Analyse recent experiences of pilot Master Tree Grower (MTG) training courses (conducted under FST/2008/030) to design an effective approach and training materials for CBCF extension.
EVALUATION REPORT
OF PILOT MASTER TREE GROWER (MTG) TRAINING COURSES

Enhancing Community-Based Commercial Forestry in Indonesia

Activity 2.1.
Analyse recent experiences of pilot Master Tree Grower (MTG) training courses (conducted under FST/2008/030) to design an effective approach and training materials for CBCF extension

Prepared by:
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Rowan Reid

THE UNIVERSITY OF MATARAM
JUNE 2017
**Glossary**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP3K</td>
<td>Balai Penyuluhan Pertanian Perikanan dan Kehutanan</td>
</tr>
<tr>
<td>BP4K</td>
<td>Badan Pelaksana Penyuluhan Pertanian Perikanan dan Kehutanan</td>
</tr>
<tr>
<td>BPTP</td>
<td>Balai Pengkajian Teknologi Pertanian</td>
</tr>
<tr>
<td>CBCF</td>
<td>Community-Based Commercial Forestry</td>
</tr>
<tr>
<td>FFM</td>
<td>Farmers to Farmers Mentoring</td>
</tr>
<tr>
<td>FFS</td>
<td>Farmer Field School</td>
</tr>
<tr>
<td>FMA</td>
<td>Farmer Manage Extension Activities</td>
</tr>
<tr>
<td>HR</td>
<td>Hutan Rakyat or Private Forest</td>
</tr>
<tr>
<td>HTR</td>
<td>Hutan Tanaman Rakyat or State Planted Forest</td>
</tr>
<tr>
<td>KASA</td>
<td>Knowledge, Attitudes, Skills, Aspiration</td>
</tr>
<tr>
<td>MTG</td>
<td>Mater TreeGrower</td>
</tr>
<tr>
<td>NTFP</td>
<td>Non Timber Forest Products</td>
</tr>
<tr>
<td>SEE</td>
<td>Social, Economic and Environment</td>
</tr>
<tr>
<td>SL-I</td>
<td>Sekolah Lapang - Iklim</td>
</tr>
<tr>
<td>SL-PHT</td>
<td>Sekolah Lapang - Pengendalian Hama Terpadu which is called as FFS</td>
</tr>
<tr>
<td>SL-PTT</td>
<td>Sekolah Lapang – Pengelolaan Tanaman Terpadu</td>
</tr>
<tr>
<td>T &amp; V</td>
<td>Training and Visit System</td>
</tr>
<tr>
<td>T4T</td>
<td>Trees for Trees</td>
</tr>
<tr>
<td>TOP Model</td>
<td>Targeting Outcomes Project Model</td>
</tr>
</tbody>
</table>
Forewords

The Master TreeGrower initiative introduced through the Community-Base Commercial Forestry (CBCF) Project, an ACIAR Project No FST/2008/030, provides a new extension approach in Indonesia to promote smallholder learning. This evaluation report provides a critical analysis of this new and promising approach. Its effectiveness, limitations, challenges and the future prospect are discussed in detail. This report is a part of a new ACIAR Project on "Enhancing Community-Based Commercial Forestry in Indonesia" (FST/2015/040) - Activity 2.1. "Analyse recent experiences of pilot Master Tree Grower (MTG) training courses (conducted under FST/2008/030) to design an effective approach and training materials for CBCF extension".

Mataram, 01 June 2017

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The University of Mataram - Indonesia

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Abstract

A Master TreeGrower initiative introduced through the Community-Base Commercial Forestry (CBCF) Project, an ACIAR Project No FST/2008/030 provides a new extension approach in Indonesia to promote smallholder effective learning. Seven MGT courses conducted at the five project sites through this project have demonstrated not only their effectiveness in promoting effective learning (Reid, R., Syafii, S., et al., 2014), but also effective in changing smallholders’ forestry practices. Recent evaluation studies conducted at Pati, Gunungkidul, and Bulukumba¹ confirmed the roles of MGT courses in promoting smallholders’ forestry practices (in both silvicultural and marketing practices), not only at the MGT course participants, but also at the surrounding farmers.

This study examines the MTG’s strengths and weaknesses in supporting the learning process for smallholders. The MTG courses adopt the participatory, seeing is believing, and learning by doing approaches in it content development, delivery, and evaluation. Roles of “contact farmers” within the concept of “Farmers to Farmers Mentoring” seems to be compatible with the existing extension practices, and the MTG courses have strengthen these roles in scaling-out best silvicultural practices and profitable marketing.

The local government in Pati and Bulukumba to some extent has adopted the approaches into their policies and programs to help the smallholders as both the government did another additional MTG courses after the project. To take MTG initiative into the existing learning and extension approach, there are some challenges such as the national policy dynamic (the implementation of UU.no.23 year 2014), the existing extension paradigm hold by the extension agents and their organisations, the issues associated with popular democracy at both local and national levels, and the political commitment to help empower the smallholders. There is a need to share this sound learning approach to the local as well as national government agencies and policy makers to let them aware of the MTG initiatives and understanding its strengthens while at the same time continue to facilitate, establish and strengthen MTG courses, groups and their network.

¹As a part of a new ACIAR Project on “Enhancing Community-Based Commercial Forestry in Indonesia” (FST/2015/040) - Activity 2.1. “Analyse recent experiences of pilot Master Tree Grower (MTG) training courses (conducted under FST/2008/030) to design an effective approach and training materials for CBCF extension”
1. Introduction

Since the early 1960s there have been several attempts by government to introduce new approaches to extension practices in Indonesia including Training and Visit system, Insus and Supra-insus approaches (group and social engineering approach), and the participatory approaches such as Farmers Field Schools, and Farmer Manage Extension Activities (FMA) that was introduced through Farmer Empowerment through Agricultural Technology and Information (FEATI). More participatory approaches, such as Farmers Field School were introduced to address pest and disease issues and control, and then adapted to tackle other agricultural issues such as crop-livestock extension and climate change. However, the philosophy underlying these models has not been widely adopted in most extension government programs for smallholders, particularly in the private forestry and agroforestry extension field.

Forestry and agroforestry extension is complicated by several factors. For instance, forest security (law enforcement) approaches have meant that regulation has become the main mode of forestry extension. That is, ‘forestry extension’ is largely seen by farmers as an auditing and law enforcement process by government. Also, there is still significant debate about the relevance and appropriateness of involving agricultural extension agents with expertise in food crops and plantations with forest farmers, even though agroforestry often involves growing crops and cash crops (trees for fruits in the same piece of land, though Social and Community Forestry Programs). Forestry extension agents tend to have a technical forestry (silvicultural) background and are employed to be responsible for conventional forestry extension. As a result, there is very little interdisciplinary extension support available for farmers interested in integrating agricultural and forestry activities.

Within this uncertain context of rural extension in Indonesia – especially regards forestry and agroforestry – the “Master Tree Grower (MTG) Indonesia Initiative” stands out as an alternative approach to addressing the existing extension issues and tree grower learning process. This report provides a comprehensive analysis and discussion of the MTG approach and its potential to be adopted as an alternative approach in the future Indonesian extension.

2. Evaluation Methodology

Approaches to the evaluation: To explore the adoption of knowledge, skills and/or practices as a result of tree grower participation in the MTG courses, this evaluation study used the ‘project logic’ (Patton 1997), ‘most significant change’ (Davies & Dart 2005), and ‘Bennett's Targeting Outcomes of Programs (TOP) Model’ (Rock-well & Bennett, 2004) evaluation frameworks as they are presented in the following figures.
The first 3 boxes of Patton’s logic model show the resources, activities and outputs at the stage of MTG Courses that was held from March to June 2014. The rest 3 boxes show some follow-up outcomes produced by the MTG participants as results of adopting the knowledge and skills learned from the courses. The logic model also shows the existence of other external factors affecting the participants’ behaviours which may against or supporting for the adoption and diffusion of tree management practices.

**Variables and measurement:** In summary, the following variables were measured in this evaluation: (1) *Changes in farmers’ management practices* due to their knowledge, skill, attitudes and aspirational changes. To what extent the MTG participants implement their knowledge and skills in tree and farm management by doing thinning, pruning, estimating timber volume in selling their trees; (2) *Changes in socio, economic and environmental conditions* due to the changes in farmers’ management practices. Once farmers adopted the best silvicultural practices and marketing practices, they may get more values to their property and timbers; (3) *Adoption of the MTG Model as an approach to tree grower learning/extension approach*. This evaluation measured the adoption of the MTG approach by the local government. To what extent the local government, especially the extension organisation, adopt and use the approach in their extension programs and activities. The numbers of the MTG Courses and its modifications conducted after the project could be used to prove that the MTG Approach and model have been adopted by the local government. Budget supports for other MTG courses after the project could also be used to support that the MTG Model has been adopted by the local government; (4) *Farmers and Field Agents’ Overall Perceptions of the MTG Approach Effectiveness*. Even though an evaluation had been made to measure MTG effectiveness in promoting learning (improving knowledge and understanding, skills, and change participants’ attitudes and aspirations, see Reid, R, Syafii, S., et al, 2014).

**Data collection and methods:** Data collection activities for this evaluation were carried out at Pati – Central Java on the 2nd to 6th November 2016, at Yogyakarta and Gunungkidul from 8th to 14th November 2016, and at Bulukumba from 12th – 18th December 2016. Data collection techniques applied to this evaluation studies were *in-depth interviews and focus group discussion* with the MTG participants – representing 105 MTG course participants (Table 2.1), local government agents (from the Forestry Office, and extension agents to represent extension organisations), and local partners at each project sites – Gunungkidul (UGM Team), Pati (T4T) and Bulukumba (FOERDIA). *Field observation* was also used as a data collecting method – triangulation approach.

**Table 2.1. List of MTG Participants at the Three MTG Sites**

<table>
<thead>
<tr>
<th>Course</th>
<th>Farmers</th>
<th></th>
<th>Non Farmers</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Gunungkidul 1 (Dengok Village, March 10th – 13th, 2014)</td>
<td>13</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Gunungkidul 2 (Katongan and Jepitu Villages, 28th May – 1st June 2014)</td>
<td>18</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Pati 1 (Payak Village)</td>
<td>17</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Bulukumba 1 (Benjala Village)</td>
<td>15</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>Bulukumba 2 (Malleling Village)</td>
<td>16</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>11</td>
<td>11</td>
<td>4</td>
<td>105</td>
</tr>
</tbody>
</table>

Notes: Total 2 FGDs at Gunungkidul, 1 FGD at Pati, and other 2 FGDs at Bulukumba

**Data analysis:** Descriptive statistics were used for data analysis such as the percentage of participating farmers who had adopted silvicultural practices or measured their trees or shared their knowledge with other farmers; number of non MTG participants who had changed their practices.

Qualitative analysis of the in-depth interviews with MTG trainers/facilitators was used to identify any patterns of responses on MTG effectiveness, MTG processes and contents, and
the value of any future MTG courses. Quotations of their statements on why they claimed for MTG effectiveness or limitations are highlighted. A triangulation approach was used to compare data from MTG participants (interview), FGD results, key informants (in-depth interviews) & observations (visit to farmers’ plantations to observe the results of pruning, thinning & other farm management practices) for every site. Farmers’ perceptions on the MTG effectiveness, the needs for future MTG processes & contents were asked. Quantitative & qualitative techniques were applied to see the "reasons/arguments" for those adopting/not adopting silvicultural practices.

3. Evaluation Results

3.1. The Participants Attended the Focus Group Discussions

The total number of 64 participants attended the evaluation meetings across all site, 5 of them are female (Table 3.1). All except one was an alumnus of an MTG course that were held in March to May 2014. There was a participant of FGD at Malleleng village identified as a non-MTG participant, but he learned the topics given in MTG through the other farmers that attended the MTG course. The highest rate of participation of MTG participants in the evaluation meeting was at Pati where 18 out of 20 MTG alumni attended the discussion. The lowest rate of participation was at the Wanagama meeting which was attended by about half of the MTG participants. In this case invitations to focus group discussions were only sent to these half MTG participants.

The participation rate was also high in Benjala where almost 100 percent of the farmers or tree growers who attended the MTG course came to the FGD. The other MTG participants in this village were identified as field extension agents, other government and village staff, and even the head of Bulukumba Forestry Office, and they were interviewed separately. Data presented in Table highlight that 62 out of 64 FGD participants are tree growers or farmers while 2 of them were a village leader and a government staff.

Table 3.1. The Participants Attended the Focus Group Discussion for the MTG Evaluation for Each MTG Site 2016

<table>
<thead>
<tr>
<th>MTG Sites</th>
<th>Gender*</th>
<th>Job**</th>
<th>Total</th>
<th>Average land size (ha)</th>
<th>Average number of trees</th>
<th>Dominant tree species</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pati</td>
<td>16</td>
<td>2</td>
<td>18</td>
<td>0</td>
<td>0</td>
<td>18 0.44 260</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sengon</td>
</tr>
<tr>
<td>Dengok</td>
<td>11</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>12 0.79 572</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Teak</td>
</tr>
<tr>
<td>Wanagama</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>9 0.96 431</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Teak, Acacia</td>
</tr>
<tr>
<td>Benjala</td>
<td>11</td>
<td>2</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>13 0.62 69</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gamelina, local teak &amp;bitti</td>
</tr>
<tr>
<td>Melleleng</td>
<td>12</td>
<td>0</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>12 0.71 176</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gamelina, teak &amp; mahoni</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>5</td>
<td>62</td>
<td>1</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

Remarks: *1: Male, 2: Female; **1: Farmer, 2: Field Extension Agent, 3: Others

According to the data provided by the FGD participants, the average land size for tree plantation varies among the study sites but is less than one hectare. The largest landholder was a participant from Jepitu found who is managing a 5 ha land – due to his position as a village staff (managing “bengkok land” as type of compensation to his service).
3.2. The Effectiveness of MTG Courses

Following the logic and TOP Models that were applied to this project evaluation, the effectiveness of the Master Tree Grower Courses as an alternative learning model for smallholders could be measured not only from the changes of participants’ knowledge, attitudes, skills and aspiration (KASA), but also from the changes in MTG participants’ practices as the results of their participation in the courses. The critical analysis to the project documents (especially the MTG course report written by Reid, R., Syafii, S., et al., 2014), Focus Group Discussions, in-depth interviews with MTG course participants/local government staff at the project sites (Pati, Gunungkidul, Bulukumba), and field observation found that MTG courses have promoted not only effective learning (improved knowledge and skills, and changed attitudes and aspirations) but also effective in changing participants’ practices. This evaluation study found that the local government at Pati and Bulukumba have to some extent adopted the MTG approach as they did another 4 to 5 MTG courses after the one they did in 2014 during the period. In Bulukumba, the government has allocated its budget for the MTG course for 2017. Changes in tree and farm management practices have also been identified in other farmers who did not attend the MTG course but learned from the MTG participants. Details of these findings are presented in the following sections.

3.2.1. Facilitating Smallholders’ Learning

Learning through training meaning to improve peoples’ knowledge, skills, and attitudes (Kirkpatrick, 1998) or to improve peoples’ knowledge, attitudes, skills, and aspiration which is known as KASA2 (Rock-well & Bennett, 2004).

This evaluation reconfirmed the effective roles of MTG courses to promote tree growers’ learning where they improve their knowledge, attitudes, skills, and aspirations on tree and farm management (Reid, R., Syafii, S., et.al., 2014). Reid, R., Syafii, S., et.al. (2014) highlights that the MTG courses have promoted learning for the MTG participants on the topic such as “Pruning and thinning” and “Harvesting and marketing timber”. About 47% of the course participants (total MTG participants was 105) also claimed that they have improved their knowledge on “Measurement of trees and logs”, and about 88% participants stated that they got better knowledge and even much better knowledge on “Market opportunities for tree products”.

MTG course was perceived as a very valuable to most of the course participants, not only for them, but also for other farmers in the groups and communities. These responses reflect and justify the relevance of the course contents to their problems and needs. Most participants were willing to apply their knowledge and skills to their own farms and willing to share their experiences (knowledge and skills to other farmers).

Reid, R., Syafii, S., et.al. (2014) also highlights participants’ perceptions of the most significant experiences or lessons gained from the MTG courses where “management skills and knowledge” is the most significant learning experiences. The participants perceived that learning “Tree and forest growth, silvicultural options (pruning, thinning, etc.), Examples of farmers applying silvicultural methods” is a significant experience. This very positive perception is in-line with the participants’ very positive perceptions of the importance of the course instruments such as measurement tape and pruning gauge.

Consistent with these findings (Reid, R, Syafii, S., et al, 2014), the FGD participants attending the discussion during this evaluation was asked “what did you learn from the MTG courses in 2014?” In response to this questions, the FGD participants at all sites stated that they learned about tree and farm management, measurement, and marketing – Table 3.2.

---

2 Behavioral Level 5 KASA: Changes in Knowledge, Attitudes, Skills, and Aspiration. Level 7 End Results: Impacts on long-term goals or conditions; Level 6 Practice change; Level 4 Reaction; Level 3 Participation; Level 2 Activities and Level 1 Inputs: Resources dedicated to the program.
Table 3.2. Learning as Results of MTG Courses by Sites

<table>
<thead>
<tr>
<th>MTG Sites</th>
<th>Learning topics</th>
<th>Market</th>
<th>Preparation</th>
<th>Farm and tree management</th>
<th>Others (liquid smoke, mushroom cultivation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Diametre</td>
<td>Heigh</td>
<td>Volume</td>
<td>Pruning</td>
</tr>
<tr>
<td>Pati</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Gunungkidul</td>
<td></td>
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<td>Dengok</td>
<td></td>
<td>✓</td>
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<tr>
<td>Wonagama</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bulukumba</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Benjala</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Malleleng</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Notes: *In Wanagama, the participants also learned subjects on land preparation, seed and seedling, planting, fertilising, and maintenance.
** In Malleleng the MTG participants also learned about tree species to grow in response to market demand, pest and diseases, and roles of farmer groups - (the farmers or tree growers have established a tree grower forum and network (hipki and fkhr – forum koordinasi hutan rakyat).

3.2.2. Changing Smallholders’ Practices - Adoption

*Changes in practices* (silvicultural and marketing practices): Field visit to the project sites in Pati, Gunungkidul, and Bulukumba found a consistent result of the MTG courses where almost all MTG course participants claimed to have implemented some or parts of knowledge and skills gained from the course (96.88%) – Table 3.3.

Table 3.3. Distribution of FGD Participants Who Implemented Knowledge and Skills Learned from MTG Courses by Sites

<table>
<thead>
<tr>
<th>Adoption</th>
<th>Distribution of MTG Participants who implement the knowledge &amp; skills gain from MTG Course</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pati</td>
</tr>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>(1) Yes</td>
<td>8</td>
</tr>
<tr>
<td>(2) No</td>
<td>2</td>
</tr>
<tr>
<td>(3) Some</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>

Notes: Those whom response “Yes” and “Some” are re-categorised into “adoption” category.

Data presented in Table 3.3 reveal that only 2 out of 64 MTG course alumni interviewed in this evaluation studies claimed to not be implementing the lessons learned from the courses. Both were from Pati. However, a field visit and observation to one of these “non-adopting farmers” confirmed that he has small and young trees where the knowledge and skills such as pruning and thinning were not required as it is not the right time to implement these practices. He said that the MTG had strengthened his knowledge and skills.
Figure 3.1. Proportion of MTG Participants Implemented the Knowledge and Skills

Further investigation of those whom claimed to have adopted practices learnt during the MTG course found that 90.63% of the MTG course participants had undertaken pruning. Knowledge and skills on timber measurement and marketing seems to be the MTG course
topics with limited application at the time of this study where 35.94% and 17.19% MTG course participants measuring tree diameter and doing market/price investigation (Table 3.4). This may be due to the fact that the farmers’ trees are still young and not ready for sale. Farmers in Pati do not measure their timber volume due to the “tebas system” – the task of the traders to cut, carry and count the timber volume. Measuring diameter is the common practice done by those tree growers who claimed for doing tree measurement.
Interesting results were found at Benjala and Malleleng where the tree growers have become stronger in dealing with the timber traders. Timber measurement knowledge and skills gained from the MTG course have enriched farmers’ knowledge and skills in estimating their timber volume and as results they did bargain with the local traders. Some farmers at Malleleng harvested their trees and undertook simple processing before selling the squared logs to traders for higher return (and not the stand or the log – the cases of Mappiwali and Rusa, and claimed by Rasyid as the village timber trader). Pak Masjidi as a forestry extension agent of Ujung Loe said farmers’ bargaining power is getting stronger due to their knowledge and skills gained from the MTG courses.

**Intensity of doing pruning and thinning:** Further investigation on the extent of pruning and thinning found that about 25 percent of tree growers had pruned and thinned their whole plantation (Table 3.5). The rest of the MTG participants did partial pruning that range between 0 to the less than 100%. About 52% MTG participants did pruning less than 50% of their total trees/farm land.

Data given by the MTG alumni who did not do 100% pruning reveal six reasons for not completing the pruning. The most common reasons were too physically “weak” or lacked the suitable family labour and that the trees are not so closely spaced. The tree growers also said that their trees too tall to prune (e.g. case of Pak Amir at Malleleng).

### Table 3.4. Distribution of FGD Participants according to Their Adoption Behaviour at the Study Sites (FGD Results)

<table>
<thead>
<tr>
<th>Knowledge &amp; skills gained from MTG Course</th>
<th>Pati (n:18)</th>
<th>Dengok (n:12)</th>
<th>Wanagama (n:9)</th>
<th>Benjala (n:13)</th>
<th>Malleleng (n:12)</th>
<th>Total (n:64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruning</td>
<td>16 88.89</td>
<td>9 100</td>
<td>2 22.22</td>
<td>9 69.23</td>
<td>12 100</td>
<td>58 90.63</td>
</tr>
<tr>
<td>Thinning</td>
<td>1 5.56</td>
<td>7 58.33</td>
<td>1 7.69</td>
<td>5 41.67</td>
<td>7 12</td>
<td>25 39.06</td>
</tr>
<tr>
<td>Measurement - volume</td>
<td>3* 16.67</td>
<td>12* 100</td>
<td>2* 22.22</td>
<td>1 7.69</td>
<td>5 41.67</td>
<td>23 35.94</td>
</tr>
<tr>
<td>Marketing</td>
<td>0 0.00</td>
<td>0 0</td>
<td>4 30.77</td>
<td>7 58.33</td>
<td>11 17.19</td>
<td></td>
</tr>
</tbody>
</table>

Remark: *Just measuring the tree diameter

### Table 3.5. Distribution of FGD Participants according to the Proportion of Farm/Trees Pruned for each the Study Sites (interview results)

<table>
<thead>
<tr>
<th>% Pruning from the total land/trees</th>
<th>MTG Sites</th>
<th>Pati</th>
<th>Dengok</th>
<th>Wanagama</th>
<th>Benjala</th>
<th>Malleleng</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>100%</td>
<td>7</td>
<td>53.85</td>
<td>1</td>
<td>10.00</td>
<td>6</td>
<td>66.67</td>
<td>0</td>
</tr>
<tr>
<td>&gt;50%</td>
<td>2</td>
<td>15.38</td>
<td>2</td>
<td>20.00</td>
<td>0</td>
<td>0.00</td>
<td>5</td>
</tr>
<tr>
<td>25-50%</td>
<td>3</td>
<td>23.08</td>
<td>4</td>
<td>40.00</td>
<td>2</td>
<td>22.22</td>
<td>5</td>
</tr>
<tr>
<td>&lt;25%</td>
<td>1</td>
<td>7.69</td>
<td>3</td>
<td>30.00</td>
<td>1</td>
<td>11.11</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>100</td>
<td>10</td>
<td>100</td>
<td>9</td>
<td>100.0</td>
<td>12</td>
</tr>
</tbody>
</table>
Table 3.6. Distribution of FGD Participants according to Their Reasons for not Doing 100% Pruning at Their Farms

<table>
<thead>
<tr>
<th>Reasons for not doing 100% pruning at their farm</th>
<th>MTG Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pati</td>
</tr>
<tr>
<td>(1) Lack of physical ability (weak)</td>
<td>n</td>
</tr>
<tr>
<td>(2) Too many trees</td>
<td>2</td>
</tr>
<tr>
<td>(3) No budget</td>
<td>3</td>
</tr>
<tr>
<td>(4) No so dense the tree population</td>
<td>1</td>
</tr>
<tr>
<td>(5) It is not the right time</td>
<td>0</td>
</tr>
<tr>
<td>(6) Others – tree has been so height, etc.</td>
<td>0</td>
</tr>
</tbody>
</table>

Field visits and observations found that the farms or tree gardens with small size could be managed well compared to large farms, and even become more difficult to implement the knowledge and skills for the stepping, rocky and hilly land/farms – see the following images.

![Easier to get 100% pruning at the flat farms (Suardi’s Farm at Malleleng)](image1)

![Difficult to get 100% pruning & thinning on a steep farm (Asimsuddin’s Farm at Malleleng)](image2)

![Difficult to get 100% pruning & thinning at rocky farms (Syahrudin and Herman’s Farms at Benjala)](image3)

Figure 3.3. Flat and Stepping and Rocky Farms at Malleleng

**Reasons for not adopting other knowledge and skills:** Data presented in Table 3.4 revels only few tree growers used the knowledge and skills such thinning (Pati and Wanagama), measurement and markets (Pati, Wanagama and Benjala). The summary of some reasons for not adopting their other knowledge and skills is presented in Table 3.7. Some factors were mentioned to justify not adopting the knowledge and skills gained from the MTG course such as measurement and markets, few of these are the collector will do the measurement, the trees are still young and no planning to sell them, and forgot how to do the measurement.
Table 3.7. Reasons for not Adopting Knowledge and Skills (Thinning, Measurement & Markets)

<table>
<thead>
<tr>
<th>Sites</th>
<th>Thinning or less than 100%</th>
<th>Measurements/Market survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pati:</td>
<td>• The trees no so dense, It is not the time to do it - Belum waktunya, Could not do it by my self or weak, and Not enough budget</td>
<td>• “Buyer will do the measurement as we use tebasan system. Doing it ourselves even get lost” (Notes: Need attention in the future MTG course)</td>
</tr>
<tr>
<td>Dengok:</td>
<td>• Trees still young, planting distance is OK, no one look after the farm, and not to “lost” or “eman-eman”</td>
<td>• Trees still young and it is not time to sell them (so no need to measure the volume)</td>
</tr>
<tr>
<td>Wanagama:</td>
<td>• It is not the time for thinning; the trees was planted in a good planting distance – 3x4m; eman-eman or not to lost; not have power or labour; and no attention (just planted and left it) – only 2 participants did thinning.</td>
<td>• All FGD participants claimed that they have not done volume measurement as their teak trees still young and no plan to sell them. Pak Samto for example, his trees just about 4 to 5 years old and it is not the time to sell them. They just use the “meter tape” to know the tree diameter and to know the trees growth and development – “Mbah Baji proud of having the “meter tape”</td>
</tr>
</tbody>
</table>
| Benjala & Malleleng: | • Husband is working in Malaysia  
• The tree still young to do pruning and or thinning | • It is not the right time to sell the trees  
• Forgot about the way to count the volume and estimate the height |

3.2.3. Results of the Changes in Practices

As a result of the implementation of knowledge and skills gained from the MTG courses, the FGD participants at all sites claimed better performance of their farms, not only in terms of being “good looking”, but also regards the trees growth and development. Their trees are growing faster and bigger. Moreover, the pruning and thinning provide fodder, firewood, and organic matters to the farmers – Table 3.8. to Table 3.11. At Dengok Village, in addition to these results, the FGD participants stated that because of thinning and pruning they have enough space to grow crops and medicinal plants under the trees, however the marketing of these products becomes the future concerns.
The tree performance looks better – in terms of growth and development, producing fodder and firewood, and the tree leaf could be used as organic fertiliser as it is returned to the soil – there is an organic fertiliser production machine at the farmer group of Payak village.

As thinning is done to cut the “stunted” trees (kerdil), “bengkok”, and to cut the bigger trees for cash. Cutting the bigger trees will allow other trees around them get more sun expose and reduce the nutrient competition.

Not so successful to control the pest (ulat kantong) due to the tree conditions – too high and difficult to do spraying, and the chemicals seem not to be working. The types of pest infected the trees such as “penggerek batang”, “ulat kantong” (difficult to control), ulat hijo (easier to control). Those sengon trees which occupied by “semut rang-rang” seem to be free from ulat kantong and it could be considered as its “natural enemy”.

Due to the “tebas system”, farmers believe to the local traders/buyers. Selling to “buyer” or bakul and letting them count the total volume may get better results compared if we do our selves – one FGD participant claimed that he did count himself and transport the timber himself and got a lost due to the responsibility to cover all the costs such as cutting and transportation costs – Sunoko. Using measurement tape just to know the diameter

No results, no activity to produce “cuka arang” or asap cair. There is no action plan to produce it, and there is only one machine given to the group, it is now placed at Sunoko’s house.

Similarly, the participants at Wanagama FGD claimed that their trees were performing better after pruning and thinning. The trees grow faster, straighter, and the tree diameter expands. The farm performance looks better and it’s now allowing them to grow crops under the trees.

Table 3.8. Participants’ Perceptions of Farm Performance due to the Adoption of Knowledge and Skills Gained from MTG Course – Pati, Central Java

<table>
<thead>
<tr>
<th>The topics</th>
<th>Results of the implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruning</td>
<td>The tree performance looks better – in terms of growth and development, producing fodder and</td>
</tr>
<tr>
<td></td>
<td>firewood, and the tree leaf could be used as organic fertiliser as it is returned to the</td>
</tr>
<tr>
<td></td>
<td>soil – there is an organic fertiliser production machine at the farmer group of Payak village.</td>
</tr>
<tr>
<td>Thinning</td>
<td>As thinning is done to cut the “stunted” trees (kerdil), “bengkok”, and to cut the bigger</td>
</tr>
<tr>
<td></td>
<td>trees for cash. Cutting the bigger trees will allow other trees around them get more sun</td>
</tr>
<tr>
<td></td>
<td>expose and reduce the nutrient competition.</td>
</tr>
<tr>
<td>Pest and diseases management</td>
<td>Not so successful to control the pest (ulat kantong) due to the tree conditions – too high</td>
</tr>
<tr>
<td></td>
<td>and difficult to do spraying, and the chemicals seem not to be working. The types of pest</td>
</tr>
<tr>
<td></td>
<td>infected the trees such as “penggerek batang”, “ulat kantong” (difficult to control), ulat</td>
</tr>
<tr>
<td></td>
<td>hijo (easier to control). Those sengon trees which occupied by “semut rang-rang” seem to</td>
</tr>
<tr>
<td></td>
<td>be free from ulat kantong and it could be considered as its “natural enemy”.</td>
</tr>
<tr>
<td>Measurement (tree height and diameter)</td>
<td>Due to the “tebas system”, farmers believe to the local traders/buyers. Selling to “buyer”</td>
</tr>
<tr>
<td></td>
<td>or bakul and letting them count the total volume may get better results compared if we do</td>
</tr>
<tr>
<td></td>
<td>our selves – one FGD participant claimed that he did count himself and transport the</td>
</tr>
<tr>
<td></td>
<td>timber himself and got a lost due to the responsibility to cover all the costs such as</td>
</tr>
<tr>
<td></td>
<td>cutting and transportation costs – Sunoko. Using measurement tape just to know the diameter</td>
</tr>
<tr>
<td>Cuka arang</td>
<td>No results, no activity to produce “cuka arang” or asap cair. There is no action plan to</td>
</tr>
<tr>
<td></td>
<td>produce it, and there is only one machine given to the group, it is now placed at Sunoko’s</td>
</tr>
<tr>
<td></td>
<td>house.</td>
</tr>
</tbody>
</table>

Table 3.9. Participants’ Perceptions of Farm Performance due to the Adoption of Knowledge and Skills Gained from MTG Course – Katongan and Jepitu, Central Java

<table>
<thead>
<tr>
<th>Changes in practices</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruning</td>
<td>• Growing faster; the stem straight and bigger; good looking farms – see</td>
</tr>
<tr>
<td></td>
<td>the following images (Samta and Tulus)</td>
</tr>
<tr>
<td></td>
<td>• Becomes possible to grow crops</td>
</tr>
<tr>
<td></td>
<td>• The pruning and thinning waste could be used as firewood and crafting</td>
</tr>
<tr>
<td></td>
<td>products (create employment). At Katongan Village for example, there are</td>
</tr>
<tr>
<td></td>
<td>2 villagers involved in using the waste to produce handy craft such as</td>
</tr>
<tr>
<td></td>
<td>miniatures of bicycle and motorcycles – see the following images! They</td>
</tr>
<tr>
<td></td>
<td>produce handy craft such as key ring, miniatures of car, Hardley</td>
</tr>
<tr>
<td></td>
<td>Davidson, motorcyle, and others (Pak SUTARI and Katongan participants</td>
</tr>
<tr>
<td></td>
<td>explained and accompanied the Team to the crafter at Katongan). The</td>
</tr>
<tr>
<td></td>
<td>pruning technique adopted by the participants is cutting the branches</td>
</tr>
<tr>
<td></td>
<td>close to the main stem and this way the recovery time is so quick. Jabon</td>
</tr>
<tr>
<td></td>
<td>is not pruned due to its nature to drop its branches.</td>
</tr>
<tr>
<td>Thinning</td>
<td>• Thinning should be done to move the stunted, poor performing and 'not</td>
</tr>
<tr>
<td></td>
<td>straight’ trees. Only 2 out of 9 participants claimed to do this. Pak</td>
</tr>
<tr>
<td></td>
<td>Samto for example has not practicing thinning due to the fact that from</td>
</tr>
<tr>
<td></td>
<td>the beginning he planted the teak in a proper distance (about 3m x 4m).</td>
</tr>
<tr>
<td></td>
<td>However, there was a debate among the FGD participants in that “whether</td>
</tr>
<tr>
<td></td>
<td>cutting the old and bigger trees as thinning practice?” To Pak Suharto it</td>
</tr>
<tr>
<td></td>
<td>is a thinning while to “Mbah Baji” it is harvesting due to cash needed.</td>
</tr>
<tr>
<td></td>
<td>Cutting the big trees also allow the surrounding trees to get light and</td>
</tr>
<tr>
<td></td>
<td>reduce the nutrient competition.</td>
</tr>
<tr>
<td></td>
<td>• It is not the time for thinning; the trees were planted in a good</td>
</tr>
<tr>
<td></td>
<td>planting distance – 3x4m; eman-eman or not to lost; not have power or</td>
</tr>
<tr>
<td></td>
<td>labour; and no attention (just planted and left it)</td>
</tr>
<tr>
<td></td>
<td>• Mbah Baji from Jepitu said that for Acacia, farmers did not do anything</td>
</tr>
<tr>
<td></td>
<td>such as thinning. They just let the tree growing and left all trees due</td>
</tr>
<tr>
<td></td>
<td>to the fact no one planting it, and some trees within the colony will</td>
</tr>
<tr>
<td></td>
<td>grow bigger than the others.</td>
</tr>
</tbody>
</table>
Similar results were also identified in Benjala and Malleleng villages where farmers stated that the farms and tree performance are getting better. In addition to this, in these villages the farmers getting better prices for their timbers. Farmers even found that selling processed timbers provided better results compared to the selling of logs – Table 3.10.

Table 3.10. Participants’ Perceptions of Farm Performance due to the Adoption of Knowledge and Skills Gained from MTG Course – Benjala, Bulukumba.

<table>
<thead>
<tr>
<th>Changes in practices</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruning (9)</td>
<td>The tree performance better, growing fast, good looking, the space is now open</td>
</tr>
<tr>
<td>Thinning (6)</td>
<td>The tree develops well and fast, diameter increase, good looking, can grow crops such as banana, tumeric, and chilli – such as found at Pak Abdul Basyir’s farms</td>
</tr>
<tr>
<td>Measurement and marketing (4)</td>
<td>Got good price, sold in form of processed timber</td>
</tr>
</tbody>
</table>

A Malleleng timber trader stated that due to better farmers’ understanding of timber volume and price, he could not easily get timbers from farmers – Table 3.11. A supporting statement was also given by the field extension agent from Ujung Loe who stated that tree growers’ bargaining position was stronger than before the MTG courses. Malleleng farmers such as Mappiwali and Russa explained that they sold their trees in form of processed timber.

Table 3.11. Participants’ Perceptions of Farm Performance due to the Adoption of Knowledge and Skills Gained from MTG Course – Malleleng, Bulukumba.

<table>
<thead>
<tr>
<th>Changes in practices</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pruning (12) and or thinning (7)</td>
<td>Trees growing well and good performance; get additional income from the pruned branches – as farmers can sell them to batubara producers, and sell as firewood; due to pruning, farmers now can grow other crops such as gajah grass, chilli, pine apple, eggplant, ginger and banana; Timber quality better and meet market demand</td>
</tr>
<tr>
<td>Measurement (5)</td>
<td>The participant stated that the knowledge on measurement timber volume help him get more satisfaction. From a total of 50 units of local teak trees, he just tried to estimate the volume of 21 trees where he found the total volume is about 6 m³ (Abdul Rasyid as a local collector estimated 4 – 5 m³ as a net, because he should have spent extra for the cost of transportation)</td>
</tr>
<tr>
<td>Marketing (7)</td>
<td>Find out the timber prices and could bargain with the timber traders, such as happen to Rassu and Rasyid. Pak Rassu still waiting for the good price for his trees</td>
</tr>
<tr>
<td>Understanding tree species (1)</td>
<td>This one helped Abdul Rahim to get back his 2 ha land (digadaikan) to grow sengon trees as he found it would get a profit from the business</td>
</tr>
</tbody>
</table>

3.3. The Impacts of MTG Courses at the Local Level

3.3.1. Sharing of the MTG Experiences with Other Farmers

This study found that 74.60% of MTG participants have shared their knowledge and skills gained from the MTG courses with other farmers at their place such as to other farmer group members, relatives, family and friends while about 25.40% said they did not share the lessons learned at the MTG course – Table 3.12. These findings are consistent with their promised where most participants were willing to share their experiences (knowledge and skills) to other farmers.
Table 3.12. Distribution of FGD Participants according to Their Activity to Share the Knowledge and Skills with Other Farmers by Study Sites (Interview Results)

<table>
<thead>
<tr>
<th>Sharing the knowledge and skills</th>
<th>MTG Sites</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pati</td>
<td>Dengok</td>
<td>Wanagama</td>
<td>Benjala</td>
<td>Malleleng</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>(1) Sharing</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Sharing</td>
<td>14</td>
<td>82.35</td>
<td>11</td>
<td>91.67</td>
<td>9</td>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>Not sharing</td>
<td>3</td>
<td>17.65</td>
<td>1</td>
<td>8.33</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100</td>
<td>12</td>
<td>100.00</td>
<td>9</td>
<td>100</td>
<td>13</td>
</tr>
</tbody>
</table>

The MTG participants at Benjala village seem to be an exception. Most of the MTG participants (77%) have not shared their knowledge and skills with other farmers. A reason for this may be evidence by Herman's statement:

“I would share my knowledge and skills once I could show them I am success in producing timber such as teak and gamelina. At the moment, I have not come to that condition...I have tried to do extensive pruning and thinning, but seem difficult to get good performance of my trees.”

Field observation to Herman and Syahruddin's properties may support Herman's arguments where it seems so hard for him to get a good result from doing pruning and thinning. The rocky natures of Herman and Syahruddin properties could be a constraint to their farm performance. Even though the gamelina trees have been 10 years old, the stem size still small. At the other part of Herman’s property there are several gamelina trees with better performance and this has been likely due to the different land structure and fertility.
In response to the question “how many farmers did you talk to share the knowledge and skills you gained from the MTG course?”, the FGD participants at Pati, Dengok and Wanagama stated that they shared the knowledge and skills with the members of their reference groups with the groups’ size range between 25 to 50 members. They shared almost all topics learned from the MTG courses such as marketing, measurement, and tree and farm management (–Appendix 1). Sharing of the lessons learned from the MTG courses was also took places at the family and neighbour levels. These findings highlight the important of selecting the MTG participants from the farmer group representatives.

An exception was found at Benjala where only few MTG participants shared their knowledge and skills with few other farmers at their village. Lack of confidence seems to be one reason (among others) for this sharing behavior. One MTG participant stated that he would not share their knowledge and skills until he can prove his own success.

3.3.2. Significant Changes at the Tree Growers’ Social Economic Status

It is expected that the MTG course participants would improve their social economic status as results of their participation in MTG course and adopt the knowledge and skills gained from the course. They would also share their knowledge and skills to other tree growers at their places, and the other farmers then may improve their knowledge and skills that may lead to the changes of tree grower practices. Further impacts would be the changes in farm productivity and the changes of social, economic and environmental status of those farmers beyond the MTG participants.
This study found that out of the five focus group discussions conducted for this evaluation (Appendix 2), the results of the focus group discussion at Malleleng confirm for the significant changes at the tree growers’ social economic status. **The first significant changes** at Malleleng claimed by the FGD participants that *farmers now getting stronger bargaining position* due to their better understanding about the value of their timbers. Four FGD participants in Malleleng such as Pak Rasyid, Pak Russa, Pak Mappiwal, and Pak Rakham claimed that they will bargain with the traders and they will sell the timber in a good price. Pak Russa and Pak Mappiwal just sold their sengon trees in form of *balok* (processed timber). They search the price and then deal with the prospective timber traders. To Pak Rasyid as a timber trader/collector, it has been difficult for him to deal for a good price with Pak Russa due to Pak Russa’s knowledge on timber price and marketing. Pak Russa is now more aware of timber business. He just sold his 6 sengon trees in form of “Bantalan” (Balok) and got the gross revenue 6 million. There was 1.5 million for cutting and processing cost, and as result he got about 4.5 million IDR for his 6 units of sengon. Pak Masjidi (an extension agent from Ujung Loe who attended MTG in 2015) provided another supporting evidence where he get information from timber traders that farmers now are cleverer and understand the volume and the good price for their timber. It became difficult for them to get much profit from timber business.

**The second significant change** found at Malleleng was about farmers’ decision making to growing trees for commercial purposes. Due to his better understanding of timber price and business, one FGD participants decided to take back and manage his “gadai land” (2 ha) to be grown with sengon. He returned the other person money and was thinking of growing sengon in the property and expecting to get a profit from timber business in the next 3 years.

Participants of FGDs at Pati, Dengok, Wanagama, and Benjala found **no significant changes** in their social economic status due to their adoption of knowledge and skills gained from the MTG courses (Appendix 2). The FGD participants at Pati stated that growing sengon has been done since 1985. Same farmers have even growing sengon at their properties for 3 times (2016 – 1985) and even more. Farmers have experiences in selling their trees to the village collectors, the local traders, and to the processors. Similar responses given by the FGD participants at Dengok and Benjala where they have not found the most significant changes to their social economic status due to the adoption of new knowledge and skills gained from the MTG courses. These findings could be understood as the participants stated:

“MTG course has not led to more substantial or significant changes to those participate in the MTG – since it just about 2 years since they attended the course. The reasons for this, because the trees are still young, and the farmers have not managed their trees properly or in an intensive manner”.

Even though the MTG courses have not produced significant changes on tree growers’ social and economic status, still the MTG courses were perceived very useful and promoted substantial changes in farmers’ management and marketing practices. A farmer at Jejitu (Pak Sukaja - particapated at MTG course conducted at Wanagama), a group leader and other farmers at Benjala making a substantial change to their properties after attending the MTG courses - Appendix 2.

### 3.3.3. Changes of Other Tree Growers’ Practices

Data collected from this study confirmed that MTG courses have had impacts on other tree growers in the communities. The MTG participants at Wanagama and Malleleng stated there were some other farmers following them in tree and farm management. These farmers did pruning and thinning. Field visits to the tree farms of these MTG participants also confirmed for this type of MTG impacts on other farmers – see the case of Samta’s Farm (Katongan Village at Gunungkidul) and Suardi’s Farm (non-participant of MTG in Malleleng at
Bulukumba). Two farmers around Samta's Farm in Katongan Village followed him in pruning their teak trees. In case of Suardi, he heard and learned about tree and farm management from Asemsuddin, the group leader and the MTG participant in Melleleng.

<table>
<thead>
<tr>
<th>Samta in his farm at Katongan Village (an MTG participant carried out in Wanagama)</th>
<th>Samta did Pruning and Thinning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearby Farmers such as Pak Ngadio and Sugiman (Non MTG participants) Followed Samta’s Practices (Right hand side of Samta’s farm)</td>
<td>A Nearby Farmer – Tukirno (Non MTG participants) did not Follow Samta’s Practices (Left hand side of Samta’s farm)</td>
</tr>
</tbody>
</table>
3.3.4. Changes of Other Tree Growers’ Social Economic and Environmental Aspects

Further changes on the other farmers’ social, economic and environmental status could not be identified well through this evaluation study, however field observations of those who followed the practices such as pruning could provide supporting evidence that the environmental performance of their farms has improved.

In case of Suardi, a non MTG participant at Malleleng, the good performance of his farm has attracted others to visit and do some research activities in his property.

Figure 3.6. Social Net Work Changes at a Non-MTG Participant
3.4. The Impacts of MTG Initiative on Local Extension Systems

3.4.1. MTG Courses after the First CBCF Project

Interview with local partners and the staff of the district office of forestry services in Pati and Bulukumba found that at both sites they did several other MTG courses after the one conducted during the project. In Pati, there were 5 additional MTG courses done in four villages involving a total of 100 farmers.

“There were additional 5 MTG courses in Pati after the CBCF project that was conducted at Payak Village. The courses were supported by the local government. There were MTG courses conducted at Tanjung Sari village – Telogowungu subdistrict (right after MTG course), and other 4 villages namely Duren Sawit village- Kayen Subdistrict; Kelaka Kasian Village - Gembong Subdistrict; Prawoto Village – Sukolilo Subdistrict, and Cabak Village – Telogowungu Subdistrict, involving farmers and field extension agents – in total 100 participants, using MTG approach but in practice we use farmer field school (MTG seems too much theories). After the meeting with these groups, we followed them up” (Head of Section at Pati Forestry Office).

In Bulukumba, another additional MTG courses were carried out by the local office of Forestry in collaboration with Makassar FORDA. They involved about 100 tree growers, and some field extension agents. These MTG course were carried out in 2015 and 2016.

“The government has done several extra MTGs after the one did during the project. In 2015 in collaboration with FOERDIA the Forestry Office of Bulukumba did another MTG involving 140 participants from 7 subdistricts; in November 2016, the office did also another MTG course attended by 50 tree growers (25 from the MTG alumni & another 25 represent other tree growers). In 2017, the government has also allocated budget to do another MTG Course.” (Head of Forestry Office – Bulukumba).

This evaluation confirmed for the absence of other additional MTG courses in Gunungkidul as it was stated by the head and the staff of Gunungkidul Forestry Office. They seem to have limited knowledge of MTG activities and according to them, they know it just from the stakeholder workshop.

3.4.2. Adoption of MTG Approach by the Local Government

There is a substantial difference among the three sites where MTG course were conducted. MTG course has been adopted as the way to help tree growers in Bulukumba, and even after the one did during the project, the local government had conducted other two MTG courses involving many farmers – Table 3.1.

Table 3.13. Adoption of MTG Approach by the Local Government – Interview Results with Key Informant in Bulukumba

| The government and Bu Mishawati perceived that MTG could be a good approach to farmers or tree growers learning. It provides not only knowledge, but also skills! |
| We have done the MTG and now up to farmers to implement the skills and knowledge. We don’t want farmers to just leave their trees growing themselves but let them manage professional way! My concern is how this approach is adopted by the government, especially by the national government! With this, the local government can allocate budget to do MTG course. Future MTG should cover also NTFP to help farmer get immediate income. |
| There has been some evidence that rearing crops under the trees could provide additional income to smallholders. We need to work together with other agencies such the office of food crops, livestock (agrosilvopasture), and others. Strengthening farmers’ institutions is another topic to be covered where farmers can help each other. |
Possibility to promote FFM: In Bulukumba we have had champion farmers who help other farmers to improve their farming. They are such as Pk. Darwis (construct honey nest using cement – we never teach them), Pk. Amirudd (also honey production), Pk. Thamrin (Gula semut producer). These innovative and progressive farmers have performed their roles as voluntary extension agents. If we can name them as “mentors”, we are actually practicing “Farmer to Farmer Mentoring” (F2M).

While at Pati, the MTG course seems to be effective at the southern part of the district where farmers grow teak compared to the one in northern park – Table 3.14.

Table 3.14. Adoption of MTG Approach by the Local Government – Interview Results with Key Informant in Pati

Focus Group Discussion with field extension agents was conducted at T4T office (at Sumberejo Village) on 4th of November 2016, lasted from 09.00 to 11.30 am (Day 04: In-Depth Interview with MTG Facilitators & Observation). Pak Sugeng and Ibu Ani are the two field agents participated in MTG Course.

Perceptions of MTG Course?

(1) MTG course is a complement to the previous and the other interventions such as done by the forestry and plantation office, and T4T.

(2) It is quite different approach, especially the use of diameter tape. We don’t have this practical tool.

(3) It is very useful and relevant to the farmers or tree growers at Kayen Subdistrict (Southern part of Pati, about 17 km to the south), and less useful for farmers in Gunungwungkal Subdistrict. Farmers in Kayen have been characterised by commercial oriented and they concern with tree management and tree measurement (At the southern part of this subdistrict, the area is characterised by the up-land with private forest and dry land. It is also characterised by the lime hills where teak forest is found).

Any Other MTG Type Activity After the One Done by or During CBCF Project?

(1) There were other 5 MTG courses after the one done by CBCF. They were supported by the local government. The first one at Payak Village during the MTG project. Other 5 MTG like trainings were conducted at Tanjung Sari village – Telogowungu Subdistrict (right after MTG course), Duren Sawit Village – Kayen Subdistrik, Kelaka Kasian Village – Gembong Subdistrict, Prawoto Village – Sukolilo Subdistrict, and Cabak Village – Telogowungu Subdistrict, for farmers and field extension agents – the total 100 participants, using MTG approach.

(2) The content of the module “Materi Pelatihan Petani Kader RHL” have included the contents of the course during the MTG course – see figures.
This MTG concept is good, and I just understand Farmer Field School, and mostly about seedling and pest and diseases for plantation and not for forest, and after that they are concerned with the farm maintenance. In my training, we give them very short theories, and mostly we facilitated discussion.

What to Do to Improve the MTG Course in the Future?

(1) **THE PROCESS:** (1) Do more specific and actual Training Assessment – specific locality; (2) follow the local culture such as the best time to have the training. It is the culture of the local community to look after their goat in the afternoon; (3) do it in a more informal way – follow the adult learning principle including the way we arrange the seat; (4) please ensure that the participants are those key persons in the farmer tree grower groups – so they will have responsibility to share with the rest of the group members.

(2) **THE CONTENT:** The future MTG should cover the issues of (1) Seedling: sengon/teak variety where one of its characteristics should resist to pest and diseases, (2) Pest and Disease management and control – the existing issues of “ulat kantong” have demotivated farmers to grow sengon such as those claimed by Pak Katam, (3) Topic on tree grower institutions such as group should be included to support the roles of contact or key farmers in helping other farmers – Farmer to Farmers Mentoring.

At Gunungkidul however, the local government has not adopted the approach as they are not exposed closely to the MTG program so far. They just know the MTG from the workshop and have not adopted it as the way they work with farmers or tree growers.

### 3.4.3. Perceptions of Local Extension Agents of MTG Approach

Local extension agents at the MTG sites stated that MTG approach to farmer learning has to some extent supported their work to help farmers do better management for their trees and farms. Extension agents at Ujung Loe, a retired forestry staff at Bulukumba, and field agents at Pati confirmed for MTG advantages. Farmers in Malleleng have learned about tree measurement and marketing and, as a result, their bargaining position has been strengthened and the traders are no longer cheating them. Some farmers in this village even sold their trees in form of processed timber (the case of Rassu and Mappawali). The retired staff of Bulukumba claimed that due to his understanding of tree and farm management, he then decided to get back his rental land to be grown with sengon.

Field agents and the district forestry office of Pati claimed that the MTG lessons learned have been very useful for them at Kayen due to their commercial orientation in growing trees, the Southern part of Pati. These agents also used the MTG course contents to train the contact farmers in the program they called as "Pelatihan Kader RTL" (the Training for Contact Farmers for Land Rehabilitation).

> “I am happy with the MTG – the process and contents, and I found it is usefull.” (a male key informant from Pati).

MTG participants at Wanagama also stated that MTG initiative has strengthened the existing and the previous efforts in helping farmers or smallholders do better management for their trees and farming practices. There have been many agencies involved in helping tree growers in Gunungkidul such as shown in the following figure.
Figure 3.7. Other Stakeholders Working on HR and HTR in Gunungkidul

This figure shows more stakeholders involved in private forest or Hutan Rakyat (HR) and State Planted Forest or Hutan Tanaman Rakyat (HTR) at Katongan village (9 agencies/consortium) and at Jepitu village (5 agencies were involved). The Forestry Office (Dishutbun) and UGM are the two institutions that involved more in supporting the two villages. This information highlights that learning silviculture is not facilitated by a single agency but all by others. However, MTG Courses promoted in Wanagama bring something new, not only in terms of the tools/equipments such as “diameter tape” and “pruning gauge”, but also new techniques such as measuring tree height, and identifying trees to be cut (for thinning) – basal area. According to Rowan, pruning teak should be done up to a predetermined stem diameter (8 centimetres was proposed) with branches larger than 2.5cm occurring above that point also being removed. The other agencies promote a different way of making decision for pruning where they recommend to pruning all branches at the first 40% of the trees while leaving all branches at the 60% of the branches (upper part of the trees).

4. Discussion

4.1. MTG Course Effectiveness

Using the “Logic Model”, “TOP Model”, and “The Most Significant Changes” evaluation framework, it could be concluded that the MTG course has demonstrate it effectiveness. The course has facilitated tree growers learning (Outputs) as the study proved that the MTG participants improve their Knowledge, Attitudes, Skills, and Aspiration (KASA) which is also consistent with the findings reported by Reid and Saffii (2014). Further investigation done through this evaluation studies reveals that the MTG participants have implemented their knowledge and skills gained from the courses (96.88%) such as trees and farm management, measurement, and marketing. These changes are identified as short term outcomes in the logic model (Patton 1997) or the change in practices and identified as intermediate outcome in the TOP model (Rock-well & Bennett, 2004). Furthermore, this evaluation studies found that 90.63% of the MTG course participants had undertaken pruning. Knowledge and skills on timber measurement and marketing seems to be the MTG course topics with limited application at the time of this study where 35.94% and 17.19% MTG course participants measuring tree diameter and doing market/price investigation (Table 3.4).

Results of these changes (adoption or changes in practices) were identified through this studies where the tree growers perceived that the tree performance looks better – in terms of growth and development. Additional results of these changes the tree growers producing
fodder and firewood, and the tree leaf could be used as organic fertiliser as it is returned to the soil.

Following the concept of the “most significant change” (Davies & Dart 2005), this evaluation studies found that the most significant changes have taken place at Malleleng village where the MTG participants (4 farmers) now getting stronger bargaining position due to their better understanding about the value of their timbers. On the contrary, a timber trader/collector found difficult to deal for a good (lower) price with an MTG alumni due to his better knowledge on timber price and marketing. This tree grower is now more aware of timber business. An extension agent from Ujung Loe who attended MTG in 2015 provided another supporting evidence where he get information from timber traders that “farmers now are cleverer and understand the volume and the good price for their timber. It became difficult for them to get much profit from timber business”. If the adoption of the MTG concept by the local government and or field extension agents of Pati and Bulukumba is identified as the further impacts of MTG courses, then it could be concluded that the MTG course and initiative has demonstrated its effectiveness. The MTG course has helped to promote further changes, not only at the level of outputs, but up to the outcomes and impacts (Patton 1997; Rock-well & Bennett, 2004; Davies & Dart 2005). Figure 4.1 illustrates these chains of changes due to MTG course and initiative.

Changes in farmers’ practices do not guarantee for changes in their trees and farm performance such as those found at Sahruddin and Herman’s Gamelina farms. They did pruning, and even an intensive thinning, but they found no much changes to the farm and tree performance. Observation and in-depth interviews done through this evaluation studies found the rocky characteristics of the farms with limited top soil have been the constraints to promote timber production. It was also discussed by the Task 1 Team (Van de Fliert, Elske, 2013) where “Water availability is limited” and “Soil is dry and rocky” were identified as the environmental/natural capital that limiting rural livelihoods in Bulukumba.
Other factors such as time and livelihood asset characteristics may have some impacts on these chains of changes. The MTG courses were conducted about mid 2014 and this evaluation was carried out in November to December 2016, and this short period of time would be not enough to see the significant changes, especially in the social and economic performance due to the timber production and revenues. The case of getting stronger bargaining position may to some extent influence tree growers’ economic status, especially to those farmers who have ready to sell trees. Field observation to some MTG participants found that they have some young trees that not allow them to do pruning and thinning.

4.2. The Strengths and Limitations of the MTG Course

The evaluation results presented in this document are consistent with the evaluation results done by Muktasam (2015) for the MTG course in Sumbawa where farmers who attended the MTG course had changed their knowledge, skills, attitudes, aspiration and practices. The evaluation studies carried out for MTG course at Pati, Gunungkidul and Bulukumba again have demonstrated and highlighted the strengths of MTG approach in promoting smallholder effective learning – as presented and discussed above. These findings reemphasize the strengths of MTG courses as an approach to smallholder learning that was reported by Muktasam (2015) - Table 4.1. These strengths could be reorganised into following points:

(1) Master TreeGrower course was developed, designed and implemented through a participatory process: At the development and the design stage, the MTG course was developed and designed with the local partners and stakeholders. The Task 4 Project Team in CBCF 1 (focused on the development of an effective ‘learning approach’ for farmer forest groups) "was worked closely with local partners to conduct a 'skills and knowledge' appraisal of all the farmer forest groups" and "work with relevant local training providers to design an improved ‘learning’ approach" (Reid and Saffii, 2014). Identification of constraints and opportunities to support CBCF (done by Task 1 Project Team) used in designing and developing the MTG course was done through participatory approach (Van de Fliert, Elske, 2013). The use of terms and activities such as discussion and reflection, brainstorming, and other forms of farmer involvement during the MTG course reflect and indicate the participatory approach of MTG courses. These types of participatory process are in line with the concepts of “Farmers First” (Chambers, 1983) and “Whose Reality is Count” (Chambers, 1994). The participatory approach is not only critical to create a sense of belonging to the program and activities, but it is also important to respect farmers’ experiences, develop commitment and responsibility as part of empowering farmers or smallholders.

(2) MTG course use market first approach. Visiting timber processing industries/companies in the first or the second day of the course reflecting the important of farmers' decision making in promoting community-base commercial forestry. Farmers' decisions on trees and farm management should be based on the market expectations, information, and demand (timber species, quality, price, and time). Visiting timber processing industries is also critical to develop smallholders’ understanding and attitudes toward trees and farm management practices. They can be convinced for the link between timber quality and the way they manage the trees and farms. Poor trees and farm management lead to lower timber quality, lower price, and lower income.

(3) The MTG courses addressing participants' lack of awareness and knowledge, unfavourable attitudes, perceptions, skills, aspirations and practices. MTG learning process is taking place in the class as well as in the farms and timber processing industries. Participants learned from resource persons, field observation and discussions, and doing real things such as pruning and thinning, and measurement. Combining classical presentations, field observation and doing real thing is an ideal
approach to change peoples' knowledge, attitudes, skills, aspiration and practice. As it is pointed out and discussed by Muktasam (2015), the process and approaches use in MTG course are consistent with Edgar Dale's Cone of Learning Experience. Peoples tend to learn more when they see, and they do the real things (Edgar Dale, 1969). Facilitating participants “to do themselves” for the topics on “measurement” and “management” is an effective way to promote effective learning, improving skills and help to accelerate the adoption (Muktasam, A., 2010). Maximum learning outcomes would occur when all senses are involved in the learning process. This approach is also consistent with Roger's concept of “Innovation Decision Making” (Rogers, 1995) where people tend to adopt such innovations that are delivering relative advantages (relative advantages), compatible to their situations (compatibility), simple/less complex (complexity), could be observed (observability) and tested (triability).

(4) Effective selection of MTG course participants was a critical step in MTG course. This study found that the participants did share their knowledge and skills with other farmers in their respective groups, and even with other family and community members at their village. As results, these non-MTG participants changed their knowledge, attitudes, skills, aspiration and practices.

(5) Conducting MTG course at the local, village and close to farmers' places is another strength of the MTG course (the case of Pati, Dengok, Benjala and Malleleng). Farmers prefer to stay close to their place and farms as they do have farming activities such as feeng their animals such as goat and cattle. When they are away from home and their business, there are at risks and and disturb their learning concentration. Adults learning principles gives a direction "Farmers learn well at their more comfortable places".

(6) Working closely with local authority and government is another strengths of the MTG course. This approach has been proved in Pati and Bulukumba where the local governments have not only provided strong supports to the project, but also adopted the MTG learning approach to help their smallholders and communities. This approach has helped in addressing issues of sustainability of the project impacts.

Table 4.1. The Strengths of MTG Course Approach to Smallholder Learning

<table>
<thead>
<tr>
<th>The strengths</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>(1) MTG course was developed and implemented through a participatory process</td>
<td>The use of terms such as “Reflection and Discussion”, brainstorming techniques in “Identify problems and expectations” session reflect the participatory approach of MTG courses. The structure of the courses is in line with the adult learning principles where for example in the first day the facilitators asked for the participants’ expectations for their participation in the training. This study reconfirmed that the approach has strengthened the participants that the training is designed to meet the participants' needs and expectations.</td>
</tr>
<tr>
<td>(2) The MTG courses addressing participants' lack of awareness and knowledge, unfavourable attitudes, perceptions, skills, aspirations and practices</td>
<td>MTG learning process is taking place in the class as well as in the farms and timber processing industries. Participants learned from resource persons, field observation and discussion, and doing riil things such as pruning and thinning, and measurement.</td>
</tr>
<tr>
<td>(3) The combination of both classical and field visit/activities</td>
<td>It is an ideal approach to change knowledge, attitudes, skills, aspiration and practice</td>
</tr>
<tr>
<td>(4) Visiting timber processing industries/companies in the early days of the course</td>
<td>It is an effective approach to let the participants understand the customers’ expectations such as on timber species, quality, prices, time, etc – market first approach</td>
</tr>
<tr>
<td>(5) Effective selection of participants for the course are critical steps in MTG design and delivery – group leaders</td>
<td>MTG participants were involved in the previous research activities, key farmers from their groups or communities, and were able to share their lessons learned from MTG to other farmers in their respective groups</td>
</tr>
<tr>
<td>(6) The choose of places where the MTG courses is another positive point of MTG</td>
<td>Especially in Pati, Dengok and Bulukumba where the MTG course took place at the village level.</td>
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Visits and discussions with the key informants at all CBCF project sites (Pati, Gunungkidul, and Bulukumba) confirmed the positive perceptions of the local governments to the MTG courses and approaches. All key informants in these sites perceived that MTG is an innovative approach to tree growers’ learning, and the MTG courses should have followed-up plans & actions.

Similar positive responses and perceptions were given by the key informants from Pati and Bulukumba. They all perceived that MTG course is an innovative approach to farmers and tree growers’ learning. These positive responses and perceptions are proven by the facts that they did several other MTG courses after the project with the support of the local government budgets. They said they have adopted the contents and or the approaches in the MTG course.

Even though there is some strength that supports the effectiveness of the MTG course, there are also some critics or limitations of the MTG courses conducted in the CBCF phase 1 such as the following:

1. An extension agent perceived that MTG course was too formal which maybe due to the room or seat arrangement or the way they were implemented – used of power point presentation for several subjects continously during the day. There is a continuum of formality level between “Training of Trainers” and “Training of Farmers” where the first one is more formal than the later one.

2. The MTG courses were also criticised for the issues of “too old participants” especially at Dengok Village (3 participants attended the FGD retired from teacher, PT. Perhutani, and Trade and Industry Office). Two field agents who attended the MTG course had already retired, and older peoples are weak enough to do hard work such as pruning and thinning. The case of MTG course at Dengok where most farmers were too old, may explain for the constraints of MTG course to have significant impacts on plantation and tree management. No information on population age structure in Task 1 Report (Van de Fliert, Elske, 2013), but in-depth interview with FGD participants found that young villagers tend to work outside the village as migrant workers – to Jakarta and other cities.

3. Limited time was allocated for the discussion session.

4. The MTG courses at the 3 sites (Pati, Gunungkidul and Bulukumba) pay limited attention to the importance of establishing or organising “The Masters” into a group of MTG alumni. According to the key informants at Gunungkidul, the MTG alumni should be organised into a group of “silvicultural expertise” or “CBCF facilitators” or “MTG groups & network”. For these reasons MTG participants should be selected properly, for example, they should be young and energetic, have a good leadership skills, they should be from tree grower groups or informal leaders. They should also have a teak plantation, have potential to share with others.

5. Limited collaboration with local forestry office (in case of Gunungkidul) has led to the limited effect of MTG course to the local policies and programs, but not for Pati and Bulukumba.

6. The absence of MTG follow-up activities led to the issues of difficulties to know the progress and to monitor the change of participants’ practices.

4.3. Future MTG Courses and the Challenges

Even though the MTG Courses have had promoted effective learning for the tree growers participated in the courses, this evaluation studies identify MTG participants’ perceptions of
the future MTG courses as they are presented and summarised in Appendix 3. The table reveals the following common suggestions for the future MTG courses:

1. **Keep the existing process or approach**
2. Keep the existing contents, but go in-depth! Add contents on teak pest and diseases addressing issues on “penyakit penggerek batang” or locally called as “Olan-olan”, effective use of space under the trees for Non Timber Forest Products (suggested by Gunungkidul and Bulukumba farmers)
3. Repeat the subject on measurement (tree volume and height, Basal Area and decision on which trees to cut out in thinning).
4. Have follow-up activities after the completion of the course
5. Establish “Demonstration Plot” or “Teaching Farms”
6. Topics on tree species - seedling
7. Include a subject on tree grower groups and associations
8. Provide supports in document such as modules or other reading materials.

In line with the suggestions provided by the FGD participants, the key informants interviewed in this study also provided some suggestions to improve the future MTG course such as the following:

**The process:** (1) Do more specific and actual Training Assessment – specific locality; (2) Follow the local culture such as the best time to have the training. It is the culture of the local community to look after their goat in the afternoon; (3) Do it in a more informal way – follow the adult learning principle including the way we arrange the seat. Avoid lecturing farmers as a key informant stated “...the MTG course at Wanagama was too formal, too much theories and very short in the field. Our practice...one subject followed by practice”; (4) Please be ensure that the participants are those key persons in the farmer tree grower groups – so they will have responsibility to share with the rest of the group members. Key informants from Gunungkidul suggested that MTG participants should be selected properly, for example, they should be young and energetic, have good leadership skills, they should be from tree grower groups or informal leaders. They should also have teak plantation, have potential to share with others.

**The contents:** The future MTG should cover the issues of (1) Seedling - sengon/teak variety where one of its characteristics should resist to pest and diseases; (2) Pest and Disease management and control – the existing issues of ulat kantong (Mahasena corbetti) have demotivated farmers to grow sengon such as those claimed by Pak Katam; (3) Topic on tree grower institutions such as group should be included to support the roles of contact or key farmers in helping other farmers – Farmer to Farmers Mentoring; (4) Future MTG should also cover NTFP to help farmers get immediate income”.

More specific suggestions given by the key informants are presented in Appendix 4.

Learning from the 3 sites, another critical factor for the success of MTG course is the involvement of local government. The future MTG course should work closely with local government, especially the forestry office. This approach will help the adoption of MTG approach by the local government, and MTG course sustainability.
MTG course new design: On the basis of the MTG course evaluation results, suggestions and the critics, the following table summarised the modified MGT course contents and process (MTG course new design).

### Table 4.2. Suggestions for Future MTG Course

<table>
<thead>
<tr>
<th>Suggestions from this study</th>
<th>The MTG Future Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Keep the existing process or approach; do it in a more informal way</td>
<td>Process and approach in delivering the topics such as visit to timber processing industry, field visit &amp; practices on the farms, short theoretical session and more discussion, participatory process during the sessions (discussion and reflection). These processes reflect the use of effective adult learning principles such as “seeing is believing and learning by doing – direct experiences”</td>
</tr>
<tr>
<td>2. MTG participants should be selected properly, they should be young, energetic, have good leadership skills, from tree grower groups or informal leaders. They should have teak plantation, have potential to share with others.</td>
<td>Knowledge and skills gain from the MTG course would not only be used for them selves, but also shared with other farmers</td>
</tr>
<tr>
<td>3. Keep the existing contents, but go in-depth; Add contents on teak pest and diseases addressing issues on “penyakit penggerek batang” or locally called as “Olan-olan”; effective use of space under the trees for Non Timber Forest Products; include also topics on tree species – seedling; a subject on tree grower groups and associations; do more specific training need assessment</td>
<td>• The existing topics given in MTG course are “mastering the art of tree growing, markets, measurement, management, and farm visits, graduation and the future”. More time is needed to deliver the topics, especially the topic on measurement (refer to suggestion no.3). &lt;br&gt; • Including other topics on pest and diseases for teak and sengon, NTFP, tree species and seedling, farmer groups/institutions</td>
</tr>
<tr>
<td>4. Repeat the subject on measurement (tree volume and height)</td>
<td>Allocate more time for this topic and or think about the process effectiveness!</td>
</tr>
<tr>
<td>5. Have follow-up activities after the completion of the course</td>
<td>Monitoring the changes and get participants feedbacks during the course, or doing the course at the village level where the participants can come and return to their place at the same day and implementing the knowledge and skills straight away</td>
</tr>
<tr>
<td>6. Establish “Demonstration Plot” or “Teaching Farms”</td>
<td>Identify the successful or model farms and use these to show participants the best practices (help demonstration the results and the processes)</td>
</tr>
<tr>
<td>7. Provide supports in documents such as modules or other reading materials.</td>
<td>Prepare documents as reading and supporting materials</td>
</tr>
<tr>
<td>8. Working closely with local government, especially the forestry office</td>
<td>Future MTG courses should be discussed with and involved local government (the Forestry Office)</td>
</tr>
</tbody>
</table>

**Days and Contents**

<table>
<thead>
<tr>
<th>Day 1: Mastering the art of tree growing</th>
<th>Process and approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Importance of farmer decision-making and appropriate design.</td>
<td>• Combining class session and farm visit (farms for the visit should be selected based on the learning objectives. These could be “best” and “bad” silvicultural practices.</td>
</tr>
<tr>
<td>• Identification of ‘farmer’ problems and aspirations (short, medium, long term).</td>
<td>• Seating arrangement should be arranged in a way to reduce the level of formality (there will be different level of formality between TOT and training for farmers)</td>
</tr>
<tr>
<td>• The role and prospects of CBCF in the region.</td>
<td>• Less formal opening</td>
</tr>
<tr>
<td>Day 2: Markets</td>
<td>• Power Point presentations should not be wordy</td>
</tr>
<tr>
<td>• Develop relationships between growers and those involved in timber and NTFP markets</td>
<td>• Class session and industry visits (the visit should be prepared and organised well in advance; learning objective should be communicated with the industry and resource persons)</td>
</tr>
<tr>
<td>• Product specifications, marketing options, regulations etc.</td>
<td>• Industry visits should be the first option if the budget is available; if not (limited budget), the industry persons would be invited to the course to share their knowledge and experiences, but should bring their “supporting aids” to demonstrate the timber quality demanded by the industry.</td>
</tr>
<tr>
<td>• Processing and marketing visits.</td>
<td></td>
</tr>
<tr>
<td>• Secondary and on-farm markets for</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Forest products.</td>
<td>Class session and farm work/practices</td>
</tr>
<tr>
<td>Tree and stand assessment relative to product specifications and landholder needs and aspirations (tapes).</td>
<td>Everyone should have the opportunity to practice tree measurement techniques.</td>
</tr>
<tr>
<td>Documenting forest growth for timber, carbon and other values.</td>
<td>Avoid using too technical terms and or translate all the English terms into more understandable terms</td>
</tr>
<tr>
<td>Class session and farm work/practices</td>
<td>Need more time and or the right methods of delivering the subjects</td>
</tr>
<tr>
<td></td>
<td>Keep the original subjects, but add “volume table”</td>
</tr>
</tbody>
</table>

### General suggestions to the MTG course process:
- Do more specific and actual Training Need Assessment to identify appropriate local presenters, content, industry visits and field sites – specific locality using participatory approaches such as focus group discussion.
- The venue should be close to the participant places.
- Follow the local culture in terms of activity schedule, and not to force participants to follow outsiders’ ideas and plan. Facilitate an agreement on the best time (days, hours) to do the course. Open to options such as doing MTG course in 5 consecutive days or 5 days but not in consecutive days (e.g. once a week or other options) – follow “Farmer first approach” (Chambers, R, Pacey, A and Thrupp, L.A., 1989) or “Rural Development: Putting the last first” (Chambers, 1983) or “Whose realities counts: Putting the first last” (Chambers, 1997) or “Putting people first: Sociological variables in rural development” (Cernea, 1991).
- Avoid formal types of class presentation – lecturing, seating lay out.
- Allow more time for discussion.
- Let everyone try all proposed practices - both during the course (eventhough they are more convenience to work in group, but give more time to let everyone trying) and back home (as the course is carried out at their place that make them easier to practice on their farms or trees, and then they may report in the next day.
- Have and develop follow-up activities – during (every day during the course) and after the course completed.

There are some challenges for future MTG course such as the following:

1) The existing dynamic of extension organisations and the structural changes of forestry organisations due to the implementation of UU No. 23 Tahun 2014 where according to this Act., forest management should be managed by the provincial and the national government (“Pasal 14, (1) Penyelenggaraan Urusan Pemerintahan bidang kehutanan, kelautan, serta energi dan sumberdaya mineral dibagi antara Pemerintah Pusat dan Daerah provinsi”). To this challenge, it is relevant to consider the suggestion given by the head of forestry office of Bulukumba that the national government should take a leading role in promoting the replication or the implementation of MTG approach using such as Ministerial Decree.

2) The old extension paradigm hold by the local government and field extension agents such as “transfer of technology”, “government-lead extension”, and “extension should provide direct income to government domestic regional income” may hinder the wide adoption of the MTG approach as an alternative learning model.
(3) Project-based approach and failed to adopt the best practices/resistant to change. There have been many interventions promoted to improve the extension system such as those promoted by the World Bank through DAFEP and FEATI (where farmers managed local extension activities – FMA), but the fact reveal that the participatory extension approaches promoted through these programs have not been adopted and used as an extension approach.

(4) The new type of Indonesian democracy where the change of government at the district level followed by the change of top leaders at the technical offices, including the head of forestry office – this sometimes led to in-effective investment in capacity building and policy changes. Lack of internalization and organisational learning lead to the issues of discontinuity and knowledge gap.

(5) There is a need to think about supplying "the measurement tape" and "the mechanical chainsaw" that are not available at the local level. There is a need to work together with the Australian TreeGrowers to fulfil these needs.

4.4. Farmers to Farmers Mentoring

This evaluation studies highlight the compatibility of the existing local practices with the concept of Farmer to Farmer Mentoring (FFM). At Pati – Central Java it was identified that the extension agents used the MTG course to train the contact farmers in the program they called as "Pelatihan Kader RTL" (the Training for Contact Farmers for Land Rehabilitation) with an expectation that these contact farmers to share the knowledge and skills with other farmers. In Gunungkidul, this evaluation studies found the concept of “Voluntary Extension for Community Forestry” or “Penyuluh Swadaya Kehutanan Masyarakat” (PSKM) where farmers are expected to help other farmers’ learning which is actually in line with the FFM concept. In Bulukumba, this study found the concept of champion farmers who help other farmers to improve their farming.

On the basis of these findings, the following steps are needed to formally introduce a more systematic and effective farmers to farmers learning or farmer to farmer mentoring (FFM):

(1) Develop a standard manual for FFM
(2) Identify potential farmers to be the mentors
(3) Trainings of Trainers on FFM - running a series of trainings for the mentors and develop action plan. Inviting Australian mentors from Otway Agroforestry Network (OAN) – Victoria could be an option to support this FFM trainings
(4) Mentoring the action-plan
(5) Evaluation of the FFM effectiveness

5. Conclusions and Recommendations

5.1. Conclusions

A pilot of the Master TreeGrower (MTG) training courses has been an effective learning approach to smallholders. The MTG participants learned knowledge and skills on markets, measurement, and trees and farm management.

The MTG courses have not only facilitated smallholders’ learning but also promoted smallholders’ change in farm management and marketing practices. Data collected through this evaluation studies consistently confirm changes in farmers’ practices, especially in doing pruning. Almost all MTG participants claimed for the implementation of the new pruning
techniques learned through MTG courses. However, due to various reasons, some of these tree growers have only pruned a proportion of their trees, and only about 26% did 100% pruning on their farm (out of 54 MTG participants attending the FGD for this evaluation). The rest of those implemented pruning technique were distributed within the range less than 25% and between 25% to the less than 100% pruning. Various factors associated with these levels of pruning such as the farm size, the number of trees, the tree age, farmers’ physical condition, and the availability of cash and human labour.

The MTG course effectiveness has been due to its strengths such as the use of participatory process in course development and implementation; market first approach; the course not only addresses issues on participants’ lack of awareness and knowledge, unfavourable attitudes, perceptions, and aspirations, but also participants’ skills and practices; the learning process takes place in class as well as on farms and timber processing industries. Participants learned from resource persons, field observation and discussions, and by doing real things such as pruning and thinning, and measurement. Combining classical presentations, field observation and doing real things is ideal; The effective selection of MTG course participants whom represents their farmer groups and the communities; the courses were conducted at the local or village level close to where participants live or farm; and Working closely with local authority and government is another critical point to get strong support for the MTG course implementation and impacts.

This evaluation also found that the MTG courses have promoted learning in other smallholders as the MTG participants did share their knowledge and skills with other farmers within their groups as well as their family members and friends at their communities. These non-MTG farmers have also changed their tree and farm management practices.

MTG Course has, to some extent, been adopted by the local government of Pati and Bulukumba. In Pati, they have another 5 activities similar to MTG course and using the MTG contents and approaches – Pelatihan Kader RHL or “A Training for Contact Farmers for Land and Forest Rehabilitation. In Bulukumba, the local government led by the Head of Forestry Office conducted another 5 MTG courses supported by local government budget and involving 100 farmers and field agents.

There is a possibility and good chance to promote Farmers to Farmers Mentoring (FFM) in Pati, Bulukumba and Gunungkidul. In Bulukumba there have been champion farmers who helping other farmers to improve their farming. They are such as Pk. Darwis (construct honey nest using cement – we never teach them said the Head of Forestry Office), Pk Amiruddin (also honey production), Pk Thamrin (Palm sugar producer). These innovative & progressive farmers have performed their roles as voluntary extension agents. "If we can name them as ‘mentors’, we are actually practicing Farmers to Farmers Mentoring (FFM) – said this key informant. Similarly, in Pati the extension agents trained contact farmers to help other farmers through the program called as “the Training for Contact Farmers for Land and Forest Rehabilitation” (Pelatihan Kader RHL). A key informant in the Forestry Office of Gunungkidul perceived that the FFM is similar to the concept of "Voluntary Extension Agents for Community Forest" or "Penyuluh Swadaya Kehutanan Masyarakat" (PSKM). The MTG course should take into account this approach. Therefore, for the future MTG course, the participants should be the representatives of PKSM, field extension agents, farmer groups, etc.

These positive results of MTG courses have been the results of the participatory approaches to the content development and implementation, learning by doing and market first approaches – as they are presented in the MTG course strengths.

5.2. Recommendations – Future MTG Process and Contents

The future MTG courses should consider the following points:
(1) Keep the existing process and approach in delivering the topics such as visit to timber processing industry, field visit & practices on the farms, short theoretical session and more discussion, participatory process during the sessions (discussion and reflection), and do it in a more informal way.

(2) MTG participants should be selected properly, they should be young, energetic, have good leadership skills, from tree grower groups or informal leaders. They should have teak plantation, have potential to share with others.

(3) Keep the existing contents, but go in-depth; Add contents on teak pest and diseases in addressing issues on “penyakit penggerek batang” or locally called as “Olan-olan”; Effective use of space under the trees for Non Timber Forest Products; Include also topics on tree species – seedling; a subject on tree grower groups and associations; do more specific training need assessment.

(4) Repeat the subject on measurement - More time is needed to deliver the topics, especially the topic on measurement.

(5) Have follow-up activities after the completion of the course. Monitoring the changes and get participants feedbacks during the course, or doing the course at the village level where the participants can come and return to their place at the same day and implementing the knowledge and skills straight away.

(1) Establish “Teaching Farms” by identifying the successful or model farms and use these to show participants the best practices (help demonstration the results and the processes).

(2) Provide supports in documents such as modules or other reading materials. Prepare documents as reading and supporting materials in advance.

(6) Working closely with local government, especially the forestry office.
References


## Appendices:

### Appendix 1: Sharing the Knowledge and Skills by the MTG Participants (FGD Results)

<table>
<thead>
<tr>
<th>Sites</th>
<th>MTG Participants who shared</th>
<th>To whom</th>
<th>Topics covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Pati</td>
<td>• Participant 1</td>
<td>25 group members</td>
<td>Tree maintenance and pest and diseases control</td>
</tr>
<tr>
<td></td>
<td>• Participant 2</td>
<td>5-10 neighbours/relatives</td>
<td>Pruning</td>
</tr>
<tr>
<td></td>
<td>• Participant 3</td>
<td>26 group members</td>
<td>All MTG topics</td>
</tr>
<tr>
<td></td>
<td>• Participant 4</td>
<td>45 group members (Amos is the head of Wana Lestari at Sidomulyo village)</td>
<td>All MTG topics</td>
</tr>
<tr>
<td></td>
<td>• Participant 5</td>
<td>30 group members</td>
<td>All MTG topics</td>
</tr>
<tr>
<td>(2) Dengok</td>
<td>Almost all FGD participants (except 1 participant) claimed they shared all the learning and experiences</td>
<td>30 group members - through monthly meeting at the residence level, Farmer Group and Farmer Cooperative – it is regularly carried out once a month</td>
<td>All MTG topics</td>
</tr>
<tr>
<td>(3) Wanagama</td>
<td>All FGD participants stated that they shared the knowledge, skills and experiences gained from MTG to other farmers and relatives</td>
<td>• At Jepitu village, the participants (Mbah Baji) – shared to more than 50 farmers – but not sure how many farmers followed and practicing the knowledge and skills</td>
<td>All learning topics</td>
</tr>
<tr>
<td></td>
<td>• Nearby farmers - At Katongan village</td>
<td></td>
<td>Topics on pruning and thinning</td>
</tr>
<tr>
<td>(4) Benjala</td>
<td>3 participants</td>
<td>9</td>
<td>Pruning</td>
</tr>
<tr>
<td></td>
<td>2 participants</td>
<td>7</td>
<td>Thinning</td>
</tr>
<tr>
<td></td>
<td>2 participants</td>
<td>7</td>
<td>Measurement – tree height and or diameter</td>
</tr>
<tr>
<td></td>
<td>2 participants</td>
<td>7</td>
<td>Marketing</td>
</tr>
<tr>
<td>(5) Malleleng</td>
<td>10</td>
<td>Sharing with other farmers within the groups; family and friends; neighbouring farmers; other groups in other villages.</td>
<td>Pruning</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Thinning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Tree species to grow</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2: Significant Changes Due to the Implementation of Knowledge and Skills

<table>
<thead>
<tr>
<th>MTG Sites</th>
<th>Significant changes at MTG and Non-MTG tree growers</th>
</tr>
</thead>
</table>
| (1) Pati  | - In both groups the participants claimed that there were no significant changes at the farmer’s level. They said that growing sengon has been done since 1985. Same farmers have even growing sengon at their properties for 3 times (2016 – 1985) and even more. Farmers have experiences in selling their trees (to the village collectors, the local traders, and to the processors).
- The new thing for them is the production of “Liquid Smoke” for wood preservative – but there are no activities after the MTG (MTG just gave them one processing tank and since then never been used. The training did not give any information on doing business for the liquid smoke).
| (2) Dengok| - In both groups the participants claimed that there were no significant changes at the farmers’ level. They said that the MTG COURSE has improved their knowledge and skills – “changes in their behaviours”
- The participants were not really sure whether the other farmers and their relatives have implemented and changed their practices that may lead to social and economic changes.
| (3) Wanagama | - Pruning method or technique was a new thing to MTG participants. Cutting branches close to the main stem has improved the tree performance, the stem recovery better. Before, it was recommended that the right pruning is not cutting the branches all! Left the first 5 cm branches, but it will produce new branches.
- Pak Sukaja cleaned his 0.5 ha land and replace all kinds and species of trees such as mahoni and others with Acacia auriculiformis
- He has planted 500 trees, and he plans to plant again 500 trees.
- To non-MTG participant at Nglipar village Nglipar sub-district, farmers did tree clearing at the property and replace with teak.
| (4) Benjala | - The FGD participants stated that the MTG course has not led to more substantial or significant changes to those participate in the MTG – since it just about 2 years since they attended the course.
- The reasons for this, because the trees still young, and the farmers have not managed their trees properly (in an intensive manner). From the field visit, it was found that only Pak Basyir have done more to his trees on the farm. He does implement the knowledge on pruning and thinning. Pak Basyir also growing crops at his tree farms such as maize, banana, and lada.
- To the MTG alumni, the subjects learned during the MTG course have been very useful for marketing practices, and to do the right pruning (they never did this before the MTG course).
- Before MTG course, the farmers claimed that farmers never got any training on farm and tree management.
- Farm and tree management before MTG is characterised as follows: Planting and then left the property.
- Clean the branches to get fodder for goat.
Back to their farms once they want to sell the trees!
No extension agent support for the knowledge on pruning and thinning.
Farmers cut their trees when they need for cash, and it is claimed as the thinning practice. Once the cut the bigger trees and then may lead the smallest to grow (misperception of thinning!).
Lack of farmer interest in managing their farm professionally.
Farmers pay no attention to trees/timber quality but the total units of the trees.

(5) Malleleng

The participants (including the field extension agent from Ujung Loe – Pak Masjidi, especially in the field of timber measurement – farmer’s knowledge on timber volume) claimed that farmers now getting stronger due to their understanding about the “value” of their timbers. Four FGD participants (Pak Rasyid, Pak Russa, Pak Mappiwali, Pak Rakhim) claimed that they will bargain with the traders and they will sell the timber in a good price. Pak Russa and Pak Mappiwali just sold their sengon trees in form of balok. They search the price and then deal with the prospective timber traders. To Pak Rasyid as a timber trader/collector, it has been difficult for him to deal a good price with Pak Russa due to Pak Russa’s knowledge on timber price and marketing. Pak Masjidi (an extension agent who attended MTG in 2015) also get information from timber traders that farmers now are cleverer and understand the volume and the good price for their timber. It became difficult for them to get much profit from timber business. THIS IS THE FIRST SIGNIFICANT CHANGE! Pak Russa is now more aware of timber business! He just sold his 6 sengon trees in form of “Bantalan” (Balok) and got the gross revenue 6 million. There was 1.5 million for cutting and processing cost, and as result he got about 4.5 million IDR for his 6 units of sengon!

The second significant change is also happening in the farmers’ decision. Due to his better understanding on timber price and business, Pak Rakhim decided to manage his “gadai land” (2 ha) to be grown with sengon. He returned the other person money and was thinking of growing sengon in the property and expect to get a profit from timber business in the next 3 years.

Pak Asri – due to the knowledge on thinning and pruning, the farm performance in now getting better. The recovery of stem is better than the previous practice – tree performance is better.

Not so much information on the significant changes in “non-MTG participants”. The only information from SUARDI, that he learned from MTG participants such as ASEMSUDDIN. As results, he did practicing the knowledge – that lead to his farm better performance. Due to this performance, Suardi’s farm was selected as research site by IPB Researchers – no clear identify of the researchers.
## Appendix 3: Perceptions for the Future MTG Courses by the FGD Participants

<table>
<thead>
<tr>
<th>MTG sites</th>
<th>Perceptions for the future MTG course</th>
</tr>
</thead>
</table>
| (1) Pati  | 1. MTG should **have follow-up activities** such as in producing and doing business on “cuka arang”, “pest and diseases control”, and “working and partnership with processing industries such as *Albasia* Bhumipala Persada (ABP), PT Bahana Bhumipala Persada (BBP), Dharma Satya Nusantara (PT.DSN) and T4T.  
2. To include **the information and topics of the tree species** – especially the seedling.  
3. The MTG process – the plan and implementation of MTG should **follow the local culture and agenda**. Do not run the training for the whole day due to other activities such as feeding the goat (from morning up to 12.30 for instance).  
4. Provides **supporting documents and learning materials** in form of book or modules – not to share the hand-out or copies of separated learning materials.  
5. **Topics on groups or tree grower association** (group management and dynamics). These farmers’ institutions could perform roles on capacity building and business. Two advantages of including this topic to the MTG, first to strengthen the MTG alumni in knowledge management (knowledge, attitudes and skills changes within and outside the groups) and second to help the participants in improving their knowledge and skills in working with groups – as part of facilitation skills. |
| (2) Dengok | 1. Keep the existing approaches. Theories in the morning, practices in the afternoon & visit to timber industry  
2. For the subject matter, keep the existing subject and go in-depth, add subjects on Teak Pest and Diseases, addressing issues on “penyakit pengerek batang” or locally called as “Olan-olan”.  
3. Farmer Institutions  
4. To include subjects on “effective use of space under the stem” by growing NTFPs.  
5. The participants of MTGs should be at a productive age (from Pak Taufiq – Gunungkidul Office of Forestry).  
6. Methods of applying fertilizers and farm maintenance (sistim pemupukan dan perawatan)  
7. Topics on carbon trading. |
| (3) Wanagama | 1. Have and establish a **demonstration plot** at the community/farmer level. The MTG alumni or the “Master” should be a role model in growing and managing the trees and plantation. It helps us in delivering and socialising the messages. This could be part of “**Farmer to Farmer Mentoring**”.  
2. The time for MTG activity should consider the local community’s culture and activities.  
3. MTG course could be broader – not only at the village level, but also at the district level  
4. Chose the strategic and close location and place – better access for the participants.  
5. Pest and disease management should be included – penyakit or hama or jamur pohon “olan-olan”  
6. Keep the existing contents  
7. Empowering **farmers’ institutions** |
| (4) Benjala | 1. Keep the existing approaches and process by combining theories and practices.  
2. Support MTG participants with equipment such as chainsaw to support farmers to do pruning.  
3. Repeat the subject on measurement (tree volume and height).  
4. Include the strategy how to increase young farmers’ interest to do best management practices for their tree farms.  
5. To include the topic on “Farmer Institutions” or the roles of farmer groups in the forest management.  
6. **Demonstration Plot** development – to show farmers how to perform better tree and farm management |
| (5) Malleleng | 1. The future MTG should keep the existing subjects. If it will involve the MTG alumni, a recharging or strengthening the subject is needed. Some alumni claimed for forget how to measure; has a different perception of the way to decide “which tree should be thinned?”  
2. Support MTG alumni with equipment such as “ladder” (*tangga*) and “pruning chainsaw” to make an easy pruning.  
3. Topics on NTFPs to be grown under the trees such as honey and medicinal plants.  
4. Issues on pesticide and its impacts.  
5. To include “Farmer or Tree Grower Institutions” such as groups and network. This is very important to develop “Farmer to Farmers Mentoring”. The group leaders could |
be good mentors for the group members. Ibu Mishawati said, in Bulukumba some success and innovative farmers (e.g. Pak Darwis who construct honey nest from cement, Pak Amiruddin who also specialised in Honey cultivation, and Pak Tamrin who produce “Gula semut” or brown sugar). These successful farmers have been promoted as “Resource Persons” to facilitate other farmers’ learning.

6. Have follow-up activities in every MTG course.
7. Put all subjects into a well binding document so farmers can keep and read the documents again after the MTG course.
8. Have a “Tree farm” model at the village level (Demonstration Plot)

Notes: Details of these suggestions are presented in the special report for each site – see Appendices.
### Appendix 4: Perceptions for the Future MTG Courses (Key Informant Interviews)

<table>
<thead>
<tr>
<th>Sites</th>
<th>Future MTG Courses</th>
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</table>
| (1) Pati (Results of the interview with field agents) | **The Process:** (1) Do more specific and actual Training Assessment – specific locality; (2) follow the local culture such as the best time to have the training. It is the culture of the local community to look after their goat in the afternoon; (3) do it in a more informal way – follow the adult learning principle including the way we arrange the seat; (4) please be sure that the participants are those key persons in the farmer tree grower groups – so they will have responsibility to share with the rest of the group members.  
**The Content:** The future MTG should cover the issues of (1) Seedling - sengon/teak variety where one of its characteristics should resist to pest and diseases, (2) Pest and Disease management and control – the existing issues of "ulat kantong" have demotivated farmers to grow sengon such as those claimed by Pak Katam, (3) Topic on tree grower institutions such as group should be included to support the roles of contact or key farmers in helping other farmers – Farmer to Farmers Mentoring. |
| (2) Gunungkidul | MTG alumni should be organised into a group of "silvicultural expertise" or "CBCF facilitators" or "MTG groups & network". For these reasons MTG participants should be selected properly, for example, they should be young and energetic, have good leadership skills, they should be from tree grower groups or informal leaders. They should also have teak plantation, have potential to share with others. The case of MTG course at Dengok where most farmers were too old, may explain for the constraints of MTG course to have significant impacts on plantation and tree management.  
In response to the future MTG course planned by the project and the possibility to promote "Farmers to Farmers Mentoring", the key informants perceived that the MTG approach seems to be matching well with the concept of “Penyuluh Swadaya Kehutanan Masyarakat” (PSKM). MTG should consider or take into account this approach which is actually in line with the F2M concept. The participants should be the representatives of PKSM, field extension agents, farmer groups, etc.  
The contents of MTG course could be extension methods, adult learning, facilitation skills and silvicultural knowledge and skills. The contents could also include technical knowledge on non-timber forest products (NTFPs) where in Gunungkidul there has been products such as honey and Bamboo. Honey culture is developed by Sugeng Afianto as one of PKSM with 2000 stups (honey nests). Bamboo will be the next to be supported, not only in the area of production, but also in processing and marketing.  
Some additional supports and actions are needed for the future MTG courses. For example, there is a need for diameter tape and to establish village demonstration plot to support the effective work of MTG alumni or the mentor or PKSM. This idea seems to be consistent with Farmer Field School approach. |
| (3) Bulukumba | *My concern is how this approach is adopted by the government, especially by the national government.* With this way, the local government can allocate budget to run the MTG courses at the local level. *Future MTG should also cover NTFP to help farmers get immediate income.*  
“There have been some evidences that growing crops under the trees could provide additional income to smallholders. *We need to work together with other agencies such the office of food crops, livestock (agrosilvopasture), and others. Strengthening farmers’ institutions is another topic that needs to be covered where farmers can help each other.*” |
Appendix 5: Images from Pati (Meeting at T4T, FGD, Farm Visits)

FGD with T4T Staff, 02 November 2016

Focus Group Discussion with MTG Participants at T4T Office – Sidomulyo Village, 03 November 2016
No thinning – Sengon trees were sold out and planted in a good distance (Pak Kayat, Sidomulyo Pati)

Infected sengon trees – ulat kantong attack & growing crops under the trees (Mazuki’s farm)
Appendix 6: Images from Gunungkidul – Dengok (FGD & Farm Visit)

FGD at Dengok, 09 November 2016
Visiting Sukimin, Sugeng & Sumardi’s Farms – They did it!

Trees pruned by Rowan at the Farmers’ Cooperative!
Visit to Farmers’ Cooperative – Wahana Manunggal Lestari - Dengok
Appendix 7: Images from Gunungkidul – Wanagama (FGD & Farm Visits)

FGD at Wanagama Gunungkidul, 10 November 2016

Muktasam and Rowan Reid  Page45
Visiting farms – They did pruning & thinning

The pruned trees at tree growers’ farm – Good recovery

Interviewing field extension agents and the Forestry Office Staff – Gunungkidul, 14 November 2016
Appendix 8: Images from Bulukumba –Benjala (FGD & Changes in Practices)

Focus Group Discussion at Benjala, 14th December 2016

Adoption of trees and farm management – Pak Basyir
Sudirman as MTG Alumni – partial adoption (do pruning and thinning in a part of his property)
Herman’s farm – no much changes even implemented the knowledge and skills – rocky farm land! Better performance of other gamelina trees at the other corner of Herman’s land – good top soil!
Appendix 9: Images from Bulukumba –Malleleng (FGD & Changes in Practices)

Focus Group Discussion at Malleleng, 16 November 2016

Suardi and his farm – non MTG participants, but learned from an MTG participant
Asemuddin and his farm – He share the knowledge and skills with Suardi

Mappiwali and Rusa – Have good knowledge on timber business and measurement! Getting stronger bargaining position due to the MTG course
Appendix 10: In-depth Interviews with MTG Alumni & Government
Appendix 11: In-depth Interview with Local Extension Agents – Pak Bandi (Malleleng)
Appendix 12: Key Questions for Focus Group Discussion

ARAHAN & PERTANYAAN KUNCI FGD

“Enhancing Community-based Commercial Forestry in Indonesia”
(Mendorong Perhutanan Komersial Berbasis Masyarakat Di Indonesia)


Sebelum kita berdiskusi, dimohon untuk mengisi “Lembar Identifikasi Perubahan Praktek” - dengan mencentang/melingkari kotak/jawaban yang disediakan.

Diskusi terarah sesuai pertanyaan kunci yang disediakan, dengan urutan pertanyaan sebagai berikut:


(2) Ilmu atau ketrampilan apa saja yang telah dipraktekkan?
   ● Pruning menggunakan pruning gauge:............................................orang
   ● Thinning:.............................................orang
   ● Menghitung volume kayu:..................................................orang
   ● Menghubungi usaha/industri pengolahan untuk menjual:......................orang
   ● Lainnya:..............................................................................orang

(3) Bagi yang telah mempraktekkan hal-hal tersebut, itu Bapak/Ibu lakukan pada seluruh luas kebun atau sebagian saja?
   ● Pruning:............................................%
   ● Thinning:.............................................%
   ● Menghitung volume kayu:................................................%
   ● Menghubungi usaha/industri pengolahan untuk menjual:........................%
   ● Lainnya:..............................................................................%

(4) Bagi yang belum menerapkan, apa saja alasannya?
   ● Pruning:............................................................................
   ● Thinning:...........................................................................
   ● Menghitung volume kayu:...............................................
   ● Menghubungi usaha/industri pengolahan untuk menjual:........................
   ● Lainnya:..............................................................................

(5) Diantara Bapak/Ibu, adakah yang telah menyampaikan ilmu dan pengalaman yang diperoleh pada MTG kepada petani lain di sekitar Bapak/Ibu – atau di dusun, desa lain?
   ● Ada/Tidak Ada
   ● Jika Ada, siapa dan pada berapa orang:............................................orang

(6) Jika mengingat kembali kegiatan MTG yang pernah dilakukan di tahun 2014, “Bagaimana seharusnya kegiatan MTG dilakukan, dan apa materi yang sebaiknya juga diberikan dalam kegiatan MTG?”.
   ● Saran-saran terhadap Proses pelaksanaan MTG:............................................
   ● Saran-saran terhadap Isi atau materi MTG:............................................

(7) Untuk mendukung proses belajar, apakah alat dan bahan yang diperlukan?
(8) Apa komentar Bapak/Ibu tentang kelebihan dan kekurangan dari pendekatan MTG sebagai pendekatan dalam proses belajar atau penyuluhan pada bidang kehutanan?
   ● Kelebihan dalam pendekatan MTG:............................................
   ● Kekurangan dalam pendekatan MTG:............................................

(9) Apakah Bapak/Ibu menjadi anggota kelompok petani kayu?
(10) Apakah Bapak/Ibu telah memfasilitasi proses belajar pada kelompok?
(11) Apakah ada diantar Bapak/Ibu yang pernah menjadi pelatih/narasumber pada pelatihan petani kayu?
(12) Terima kasih atas partisipasinya! Mohon di lembar isian dituliskan no. HP yang dapat kami hubungi dan terima kasih juga atas kerjasamanya.
Atas dasar hasil FGD, saya sudah bisa mengidentifikasi dan menyepakati “siapa yang akan saya kunjungi kebunnya” dan “siapa yang saya akan wawancara secara mendalam” - untuk dokumentasi “The Most Significant Changes”. Saya juga mau mendokumentasikan “Kebun Peserta MTG yang telah melakukan pruning, thinning dll.”

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Catatan Tambahan:

Appendix 13: Interview Guides for MTG Participants

**Enhancing community-based commercial forestry in Indonesia**

1. **IDENTITY**
   - Name: 
   - Address: 
   - Gender: 
   - Education: 
   - Age: 

2. **FARMING CHARACTERISTICS**
   - Farm size: 
   - Tree species and number: 
   - Farm status: 

3. **PARTICIPATION IN MTG COURSE – 2014**
   - Did you attend the MTG course? 
   - When? 
   - How many days did you attend? 

4. **PERCEPTIONS OF MGT COURSE EFFECTIVENESS**
   - What did you learn from the course? 
   - Have you put the lessons learned in your farming practices? 
   - If Yes, what are the results? 
   - If Not, why did you not use them? 

5. **PERCEPTIONS OF MTG COURSE PROCESS AND APPROACH**
   - What do you think about the way the course was delivered? 
   - What do you think about the subject? 
   - What do you think about the instructors? 
   - Could you provide some ideas how to improve the course? 

6. **CHANGES HAPPEN AFTER MTG COURSE**
   - Any changes to your farm practices after the course? 
   - If Yes, what are they? 
   - If Not, why? 
   - Did you share your MTG experiences with your farmer friends? 
   - Have they changed their farming practices? 
   - Any other changes happen to other farmers due to their observation to your practices? 

7. **PERCEPTIONS ON “THE FUTURE OF MTG COURSE”**
   - What thing is needed by you and other MTG alumni?
Do you think that getting in the group – such as MTG or The Master Group and network is needed? In your opinion, do you think the group could develop into a business unit?

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Appendix 14: Observation Guides (Farm visit and Observation)

**MTG Participants:**
Observe farming practices:

- Pruning? Process and results?
- Thinning? Process and results?
- Farm performance?

**MTG Non-participants:**
Observe farming practices:

- Pruning? Process and results?
- Thinning? Process and results?
- Farm performance?

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