Central Java provincial newspaper 'Suara Merdeka', Wednesday, May 28, 2014, "Petani Hutan Rakyat Dilatih Membuat Arang dan Cuka Kayu./ Community Forest Farmers Trained to Make Charcoal and Wood Vinegar".

National newspaper *'Media Indonesia'*, with a report about the annual meeting in Yogyakarta *"Memanen Uang dari Hutan Rakyat"*, Wednesday 24 December 2014.

Bugi Sumirat. *MTG (Pelatihan Petani Hutan Rakyat) sangat diperlukan oleh petani; Pembelajaran dari pelatihan MTG di Bulukumba*, Sulawesi Selatan. May 2015. http://ekonomi.kompasiana.com/manajemen

Bugi Sumirat. *Petani hutan rakyat perlu pintar membuat keputusan; Pembelajaran dari pelatihan MTG di Bulukumba*, Sulawesi Selatan. May 2015. http://ekonomi.kompasiana.com/manajemen

Bugi Sumirat. *Hutan rakyat dirawat, kualitas kayu lebih baik, petani sejahtera; Pembelajaran dari pelatihan MTG di Bulukumba, Sulawesi Selatan*. May 2015. http://ekonomi.kompasiana.com/manajemen

9 Conclusions and recommendations

9.1 Conclusions

Establishing a vibrant CBCF sector is widely viewed by policy makers as a strategy to assist smallholders build productive and sustainable farming systems, so that commercial forestry becomes part of a diverse and resilient 'package' of opportunities to enhance rural livelihoods. Even in parts of Java where trees are more commonly used as an integrated component of family farms than elsewhere in Indonesia, most smallholders fail to realise the commercial potential of the trees they plant.

The current project supported by ACIAR – *'Overcoming constraints to community-based commercial forestry in Indonesia'* [FST/2008/030] has built a comprehensive knowledge base about the different capacities among smallholders to become involved in CBCF, and improved understanding of how more effective links between smallholders and the private sector can rapidly scale-up the benefits of CBCF to regional economies. The project has:

- identified the common barriers facing different smallholders involved in CBCF across different provinces (the new project will expand the range of study sites to include CBCF with natural forests and state-owned land);
- analysed the dominant value chains (market pathways) used by smallholders and the potential to add value at different market points, 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 Tree Grower' training course that improves the silviculture skills of smallholders, enabling them to produce high-quality timber and receive higher prices from the private sector.

Some of the key findings from the project's research include:

- Most Indonesian farmers are involved in CBCF as part of a mix of income sources. Data from the project's five study sites indicated that the average contribution of CBCF to the total income of the farmers was 20%.
- When smallholders formed a cohesive group, in general their commercial opportunities tended to improve than when as individual growers. The advantages for smallholders include 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. However, where smallholders are yet to form a cohesive group, it may take some time to develop to its full potential.
- In most value chains for CBCF, 'middlemen' play a central role in linking small-scale growers to processors. The profit share of middlemen was not always greater than that of growers; however middlemen gain their profits in a time horizon that could be as short as several days whereas growers must wait much longer (e.g. 5–7 years if growing sengon or more than 20 years if growing teak).
- Certification of forests owned by smallholder growers remained challenging due to the complexity of achieving certification and maintaining the required management systems, and the initial and recurrent costs. The cost of certification was high and appeared to be unachievable for smallholder growers unless heavily supported and subsidised by external parties (e.g. NGOs, companies).

- The issue of the annual allowable cut was challenging for participants in FSC group schemes. Challenges in complying with this 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.
- When smallholders have a strong understanding of market dynamics and silvicultural principles, most are able to adapt their practices to CBCF to enhance the financial returns. A strong local network of experienced smallholders creates an opportunity for scaling-out new ideas and approaches for CBCF.

There is great potential to enhance the impact from this initial investment and scale-up the benefits of CBCF for smallholders and Indonesia's private sector by building the capacity of local farmer groups (e.g. how to appraise markets), strengthening the links between the private sector and smallholders (e.g. work closely with processors that seek to increase their supplies from farmers), better targeting government policies relating to CBCF (e.g. match HTR options with socio-economic characteristics of smallholders), and extending the reach of the project to include natural and planted forests.

9.2 Recommendations

There are some promising signs of the positive impacts being generated by the project, however these are considered to be in an emergent stage. Follow-up research and development is warranted to consolidate the progress made by this project. Key areas suggested for future research include:

- Identifying the most effective business networks (market pathways) that bring greater benefits from community-based commercial forestry to different smallholders;
- Increasing the business capacity of smallholders investing in community-based commercial forestry, and develop strategies to scale out the capacity building of local farmer groups; and
- Analysing the policy context for community-based commercial forestry and support policy reform that enables it to become a common investment choice for smallholders.

At the time that this report was finalised, a Preliminary Proposal had been submitted to ACIAR for consideration to build on the project described in this report.

10 References

10.1 References cited in report

ALDEN WILEY, L. 2002. From meeting needs to honouring rights: the evolution of community forestry. Invited paper submitted to the XII World Forestry Congress. Quebec, Canada.

CERNEA, M.M. 1991. The social actors of participatory afforestation strategies. In: M.M. Cernea (ed) *Putting People First: Sociological variables in rural development*. 2nd edition. Oxford University Press, UK. Pp. 340-393.

CHARNLEY, S. and POE, M.R. 2007. Community forestry in theory and practice: Where are we now? *Annual Review of Anthropology*, 36: 301-336.

DFID (Department for International Development). 1999. Sustainable Livelihoods Guidance Sheet. DFID. London, UK.

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, Bangkok, Thailand.

GILMOUR, D.A. and FISHER, R.J. 1991. *Villagers, Forests and Foresters*. Sahayogi Press, Kathmandu, Nepal.

GILMOUR, D.A. and FISHER, R.J. 1997. Evolution in community forestry: Contesting forest resources. In: M. Victor (ed) *Community forestry at the cross road: Reflection and future directions in the development of Community Forests*. Regional Community Forestry Training Centre (RECOFTC), RECOFTC Report #16, Bangkok, Thailand.

GILMOUR, D., MALLA, Y. and NURSE, M. 2004. Linkages between community forestry and poverty. Regional Community Forestry Training Centre, Bangkok, Thailand.

HOBLEY, M. 2007. Forests – the poor man's overcoat: foresters as agents of change? Paper presented at the Australian National University (3rd April), Canberra, Australia.

HOBLEY, M. 1996. Participatory forestry: the process of change in India and Nepal. Overseas Development Institute, London, UK.

Irawanti, S., Ginoga, K.L., Prawestisuka, A. And Race, D. 2014. Commercializing community forestry in Indonesia: lessons about the barriers and opportunities in Central Java. *Small-scale Forestry,* 13: 515-526.

Jakobsen, K. 2013. Livelihood Asset Maps: A multidimensional approach to Measuring Risk-Management Capacity and Adaptation Policy Targeting - A Case Study in Bhutan. *Regional Environment Change,*13: 219-233.

MALLA, Y. 2000. Impact of community forestry policy on rural livelihoods and food security in Nepal. *Unasylva*, 51 (202): 37-45.

MAYERS, J. and VERMEULEN, S. 2002. *Company-community forestry partnerships: from raw deals to mutual gains?* International Institute for Environment and Development, London, UK.

Mendham, D. & Hardiyanto, E. 2011. Realising genetic gains in Indonesia and Australian plantations through water and nutrient management. Final Report by Project FST/2004/058 submitted to ACIAR, Canberra, ACT.

Mendoza, G.A. and Macoun, P. with Prabhu, R., Sukadri, D., Purnomo, H. and Hartanto, H. 1999. Guidelines for applying multi-criteria analysis to the assessment of criteria and indicators. CIFOR. Bogor, Indonesia.

Muktasam. 2015. EVALUATION REPORT – 'MASTER TREE GROWER (MTG) INDONESIA INITIATIVE'. Report submitted by RESEARCH CENTER FOR RURAL DEVELOPMENT, THE UNIVERSITY OF MATARAM, Indonesia.

M4P. 2008. *Making value chains work better for the poor: A toolbox for practitioners of value chain analysis*. Phnom Penh, Cambodia: Agricultural Development International.

M4P. 2012. *Membuat rantai nilai lebih berpihak pada kaum miskin: Buku pegangan bagi praktisi analisis rantai nilai*. ACIAR Monograph No. 148. Canberra: Australian Centre for International Agricultural Research (*in Bahasa*).

NAWIR, A.A. and SANTOSO, L. 2005. Mutually beneficial company-community partnerships in plantation development: emerging lessons from Indonesia. *International Forestry Review* 7 (3): 177-192.

PAGDEE, A., KIM, Y. and DAUGHERTY, P.J. 2006. What makes community forest management successful: A meta-study from community forests throughout the world. *Society and Natural Resources*, 19: 33-52.

RACE, D. and DESMOND, H. 2002. Forestry outgrower schemes: a review from selected countries. *Journal of Sustainable Forestry* 15 (4): 79-98.

RACE, D., BISJOE, A.R., HAKIM, R., HAYATI, N., JULMANSYAH, KADIR, A., KURNIAWAN, KUSUMEDI, P., NAWIR, A.A., NURHAEDAH, PERBATASARI, D.U., PURWANTI, R., ROHADI, D., STEWART, H., SUMIRAT, B. and SUWARNO, A. 2009. Partnerships for involving small-scale landholders in commercial forestry: lessons from Australia and Indonesia. *International Forestry Review*, 11 (1): 87-95.

Reid, R. 2008. Tree Change - The Australian Master TreeGrower phenomenon. RIRDC Publication No. 08/129 Project No.UM-63A, Canberra, ACT.

Reid, R. 2014 The Australian Master TreeGrower and Peer Group Mentoring programs: building farmer and community capacity. Paper presented at the World Agroforestry Congress on Agroforestry, Trees for Life, Accelerating the impact of Agroforestry, Delhi, India.

Reid, R, Syafii, S., et al. 2015. Research Task 4: Design, Delivery and Evaluation of an Alternative Farmer Learning Approach to Enhancing The Capacity of Farmers to Participate in Community Based Commercial Forestry in Indonesia. Report submitted by the University of Melbourne, Victoria.

SANDS, R. 2005. *Forestry in a Global Context*. CABI Publishing, Wallingford , UK.

Stewart, H.T.L, Rohadi, D., et al. 2014. *Research Task 3: Evaluation of the dominant business models of CBCF being implemented by government and the private sector*. Report of a study conducted in Gunungkidul, Pati, Bulukumba, Konawe Selatan and Sumbawa, ACIAR Project FST/2008/030 'Overcoming constraints to community-based commercial forestry in Indonesia'. Report submitted by the Australian National University, Canberra, ACT.

van de Fliert, E. (2013) *Overcoming constraints to community-based commercial forestry in Indonesia (FST/2008/030): Social dimensions analysis.* Report submitted by the University of Queensland, Queensland.

VAN NOORDWIIK, M., Suyanto, S., Budidarsono, S., Sakuntaladewi, N., Roshetko, J., Tata, H., Galudra, G. and Fay, C. 2007. *Is Hutan Tanaaman Rakyat a new paradigm in community based tree planting in Indonesia?* ICRAF Working Paper No. 45.

10.2 List of publications produced by project

Articles published in national and international peer-reviewed journals by members of the project team include:

Irawanti, S., Suka, A.P. & Ekawati, S. (2012) The role of timber and NTFP from community forest on small-scale land ownership: case of Pati district. Published by FORDA in the: *Forestry Socio and Economic Research Journal*, **9** (3): 113-125.

Irawanti, S., Suka, A.P. & Ekawati, S. (2012) Economic benefit and opportunity to develop community forestry of Albizia in Pati district. Published by FORDA in the: *Forestry Socio and Economic Research Journal*, **9** (3): 126-139.

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.

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

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.

Wibowo, L.R., Race, D.H. & Curtis, A.L. (2013) Policy under pressure: policy analysis of community-based forest management in Indonesia. *International Forestry Review*, **15** (3): 398-405.

11 Appendixes

11.1 Appendix 1: Project policy briefs

Towards commercialization of community forest timber: Barriers, opportunities, and policy advice' (2013), by Setiasih Irawanti, FORDA Bogor, Policy Brief Vol. 7 (9) 2013,

'Changing the mindset of community forest farmers through MTG program' (2014), by Setiasih Irawanti & Aneka Prawesti Suka, FORDA Bogor, Policy Brief, Vol. 8 (4) 2014,

'Increase forestry trade chains to develop community forest business' (2014), by Setiasih Irawanti, Nunung Parlinah & Aneka Prawesti Suka, FORDA Bogor, Policy Brief, Vol. 8 (10) 2014,

'Making timber plantations an attractive business for smallholders' (2015), by Dede Rohadi, Tuti Herawati, Christine Padoch & Digby Race, CIFOR Info Brief #114, March 2015,

'Enhancing Community-based Commercial Forestry in Indonesia – Summary of key findings' (2015), by the Project Team, FORDA Bogor Vol. 13 (1), June 2015.

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Kementerian Kehutanan
Badan Penelitian dan Pengembangan Kehutanan
Pusat Penelitian dan Pengembangan Perubahan Iklim dan Kebijakan

Policy Brief

Volume 7 No. 9 Tahun 2013

Menuju Komersialisasi Kayu Hutan Rakyat: Hambatan, Peluang dan Saran Kebijakan

Oleh: Setiasih Irawanti

Pendahuluan

Di banyak negara tropis, pertumbuhan penduduk menyebabkan naiknya tekanan terhadap lahan dan menurunnya areal hutan. Faktor-faktor yang berkontribusi terhadap menurunnya area hutan adalah persaingan lahan untuk kegiatan pertanian pangan dan kehutanan, pertanian mampu memberi hasil tahunan sedangkan kehutanan memberi hasil lebih lambat, hasil pohon tidak mampu memenuhi kebutuhan mendesak penduduk setempat, manfaat hutan seringkali tersebar di bagian luar area seperti perlindungan atas terjaganya kondisi hidrologi untuk wilayah hilirnya, dan kurangnya perhatian untuk memperbaiki manajemen dan teknik budidaya pohon yang sangat penting bagi petani (Wiersum, K.F., 1988).

Konversi hutan menjadi lahan usaha untuk memenuhi kebutuhan pangan telah menyebabkan berkembangnya agroforestri yang telah berlangsung lama, seperti hutan rakyat yang terlihat di sekitar rumah petani. Hutan rakyat di Jawa Tengah mencakup 39% dari total area yang berfungsi sebagai hutan, dan mempunyai peran sangat penting. Pertama, perannya dalam pemanfaatan lahan yang sempit sebagai sumber mata pencaharian petani. Kedua, perannya dalam memenuhi permintaan kayu bangunan rumah penduduk dan bahan baku industri yang diolah menjadi produk yang dipasarkan di dalam negeri dan diekspor.

Hutan rakyat sengon memberi kontribusi terhadap peningkatan ekonomi rumah tangga petani, ekonomi regional dan nasional. Namun hutan rakyat sengon umumnya dibangun di lahan milik petani yang sempit, pengetahuan petani tentang manajeman pohon sangat terbatas, dan pendampingan oleh penyuluh kehutanan lapangan (PKL) juga menghadapi keterbatasan, sehingga komersialisasi kayu hutan rakyat sangat memerlukan dukungan kebijakan pemerintah.

Hambatan Usaha Hutan Rakyat

Program Pemerintah Kurang Dinamis

Program pemerintah yang mendukung pengembangan hutan rakyat umumnya berupa penyediaan bibit tanaman, yaitu Kebun Bibit Rakyat (KBR) dari Pemerintah Pusat, Bantuan Langsung Masyarakat untuk Pengembangan Perhutanan Masyarakat Pedesaan Berbasis Konservasi (BLM-PPMBK) dari Pemerintah Pusat, dan Kebun Bibit Desa (KBD) dari Pemerintah Kabupaten.

KBR menyediakan bibit tanaman kehutanan dan *Multi Purpose Tree Species* (MPTS) yang dilaksanakan secara swakelola oleh kelompok masyarakat. Bibit KBR adalah jenis-jenis tanaman kehutanan, perkebunan, dan buah-buahan, digunakan untuk merehabilitasi lahan hutan, lahan kritis, dan penghijauan lingkungan. Program KBR dimulai sejak 2 tahun terakhir yaitu 2010 dan 2011. Selain itu ada juga bantuan pemerintah pusat seperti pembangunan dam penahan, sumur resapan, dan embung untuk konservasi tanah.

Program KBD dimaksudkan untuk mendukung program *One Billion Indonesian Trees* (OBIT) yang dilaksanakan setiap tahun sejak 2009 setelah program Gerakan Rehabilitasi (Gerhan) berakhir. Jenis tanaman KBD disesuaikan dengan keinginan masyarakat dan ditanam di turus-turus jalan, lapangan, pekarangan, halaman sekolahan dan perkantoran, dan lain-lain.

Program BLM-PPMBK disalurkan melalui Kelompok Tani, 85% dananya digunakan untuk tanaman kayu-kayuan dan 15% untuk pemberdayaan masyarakat dari sektor lain seperti untuk membeli ternak, menanam tanaman semusim atau hijauan pakan ternak. Melalui Program BLM-PPMBK, pemerintah mendukung penanaman tanaman kehutanan, tanaman semusim, dan hijauan pakan ternak yang dapat ditanam dengan teknik agroforestri diintegrasikan dengan usaha peternakan.

Hutan rakyat merupakan salah satu model pengelolaan sumberdaya alam berdasarkan inisiatif masyarakat, dimana menurut sudut pandang pemerintah keberhasilan hutan rakyat karena ada dukungan program penghijauan dan kegiatan pendukung seperti demplot dan penyuluhan (San Afri Awang dkk, 2002). Namun setelah petani sadar dan berhasil menanami lahannya dengan tanaman perkebunan, tanaman buah-buahan, dan kayu-kayuan dalam bentuk hutan rakyat, timbul berbagai kendala yang menghambat kemajuan usaha hutan rakyat.

Petani secara umum belum mengetahui bibit tanaman unggul. Sebagian petani mendapatkan bibit dari pasar desa/kecamatan dengan cara membeli, dan kadangkala mendapatkannya dari kantor Dinas Kehutanan dan Perkebunan Kabupaten. Serangan hama dan penyakit mengakibatkan tanaman rusak atau mati. Hama yang sering menyerang tanaman sengon adalah ulat, semut gramang, cabuk (kutu putih), tupai, dan penyakit yang sering menyerang sengon adalah karat puru. Penyakit karat puru dapat mematikan sengon di tingkat semai sampai tingkat tegakan. Petani mengendalikan hama penyakit secara mekanis dan kimiawi dengan penyemprotan pestisida sehingga belum berhasil mengatasinya. Kendala demikian tidak dapat diatasi dengan program pembibitan saja, karenanya program pemerintah sebaiknya bersifat dinamis sehingga mampu mengimbangi dinamika kemajuan usaha hutan rakyat.

Keterbatasan penyuluh kehutanan lapangan

Penyuluh kehutanan lapangan (PKL) berada dibawah koordinasi Dinas Kehutanan dan Perkebunan Kabupaten, namun setiap hari berkantor di kecamatan. Tugasnya mengadakan pertemuan bulanan, mengunjungi petani di wilayah kerjanya untuk mendengarkan keluhan, menjawab pertanyaan, memecahkan masalah yang dihadapi petani. Kendala yang dihadapi oleh PKL terutama kekurangan bahan penyuluhan, sedangkan kesempatan untuk mengikuti pelatihan teknis sangat terbatas. Jumlah PKL antara 1-3 orang per kecamatan atau wilayah kerja per orang penyuluh antara 5 s/d 13 desa. Luasnya wilayah kerja tersebut ditelusuri menggunakan kendaraan roda dua.

Sementara itu keterbatasan pengetahuan petani telah menghambat kemajuan usaha hutan rakyat. Pemangkasan tanaman kayu-kayuan untuk memenuhi kebutuhan pakan ternak sejak tanaman masih muda telah mengakibatkan batang pohon atau kayunya melengkung atau bengkok, terhambat pertumbuhannya, dan kadangkala bagian dalam kayunya cacat/busuk. Kegiatan penjarangan tanaman jarang dilakukan oleh petani karena sebagian petani merasa sayang untuk menebang pohon sengonnya. Padahal penanaman tanpa penjarangan juga menghambat pertumbuhan pohon atau diameter kayu. Tebang pilih dilakukan oleh petani berdasarkan kebutuhan, di mana tanaman yang diameternya sudah besar dipanen terlebih dahulu. Selain itu petani masih melakukan panen kayu pada umur 4 tahun atau belum masak tebang, karena umur panen 6 tahun dipandang terlalu lama dalam kaitannya dengan kesinambungan pendapatan. Hal ini mengakibatkan volume produksinya belum maksimal. Petani umumnya juga tidak bisa membaca *Daftar Grade Kayu* yang dibuat oleh pabrik, tidak bisa melakukan *grading* kayu, dan tidak tahu cara mengukur volume kayu, sehingga saat petani menjual kayu per pohon atau per hamparan lahan, langsung menerima uang tunai tanpa menebang, mengukur, dan menghitung volume sendiri. Petani juga belum mengerti hubungan antara ukuran diameter, grade dan harga kayu yang sangat menentukan besarnya pendapatan mereka. Terkait hal tersebut pendampingan petani oleh para PKL belum mampu memecahkan kendala usaha hutan rakyat.

Pentingnya pendapatan dari hasil hutan bukan kayu

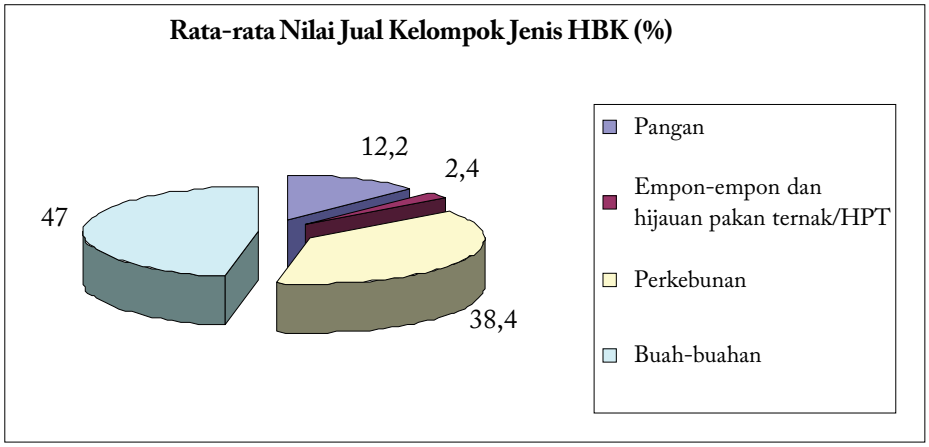
Ada tiga jenis pemanfaatan lahan milik petani, yaitu pekarangan, sawah, dan tegalan. Pekarangan adalah lahan yang berada disekitar rumah tinggal, tegalan adalah lahan kering yang jauh dari rumah tinggal, dan sawah adalah lahan basah yang ditanami padi. Rata-rata luasan lahan petani adalah 76,1% (tegalan), 12,5% (pekarangan), dan 11,4% (sawah). Hutan rakyat ditanam di lahan pekarangan dan tegalan yaitu 88,6%, sehingga pendapatan dari hutan rakyat menjadi sumber pendapatan utama petani.

Pada lahan pekarangan dan tegalan dipraktekan sistem tumpangsari antara jenis tanaman kehutanan, perkebunan, buah-buahan, dan dibawahnya ditanami tanaman semusim, empon-empon, rumput pakan ternak sehingga berbentuk agroforestri. Pada umumnya petani memelihara ternak ayam, kambing, dan sapi. Pakan kambing dan sapi diperoleh dari lahan dan kotorannya menjadi pupuk untuk menyuburkan tanah di lahan.

Peluang Usaha Hutan Rakyat

Tanaman sengon dipanen pada umur 4-6 tahun, sedangkan hasil hutan bukan kayu (HHBK) dipanen dalam mingguan, bulanan atau tahunan secara bergilir sesuai masa panennya. Kontribusi pendapatan rata-rata dari HHBK adalah 64% dan dari kayu adalah 36% terhadap total pendapatan dari lahan hutan. Lebih dari 92% hasil kayu berasal dari jenis sengon, sehingga HHBK dan kayu sengon memiliki peran besar dalam ekonomi rumah tangga petani. Kontribusi pendapatan per jenis HHBK terhadap total pendapatan HHBK adalah 46,93% (buah), 38,44% (hasil perkebunan), 12,19% (hasil tanaman semusim), dan 2,44% (hasil tanaman obat dan pakan ternak).

Untuk mempertahankan eksistensi hutan rakyat maka petani sangat bergantung pada HHBK.



Terbuka Pasar Hasil Hutan Rakyat

Permintaan kayu sengon yang tinggi

Jenis kayu-kayuan dapat dikelompokkan dalam tanaman perkebunan (kakao, kopi, cengkeh, kelapa, randu), tanaman penghasil buah-buahan (jengkol, manggis, petai, sukun, durian, rambutan), dan tanaman kehutanan (sengon, mahoni, jati). Kayu sengon dapat dipandang sebagai kayu komersial, karena menyumbang lebih dari 92% terhadap pendapatan rumah tangga dari kayu. Selain itu dapat mengatasi kebutuhan keuangan rumah tangga sehingga dipandang sebagai tabungan keluarga yang dapat dipanen bila dibutuhkan.

Petani menjual kayu sengon berupa pohon berdiri dimana seluruh biaya penebangan ditanggung pembeli yaitu pedagang desa. Penebangan dilakukan menggunakan gergaji rantai. Pedagang desa selanjutnya menjual kayu sengon ke pabrik pengolahannya, sedangkan kayu lain seperti jati, mahoni, kayu buah-buahan dijual ke penduduk atau penggergajian desa untuk diolah menjadi bahan bangunan atau bahan pembuatan mebeler.

Kayu sengon dijual per pohon atau per hamparan lahan. Penjualan per pohon dilakukan dengan sistem tebang butuh, yaitu dipilih pohon yang diameternya sudah besar. Penjualan per hamparan dilakukan dengan sistem borongan, dimana volume dan harga kayu ditaksir oleh pedagang sedangkan petani langsung menerima uang tunai tanpa menebang, mengukur dan menghitung volumenya.

Banyak industri kayu yang mengolah kayu sengon menjadi berbagai produk seperti

kayu gergajian, papan sambung, bilah sambung, papan blok, kayu lapis, dan lain-lain. Di Jawa Tengah telah berkembang industri penggergajian sebanyak 374 unit berkapasitas < 2.000 m3/th, 173 unit berkapasitas 2.000 s/d 6.000 m3/th, serta 44 unit berkapasitas > 6.000 m3/th yang juga menghasilkan *veneer* dan *plywood* (Dinas Kehutanan Propinsi Jawa Tengah, 2011), yang lokasi pabriknya tersebar di berbagai wilayah kabupaten. Untuk menjamin kesinambungan bahan baku, pabrik memiliki pelanggan depo kayu atau ratusan pemasok kayu. Untuk memperlancar pasokan kayu, pabrik mengirim *grader* dan tenaga pengumpul kayu ke sentra-sentra produksi kayu hampir di seluruh Jawa. *Grader* pabrik dapat bekerja di lahan petani, di pedagang desa, atau di depo desa. Hal ini memberi gambaran tentang (1) tingginya permintaan kayu, persaingan antar pabrik dalam memperebutkan kayu, dan persaingan antar depo dan antar pedagang kayu, (2) terbukanya pasar kayu olahan sengon telah mendorong berkembangnya hutan rakyat.

Komersialisasi kayu terutama ditentukan oleh ukuran diameter dan grade kayu. Batang pohon sengon dipotong dalam ukuran panjang 260 cm,130 cm, dan 100 cm. Ada dua grade kayu yaitu Kayu Bulat Super dan Kayu Reject. Diameter terkecil kayu super adalah 25 cm sedangkan kayu reject adalah 10 cm. Kayu super diolah di pabrik kayu lapis sedangkan kayu reject diolah di penggergajian menjadi balken yang merupakan bahan baku pabrik *barecore*, papan sambung atau papan laminasi, dan papan blok yang lokasinya tersebar di berbagai wilayah kabupaten. Karenanya kayu sengon diperdagangkan lintas kabupaten dari lokasi hutan rakyat menuju lokasi industri pengolahnya. Pabrik menetapkan Kriteria Kayu Bulat Super sebagai berikut.

1. Kayu bulat harus lurus
2. Toleransi bengkok untuk kayu bulat panjang 130 cm adalah 2 cm
3. Toleransi bengkok untuk kayu bulat panjang 260 cm adalah 4 cm
4. Tidak ada pokol dan atau mata busuk
5. Tidak pecah
6. Toleransi pecah masuk adalah 10 cm, lebar maksimum 5 mm dan harus di paku "S"
7. Diameter terkecil kayu bulat panjang 130 cm adalah 25 cm.

Tabel 1. *Harga kayu bulat super dan reject di petani dan di pabrik*

Grade	Harga Kayu (Rp/m3)		
	Tingkat Petani[1] (di atas truk/ping-gir jalan)	Di Pintu Pabrik	
		Kayu Lapis[2]	Papan Sambung[3]
A. Super			
Panjang 130 cm			
- Diameter 20-24 cm	599.000	720.000	
- Diameter 25 up	754.000	875.000	
Panjang 260 cm			
- Diameter 28-29 cm	795.000	916.000	
- Diameter 30 – 39 cm	979.000	1.100.000	
- Diameter 40-49 cm	1.019.000	1.140.000	
- Diameter 50 cm up	1.029.000	1.150.000	
B. Reject			
Panjang 130 cm			
- Diamater 10-14 cm	329.000		470.000
- Diameter 15-19 cm	429.000		570.000
- Diameter 20 cm up	449.000		590.000

Sumber: Trees4Trees, 2012
Keterangan: [1] di Kabupaten Pati, [2] di Kabupaten Batang, [3] di Kabupaten Temanggung

Harga per meter kubik kayu bulat panjang 100 cm dan 130 cm adalah sama. Harga kayu bulat super dan reject sangat berbeda nyata sehingga makin sabar menunggu kayu masak tebang, makin besar diameter, dan makin besar peluang untuk memanen kayu bulat super.

Dalam komersialisasi, menyediakan pasokan kayu tepat jumlah, tepat grade, dan tepat waktu sangatlah penting. Saat ini kayu sengon diameter kecil dapat dijual sehingga petani cenderung menjual pohon sengon secepat mungkin, dan enggan melakukan penjarangan. Hal ini berdampak pada melimpahnya pasokan kayu diameter kecil yang termasuk kayu bulat reject. Sekitar 70% hasil panen kayu sengon termasuk kayu bulat reject, hanya 30% termasuk kayu bulat super dan hanya 10% dari kayu bulat super yang panjangnya mencapai 260 cm. Kualita kayu sengon hasil hutan rakyat masih rendah, sehingga petani belum dapat memperoleh manfaat secara optimal dari luasnya kesempatan pasar kayu sengon.

Pendapatan dari HHBK yang Berkesinambungan

HHBK terdiri dari 3 jenis tanaman semusim (ubi kayu, jangung, ketela), 2 jenis tanaman empon-empon (kapulaga, jahe), tanaman rumput pakan ternak, 7 jenis tanaman perkebunan (kakao, kopi, cengkeh, kelapa, randu, lada, panili), dan 7 jenis tanaman buah-buahan (jengkol, manggis, petai, pisang, sukun, durian, rambutan). Pedagang HHBK umumnya mendatangi rumah-rumah petani.

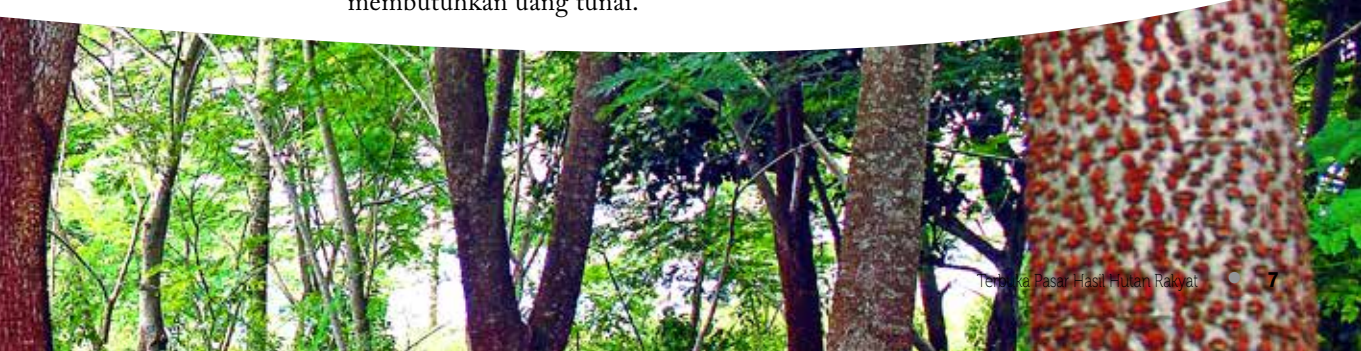
Hasil tanaman semusim biasanya dipanen sendiri oleh petani. Jagung dikeringkan lalu disimpan, selanjutnya dapat dikonsumsi sendiri atau dijual. Ubi kayu dipanen sendiri lalu dijual ke pabrik tapioka, atau dijual borongan kepada pedagang yang akan memanennya di lahan. Hasil tanaman empon-empon kapulaga dan jahe dipanen sendiri, hasilnya dapat langsung dijual, namun kapulaga dapat dikeringkan lalu disimpan, selanjutnya dapat dijual bila membutuhkan uang tunai. Rumput pakan ternak jenis rumput gajah atau kalanjana dibudidayakan untuk dijual pada pemilik kambing atau sapi yang tidak memiliki tanaman pakan ternak.

Hasil tanaman perkebunan seperti kopi, cengkeh, kakao, randu, lada, dan fanili dipanen setiap tahun, dikerjakan sedikit-sedikit sehingga dapat dilakukan sendiri. Hasilnya dapat langsung dijual dalam bentuk basah atau disimpan dalam bentuk kering. Buah kelapa dapat dipanen sendiri, dapat dikonsumsi sendiri atau dijual bila membutuhkan uang tunai. Buah randu dapat dijual dengan sistem borongan, namun dapat pula dipanen sendiri lalu disimpan dalam bentuk kering sehingga dapat dijual sewaktu harga tinggi atau saat membutuhkan uang tunai.

Sementara itu tanaman buah-buahan seperti durian, jengkol, langsep, manggis, duku, petai, sukun, mangga, rambutan, pisang, umumnya juga panen setahun sekali kecuali buah pisang. Waktu berbuah dari berbagai jenis buah-buahan tidak bersamaan sehingga waktu panennya dapat terjadi secara bergilir. Cara memanennya juga dilakukan sedikit-sedikit sehingga dapat dikerjakan sendiri dan hasilnya dapat dijual. Petani hutan rakyat umumnya telah menguasai seluruh teknik budidaya, pemanenan, penanganan paska panen, dan pemasaran berbagai jenis HHBK.

Hasil berbagai jenis tanaman yang dibudidayakan oleh petani dapat dipanen secara bergilir. Tanaman semusim, empon-empon, dan rumput pakan ternak dapat dipanen dalam jangka harian, mingguan dan bulanan. Tanaman buah-buahan dan tanaman perkebunan dapat dipanen dalam jangka tahunan. Tanaman kayu dapat dipanen dalam jangka lebih dari 5 tahunan.

Dari lahannya, petani dapat memperoleh uang tunai dalam jangka harian, mingguan, bulanan, tahunan, dan lebih dari lima tahunan. Dengan cara menanam berbagai jenis tanaman, petani dapat memenuhi seluruh kebutuhan jangka pendek, jangka menengah dan jangka panjang, namun kecukupannya sangat dipengaruhi oleh luasan lahannya. Lebih singkatnya jangka waktu panen HHBK sangat besar peranannya dalam mempertahankan eksistensi hutan rakyat pada pemilikan lahan sempit karena petani selalu memperoleh hasil meskipun tanaman kayunya belum dapat dipanen.



Saran Kebijakan

Untuk mengatasi hambatan usaha hutan rakyat sengon, ada beberapa saran kebijakan sebagai berikut.

Program Ditjen Bina Pengelolaan Daerah Aliran Sungai dan Perhutanan Sosial (BPDASPS) dan Pemerintah Kabupaten sebaiknya dinamis untuk mengimbangi dinamika kebutuhan dukungan bagi kemajuan usaha hutan rakyat, seperti menyediakan bibit unggul, mengenalkan teknik mengatasi serangan hama dan penyakit tanaman, dan memfasilitasi berkembangnya hutan rakyat kemitraan.

Badan Penyuluhan dan Pengembangan SDM Kehutanan diharapkan dapat meningkatkan pengetahuan para PKL bidang manajemen pohon (jarak tanam, pemangkasan, penjarangan, tebang pilih, pemanenan), dan pemasaran (mengukur diameter kayu, menghitung volume kayu, melakukan *grading* kayu, membaca *Daftar Grade Kayu* dari pabrik).

Ditjen Bina Usaha Kehutanan (BUK), Pemerintah Propinsi, dan Pemerintah Kabupaten diharapkan dapat memfasilitasi pemberian ijin pendirian dan perluasan pabrik pengolahan kayu sengon, ijin pengadaan lahan untuk tempat penimbunan kayu (TPK), dan kemudahan pemasaran produk kayu rakyat dan olahannya.

Ucapan Terima Kasih

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Referensi

Awang, San Afri dkk. 2002, *Hutan Rakyat: Sosial Ekonomi dan Pemasaran*, Badan Penerbit Fakultas Ekonomi Universitas Gadjah Mada, Yogyakarta.

Wiersum, K.F., 1988. *Outline of The Agroforestry Concept*, Viewpoints of Agroforestry II, Departement of Forestry Hinkeloord, Agricultural University Wageningen, The Netherlands.

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Merubah Pola Pikir Petani Hutan Rakyat Melalui Program Master TreeGrower (MTG)

Setiasih Irawanti; Aneka Prawesti Suka

Ringkasan

Petani hutan rakyat memiliki keterbatasan pengetahuan tentang bibit unggul, teknik mengatasi serangan hama-penyakit, teknik pemangkasan dan penjarangan yang benar, melakukan grading kayu, serta cara menghitung volume dan nilai kayu. Nilai tambah dari pengusahaan kayu yang diterima petani tidak berbeda nyata dengan yang diterima oleh pedagang, padahal waktu yang diperlukan petani 6 tahun untuk sengon dan 20-30 tahun untuk jati; sedangkan pedagang hanya beberapa minggu saja. Terkait hal tersebut community based commercial forestry (CBCF) mendorong peningkatan pengetahuan para penyuluh kehutanan dan petani melalui program Master TreeGrower (MTG) yang menghubungkan petani dengan pasar kayu. Melalui program tersebut diharapkan dapat merubah cara berpikir petani menjadi lebih mengenal pasar kayu, menumbuhkan minat untuk menghasilkan kualitas kayu sesuai permintaan pasar dengan cara mengelola tanaman kayu dengan benar, dan melatih cara mengukur volume pohon agar mendapat harga jual yang pantas, sehingga akan merubah paradigma dari manajemen hutan yang pasif (tanam-tinggal-panen) menjadi lebih aktif (tanam-pelihara-panen).

Rekomendasi

1. Diperlukan dukungan kebijakan dari Pemerintah Daerah melalui peran aktif Dinas Kehutanan atau Dinas yang menangani bidang kehutanan untuk mempertemukan petani hutan rakyat dengan industri pengolahan kayu dalam rangka membuka akses pasar kayu dan/atau peralatan/teknologi produksi, atau dengan mitra di bidang permodalan.
2. Diperlukan dukungan kebijakan Pemerintah Pusat utamanya Badan Penyuluhan dan Pengembangan Sumberdaya Manusia (BP2SDM) Kementerian Kehutanan untuk meningkatkan pengetahuan para penyuluh kehutanan dalam bidang manajemen pohon (jarak tanam, pemangkasan, penjarangan, pemanenan, tebang pilih), dan pemasaran (mengukur diameter, menghitung volume, dan melakukan *grading* kayu). Salah satu cara yang dapat dilakukan adalah menyelenggarakan *Training the Trainer* bagi para widyaiswara agar dapat memberikan pelatihan kepada para penyuluh kehutanan lapangan secara lebih luas di lingkup nasional.

Latar Belakang

Pembangunan hutan rakyat di Indonesia tahun 1970-1990-an didorong oleh berbagai program pemerintah yang bertujuan merehabilitasi lahan kritis dan meningkatkan kesejahteraan masyarakat. Kini hutan rakyat telah berhasil mendorong pertumbuhan perdagangan kayu dan industri pengolahan kayu serta membuka peluang bisnis kehutanan untuk memanfaatkan lahan milik rakyat. Hasil analisis dimensi sosial memperlihatkan bahwa petani hutan rakyat umumnya memelihara ternak yang pakannya antara lain berupa daun tanaman kayu-kayuan seperti sengon, glirisideae, lamtoro, sehingga pemangkasan tanaman kadangkala sampai mengorbankan pertumbuhan pohon dan kualitas kayunya. Penjarangan dilakukan untuk menebang tanaman yang pertumbuhannya bagus untuk dijual dan membiarkan tanaman yang pertumbuhan dan bentuknya jelek. Penjualan kayu dilakukan per pohon atau per hamparan lahan dan langsung menerima uang tunai tanpa menebang, mengukur, menghitung volume dan nilainya sehingga nilai jualnya tidak mencerminkan nilai tegakannya. Secara umum petani memiliki keterbatasan pengetahuan tentang bibit unggul, teknik mengatasi serangan hama-penyakit, teknik pemangkasan dan penjarangan yang benar, melakukan *grading* kayu, dan cara menghitung volume dan nilai kayu.

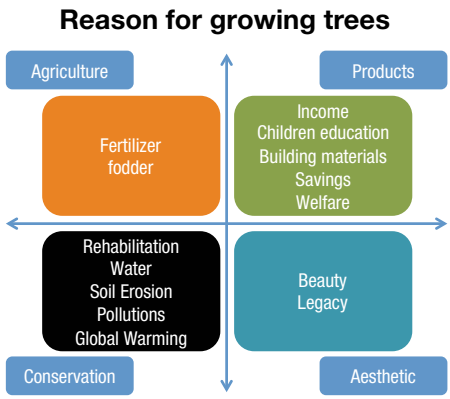
Hasil analisis rantai-nilai menyatakan bahwa nilai tambah yang diterima oleh petani hutan rakyat lebih kecil/lebih besar daripada yang diterima oleh pedagang meskipun bedanya tidak nyata. Sementara itu rentang waktu yang dibutuhkan oleh petani lebih panjang yaitu 6 tahun untuk sengon dan 20-30 tahun untuk jati dibanding dengan pedagang kayu yang hanya beberapa minggu saja. Kebanyakan petani sengon dibujuk untuk menjual kayu sesegera mungkin, sehingga sekitar 70% hasil panennya termasuk 'kualitas *reject*' dan hanya 30% termasuk 'kualitas super' (Trees4Trees 2012, www.trees4trees.org).

Terkait hal tersebut *community based commercial forestry* (CBCF) mendorong peningkatan pengetahuan para penyuluh kehutanan dan petani hutan melalui program *Master TreeGrower* (MTG) atau dapat diterjemahkan sebagai "Pendekar Penanam Pohon", yaitu pelatihan untuk menjadikan petani sebagai pengambil keputusan dan diberi keleluasaan untuk memilih yang bisa dilakukan. Program MTG mulai dikembangkan di Australia tahun 1996 dan kemudian diperkenalkan di Afrika (Uganda dan Nigeria) tahun 2012 (www.agroforestry.net.au). Khusus di Indonesia, pelatihan ini telah dilaksanakan di lima kabupaten, yaitu Kabupaten Pati Provinsi Jawa Tengah, Kabupaten Gunungkidul Provinsi Daerah Istimewa Yogyakarta, Kabupaten Bulukumba Provinsi Sulawesi Selatan, Kabupaten Konawe Selatan Provinsi Sulawesi Tenggara, dan Kabupaten Sumbawa Provinsi Nusa Tenggara Barat. Diperlukan dukungan pemerintah agar pelatihan ini dapat merubah paradigma dari manajemen hutan yang pasif (tanam-tinggal-panen) menjadi lebih aktif (tanam-pelihara-panen) dengan minat untuk melakukan pemangkasan dan penjarangan yang benar sehingga hutan dapat lestari dengan kehadiran masyarakat.

Berbasis Pasar dan Petani yang Pertama

Pendekatan program MTG menekankan pada 'berbasis pasar' dan 'petani yang pertama', yang meliputi 5 tahapan sebagai berikut:

1. Mengeksplorasi berbagai alasan petani menanam pohon.
2. Penyampaian materi tentang apa yang dibutuhkan pasar yaitu kualifikasi kayu (ukuran dan kualitas) yang diperlukan industri pengolahan kayu.
3. Penyampaian materi tentang pengukuran log, pohon, dan hutan untuk memprediksi pertumbuhan dan volume kayu yang akan dihasilkan.
4. Penyampaian materi tentang pengelolaan pohon agar menghasilkan kayu sesuai harapan petani dan permintaan industri.



Gambar 1. Alasan menanam pohon para petani di Kabupaten Pati.

5. Mengeksplorasi berbagai keputusan individual petani dan tanggung jawab atas tindakannya dalam mengelola hutan rakyat.

Alasan Menanam Pohon

Upaya menangkap aspirasi dan kebutuhan petani dimaksudkan agar dapat memahami apa yang dibutuhkan petani dan menjadikan mereka sebagai "Master" dalam mengelola tanaman di lahannya. Untuk mendengarkan dan memahami apa yang dibutuhkan petani, pertama-tama memberi pertanyaan pada petani "Mengapa menanam pohon?" Jawaban atas pertanyaan tersebut dikelompokkan menjadi empat kelompok, yaitu kelompok produk, estetika, konservasi, pertanian.

Setelah memahami apa yang dibutuhkan petani, pelatihan ini akan membantu petani untuk mencapainya. Petani dapat membangun hutan rakyat dengan cara mengkombinasikan empat kelompok tersebut. Bila tujuan petani ingin menghasilkan kayu untuk komersial maka pelatihan ini bisa membantu untuk mencapainya dengan memperkenalkan pasar bahwa kayu laku dijual, ada alat sederhana untuk mengukur pohon, menumbuhkan pohon yang baik dengan memberi pengetahuan tentang pemangkasan, penjarangan, dan konservasi yang akan memberi pencerahan pada petani tentang pohon seperti apa yang diinginkan dan bagaimana secara teknis mencapainya.

Pasar

Materi pasar difokuskan pada informasi pentingnya pasar bagi petani sehingga petani tahu apa yang sebaiknya dilakukan dalam menanam pohon agar kualitas kayu memenuhi syarat yang diminta pasar atau industri pengolahan. Beberapa faktor yang dapat mempengaruhi harga kayu misalnya jenis kayu, diameter log, panjang log, umur pohon, bentuk batang (bengkok, bulat), beralur, cacat lubang simpul, cacat busuk/serangga. Log yang beralur atau seratnya tidak beraturan kemungkinan besar disebabkan oleh kematian kambium, adanya cabang besar yang menghalangi aliran gula ke batang bawah, atau manajemen lahan yang buruk. Log yang bercabang besar akan mengurangi volume produksi dan nilai hasil penjualannya, namun hal ini dapat diatasi dengan melakukan pemangkasan yang benar. Cacat lubang simpul yang tampak bila log telah digergaji juga akan menurunkan kualitas dan harga kayu, meskipun hal ini dapat dikurangi bila dilakukan pemangkasan yang benar.

Untuk mengenal pasar, petani diajak mengunjungi industri penggergajian kayu. Tujuannya untuk mengidentifikasi peluang pasar dan metode perdagangan dari berbagai produk dan jasa yang dihasilkan oleh penanaman pohon dan vegetasi asli yang tumbuh di lahan, serta pengenalan tentang proses dan teknik pengolahan kayu rakyat yang bermanfaat bagi mereka. Di dalam industri, petani akan mengetahui spesifikasi produk, kayu yang mulus harganya tinggi, teknik pengolahan kayu, rendemen yaitu % volume kayu gergajian terhadap volume log, perubahan nilai akibat perubahan log menjadi kayu gergajian, risiko yang dihadapi

pengusaha penggergajian, keterampilan yang dibutuhkan, peralatan, peraturan, peluang sertifikasi, pemasaran kayu tingkat lokal atau regional.

Petani dapat mengetahui bahwa jenis kayu yang diolah dalam penggergajian bermacam-macam, ada kayu jati, sengon, bitti, pohon buah-buahan, dan lain-lain. Ada faktor-faktor yang mempengaruhi biaya pemanenan dan pengangkutan kayu seperti ukuran pohon, kualitas kayu, jarak lahan dari jalan, akses ke lahan, pemuatan ke truk, peralatan yang digunakan, jarak ke pabrik, volume panen, kondisi cuaca, bantuan tenaga terampil, dan lain-lain.

Selain itu petani juga akan mengetahui bahwa harga kayu bulat dapat disepakati berdasarkan kayu teras saja, kayu teras dan gubal tanpa kulit, atau kayu bulat utuh dengan kulit. Kayu bulat ada yang mempunyai gubal tebal atau tipis, pecah atau utuh, cacat lobang/busuk, atau mulus. Hal ini mempengaruhi rendemen pengolahannya sehingga nilai jualnya akan berbeda. Untuk mendapat diameter kayu yang dibutuhkan oleh industri, petani perlu mengetahui diameter pohon secara keseluruhan, dan untuk mendapatkan harga jual yang tinggi maka petani perlu menghasilkan kayu yang berkualitas baik.

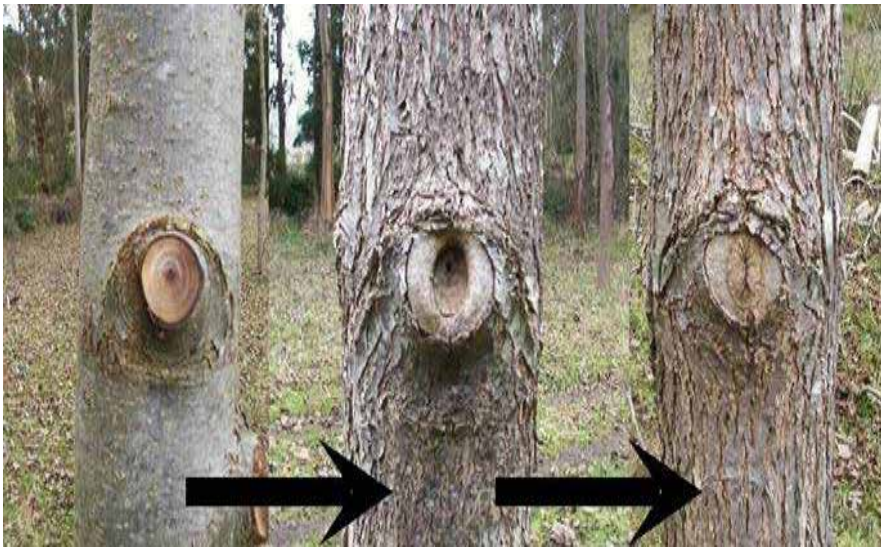
Manajemen

Materi manajemen meliputi penjelasan tentang pertumbuhan pohon bahwa pohon tumbuh membesar melalui kambiumnya atau lapisan luar dari batang kayu, sedangkan tumbuh meninggi melalui pucuk pohon. Pohon tumbuh membesar kalau mendapat asupan makanan dari daun-daun melalui fotosintesa, artinya pertumbuhan diameter didorong oleh jumlah daun-daunnya. Umur pohon mempengaruhi besarnya diameter batang, tinggi pohon, dan banyaknya cabang yang tumbuh. Ada anggapan bahwa kalau pohon dikelola dengan baik maka akan mempunyai kualitas kayu yang baik sehingga harganya baik.

Pemangkasan

Pemangkasan cabang akan mengganggu pertumbuhan pohon dalam waktu tidak lama dan bekas lukanya akan hilang atau menjadi mata mati bersama membesarnya batang pohon. Teknik pemangkasan yang benar adalah memotong cabang tegak lurus terhadap arah cabang sehingga bekas lukanya berbentuk lingkaran, proses penyembuhan luka berasal dari semua arah sehingga cepat sembuh dan menjadi mata mati. Tujuan pemangkasan adalah untuk mempertinggi batang bebas cabang dan bebas mata kayu. Bila ada tunas yang tumbuh pada bekas pemangkasan sebaiknya dibersihkan dan tunas tak akan tumbuh lagi bila pohon sudah cukup mendapat makanan.

Untuk menentukan cabang yang akan dipangkas, digunakan alat bantu sederhana "*gauge (baca: gaus)*" yang terbuat dari papan yang dilubangi lebar 8 cm di satu sisi dan lebar 3 cm di sisi lain. Pemangkasan dilakukan untuk cabang berdiameter > 3 cm yang tumbuh pada batang pohon berdiameter > 8 cm karena batang pohon tersebut dipandang sudah kuat sehingga tidak mengakibatkan cacat bengkok dan luka pangkas segera pulih. Memangkas adalah menghilangkan setiap cabang sampai ke tempat yang sesuai ukuran "gaus" yaitu diameter pohon 8 cm. Untuk kasus tertentu, meskipun diameter batang pohon < 8 cm namun tumbuh cabang berdiameter > 3 cm maka cabang harus dipangkas karena akan mengganggu pertumbuhan batang pohon. Menghilangkan cabang besar perlu segera dilakukan sebelum mereka mempengaruhi bentuk pohon.



Pertumbuhan tinggi pohon didorong oleh kesehatan dan kekuatan tunas utama dan memangkas cabang di bagian bawah tidak berdampak pada pertumbuhan tinggi. Untuk pohon cepat tumbuh maka pemangkasan dilakukan setiap tahun. Pemangkasan yang dilakukan secara rutin sama halnya dengan memproduksi log yang lebih bernilai. Pohon yang tidak akan pernah memenuhi target bentuk atau ukuran batang tidak perlu dipangkas karena pohon demikian sebaiknya ditebang untuk penjarangan tanaman.

Penjarangan

Faktor-faktor yang menentukan tinggi pohon adalah pasokan air dan nutrisi dari akar, kelembaban di sekitar ujung tumbuh, serta gangguan serangga dan penyakit. Penjarangan dimaksudkan untuk mempertahankan kayu yang batang pohon dan pertumbuhannya bagus agar nantinya mempunyai nilai jual tinggi, serta menebang pohon yang kurang bagus yang tumbuh di sekitarnya. Setelah dilakukan penjarangan akan terjadi penurunan persaingan antar tanaman sehingga pertumbuhan diameter akan terpacu lagi. Efek penjarangan terlihat dari lingkaran tahun yang kembali melebar. Untuk menentukan kapan tanaman harus dijarangi perlu mempertimbangkan agar kayu hasil penjarangan dapat dijual sehingga memberi pendapatan.

Penjarangan dilakukan untuk semua jenis pohon. Tujuannya menyediakan jumlah pohon yang cukup untuk mencapai pertumbuhan tinggi yang baik (saling melindungi), menyisakan pohon terbaik (tidak diserang penyakit atau rusak), mengurangi jumlah pohon yang perlu pemangkasan tanpa mengorbankan volume akhir, meminimalkan waktu untuk mencapai ukuran pohon komersial (diameter setinggi dada = 25 cm), menumbuhkan pohon terbaik yang bernilai tinggi (diameter setinggi dada untuk jati = 55 cm), serta mengurangi kompetisi agar tanaman pangan di bawah tegakan muda dapat berproduksi.

Beberapa tahun pertama, yaitu saat diameter setinggi dada pohon terbaik = 8 cm, maka dilakukan tebang penjarangan untuk semua pohon yang bengkok/melengkung serta memangkas cabang besar ganda. Tebang penjarangan dilakukan di sekitar pohon terbaik sampai rasio diameter setinggi dada : basal area = 2. Penjarangan awal akan membantu produksi tanaman semusim dan meningkatkan pertumbuhan pohon terbaik. Menunda penjarangan akan memperlambat pertumbuhan diameter, sebaliknya penjarangan yang dimulai dari pohon terbesar (tebang butuh) akan mengurangi keuntungan masa mendatang secara signifikan.

Untuk membangun pemahaman yang lebih baik tentang manajemen pohon, petani diajak mengunjungi lahan hutan rakyat untuk melihat bahwa hasil dari hutan rakyat dapat berupa kayu dan ada pula berbagai hasil hutan bukan kayu (HHBK). Ada pohon yang tumbuh baik/tidak baik, dipangkas dengan benar/tidak, tanaman perlu dijarangi/tidak, pohon yang batangnya lurus, bengkok, cacat diserang hama/penyakit, pohon yang batang bebas cabangnya tinggi/rendah; dan berlatih menentukan pohon yang perlu dipangkas/tidak dan akan ditebang untuk penjarangan/tidak.

Pengukuran

Diskusi dan praktek lapangan untuk mengukur diameter, tinggi pohon dan basal area tegakan dilakukan menggunakan pita diameter MTG Australia yang diberikan kepada masing-masing peserta. Sisi pita diameter berwarna kuning menunjukkan keliling batang dan sisi yang berwarna putih menunjukkan diameter batang. Tujuan mengukur log, pohon dan hutan adalah untuk memperkenalkan pada petani tentang metode pengukuran pohon dan hutan sehingga mereka dapat memantau pertumbuhan, memberikan metode sederhana untuk menghitung volume log, pohon, dan hutan, memperkenalkan konsep persaingan, dan metode monitoring intensitas penjarangan.

Pengukuran pohon tunggal meliputi pengukuran diameter, tinggi, bentuk, ukuran dan lokasi cabang, log lancip, tingkat pertumbuhan. Pengukuran hutan meliputi mengukur rata-rata diameter, rata-rata tinggi pohon, volume/ha, dan kenaikan volume tahunan. Tujuan utamanya untuk menduga banyaknya log yang akan dihasilkan. Dalam mengukur pohon, langsung dapat menentukan kelas kualitas kayunya.

Pengukuran diameter dilakukan dengan cara melingkarkan pita diameter sisi warna putih pada setinggi 1,3 m atau setinggi dada sehingga akan terbaca besarnya diameter setinggi dada. Tinggi pohon dapat ditentukan setinggi pucuk pohon atau setinggi batang bebas cabang, disesuaikan dengan kebutuhan. Pengukuran tinggi pohon dilakukan dengan memegang pita tegak lurus ke atas di mana sisi warna kuning menghadap wajah kita lalu menetapkan angka nol pada pangkal pohon. Praktek pengukuran diameter dan tinggi dapat dilakukan pada pohon-pohon di lahan datar dekat tempat pelatihan.

Evaluasi Pelatihan

1. Pengukuran kayu dinilai sebagai pelajaran yang paling berguna karena petani dapat menghitung volume pohon miliknya dan menggunakan informasi ini untuk menentukan harga jual sehingga menguatkan posisi tawar dalam menghadapi pedagang kayu.
2. Pelajaran pemasaran adalah jenis pengetahuan baru dan sangat menarik karena dapat membuka pikiran petani untuk menemukan alternatif lain dalam menjual kayu, tidak hanya kepada pedagang tetapi dapat pula dijual langsung ke industri, baik secara langsung ke penggergajian lokal atau tidak langsung melalui kelompok tani. Pelajaran pemasaran juga memberi informasi rinci tentang kualitas kayu yang diperlukan oleh industri dan harganya. Salah satu dampak menarik dari pelajaran ini adalah beberapa peserta ingin menjadi pedagang kayu atau pengusaha penggergajian di samping sebagai petani.
3. Pelajaran manajemen menambah pemahaman yang lebih baik untuk mengelola hutan rakyat seperti pemilihan bibit, pemangkasan, penjarangan, jarak antar pohon, dan petani bersemangat untuk berlatih agar dapat meningkatkan nilai jual pohon di lahannya.
4. Petani mendapat kesempatan berinteraksi dengan petani dari kelompok tani atau desa lain sehingga dapat berbagi pengalaman dan akan membagikan pengetahuan baru tersebut kepada petani lainnya.

Kesimpulan

1. Pengetahuan dan keterampilan yang diberikan dalam pelatihan diharapkan akan meningkatkan kapasitas petani untuk menghasilkan kayu berkualitas dan manfaat ekonomi yang lebih tinggi dari lahannya.
2. *Master TreeGrower* merupakan pendekatan baru dalam penyuluhan, yaitu menghubungkan petani dengan pasar kayu rakyat, diharapkan dapat mengubah cara berpikir petani menjadi lebih mengenal pasar kayu, menumbuhkan minat untuk menghasilkan kualitas kayu sesuai permintaan pasar dengan cara mengelola tanaman kayu dengan benar, dan melatih cara mengukur volume pohon agar mendapat harga jual yang pantas.
3. Pelatihan ini mendorong berkembangnya penyuluhan antar-petani melalui diskusi atas pengalaman masing-masing, serta memberi penyuluhan pada masyarakat luas bahwa hutan dapat lestari dengan kehadiran masyarakat.

Ucapan Terimakasih

Penulis menyampaikan penghargaan yang besar kepada petani hutan rakyat dan pimpinan Dinas Kehutanan Kabupaten Pati dan Provinsi Jawa Tengah yang memberi waktu untuk mendiskusikan pengalaman mereka mengenai hutan rakyat. Juga, penulis mengucapkan terima kasih kepada rekan-rekan yang bekerja pada proyek penelitian 'Overcoming Constraints to Community-Based Commercial Forestry in Indonesia', yang telah memberi kontribusi informasi yang dilaporkan dalam artikel ini. Proyek penelitian ini menerima dukungan keuangan dari Australian Centre for International Agricultural Research selama 2011-2014.

Referensi

Rowan Reid. *Who are the Australian Master TreeGrowers? Guidelines for the development and delivery of regional Australian Master TreeGrower courses.* National Master TreeGrower Coordinator MTG Inc. BIRREGURRA, 3242.

Rowan Reid. 2002. *The Principles and Practice of Pruning*. Special Liftout No. 60, Winter 2002 Vol. 25 No. 2.

Rowan Reid. 2014. *The Indonesian Master TreeGrower Course.* Pelatihan "Master TreeGrower (ACIAR Project No. FST/2008/030), 4-11 Maret 2014, Gunungkidul.

Rowan Reid. 2014. *Day 2: Markets for Farm Timber.* Pelatihan "Master TreeGrower (ACIAR Project No. FST/2008/030), 4-11 Maret 2014, Gunungkidul.

Rowan Reid. 2014. *Day 3: How to Measure Logs, Trees and Forests.* Pelatihan "Master TreeGrower (ACIAR Project No. FST/2008/030), 4-11 Maret 2014, Gunungkidul.

Rowan Reid. 2014. *Day 4: Managing Trees on Farms*. Pelatihan "Master TreeGrower (ACIAR Project No. FST/2008/030), 4-11 Maret 2014, Gunungkidul.

Setiasih Irawanti, Aneka Prawesti Suka, Kirsfianti L. Ginoga. *Laporan Task#1: Analisis Dimensi Sosial CBCF Wilayah Studi Kabupaten Pati (ACIAR Project No. Fst/2008/030),* Puspijak Bogor.

Setiasih Irawanti, Aneka Prawesti Suka. 2014. *Activity Report Research Task#4: Farmers Learning (ACIAR-FST/2008/030), Capacity Building of The Forest Farmers Pati District Central Java,* Puspijak, Bogor.

Setiasih Irawanti, Kirsfianti L. Ginoga, Aneka Prawesti Suka, Digby Race. 2014. *Commercialising Community Forestry in Indonesia: Lessons About the Barriers and Opportunities in Central Java*, Research Paper, Small-scale Forestry DOI 10.1007/s11842-014-9268-4, Published online 17 Mei 2014, Springer.

Setiasih Irawanti, Nunung Parlinah, Aneka Prawesti Suka. 2014. *Meningkatkan Rantai-Nilai Kehutanan Untuk Petani Hutan Rakyat,* Policy Brief, Puslitbang Perubahan Iklim dan Kebijakan, Bogor.

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Meningkatkan **Rantai Perdagangan Kehutanan**
untuk Mengembangkan Bisnis Hutan Rakyat

Setiasih Irawanti, Nunung Parlinah, Aneka Prawestisuka

Ringkasan

Dewasa ini hutan rakyat telah berhasil mendorong pertumbuhan perdagangan kayu dan industri pengolahan kayu di daerah pedesaan, kabupaten, provinsi dan antar provinsi, memenuhi permintaan petani akan kayu bangunan, serta membuka peluang bisnis untuk memanfaatkan lahan masyarakat. Namun para petani, penyuluh, lembaga swadaya masyarakat (LSM) pendamping petani masih menghadapi berbagai keterbatasan. Terkait hal tersebut, pengembangan bisnis hutan rakyat memerlukan kondisi pendukung berupa peran pemerintah melalui pembangunan pedesaan dan penyuluhan, peran industri kehutanan yang kadangkala dapat menggantikan peran pemerintah melalui *Corporate Social Responsibility* (CSR) dan *Community Development*, serta reformasi pasar melalui keterbukaan informasi pasar.

Rekomendasi

1. Diperlukan dukungan swasta, utamanya industri pengolahan kayu untuk membuka akses teknologi bagi petani berupa pemberian bantuan/ pinjaman peralatan (*chainsaw/ bandsaw*) atau membuka akses pasar berupa pemberian uang muka pembelian kayu dari dana CSR, agar petani dapat memperluas keterlibatannya sepanjang rantai pemasaran kayu rakyat, seperti berperan sebagai pedagang kayu atau sebagai pemilik penggergajian.
2. Diperlukan dukungan kebijakan pemerintah daerah untuk menghapuskan kebijakan perdagangan dan ijin penebangan yang bersifat disinsentif dalam rangka mendorong petani untuk lebih aktif dalam menanam pohon.
3. Diperlukan dukungan kebijakan pemerintah pusat utamanya Direktorat Jenderal Bina Usaha Kehutanan Kementerian Kehutanan untuk memberi sosialisasi tentang sertifikasi hutan rakyat dan produk olahannya dalam kaitannya dengan harga dan pemasaran kayu rakyat kepada para petani, penyuluh, LSM pendamping petani, dan pemerintah kabupaten.

Pendahuluan

Pembangunan hutan rakyat di Indonesia didorong oleh beberapa program pemerintah yang bertujuan merehabilitasi lahan kritis dan meningkatkan kesejahteraan masyarakat. Antara tahun 1970 s/d 1990-an ada Program Inpres Penghijauan, Kredit Usaha Konservasi Daerah Aliran Sungai (KUK-DAS), Kredit Usaha Hutan Rakyat (KUHR), dan saat ini masih ada program Kebun Bibit Rakyat (KBR), Bantuan Langsung Masyarakat untuk Pengembangan Perhutanan Masyarakat Pedesaan Berbasis Konservasi (BLM-PPMBK), dan Kebun Bibit Desa (KBD) yang menyediakan bibit tanaman kayu-kayuan dan buah-buahan. Setelah beberapa dekade dikembangkan, kini hutan rakyat telah berhasil mendorong pertumbuhan perdagangan kayu dan industri pengolahan kayu di daerah pedesaan, kabupaten, provinsi dan antar provinsi, memenuhi permintaan petani akan kayu bangunan, serta membuka peluang bisnis untuk memanfaatkan lahan masyarakat.

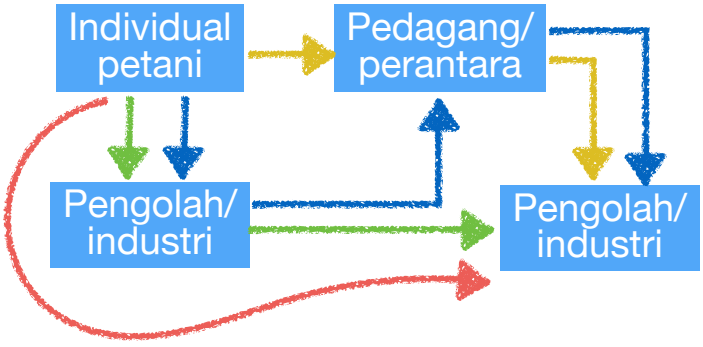
Perdagangan dan industri pengolahan kayu rakyat kini telah berkembang luas. Perdagangan kayu di Gunungkidul, Konawe Selatan, dan Sumbawa didominasi oleh jati (*Tectona grandis*). Di Bulukumba perdagangan didominasi oleh jati dan bitti (*Vitex cofassus*) untuk membuat perahu tradisional phinisi. Di Pati perdagangan didominasi oleh sengon (*Paraserianthes falcataria*). Rantai perdagangan kayu rakyat umumnya melibatkan petani, pedagang, dan industri di mana masing-masing melakukan kegiatan untuk menciptakan nilai tambah.

Sejalan dengan pencapaian sasaran pembangunan sebagaimana dituangkan dalam Rencana Pembangunan Jangka Menengah (RPJM) 2 dan 3, untuk lebih meningkatkan peran hutan rakyat dalam pembangunan nasional maka perlu peningkatan kualitas sumber daya manusia petani dengan membangun kemampuan ilmu dan teknologi, serta memperkuat daya saing perekonomian rakyat yang berbasis sumber daya alam. Upaya ini dapat dilakukan oleh pemerintah, swasta, dan masyarakat dalam rangka penanggulangan kemiskinan dan pemerataan pembangunan di mana intervensi oleh pemerintah dapat dilakukan melalui kebijakan atau regulasi dan kebijakan anggaran.

Penelitian ini dilakukan di lima kabupaten, yaitu Kabupaten Pati Provinsi Jawa Tengah, Kabupaten Gunungkidul Provinsi DI Yogyakarta, Kabupaten Bulukumba Provinsi Sulawesi Selatan, Kabupaten Konawe Selatan Provinsi Sulawesi Tenggara, dan Kabupaten Sumbawa Provinsi Nusa Tenggara Barat. Dengan menggunakan metode analisis rantai-nilai, artikel ini menguraikan bahwa petani perlu memahami rantai-nilai kayu yang mereka hasilkan serta perlu ada kebijakan/regulasi dari pemerintah.

Rantai Pemasaran Kayu

Beberapa model rantai-nilai sangat mungkin ditemukan di satu lokasi, di mana model rantai Petani-Pedagang-Industri Pengolah selalu ditemukan di semua lokasi, sedangkan model yang lain bervariasi. Pedagang menjadi pelaku pemasaran yang penting bagi kayu rakyat dan memiliki berbagai peran dalam rantai-nilai, meskipun tidak selalu mendapatkan keuntungan yang lebih besar daripada petani, hanya saja pedagang mendapatkan keuntungan dalam waktu yang relatif singkat sedangkan petani harus menunggu selama 6 tahun untuk sengon atau 20-30 tahun untuk jati,



Gambar 1. *Model rantai-pemasaran kayu rakyat*

Semakin banyak pedagang di suatu daerah akan mendorong terjadinya harga yang lebih wajar bagi pasar kayu. Faktor pendorong utama dari perdagangan kayu rakyat adalah tingginya permintaan pasar dan harga premium khususnya untuk kayu bersertifikat. Faktor yang menjadi tantangan adalah keterbatasan pengetahuan petani tentang informasi pasar, cara mengelola tanaman kayu, cara menghitung volume kayu, serta biaya sertifikasi yang tidak dapat dikompensasi oleh harga premium sehingga diperlukan sumber pembiayaan lain.

Analisis rantai-nilai juga memberikan informasi mengenai biaya, manfaat dan risiko yang dihadapi pedagang. Berdasar informasi ini, petani hutan rakyat dapat mempertimbangkan untuk berpartisipasi sepanjang rantai-nilai seperti pada kegiatan pemanenan dan pengangkutan kayu ke pasar primer. Selain itu, kayu jati dari luar Jawa umumnya diperdagangkan sebagai balok atau papan ke pulau Jawa untuk diolah lebih lanjut menjadi mebel yang dijual ke pasar dalam negeri dan ekspor.

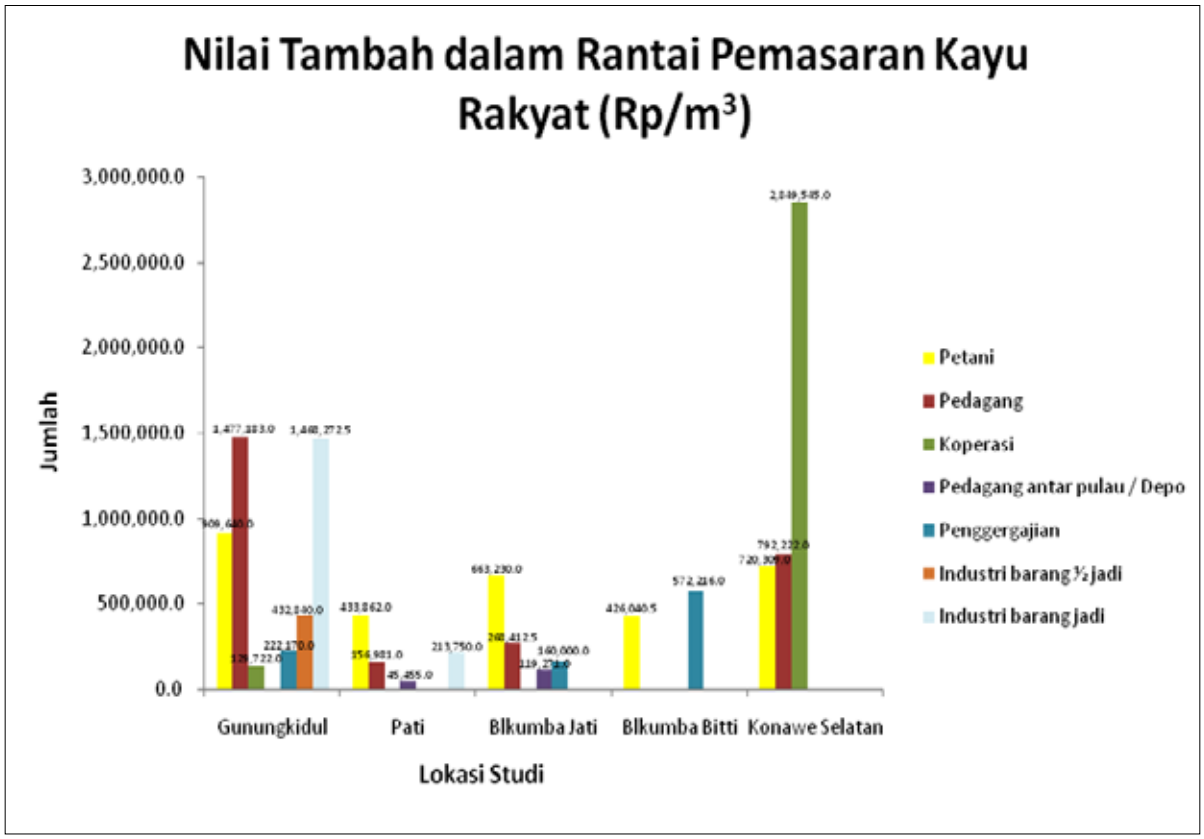
Gambar 2. *Pemasaran kayu jati antar-pulau ke Jawa*

Kebijakan dan peraturan pemerintah yang tidak tepat dapat menyebabkan hambatan perdagangan dan biaya transaksi tinggi. Biaya transaksi relatif lebih rendah di Jawa seiring dengan penyederhanaan peraturan melalui Permenhut No. 30/2012, namun kurang berpengaruh di luar Jawa. Sebagai contoh untuk mendapatkan Izin Pemanfaatan Kayu Tanah Milik (IPKTM) di wilayah Sumbawa yang jangka berlakunya satu tahun diperlukan ijin Bupati, peta lahan yang disahkan oleh Kepala Desa dan pejabat kehutanan, sertifikat tanah atau Surat Keterangan Pendaftaran Tanah (SKPT) dari Badan Pertanahan Kabupaten, dilakukan survei oleh dinas teknis daerah, melunasi pungutan-pungutan, dan membuat laporan hasil produksi. Ini semua dipandang memberatkan petani.

Nilai Tambah pada Rantai-Nilai Kayu Rakyat

Harga kayu dipengaruhi berbagai faktor seperti spesies, kualitas, tahapan sepanjang rantai pemasaran, waktu, mengikuti skema sertifikasi atau tidak. Diameter log merupakan faktor penting yang menentukan harga kayu dan harga akan berbeda secara signifikan sesuai kualitas kayu. Sebagai contoh, harga jual log sengon diameter 10-50 cm *up* di tingkat pedagang Pati adalah Rp 395.000 – Rp 1.125.000/m^3, sedangkan harga jual log jati di tingkat pedagang Gunungkidul adalah Rp 2.600.000 – Rp 2.629.990/m^3.

Nilai tambah yang diterima oleh petani hutan rakyat lebih kecil/lebih besar daripada yang diterima oleh pedagang namun bedanya tidak nyata. Sementara itu rentang waktu yang dibutuhkan oleh petani lebih panjang yaitu enam tahun untuk sengon dan 20-30 tahun untuk jati dibanding dengan pedagang kayu yang hanya beberapa minggu saja.



Gambar 3. *Nilai tambah dalam rantai pemasaran kayu rakyat (Rp/m³).*

Hutan rakyat di Gunungkidul mendapat sertifikat dari LEI dan di Konawe Selatan mendapat sertifikat dari FSC. Dengan alasan tersebut koperasi di dua lokasi tersebut menjual kayu dengan harga sangat tinggi dengan pemahaman bahwa kayu bersertifikat memiliki harga jual tinggi. Akibatnya harga jualnya tidak dapat bersaing dengan harga jual dari pedagang kayu, sehingga mematikan rantai pemasaran produk kayu. Sebagai contoh, harga jual log jati di kelompok tani Gunungkidul sekitar dua kali lebih tinggi daripada harga jual pada individu petani di desa lain sehingga kelompok tani tersebut hanya dapat menjual kayu sampai tahun 2011 karena pedagang (CV Dipantara) sebagai pembelinya merugi. Demikian pula, harga jual balok jati di Koperasi Konawe Selatan dua kali lebih tinggi daripada harga jual di tingkat pedagang Konawe Selatan sehingga perdagangan antar pulau balok jati dari koperasi di Konawe Selatan ke Jawa hanya terjadi sampai tahun 2010. Terkait hal tersebut diperlukan sosialisasi kepada petani, penyuluh, LSM pendamping petani, dan pemerintah kabupaten tentang sertifikasi hutan rakyat dan produk olahannya dalam kaitannya dengan pemasaran kayu rakyat.

Dalam rantai pemasaran, sertifikasi dapat menyediakan akses pasar yang lebih kuat dan harga premium bagi petani hutan rakyat, dan kadang-kadang industri bersedia memberikan CSR kepada petani berupa uang muka dalam pembelian bahan baku kayu. Sebagai contoh, pabrik bersedia membayar uang muka kepada petani sebesar 30% dari nilai kayu, atau petani menerima harga premium sebesar Rp 100.000/ m³ kayu yang dijual karena kayunya diolah menjadi produk bersertifikat. Contoh pada produk mebel, CSR dari importir mebel di luar negeri disalurkan langsung ke pabrik mebel di Jawa

untuk membangun program sertifikasi hutan rakyat, di mana pembayaran dari pabrik kepada petani sebagian dalam bentuk pelatihan petani dan sebagian dalam bentuk uang tunai. Ada pula pabrik pengolahan kayu yang bersedia meminjamkan *bandsaw* kepada petani agar dapat memasok kayu gergajian/ *balken* sebagai bahan baku papan sambung yang bersertifikat.

Peraturan tentang ijin penebangan dan dokumen pengangkutan kayu cenderung menyebabkan hambatan pemasaran dan biaya transaksi yang tinggi dalam pemasaran kayu. Potensi kayu jati di desa Semamung Kabupaten Sumbawa menghadapi kesulitan dalam pemasaran karena harus dilengkapi dengan dokumen resmi. Sebagian besar petani tidak memiliki sertifikat tanah yang diperlukan untuk memperoleh IPKTM dan untuk memperoleh sertifikat tanah dikenakan biaya sebesar Rp 2.500.000/ha. Akibatnya, nilai kayu rakyat di tingkat pedagang sangat rendah. Di Gunungkidul, biaya dokumen transportasi kayu sekitar 7-13% dari biaya pemasaran. Di Konawe Selatan, biaya retribusi dan dokumen transportasi adalah 32% dari biaya pemasaran. Pedagang dalam banyak kasus membayar biaya transaksi, yang menyebabkan penurunan harga log di tingkat petani. Biaya transaksi di bawah peraturan saat ini bersifat disinsentif bagi investasi hutan rakyat. Hasil penelitian ini memberikan justifikasi yang kuat untuk menyederhanakan berbagai peraturan terkait dengan pemasaran kayu rakyat.

Kesimpulan

1. Pedagang kayu memainkan peran penting dalam rantai-nilai kayu rakyat, namun mereka perlu mengetahui pasar, peraturan, dan memiliki kemampuan untuk melakukan pemanenan dan pengangkutan kayu.
2. Petani perlu memahami bahwa peluang pasar kayu yang mereka hasilkan sangat tergantung pada kesediaannya untuk mengelola tanaman hutannya karena akan mempengaruhi kualitas dan volume kayu yang dihasilkan.
3. Pengembangan bisnis hutan rakyat memerlukan kondisi pendukung berupa peran pemerintah melalui pembangunan pedesaan dan penyuluhan, peran industri kehutanan yang kadangkala dapat menggantikan peran pemerintah melalui CSR dan C*ommunity Development*, serta reformasi pasar melalui keterbukaan informasi pasar sehingga meningkatkan harga kayu.

Ucapan Terimakasih

Penulis menyampaikan penghargaan kepada petani hutan rakyat dan pimpinan Dinas Kehutanan yang memberikan waktu mereka untuk mendiskusikan pengalaman mereka mengenai hutan rakyat. Juga, penulis mengucapkan terima kasih kepada rekan-rekan yang bekerja pada proyek penelitian '*Overcoming Constraints to Community-Based Commercial Forestry in Indonesia*' atas informasi yang dilaporkan dalam artikel ini. Proyek penelitian ini menerima dukungan keuangan dari Australian Centre for International Agricultural Research selama 2011-2014.

Referensi

Oktalina, S.N., Rohman, & L. W. Ningrum. 2013. Evaluation of the Dominant Business Models of CBCF being Implemented by Government and the Private Sector. Overcoming Constraints to Community-Based Commercial Forestry in Indonesia-ACIAR Project FST/2008/30, Faculty of Forestry, Gadjah Mada University, Yogyakarta.

Hayati, N., Rizal H.B., A., & Kadir W., A. 2013. Analisis Rantai-Nilai Kayu CBCF di Kabupaten Konawe Selatan (Value Chain Analysis of Timber in Community-based Commercial Forestryin District of South Konawe). Overcoming Constraints to Community-Based Commercial Forestry in Indonesia-ACIAR Project FST/2008/30, Balai Penelitian Kehutanan Makassar, Makassar.

Hayati, N., Rizal H.B., A., & Kadir W., A. 2013. Analisis Rantai-Nilai Kayu CBCF di Kabupaten Bulukumba (Value Chain Analysis of Timber in Community-based Commercial Forestry in District of Bulukumba). Overcoming Constraints to Community-Based Commercial Forestry in Indonesia-ACIAR Project FST/2008/30, Balai Penelitian Kehutanan Makassar, Makassar.

Parlinah, N., Irawanti, S., & Suka, A.P. 2013. Laporan Research Task#3, "Value Chain Analysis of CBCF" Kabupaten Pati (Analisa Rantai Nilai Kayu CBCF di Kabupaten Pati). Overcoming Constraints to Community-Based Commercial Forestry in Indonesia ACIAR-Project FST/2008/30, Puslitbang Perubahan Iklim dan Kebijakan Kehutanan, Bogor.

Syafii, S. 2013. Rantai Nilai Community Based Comercial Forestry (CBCF) Desa Semamung Kabupaten Sumbawa NTB. Overcoming Constraints to Community-Based Commercial Forestry in Indonesia- ACIAR Project FST/2008/30, WWF Indonesia, Sumbawa.

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Making timber plantations an attractive business for smallholders

Dede Rohadi, Tuti Herawati, Christine Padoch and Digby Race

Key points

- The businesses of most smallholder timber growers are not strictly market-oriented. Consequently, opportunities to make better income from timber selling are often lost.
- Timber plantations generate important additional income for farmers. In Gunungkidul district, Indonesia, where smallholder teak plantations are grown, timber selling contributes about 15% of farmers' total income.
- There is a wide range in timber prices at village and district levels but the farm-gate price generally lies at the lower end of the range. This is because of: (i) poor quality of logs produced by farmers; (ii) low bargaining power of farmers when selling their timber; and (iii) high transaction costs due to timber market regulations.
- Government agencies responsible for extension programs need to encourage farmers to improve their business skills in managing timber plantations. Priority efforts need to address farmers':
  - knowledge about timber markets and prices, market access and quality standards;
  - silvicultural skills, in particular thinning and pruning of their timber plantations;
  - collective timber marketing and developing linkages with timber industries.
- In order to reduce transaction costs in timber marketing, both central and regional governments need to simplify the regulations for smallholders to trade timber. Timber certification for smallholders, such as the TLAS (Timber Legality Assurance System) should provide a clear incentive to smallholders and should replace their obligation to provide a timber certificate of origin or SKAU (*Surat Keterangan Asal Usul*).

Introduction

Smallholder timber plantations exist in various forms in Indonesia. Farmers may plant trees for timber on their private lands which is known as *hutan rakyat*, or on state forest lands under various schemes, such as *hutan kemasyarakatan* (HKm), hutan tanaman rakyat (HTR) or *hutan desa*. Despite different schemes and rules, farmers are the main actors in smallholder timber plantation businesses. Farmers' decisions on investing resources and managing their timber plantations are important in determining the benefits they realize.

Smallholder timber plantations play important roles in forestry development in Indonesia. Various initiatives are being promoted by the government through a number of social forestry programs. Their main objective is to reduce poverty, in particular in rural areas, increase forest cover and increase wood supply to support industries (Ministry of Forestry Regulation No. P.01/2004[1]).

Despite efforts to increase the extent of smallholder timber plantations across the country, the expansion of the total plantation area so far has been slow. The current total area of smallholder timber plantations is about 2.8 million ha (Forest Industries Roadmap 2013[2]), with most in the form of *hutan rakyat*. The total area of smallholder plantations in state forests is only 8000 ha[3]. This indicates that smallholders do not view timber plantations as an attractive business opportunity.

Recent research has identified the following as challenges that currently prevent smallholders from maximizing the benefits from their timber plantation businesses:

- Farmer tree growers tend to be price takers in their timber plantation businesses due to lack of market access, limited business expertise and lack of capacity in applying good silvicultural practices. These factors weaken their bargaining position.
- Farmer tree growers are constrained by timber trade regulations that result in high transaction costs.

1 Ministry of Forestry Regulation No. P.01/2004 on local community empowerment within and around forest areas in Social Forestry, Article 1, and Paragraph (5) stated "Social Forestry is a system of management of forest resources in state and or private forests that provides opportunities to the local community as principal or partner in forest management to improve livelihood and promote sustainable forest."

2 Presented by the Director General of Forestry Enterprise Development (*Bina Usaha Kehutanan*) on Panel Discussion "*Menjawab Tantangan Indonesia Raja Kayu Dunia*", Jakarta, 22 May 2014.

3 Based on Directorate General of Forestry Enterprise Development, the current planted HTR area is only 7986 ha, representing 4% of total granted permits, or 1% of the currently allocated area for HTR development.

Timber plantations in farmers' livelihood portfolios

Government and development agencies need to understand the role that timber plantation activities play in farmers' livelihood portfolios. A previous study (Rohadi et al. 2012) concluded that timber is not the main source of income for farmer households, although it is an important contributor to their incomes. Timber sales contribute about 15% of total household income (Figure 1). In some areas, especially in Java, farmers see timber plantations as an important element of their farming systems. In Gunungkidul district (Java) in spite of limited land ownership, farmers allocate more than 10% of their land to planting teak (*Tectona grandis*) for timber.

A recent study of community-based commercial forestry (CBCF) conducted a social dimension analysis and forestry livelihood framework assessment in five districts in Indonesia (Gunungkidul, Pati, Sumbawa, Bulukumba and Konawe Selatan). The study reported that the contribution from timber sales tends to be higher among middle income and wealthy farmers (Van de Fliert, 2013; Oktalina et al. 2014). This indicates that timber plantation businesses may increase in importance as farmers improve their incomes.

Planting timber by farmers has also become a tradition in some communities, with experience inherited from older generations. Timber plantations are seen by farmers as an important activity to improve the local environment and increase social status. Farmers have also been encouraged to plant timber by outsiders through both government and corporate investment programs.

Challenges of smallholder timber plantation practices

Research findings show that farmers manage their timber crops in traditional ways, especially when viewed from a business perspective. Due to limited access to loans, most farmers harvest timber only when they have an urgent need for cash, and their focus is on the amount of cash needed rather than on the existing timber market price. Such urgent needs for cash also often force farmers to harvest their timber before it reaches the optimum size for sale (Rohadi et al. 2012; Stewart et al. 2014a).

Farmers sell timber in the form of trees instead of logs. They generally do not have the skills and capital to harvest and sell timber directly to timber depots or sawmills. In addition, smallholder timber tends to be low quality, small in diameter, with knots and other defects and not straight. This is partly because most farmers do not use appropriate silvicultural practices, particularly thinning and pruning (Rohadi et al. 2012; Stewart et al. 2014a).

Men are more often involved in timber management practices than women, while women play a greater role in non-timber forest product (NTFP) harvesting and the financial aspects of timber production. When farmers work as individuals in the timber business they may weaken their bargaining power in selling timber. Effective timber cooperatives are rare in Indonesia due to an apparent lack of appropriate organizational capacity, lack of extension services and lack of trust among group members (Van de Fliert et al. 2013).

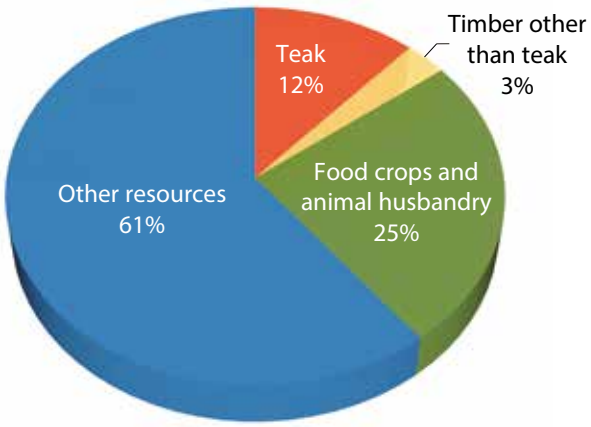


Figure 1. Average income share of teak plantation in household portfolios (from interviews with 31 household respondents in Gunungkidul district, Yogyakarta; Rohadi et al. 2012).

Smallholder timber marketing

The CBCF research effort included value chain analyses of smallholder timber. Findings revealed that for a given timber species, market prices for smallholder timber varied significantly with wood quality. The price of teak logs in the five districts varied from IDR 500,000 to IDR 5 million per m^3. The price of sengon (*Paraserianthes falcataria* (L.) Nielsen) logs varied from IDR 395,000 to IDR 1.15 million per m^3. As shown in Table 1, diameter size and log form (free from defects) are the most important factors in determining timber grades (Stewart et al. 2014 a).

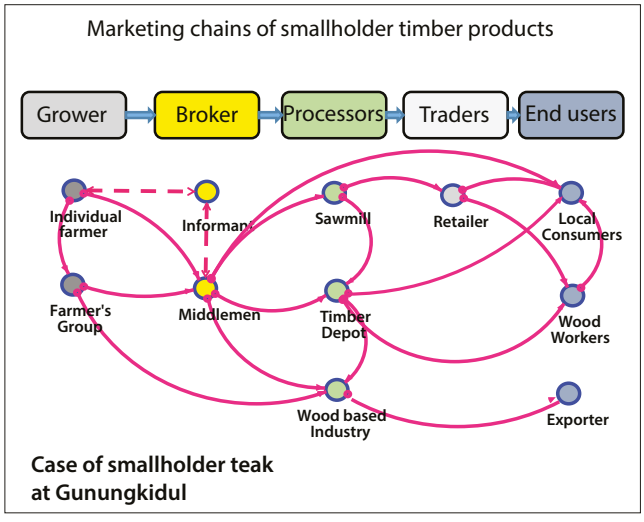
Research has found that smallholder timber market structures such as numbers and diversity of market actors (middlemen, processors and traders) varied significantly with location. In Java, the market is relatively developed and is moving toward perfect market competition. The number of middlemen in Java (Gunungkidul and Pati) was higher than in areas outside Java (Sumbawa, Bulukumba and Konawe Selatan). Figure 2 compares the marketing chains of smallholder timber in Gunungkidul, Yogyakarta (in Java) and Sumbawa, West Nusa Tenggara (outside Java).

Middlemen play an important role in smallholder timber marketing. The profit share of middlemen was not always greater than those of timber growers but they may still achieve significant profits in a much shorter time than growers (Stewart et al. 2014a).

Current regulations surrounding harvesting permits and timber transport documents tend to create marketing barriers and high transaction costs in timber marketing. In Sumbawa,

Table 1. Price variation for smallholder timber at village and district levels in Gunungkidul (teak) and Pati (sengon) districts.

No.	Timber species	Grade	Diameter (cm)	Price (IDR 1000/m³)
1	Teak (*Tectona grandis*) – slow growth	A1 (DL)	< 13	500–700
		A1 (UP)	16–19	1000–1400
		A2 (UD)	22–28	2000–2400
		A3 (UGD)	> 30	3000–3500
		A4	> 44	> 4000
		A5	> 54	> 5000
2	*Sengon (Paraserianthes falcataria (L.) Nielsen)* – fast growth	Length 1.3 m	10–14	395–470
			15–19	495–570
			> 20	695–720
			> 25	795–875
		Length 2.6 m	25–29	800–916
			30–39	925–1100
			40–49	1125–1140
			> 50	1125–1150



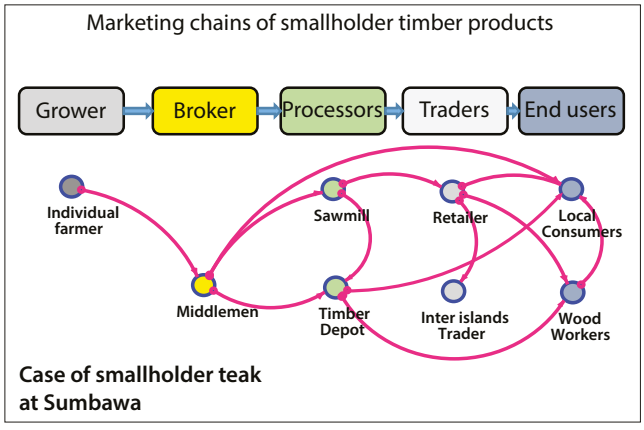


Figure 2. Comparison of marketing chains of smallholder timber at Gunungkidul and Sumbawa.

the cost of a land certificate was high (around IDR 2.5 million per ha). This certificate is required to obtain a harvesting permit or *Izin Pemanfaatan Kayu Tanah Milik* (IPKTM). In addition, other transaction costs[4] incurred per single transaction (about 5 m³ of log) can be as high as IDR 100,000 to IDR 500,000. In Gunungkidul, the cost of the timber transport document was around 7–13% of the marketing cost. In Konawe Selatan, the cost of the regional government tax and transport permit was 32% of the marketing cost. Middlemen in most cases provide for the transaction costs, but may transfer all of the costs by lowering the farm-gate price. Current regulations tend to be a disincentive to timber production and decrease investment in smallholder timber plantations (Stewart et al. 2014a).

Recently, the government has applied the SVLK (*Sistem Verifikasi Legalitas Kayu*) or TLAS (Timber Legality Assurance System) to all timber that is produced in the country, including timber from smallholder plantations. This certification scheme is intended to improve the brand image of timber produced from Indonesia and in doing so, provides better market access for international trading. As this new policy creates additional transaction costs for smallholders, the government should provide incentives to compensate for this additional cost (Stewart et al. 2014b). A possible incentive is elimination of the need for a *Surat Asal Usul Kayu* (SKAU) or certificate of timber origin when a SVLK has already been obtained by smallholders.

Recommendations

To promote smallholder timber plantations in Indonesia, central and regional government agencies responsible for extension programs should:

- improve farmers' market position and skills - enhance farmers' knowledge of timber markets, the timber quality required by industries and the prices for timber of varying quality;
- improve farmers' silvicultural skills - facilitate training in smallholder timber plantation management. Women should be included in the training programs as they play important roles in timber plantation management;
- strengthen farmers' capacity in collective timber marketing –facilitate training for farmers in collective action and developing business links with timber industries. Training in timber certification could provide an entry point for improving farmers' collective actions;

The Ministry of Environment and Forestry should simplify smallholder timber trade regulations by integrating the TLAS and SKAU regulations. Farmer groups that have already obtained a TLAS certificate should be released from the obligation to provide a SKAU for their timber transaction. This will reduce the transaction costs of timber marketing and provide an incentive for farmers to engage in government timber certification programs.

4 The transaction cost was required for checking the legality of timber being transported.

References

Ministry of Forestry Regulation No. P.01/Menhut-II/2004 on local community empowerment within and surround forest areas in social forestry. Jakarta: Ministry of Forestry of Indonesia.

Oktalina SN, Bisjoe AR, Muin N, Purwanti R, Sumirat BK, Putro WT, Utomo S, Nugroho P, Manalu P, Rohadi D, Waka AK, Irawanti S, Pramestisuka A, Syafii S, Julmansyah. 2014. *Forestry livelihood framework.* Report of Research Task #2, ACIAR Project FST/2008/030 – Overcoming constraints to community-based commercial forestry in Indonesia. Canberra: Australian Centre for International Agricultural Research.2

Rohadi D. Roshetko JM, Perdana A, Blyth M, Nuryanto N, Kusumowardani N, Pramono AA, Wydiani N, Fauzi A, Sasono J, Sumardamto P, Manalu P. 2012. *Improving economic outcomes for smallholders growing teak in agroforestry systems in Indonesia.* Final Report ACIAR Project FST/2005/177. Canberra: Australian Centre for International Agricultural Research.

Stewart HTL, Rohadi D. Manalu P, Herawati T, Oktalina SN, Rohman, Putro WT, Utomo S, Ningrum LW, Hidayat R, Irawanti S, Pramestisuka A, Parlinah N, Bisjoe AR, Muin N, Hayati N, Waka AK, Sumirat BK, Syafii S, Julmansyah, Aryanti ND, Waluyadi YK, Darisman A, Silvia D . 2014a. *Research Task 3: Evaluation of the dominant business models of community-based commercial forestry being implemented by government and the private sector*. Report of a study conducted in Gunungkidul, Pati, Bulukumba, Konawe Selatan and Sumbawa, ACIAR Project FST/2008/030 – Overcoming constraints to community-based commercial forestry in Indonesia. Canberra: Australian Centre for International Agricultural Research, 46 pp.

Stewart HTL, Rohadi D and Irawanti S. 2014b. *Special study into the outcomes of forest certification for smallholder forest growers*. Report of a study conducted in Gunungkidul and Pati, ACIAR Project FST/2008/030 – Overcoming constraints to community-based commercial forestry in Indonesia. Canberra: Australian Centre for International Agricultural Research.

Van de Fliert E. 2013. *Social dimension analysis of community based commercial forestry in Indonesia*. Report on study conducted in Gunungkidul, Pati, Bulukumba, Konawe Selatan and Sumabawa. ACIAR Project FST/2008/030 – Overcoming constraints to community-based commercial forestry in Indonesia.

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CGIAR RESEARCH PROGRAM ON Forests, Trees and Agroforestry

This research was carried out by CIFOR as part of the CGIAR Research Program on Forests, Trees and Agroforestry (CRP-FTA). This collaborative program aims to enhance the management and use of forests, agroforestry and tree genetic resources across the landscape from forests to farms. CIFOR leads CRP-FTA in partnership with Bioversity International, CATIE, CIRAD, the International Center for Tropical Agriculture and the World Agroforestry Centre.

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WARTA SOSEK dan KEBIJAKAN KEHUTANAN

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Dari Redaksi

Pada edisi ini disajikan secara tunggal temuan dan rekomendasi dari kerjasama penelitian *Australian Centre for International Agricultural Research* (ACIAR) periode 2011-2014, di mana Pusat Litbang Sosial, Ekonomi, Kebijakan, dan Perubahan Iklim - salah satu institusi di Badan Litbang Kehutanan - merupakan bagian penting dalam mewujudkan pengembangan perhutanan sosial komersial (*community-based commercial forestry*/CBCF) di Indonesia.

Sebagaimana diketahui, Pemerintah Indonesia melanjutkan pengembangan CBCF sebagai strategi ganda untuk menekan kemiskinan masyarakat pedesaan sekaligus membangun industri kehutanan yang berkelanjutan. Salah satu inisiatif besar adalah program Hutan Tanaman Rakyat (HTR) untuk penyediaan 5,4 juta hektar lahan perhutanan sosial komersial bagi 360.000 keluarga petani hutan pada tahun 2016; juga penyediaan 12,7 juta hektar lahan untuk berbagai kegiatan perhutanan sosial lainnya. Masyarakat setempat dapat lebih terlibat dalam mengelola lahan hutan sebagai upaya mengurangi kebakaran hutan, konflik lahan, dan aktivitas penebangan hutan ilegal. CBCF diharapkan dapat membuka akses masyarakat terhadap sumberdaya hutan sebagai sarana meningkatkan kesejahteraan hidupnya.

Penelitian oleh konsorsium Badan Litbang Kehutanan (Bogor dan Makassar), CIFOR, Universitas Gadjah Mada, WWF Indonesia dan beberapa universitas dari Australia (Australian National University, University of Melbourne, dan University of Queensland) membuka pemahaman baru tentang kompleksitas CBCF di Indonesia. Kerjasama penelitian *'Overcoming constraints to community-based commercial forestry in Indonesia'* melibatkan masyarakat dari 10 desa di 5 kabupaten di Indonesia.

Selamat membaca.

TOPIK

Kementerian Lingkungan Hidup dan Kehutanan
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Memperkuat Perhutanan Sosial Komersial di Indonesia

Temuan dan Rekomendasi Kerjasama Penelitian ACIAR 'Overcoming constraints to community-based commercial forestry in Indonesia'

[Enhancing Community-based Commercial Forestry in Indonesia Summary of key findings]

Pemerintah Indonesia melanjutkan pengembangan perhutanan sosial komersial (*community-based commercial forestry*/CBCF) sebagai strategi ganda untuk menekan kemiskinan masyarakat pedesaan sekaligus membangun industri kehutanan yang berkelanjutan. Salah satu inisiatif besar pemerintah adalah program Hutan Tanaman Rakyat (HTR) yang menargetkan penyediaan 5,4 juta hektar lahan perhutanan sosial komersial bagi 360.000 keluarga petani hutan pada tahun 2016. Pemerintah juga menargetkan penyediaan 12,7 juta hektar lahan untuk berbagai kegiatan perhutanan sosial lainnya, sehingga masyarakat setempat dapat lebih terlibat dalam mengelola dan menguasai lahan hutan sebagai upaya mengurangi kebakaran hutan, konflik lahan, dan aktivitas penebangan hutan ilegal. CBCF diharapkan dapat membuka akses masyarakat terhadap sumberdaya hutan sebagai sarana meningkatkan kesejahteraan hidupnya. Tidak dapat dihindari apabila harapan besar terhadap CBCF tersebut menghadapi tantangan dalam pelaksanaan program dan beragamnya kemampuan sumberdaya manusia di tingkat lokal.

Para pengambil kebijakan secara umum memandang penguatan CBCF sebagai strategi agar petani kecil mampu membangun sistem budidaya yang lebih produktif dan berkelanjutan termasuk 'paket' peluang komersialisasi produk perhutanan sosial yang luas dan fleksibel. Meskipun umumnya kegiatan perhutanan sosial skala kecil merupakan bagian integral dalam keluarga petani, misalnya di Jawa berkontribusi hingga 30% terhadap pendapatan petani, mayoritas petani kurang memahami potensi komersial yang lebih dari pohon yang mereka tanam atau kurang memperhatikan spesifikasi kebutuhan pasar sehingga berdampak terhadap kualitas *log* dan nilai yang mereka dapatkan (Irawanti *et al.*, 2014). Ribuan petani kecil mengelola lebih dari 1,5 juta hektar lahan hutan di seluruh Indonesia dengan dua jenis kayu komersial utama yakni jati (*Tectona grandis*, masa tebang 15-30 tahun) dan sengon (*Paraserianthes falcataria*, masa tebang 5-7 tahun).

Penelitian oleh konsorsium Badan Litbang Kehutanan (Bogor dan Makassar), CIFOR, Universitas Gadjah Mada, WWF Indonesia dan beberapa universitas dari Australia (Australian National University, University of Melbourne, dan University of Queensland) membuka pemahaman baru tentang kompleksitas CBCF di Indonesia.

The Indonesian government continues to increase its investment in community-based commercial forestry (CBCF) as a strategy to achieve the twin goals of alleviating rural poverty and building a sustainable forest industry. One of the government's biggest initiatives to support CBCF is the *Hutan Tanaman Rakyat* (HTR) program, which aims to establish 5.4 M ha of commercial forestry with 360,000 farm families by 2016. The government has also recently set a target of establishing 12.7 M ha of more general community-based forestry, so local communities are actively engaged as manages and owners of forests as a strategy to reduce forest fires, land tenure conflict and illegal forest activities. In addition, CBCF is also intended to provide communities with access to forest resources, as another means of improve their welfare. While Indonesia has an ambitious policy goal for CBCF it faces considerable challenges with program implementation and the variable capacity at the local level.

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. 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 market specifications that impact on log quality and value (Irawanti et al. 2014). Thousands of smallholders manage more than 1.5 M ha 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).

Recent research by a consortium of partners – FORDA Bogor and Makassar, CIFOR, University of Gadjah Mada, WWF Indonesia and several Australian universities (ANU, UMelb and UQ) – has revealed important insights about the complexities of CBCF in Indonesia.

Kerjasama penelitian *'Overcoming constraints to community-based commercial forestry in Indonesia'* melibatkan masyarakat yang berasal dari 10 desa di 5 kabupaten, yakni Gunungkidul (Daerah Istimewa Yogyakarta), Pati (Jawa Tengah), Bulukumba (Sulawesi Selatan), Konawe Selatan (Sulawesi Tenggara), dan Sumbawa (Nusa Tenggara Barat) [Gambar 1]. Tim peneliti juga bekerjasama dengan institusi lokal, seperti lembaga pemerintahan (misalnya Dinas Kehutanan di Bulukumba) dan LSM (misalnya *Trees4Trees* di Pati). Temuan ini merupakan rangkuman dari rangkaian kegiatan penelitian selama periode 2011-2014, yang merupakan kelanjutan dari kerjasama penelitian ACIAR yang telah dilakukan sejak 2005.

Penelitian ini semakin memperluas pengetahuan dan pemahaman tentang:

1. Karakteristik sosio-ekonomi dan kombinasi pertanian-kehutanan dalam CBCF di berbagai provinsi (survei dasar yang komprehensif telah dilaksanakan dan dilaporkan dari 10 desa lokasi penelitian);
2. Kekuatan aset (modal) yang dimiliki petani kecil, dengan data yang dibedakan dan dianalisis menurut tingkat kesejahteraan (miskin, sedang, dan kaya).
3. Berbagai jalur pemasaran (rantai nilai) yang digunakan petani kecil dan nilai dari 'sertifikasi';
4. Pendekatan untuk meningkatkan pengetahuan petani kecil tentang pasar produk hasil hutan dan keterampilan silvikultur yang tepat untuk CBCF.

The research project – *'Overcoming constraints to community-based commercial forestry in Indonesia'*, 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 1]. The consortium also worked closely with important local partners, such as government agencies (e.g. *Dinas Kehutanan* in Bulukumba) and NGOs (e.g. Trees4Trees in Pati). The findings summarised in this note are drawn mainly from research conducted during 2011-15, which builds on a longer research interest that has been supported by ACIAR since 2005.

The research has increased understanding of the:

1. Socio-economic and agro-forest characteristics of CBCF across different provinces (comprehensive baseline survey completed and reported from 10 case study villages);
2. Strength of assets (capitals) held by smallholders, with the data disaggregated and analysed across a 'wealth' continuum (i.e. the strength of capitals held by smallholders of 'low-medium-high' wealth status);
3. Varying market pathways (value chains) utilised by smallholders and the value of 'certification'; and
4. An approach to enhance smallholders' knowledge of forest markets and appropriate silviculture skills for CBCF.

Gambar 1. Lokasi penelitian

[Figure 1. District locations of research**]**

Karakteristik Sosio-Ekonomi dan Kombinasi Pertanian-Kehutanan dari CBCF

Di Indonesia dapat ditemukan berbagai sistem perhutanan sosial dengan berbagai perbedaan dalam tujuan, kepemilikan lahan (pribadi atau milik negara), hutan alam atau hutan tanaman, pendekatan silvikultur, dan jenis produk dan manfaat yang diperoleh petani. Meskipun tiap desa memiliki keunikan warisan sosial-budaya, kondisi ekologi, dan dinamika ekonomi, namun di semua tempat terlihat adanya ketertarikan petani kecil terhadap CBCF. Peluang pengembangan CBCF di Indonesia sangat luas, di mana tingginya permintaan pasar terhadap kayu ditindaklanjuti oleh petani kecil dengan menambah jumlah pohon dalam sistem pertanian mereka (dapat dijumpai di Pati, Bulukumba, dan Konawe Selatan). Namun demikian, keberhasilan pengembangan CBCF di Indonesia menghadapi beberapa tantangan, yakni lemahnya pemahamann petani kecil terhadap dinamika pasar dan teknik silvikultur yang tidak selalu mendukung pemenuhan permintaan pasar; dukungan penyuluhan sering terlalu fokus pada aspek teknis dari silvikultur; kelompok tani setempat memiliki kapasitas organisasional yang terbatas.

Salah satu budaya yang menonjol dalam CBCF adalah bahwa budidaya pohon lebih banyak melibatkan laki-laki daripada perempuan. Kaum laki-laki berperan besar menentukan jenis pohon, melaksanakan penanaman, pemeliharaan, dan proses pemanenan, serta berbagai praktek silvikultur lainnya. Mereka juga lebih aktif terlibat dalam berbagai aktivitas kemasyarakatan dan pertemuan, sebagaimana tradisi yang berlangsung di daerah tersebut. Sementara itu, kaum perempuan lebih berperan dalam pemanfaatan hasil hutan bukan kayu (misalnya mencari pakan ternak) dan aspek keuangan misalnya negosiasi harga dengan pedagang kayu serta berbagai pengelolaan keuangan keluarga lainnya.

Dukungan bantuan terkait CBCF yang diberikan, baik oleh pemerintah maupun LSM umumnya langsung ditujukan pada kelompok tani hutan yang telah ada di desa tersebut, yang anggotanya tentu saja didominasi oleh laki-laki. Dengan demikian kaum perempuan terlewat dari berbagai informasi pasar dan dukungan yang sangat mungkin dapat meningkatkan kemampuan mereka dalam menegosiasikan harga yang lebih baik dari produk hasil hutannya.

Socio-Economic and Agro-Forest Characteristics of CBCF

There are many types of community forestry systems across Indonesia, with differences in objective, 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 be involved in some form of CBCF. The opportunities for CBCF vary greatly across Indonesia, but where there is strong market demand for timber there is a corresponding trend by smallholders to incorporate additional trees in their farming systems (e.g. in Pati, Bulukumba and Konawe Selatan). However, the successful development of CBCF in Indonesia faces some common challenges, which include: smallholders often have a weak understanding of markets dynamics, and 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.

An important cultural dimension to CBCF is that commercial tree production tends to involve more time of the men in the farming household than the women, and men have a greater role in the selection of species, times of planting and harvesting, and the overall silvicultural practices. Men are also more actively involved in community-based activities and meetings, which mainly reflects cultural traditions. 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) and in financial aspects of wood production, like the negotiation of prices with timber traders, and the overall financial management of the household.

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.

Kekuatan Aset yang Dimiliki oleh Petani Kecil

Berbagai hambatan dan peluang pengembangan CBCF di Indonesia telah secara luas diketahui, namun masih ada kekurangjelasan – dalam terminologi sosial-ekonomi, teknis dan kebijakan – tentang apa yang dimaksud dengan CBCF yang '*pro-poor*'. Pertumbuhan ekonomi Indonesia meningkat dengan cepat diikuti dengan peningkatan kesejahteraan orang per orang. Namun demikian di banyak wilayah pedesaan, masyarakat kurang merasakan peningkatan kesejahteraan yang dialami di tataran negara, termasuk petani 'miskin' yang luput dari peluang mendapatkan keuntungan dari berbagai inisiatif pembangunan desa. Kurang teridentifikasinya berbagai status kesejahteraan petani kecil mempersulit upaya memfokuskan kebijakan dan program yang langsung ditargetkan pada petani kecil yang paling memerlukan yakni mereka yang tergolong sebagai petani 'miskin'.

Kontribusi hasil hutan (kayu dan non-kayu) dari CBCF terhadap pendapatan keluarga relatif kecil bila diperhitungkan secara mingguan, namun bernilai sangat penting sebagai 'tabungan' untuk memenuhi kebutuhan keuangan keluarga yang sangat besar dalam jangka pendek. Oleh karena itu, CBCF tetap berperan penting dalam ketahanan keluarga petani. Meskipun demikian, pemanenan berdasarkan kebutuhan yang umum dilakukan oleh keluarga yang perlu uang tunai mungkin tidak tepat dengan waktu pemanenan optimal sehingga petani sering kehilangan peluang mendapatkan keuntungan lebih dari CBCF.

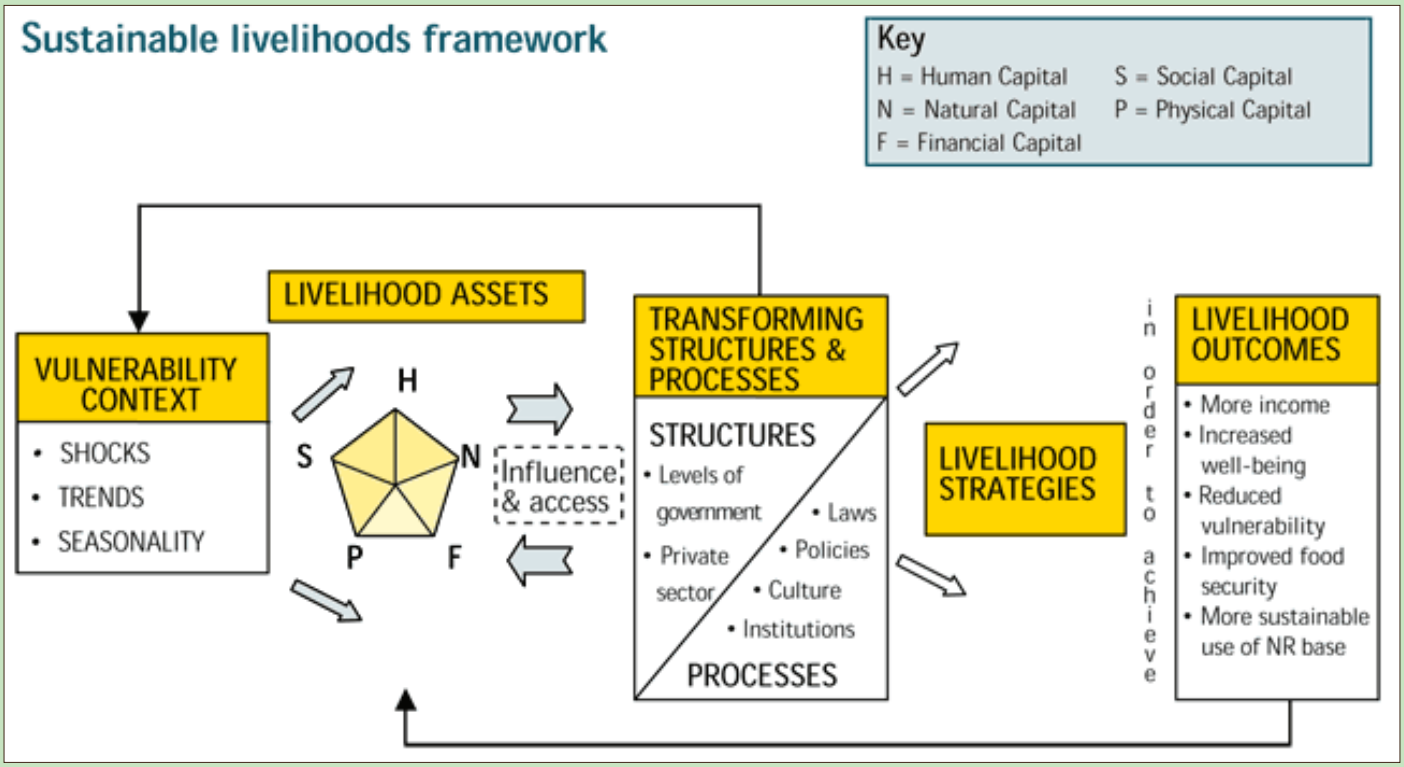
Untuk memahami peran dan kontribusi CBCF terhadap kehidupan petani kecil, penelitian ini mengeksplorasi lebih dalam tentang konsep penghidupan pedesaan yang meliputi komponen, proses, dan hasilnya. Konsep penghidupan pedesaan yang digunakan adalah '...aset (modal alam, fisik, sumberdaya manusia, finansial, dan sosial), aktivitas dan proses sosial-ekonomi serta struktur yang mendukung kehidupan manusia' (Ellis, 2000). Konsep tersebut disajikan dalam bentuk skema oleh DFID (1999) seperti Gambar 2. Kerangka penghidupan yang berkelanjutan menyediakan langkah yang bermanfaat dalam memahami kompleksitas penghidupan petani kecil.

Strength of Assets Held by Smallholders

The constraints and opportunities for CBCF in Indonesia are broadly known, but there is still a lack of clarity – in socio-economic, technical and policy terms–of 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, including 'poor' smallholders who can miss out on the benefits of rural development initiatives. The lack of clarity about the varying wealth status of smallholders makes it difficult to target policies and programs to enhance the livelihoods of smallholders who need it most – those with the characteristics of 'poor' smallholders.

The contribution of forest products (timber and non-timber) to the household income is relatively small when considered on an average weekly basis in most CBCF systems, but it plays an important role as a 'savings account' for meeting household needs that require a large sum of money at short notice. As such, CBCF fulfils a vital role in the resilience of farming households. However, needs-based harvesting of trees, which is commonly practised by households with insufficient cash flow, may not correspond with the optimum timing for commercial timber production and, so smallholders are often missing out on achieving better financial returns from CBCF.

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. A useful definition of rural livelihoods is *'... the assets (natural, physical, human, financial and social capitals), the activities and socio-economic processes and structures that sustain peoples' lives'* (Ellis 2000). This is commonly represented as shown in Figure 2, below (DFID 1999). The sustainable livelihoods framework provides a useful way to understand the complexity of smallholders' livelihoods.

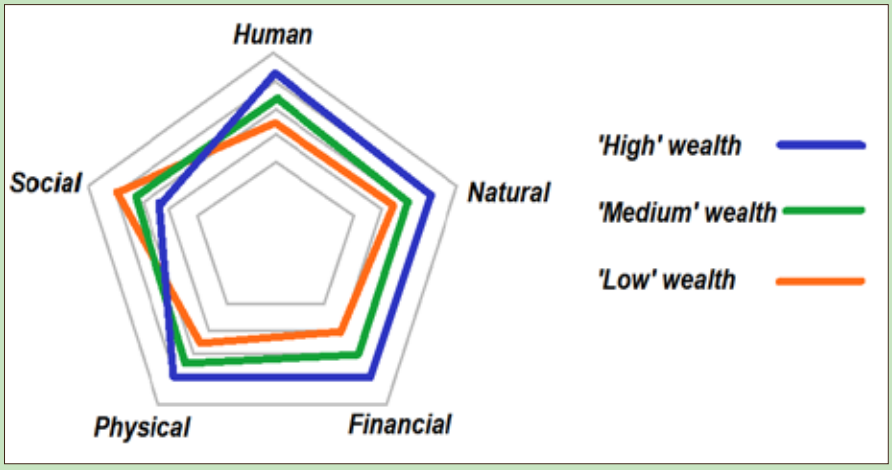


Gambar 2. Kerangka penghidupan berkelanjutan (DFID, 1999)

[Figure 2. Sustainable livelihoods framework (DFID, 1999)**]**

Penelitian ini menemukan bahwa dalam pengusahaan CBCF petani 'kaya' umumnya menggunakan modal fisik dan sumberdaya manusia, sementara petani 'sedang' umumnya menggunakan aset fisik dan finansial. Di pihak lain petani 'miskin' lebih mengandalkan modal sosial (misalnya kedekatan hubungan dengan tetangga untuk mendapatkan informasi dan pertukaran tenaga kerja). Juga kayu daur pendek (misalnya sengon) lebih banyak dibudidayakan oleh petani 'miskin' yang lebih memiliki keterbatasan finansial, daripada spesies daur panjang (misalnya jati) meskipun harga jualnya lebih tinggi. Ilustrasi pemanfaatan aset dalam pengusahaan CBCF oleh petani pada berbagai tingkat 'kesejahteraan' dapat dilihat pada Gambar 3.

This research found that in terms of CBCF, 'high' wealth farmers mostly used physical and human capitals, 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). Also, short-rotation forest crops (e.g. albizia) often have more appeal to 'low' wealth farmers who have few financial reserves, rather than long-rotation species (e.g. teak) even if these may ultimately be of higher commercial value. Understanding the strength of different assets among smallholders in a village can assist design of effective support programs. An example of how the assets can be illustrated for the different 'wealth' levels at a village is shown in Figure 3, below.



Gambar 3. Contoh kekuatan penggunaan aset pada berbagai tingkat kesejahteraan petani

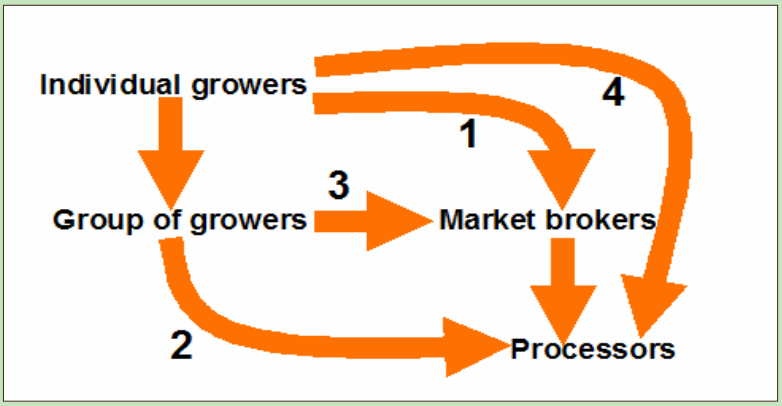
[Figure 3. Example of strength of assets for different wealth levels among smallholders**]**

Berbagai Jalur Pemasaran yang Digunakan Petani Kecil

Petani kecil memanfaatkan berbagai jalur pemasaran atau rantai nilai dalam penjualan hasil hutannya. Berbagai jalur tersebut memiliki kelebihan dan katerbatasan di mana tiap jalur menarik bagi petani dalam kondisi yang berbeda (Gambar 4). Jalur pemasaran yang paling umum bagi petani kecil yang menjual pohon 'berdiri' adalah melalui pedagang kayu (perantara) [#1]. Petani juga dapat bergabung dengan petani lain dan menjual kayunya melalui kelompok tani atau koperasi [#2] yang selanjutnya menjualnya pada pedagang kayu [#3] atau langsung ke pabrik pengolahan kayu [#4]. Di satu lokasi bahkan dapat ditemukan beberapa jalur pemasaran yang beroperasi bersamaan – menyediakan keuntungan pada petani kecil dalam kondisi yang berbeda-beda.

Market Pathways Used by Smallholders

Smallholders use a variety of different market pathways, or value chains, to sell their forest products. All market pathways of CBCF offer advantages and limitations, with each pathway appealing to smallholders in different circumstances [see Figure 4]. The most common market pathway for smallholders with commercial timber is to sell their trees 'standing' to market brokers (middlemen) [#1]. However, smallholders can aggregate their resource and sell via a growers' cooperative [#2], via a growers' cooperative that in turn sells to a market broker [#3], or sell directly to processors [#4]. Even within a single locality, there may be several market pathways operating simultaneously – providing benefits for smallholders in different circumstances.



Gambar 4. Jalur pemasaran kayu yang digunakan petani

[Figure 4. Common market pathways used by smallholders to sell timber, Indonesia**]**

Profitabilitas, biaya investasi dan risiko di tiap tingkatan jalur pemasaran penting diketahui dan dipahami, mengingat hal tersebut tidak selalu diharapkan atau layak bagi petani kecil untuk terlibat dalam tahap pemanenan atau pengolahan kayu. Pemahaman sederhana tentang berapa harga yang dibayarkan atau diterima pada setiap tingkatan rantai nilai belum tentu menjadi indikator yang akurat tentang besarnya keuntungan yang diperoleh pada tingkatan tersebut. Meskipun informasi tentang harga *log* mudah diperoleh, penelitian ini tidak menemukan indikator pengukuran kayu yang universal (misalnya dalam hal kualitas dan ukuran) sehingga sulit untuk membandingkan 'nilai' *log* antar lokasi.

Penyumbang utama pendapatan keluarga petani secara umum bukan berasal dari produksi kayu komersial namun berasal dari usaha ternak (kambing), pertanian tanaman semusim (jagung, ketela pohon), dan berbagai tanaman pangan lainnya atau hasil perkebunan (kopi, cengkeh).

It is important to understand 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 be involved in the harvesting or processing stages of the forestry sector. Simply understanding the prices paid, or received, at each stage of the value chain 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'.

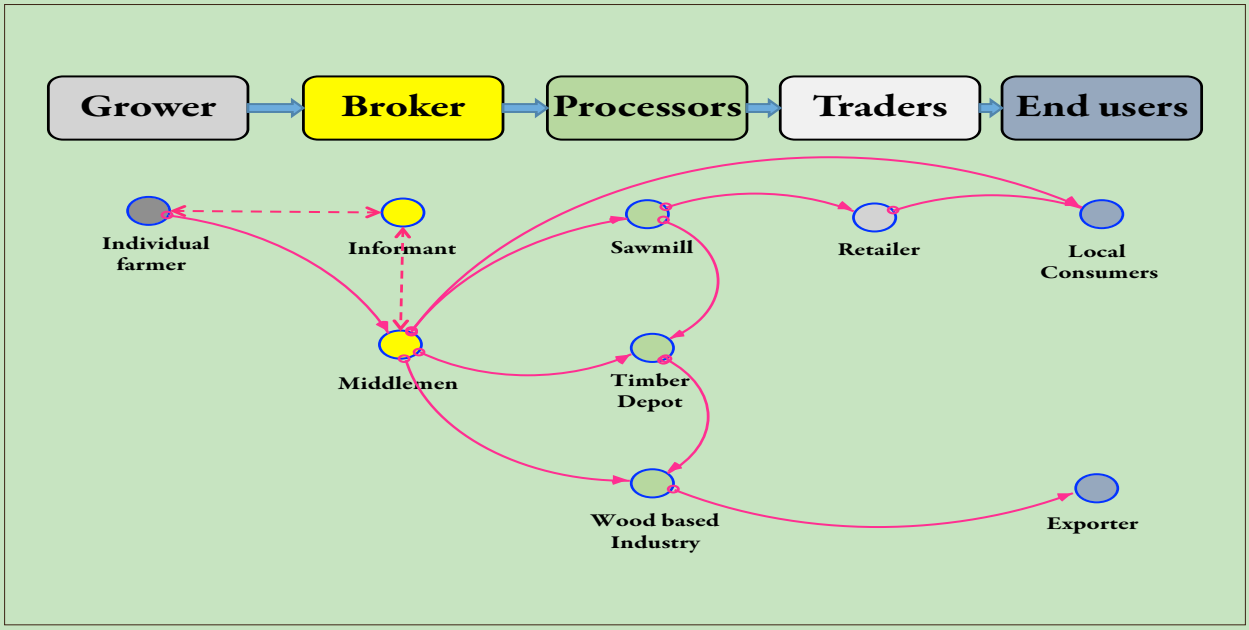
Commercial forest production is generally not the largest contributor to the household income of farmers, which is commonly by cattle, goats, corn, cassava and other secondary food or estate crops.

Tentu saja petani dapat menjual kayunya kapanpun 'karena kebutuhan' sehingga pemahaman detil pasar kayu komersial dan jalur pemasarannya menjadi kurang penting. Oleh karena itu, dapat dipahami apabila petani menjual kayu langsung ke pedagang lokal yang tinggal di desa tersebut atau desa tetangga karena pedagang tersebut yang memiliki jaringan bisnis ke pasar regional atau nasional atau industri pengolahan. Hal inilah yang menjadikan petani hanya dapat menerima harga yang ditawarkan oleh pedagang lokal.

Sesungguhnya petani kecil masih memiliki peluang mendapat keuntungan lebih apabila mereka menggabungkan sumberdaya yang dimilikinya secara efisien agar memenuhi batas minimal sebelum menjualnya ke industri pengolahan (melalui jalur pemasaran: petani - kelompok tani - industri pengolahan). Hal tersebut terjadi karena adanya kekuatan potensial yang dimiliki kelompok tani atau koperasi untuk menegosiasikan pemasaran langsung dengan industri pengolahan, kapasitas kelompok dalam memahami pasar kayu lokal dan regional (misalnya dalam hal spesifikasi kayu dan harga) sehingga dapat menegosiasikan harga yang adil, dan kapasitas kelompok untuk berpartisipasi dalam proses sertifikasi kayu. Jalur pemasaran ini ditemukan di Pati di mana terjadi peningkatan produksi sengon, dan karena daurnya yang lebih pendek (5-7 tahun) daripada daur jati (15-20 tahun), dan telah menjadi sumber pendapatan yang penting bagi keluarga petani. Selain jalur pemasaran tersebut di Pati juga dapat dijumpai berbagai jalur pemasaran yang digunakan petani untuk menjual kayunya (Gambar 5).

As such, smallholders may sell timber infrequently on an 'as needed' basis – with little imperative to gain a detailed understanding of commercial timber markets and alternate market pathways. It is understandable that in such situations 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. However, this can lead to farmers being highly dependent on the prices offered by the local broker.

Nonetheless, there appear some advantages for small-scale growers to aggregate their resource to efficiently achieve a critical mass before selling to a processor (i.e. market pathway comprised of: grower–growers' cooperative–processor). 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 the production of sengon is increasing and, due to its shorter growth duration (5-7 years) compared to teak (15-30 years), is becoming a regular and substantial source of income for smallholders. Yet even in Pati, where there is growing demand for timber grown by smallholders, there are several market pathways used by smallholders [see Figure 5].



Gambar 5. Jalur pemasaran kayu yang digunakan oleh petani kecil di Pati

[Figure 5. Market pathways used by smallholders in Pati, Indonesia**]**

Meskipun berbagai jalur pemasaran yang digunakan petani telah banyak diketahui, namun akses pasar oleh kebanyakan petani masih sangat ditentukan oleh jaringan sosial yang dimilikinya, yang tidak selalu dibangun untuk mendapatkan keuntungan maksimal. Lebih lanjut, jaringan sosial petani 'kaya' cenderung berbeda dengan yang dimiliki petani 'miskin' meskipun mereka tinggal di desa yang sama. Bagaimana mengoptimalkan berbagai jalur pemasaran dengan karakteristik petani yang berbeda-beda masih perlu dipahami lebih lanjut.

Sertifikasi sukarela[1] (auditor independen melakukan verifikasi atas keberlanjutan sosial-ekonomi dan lingkungan dari praktek dan produksi kehutanan) merupakan strategi terbaru untuk mendorong perubahan dalam kehutanan, dengan harapan petani dan industri pengolahan mendapat insentif berupa pendapatan yang lebih tinggi dari sertifikasi. Penelitian ini menghasilkan temuan adanya peningkatan harga kayu bulat sebesar 10-30% dari harga kayu tanpa sertifikasi. Namun demikian pasar kayu yang bersertifikat masih kecil dan terbatas (misalnya hanya untuk kayu berdiameter besar dan berkualitas bagus) dibandingkan dengan pasar kayu pada umumnya. Penelitian juga memperlihatkan adanya peningkatan harga produk olahan dari kayu yang bersertifikat sebesar 5%.

Tantangan terbesar bagi petani kecil dalam sertifikasi adalah prosesnya yang kompleks dan membutuhkan biaya besar. Hingga saat ini pasokan kayu bersertifikat dari petani kecil umumnya didukung oleh indsutri pengolahan yang membiayai dan memfasiliasi prosesnya dalam rangka mendapatkan akses pasar produk 'bersertifikat' dan membangun citra perusahaan yang positif.

Peningkatan Pengetahuan Petani Kecil Mengenai Pasar dan Silvikultur

Banyak penelitian menegaskan bahwa petani kecil memandang CBCF sebagai 'tabungan' dan melakukan pemanenan kapanpun saat mereka perlu dan seringkali memutuskan untuk menjual kayu dalam waktu singkat. Dampaknya, tanaman dibiarkan tumbuh tanpa pemeliharaan yang diperlukan (pemangkasan dan penjarangan) untuk meningkatkan kuantitas dan kualitas hasil kayu.

[1] Sertifikasi sukarela (misalnya FSC, LEI) berbeda dengan skema sertifikasi wajib 'SVLK' yang dikembangkan pemerintah Indonesia untuk mengatasi perdagangan kayu ilegal.

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.

Voluntary market-based forest certification[1] (where independent auditors can verify the socio-economic and environmental sustainability of forestry practices and products) has been a recent strategy to encourage a shift in forestry, with the expectation of higher market returns an incentive for growers and processors who achieve certification. This 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 the wider forest market. There was also evidence that products manufactured with certified timber were receiving prices 5% higher than comparable products without certified timber.

The biggest challenge for smallholders before they make a greater investment in certified forestry is that it is a complex and expensive process for them to comply with, largely unaffordable to most small-scale growers. To date, the supply of certified timber from smallholders is largely due to the costs being covered by manufacturers seeking to maintain access to 'certified' markets and develop a positive corporate image.

Enhancing Smallholders' Knowledge of Forest Markets and Silviculture

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.

[1] The voluntary market-based forest certification (e.g. FSC, LEI) is different to the mandatory 'SVLK' certification scheme introduced by the Indonesian government to arrest the illegal forest trade.

Keputusan menjual kayu mengabaikan potensi jangka panjang kayu dan dinamika pasar, di mana petani menerima begitu saja harga yang diberikan oleh pedagang lokal (perantara). Petani biasa menjual pohon yang bervariasi umur dan kualitasnya dalam satu transaksi dan menerima harga yang tidak terlalu tinggi dari pedagang.

Petani terbiasa mengadopsi praktek silvikultur yang diterapkan oleh tetangganya tanpa memperhatikan standar yang diperlukan oleh industri pengolahan. Proyek ini mendesain dan menyelenggarakan pelatihan penyuluhan kehutanan model baru kepada lebih dari 120 petani melalui '*Master TreeGrower* (MTG) Indonesia'. Program pelatihan difokuskan pada upaya membangun pemahaman petani terhadap spesifikasi kayu yang diperlukan pasar, pertumbuhan pohon dan pilihan pengelolaannya, dan mengeksplorasi pilihan pengelolaan secara komersial sesuai dengan kepentingan dan sumberdaya masing-masing petani. Para peserta pelatihan dibawa ke industri pengolahan lokal agar mendapatkan pemahaman tentang tuntutan pasar dan rantai nilai dari kayu yang ditanam. Pengetahuan ini kemudian dikaitkan dengan praktik silvikultur yang diperlukan untuk menghasilkan kayu berkualitas sesuai tuntutan pasar dan lebih lanjut diharapkan membawa peningkatan pendapatan para petani.

Perintisan 'MTG Indonesia' sebagai model penyuluhan dan pendidikan bagi petani merupakan suatu kebaruan karena bukan merupakan upaya 'melatih' petani agar mengadopsi dan mereplikasi praktek silvikultur yang diterapkan oleh kehutanan industri atau pemerintah.

Sebagaimana telah diungkapkan dari penelitian sebelumnya bahwa tujuan menanam pohon, sumberdaya dan pengetahuan yang dimiliki petani dan kalangan industri kehutanan adalah sangat berbeda. Rintisan pelatihan 'MTG Indonesia' meliputi lima pokok bahasan yakni *review* terhadap minat pemilik lahan dalam menanam pohon, eksplorasi berbagai peluang pasar lokal, pelatihan pengukuran pohon dan hutan, pembelajaran tentang pertumbuhan pohon dan pengelolaan hutan, serta diskusi mengenai kebutuhan akan informasi dan bantuan lebih lanjut. Pelatihan juga ditujukan untuk mendorong petani agar membagikan pengalaman dan pengetahuannya serta memperkuat jaringan pribadi-mendorong kepercayaan diri yang lebih besar antar petani untuk mengeksplorasi jalur pemasaran baru.

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 (middlemen). 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.

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 forestry extension course to over 120 smallholders – the 'Master Tree Grower (MTG) Indonesia' initiative. The program focused on developing farmers' understanding of timber market specifications, tree growth and management options, and exploring commercial management options that reflect their particular interests and resources. The participants were taken to local timber processors to gain a better understanding market requirements and the marketing chains. This understanding was then linked to silvicultural practices designed to produce the quality of timber in demand by their local markets with the expectation that this would lead to better financial returns to 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 pilot 'MTG Indonesia' course covered a consistent 5-part structure that 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 information and support needs. The course also aimed to encourage smallholders to share their experiences and consolidate their personal networks – encouraging a greater confidence among smallholders to explore new market pathways.

Rekomendasi

1. Diperlukan peningkatan pemahaman terhadap karakteristik sosial-ekonomi dan pertanian-kehutanan di tingkat kabupaten, dan menggunakan pemahaman ini untuk mendesain berbagai program yang mendukung CBCF. Sebagai contoh, penggunaan 'kerangka penghidupan berkelanjutan' untuk menilai dan mengukur aset dari berbagai petani kecil dan berbagai proses eksternal yang memengaruhi kehidupan mereka, dan bagaimana hal-hal tersebut memengaruhi kecenderungan mereka terhadap CBCF (misalnya apakah spesies kayu daur pendek lebih menarik bagi petani 'miskin' karena akan menyediakan aliran dana tunai yang lebih cepat daripada spesies daur panjang).
2. Diperlukan desain bantuan program khusus untuk menyesuaikan dengan berbagai minat dalam CBCF. Sebagai contoh, membangun kapasitas penyuluhan di daerah sehingga memiliki berbagai keahlian (misalnya, bagaimana tanaman kayu dapat diintegrasikan dengan tanaman pertanian? Bagaimana berbagai pilihan praktik silvikultur dapat dikaitkan dengan tuntutan pasar? Pembangunan kapasitas apa yang paling diperlukan kelompok tani? Pelatihan finansial apa yang dapat diberikan kepada wanita tani terkait keterlibatannya dalam CBCF?).
3. Diperlukan peningkatan pemahaman tentang berbagai jalur pemasaran yang beroperasi di daerah dan mengkaji pilihan mana yang sesuai untuk masing-masing petani. Sebagai contoh, para penyuluh dapat menyediakan informasi terkini secara reguler kepada petani tentang berbagai jalur pemasaran yang ada di daerah mereka (misalnya poster yang berisi ilustrasi berbagai pilihan pasar dapat disajikan dan didiskusikan di tiap desa, penyuluh kehutanan dapat mendorong petani untuk berbagai pengalaman pemasaran kayu mereka).

Recommendations

1. Increase understanding of the socio-economic and agro-forest characteristics at the district level, and use this understanding to design effective support programs. For example, use the 'sustainable livelihood framework' to assess and measure the assets for different smallholders and the external processes impacting on their lives, and how these combine to influence their preferences for CBCF (e.g. do short-rotation species have more appeal for 'low' wealth farmers because they will provide cash flow more quickly than long-rotation species).
2. Design support programs that are tailored to the different interests in CBCF. For example, build the capacity of regional extension services so that a range of expertise is available for a mix of smallholders to access (e.g. 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?).
3. Increase understanding of the multiple market pathways that operate at the district level, and explore the options that suit different smallholders. For example, extension agents could provide regular and up-to-date information to smallholders about the different market pathways available in their district (e.g. an illustrated poster explaining the different market options in local area could be displayed and discussed in each village, extension agents could encourage smallholders to share their market experiences).

4. Diperlukan pengkajian pilihan untuk meringkas persyaratan agar skema sertifikasi hutan dapat terjangkau oleh petani. Sebagai contoh, pemerintah perlu membangun proses yang jelas dan sederhana untuk melibatkan petani dalam skema sertifikasi hutan (misalnya poster yang berisi ilustrasi tentang berbagai pilihan sertifikasi hutan dan persyaratannya dapat disajikan dan didiskusikan di tiap desa; penyuluh kehutanan dapat menginisiasi proses pengumpulan dan pembakuan pelaporan bagi petani kecil untuk berpartisipasi dalam skema sertifikasi hutan).
5. Diperlukan peningkatan pemahaman terhadap dinamika pasar di tingkat daerah dan menggunakan pengetahuan tersebut untuk menyampaikan berbagai metode silvikultur yang dapat dipraktikkan petani. Sebagai contoh, penyuluh kehutanan dapat mendampingi petani kecil untuk meningkatkan pemahaman terhadap berbagai persyaratan pasar dan tren yang terjadi serta bagaimana kondisi tersebut memengaruhi praktik silvikultur (misalnya penyuluh kehutanan dapat memperkuat pemahaman petani kecil tentang pasar lokal dan berbagai pilihan silvikultur; berbagai lembaga yang mendukung CBCF perlu mengadaptasi dan memperluas penyebaran pelatihan 'MTG Indonesia' bagi petani kecil yang berminat dalam CBCF; penyuluh kehutanan perlu disadarkan tentang tujuan dan metode khusus dari 'MTG Indonesia').

4. Explore options for streamlining the requirements for smallholders to be involved in affordable forest certification schemes. For example, a clear and simplified process for smallholders to be involved in forest certification schemes should be developed by the government's agencies at the district level (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).
5. Increase understanding of market dynamics at the district level, and use this understanding to inform the silviculture practiced by smallholders. For example, extension agents should assist smallholders to increase their understanding of different market requirements and trends, and how these options relate to their silvicultural practices (e.g. extension agents should strengthen smallholders understanding of the local market and the different silvicultural options; organisations supporting CBCF should consider adapting and expanding the delivery of the 'MTG Indonesia' course to smallholders interested in CBCF; forestry extension agents should be made aware of the purpose and design of the 'MTG Indonesia' course).

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