

Master Trainers Guide for Sessions in Training of Trainers (ToT) in Farm Forestry



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DANISH FORESTRY EXTENSION



Master Trainers Guide for TOT Training

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Edited by Josipa Bicanic and Karsten Raae, DFE jointly with the master trainer team from NVCARD

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About Danish Forestry Extension

Danish Forestry Extension (DFE) works in partnership with local communities and local and international organisations to support the development of sustainable forest and natural resource management across the globe.

DFE is the international department of the Danish Forest Owners Associations, in Danish, *Skovdyrkerne*, which is owned and governed by small scale forest owners/farmers in Denmark. Skovdyrkerne have practiced extension work among Danish forest owners based on advocacy and participatory principles since 1904. Established in 1992, DFE's international engagement was prompted by the fall of the Soviet Union and the therewith associated denationalization of services. DFE was invited to the Baltic States to assist with the establishment of community based forest owners associations. The foundation of the forest owners associations in Latvia and Lithuania was to a very large degree facilitated by DFE. Eastern Europe, including Poland, Romania, Belarus, Estonia, and Russia, was a core geographic region for DFE in the 90s. Since then, our expertise has spread throughout the world and today spans over 30 countries in Europe, Africa, and Asia.

Facilitation of education and dissemination of information on responsible natural resource management is one of DFE's core competences. Thus, the organization has documented experience in formal as well as informal adaptable education from more than 20 countries in Europe, Asia, and Africa. In Poland, for example, DFE has facilitated the establishment of nature schools as well as developed a curriculum for civil servants appointed to undertake tasks in connection to NATURA 2000 issues. In Nepal, DFE has been working with its local partner on environmental education in schools. Here, one major achievement has been the successful collaboration with the Department of Education in developing local curricula in two districts of Nepal on the environment, nature, and conservation for students at the primary level.

DFE has also been involved in establishing farmer field schools and developing training materials for farm forestry in Vietnam and Mozambique. In Vietnam, this manual is one of the outputs. In addition, a new curriculum for training future agricultural advisors with a specialization in farm forestry was developed and has been adopted on a national level. In Nepal, India, and Mozambique local forest owner associations have been established, which have the objective of providing extension on responsible forest and natural resource management to forest users. In addition, several employees lecture at the forestry faculty of Copenhagen University, participate in the development of curricula, and hold representation in different committees at the Centre for Forest and Landscape (Center for Skov og Landskab).

Contacts:

Danish Forestry Extension

Amalievej 20
1875 Frederiksberg C
Denmark

www.df-extension.dk

<http://www.skovdyrkerne.dk/>

Tlf. +45 33 24 42 66

Fax. +45 33 24 18 44

E-mail: office@df-extension.dk

PREFACE

The manual was developed by a group of teachers from the North Vietnam College of Agriculture and Rural Development and experts from Danish Forestry Extension. The manual was used as training material for training 41 Farmer Field Facilitators, staff from the More Trees Project, and staff from the Farmers Unions in the Hoa Binh and Ha Tinh provinces. The training course took place from April to August 2011. After gaining experience from the training course, the manual was adjusted accordingly.

The manual was used by the Master Trainers (MTs) of Training of Trainers (ToT) on farm forestry. The Master Trainers have used the manual along with the Technical Guide on farm forestry establishment, which also was developed by the More Trees Project and the North Vietnam College of Agriculture and Rural Development during August 2011 with the purpose to conduct the ToT.

This guide is divided into 44 sessions where each session includes the following parts: Training objective, duration, materials, steps and master trainers' notes. The guide covers three topics: Facilitation skills, Agroforestry and Forestry.

Hanoi, September 2013

Editors Team

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PART A. FACILITATION SKILLS

Part A is divided into 16 sessions and is designed to equip facilitators with basic participatory training skills.

SESSION 1. LEARNER-CENTRED TRAINING

Objective

After the session, participants will be able to:

- Analyse the concept of learner-centred training.
- Define the benefits of learner-centred training.
- Define the steps of learner-centred training.

Duration

2.5 hours

Training Materials and Equipment:

- Some pictures of roots, stems, leaves, flowers and fruits of forest trees (acacia, eucalyptus).
- Projector, A4 paper, adhesive tape, felt pen, pen, and hand-outs.

Contents and Methodology

Contents	Methodology	Time (minutes)
Icebreaker and Warm-up Game	MTs guide and participants do	15
Name Introduction and objective of the session	Presentation	5
Concept of learner-centred training	What do you know about the learner-centred training?	10
Benefits of learner-centred training	Divide class into 5 groups to discuss: Please compare the 2 teaching approaches: learner-centred and teacher-centred. Make a comparison using the format: Objective Methodology Contents Participation	60
Steps to conduct the learner-centred training	Divide class into 5 groups to discuss: In your opinion, what should teachers do when applying the learner-centred training?	60

Master Trainers' Notes

Concept of the learner-centred training

The learner-centred training is putting the learner (setting aside their profession, age, position, etc.) in the highest position during the whole training process. All of the training activities aim to meet the learning demands of the participants and are designed, organised and carried out in a way to meet the participants' needs and interests.

Learner-centred training is a point of view and not a training method. The most important thing to consider is what the participants have learned after a session/training course? Are they satisfied with what they have gained from the class? Has the training been conducted in the best way for them?

When talking about the learner-centred training, we also consider opportunities to create strategies for participants to actively participate in the training and learning processes. The participants play an important role as the main information provider as well as being facilitators of their learning process.

The benefits of learner-centred training

To better understand the learner-centred training, please make a comparison between the two different training points of view:

Teacher-centred training	Learner-centred training
Training objective and contents chosen by trainers	Training objective and contents chosen on basis of the participants' needs
Training methodology guided by trainers' interest	Training methodology chosen according to the participants' ability to acquire knowledge as well as to each participant group
Training contents may or may not be relevant to the participants' needs	Training contents are relevant to the participants' needs
Participants do not apply the unrelated knowledge after learning	All knowledge gained from the training can be applied immediately to their jobs and life
Participants have limited interest in the session since the contents may not be relevant for them	Participants are very interested and motivated in the session as they can see it's very relevant for their jobs and life
It is difficult for trainers to encourage the participants' participation since they may not be interested in the chosen material	It is very easy for trainers to encourage the participants' participation

When applying the learner-centred training, the participants will:

- have more opportunities to participate in the training as the time the trainers speak is accounting for a low ratio of the total time of the session;
- feel respected and appreciated when they raise their voice and provide opinions;
- have the chance to work alone or in groups to solve interesting or difficult exercises;
- see the class as a place where they can exchange experiences and discuss deeply;
- understand the session better;

- feel that they themselves have the responsibility for their learning and learning progress; and
- gain practical skills to work in the fields or farms.

What the trainers should do to conduct a learner-centred training?

Assess the participants' training needs	<ul style="list-style-type: none"> • Use tools for a training needs assessment, e.g. meeting, questionnaire, interview, etc. • Synthesize training needs. • Analyse participants of each training course before it starts.
Select training contents that correspond to the needs identified	<ul style="list-style-type: none"> • Find out what the participants already know and not yet know about the training topic. • Identify the needed knowledge and skills to meet the participants' training needs.
Apply participatory training methodology	<ul style="list-style-type: none"> • Create room for the participants to participate. • Use real life situations that participants can discuss. • Design different dynamic exercises to help participants feel comfortable during the training. • Make simple questions which are realistic and easy to understand to stimulate the participants' creativity and learning.
Apply adult training principles	<ul style="list-style-type: none"> • Study participants' characteristics on age, hobby and capacity in order to design different activities suitable to each group of participants and each training course. • Give chances for participants to share their experiences.
Being a good trainer who is close to and understands the life of participants	<ul style="list-style-type: none"> • Share difficulties and help find solutions that participants find difficult to solve. • Always listen to and respect participants' opinions.

The application of participatory learner-centred training does not depend on available resources. The success of the session depends on good preparation and understanding of the training needs, the trust in the participants' ability, and the leading role of trainers.

The most important skill that trainers need when applying this training method is the ability to ask questions which enable the participants' reflection, give clear assignments, make conclusions concisely and to be insightful.

SESSION 2. STRUCTURED LEARNING EXPERIENCE

Objectives

After the session, participants will be able to:

- Analyse steps of the experiential learning cycle (experience, analyse, generalize into lessons learnt, apply).
- Apply the theory of structured learning experience in training for farmers.

Duration

3.5 hours

Training Materials and Equipment:

- Bag and soil to make seedling bag, tray, phosphorous.
- A4 paper, A0 paper, adhesive tape, felt pen, hand-outs.

Content and Methodology

Content	Methodology	Time (minutes)
Icebreaker and Warm-up Game	MTs guide and participants do	15
Name Introduction and objective of the session	Presentation	5
Theory of structured learning experience	Master trainer makes a forest seedling bag to serve as a model. Step 1: Make a standard seedling bag without explaining (experience) Step 2: Make a standard seedling bag and explaining how to do it (experience) Step 3: Participants recall the techniques of making seedling bag (analyse, generalize lesson learnt) Step 4+5: Participants practice doing it under the guidance of master trainers and supported by other participants (Application)	60
Apply theory of structured learning experience	Divide the class into 5 small groups for group work: Show the class a working process or operation. After the Master Trainer demonstrates the process, have the groups describe perform, and by that elaborate a description of a structured learning method.	60
Facilitate the design of a training session by using the structured learning experience method	Suggest to participants to recall the first session conducted by master trainers and then ask: In that session, which stage was experience, analysis, lesson learnt and application?	60
Lesson learnt	Master trainers and participants analyse again together the session process and agree on steps of the structured learning experience process	10

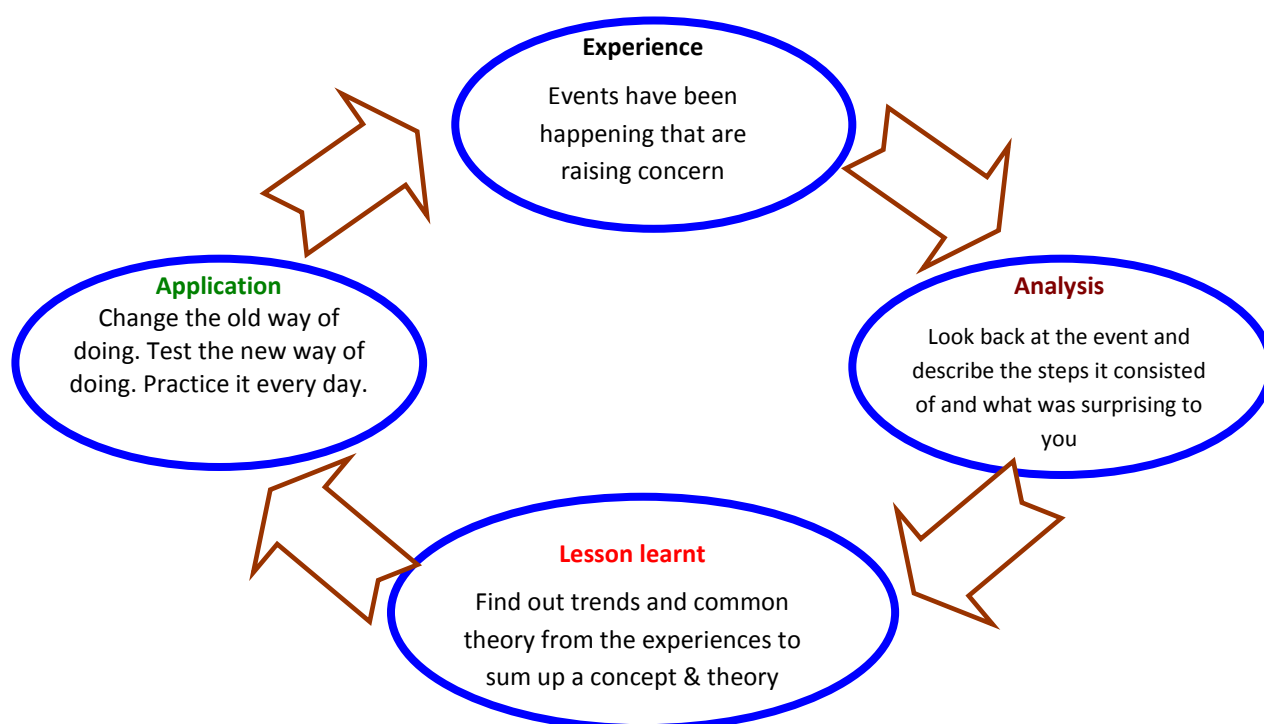
Master Trainers' Notes

Learning through experience is a natural learning process that happens to all of us. This process comes from work and phenomena that each person has experienced or is based on their own existing knowledge.

For instance: A farmer saw his neighbour producing Acacia seedlings by using the “cutting propagation” method with a very high survival rate, while his own family has experienced that many seedlings produced have died. When he goes to talk to the neighbour, he finds out that besides selecting good sprouts, having a sharp knife, applying correct techniques for cutting, he also applies fertilizer to stimulate new roots and after that, he treats the seedlings with Boocdo 1% against fungus. After learning that, he comes back and applies those same methods as the neighbour. From then on, he has been applying the same techniques and has succeeded with low costs and high profits.

In the above example, the four steps of the structured learning experience are reflected: experience-analysis-lesson learnt-application.

The above four steps can be illustrated as follows:



The process of learning through experience happens constantly. When applying the lessons learned, new issues will come up and this new experience has to be looked at and analysed in order to gain further lessons learned. As such, humans constantly improve their lifestyles and the way they are doing things.

Applying the structured learning experience into training for farmers

The structured learning experience is an interesting and effective way of learning. It enables the participants to feel more at ease and excited, especially adult participants. As a result, the theory of the structured learning experience has been used for designing and conducting farmers' training courses.

The participants of agricultural and forest extension training are almost all adult farmers. They have experienced a lot in their life and work. The task of the master trainers is to make training session become training activities relative to the steps of the experience cycle. The important thing is that the master trainers refer to this vast set of experiences gained by the participants and encourage them to come up with new ideas during the training. How to design a training session by using the theory of structured learning experience, please refer to “training design” in this manual.

SESSION 3. OBSERVATION SKILLS

Objective

After the session, participants will be able to:

- Analyse the importance of observation.
- Define what they should do and should not do while observing.
- Practice to observe during a training course.
- Deal with observed situations during a training course.

Duration

2.5 hours

Training Materials and Equipment:

- A tool set for forest trees.
- A4 paper, A0 paper, adhesive tape, felt pen, handouts.

Content and Methodology

Content	Methodology	Time (minutes)
Warm-up through a game or songs	Master trainers facilitate and participants do	15
Name introduction and objectives of the session	Presentation	5
The importance of observation	Master trainers introduce a tool set of pruning and request participants to draw what they have observed. Master trainers ask: What is the importance of observation? Participants discuss and draw lesson learnt.	60
Things one should and should not do while observing	Divide class into 5 small groups for group work: Group 1, 2: Discuss the things one should do while observing. Group 3, 4, and 5: Discuss about things one should not do while observing. After discussion, groups present their group discussion results and draw a lesson learnt.	60

Areas one should observe during a training course	<p>Ask the participants when conducting a training course for farmers which areas the facilitators should observe? Why do facilitators need to observe those areas?</p> <p>Divide class into small groups to discuss about the areas needed to be observed during training:</p> <ul style="list-style-type: none"> - Level of interest - Awareness ability - Participation - Relationships - Training environment 	60
Deal with observed situations during a training course	<p>Master trainers and participants analyse some situations together such as: Manner of speaking, e.g. fast, slow; unreasonable content and methodology, etc.</p>	10

Master Trainers' Notes

All of us observe during every day living and working in order to gain more understanding about our surrounding environment. Some researchers have come to the conclusion that 2/3 of information people receive is through their eyes.

The importance of observation

A successful facilitator needs to have skills for observing people and for non-verbal communication. There is a lot of information exchange and communication in non-verbal behaviour that is not in the consciousness of communicators. Those facilitators who are not good at observation, they "look but do not see". On the contrary, those who are good at observation, they have "just a quick look and know everything". During training, facilitators need to observe how the participants are perceiving and experiencing the training session and how the relationships are among themselves. Based on this information, facilitators can decide when they need to change things up, when it is necessary to intervene in the training, and what is best for participants. The intervention can be on the content, methodology, the speed of training or process of learning support such as: team building, confidence building, creation of a secure and comfortable atmosphere.

When participants are carrying out tasks, which are out of their own professional field, facilitators need to observe the attitude of people, their skills and their results of applying advanced science techniques. Based on the information obtained through observation, the facilitators can decide how to help farmers to apply new techniques and how to cooperate and link their production and market in the most effective way.

Do's and Dont's during observation:

Do's:

- Pay attention to the expression/behaviour of participants/farmers in the training course.
- Classify expressions/behaviours of participants/farmers into different categories to understand correctly the meaning of each behaviour.
- Analyse meanings and causes of each behaviour.
- Decide how to react and the right time to intervene.

Dont's:

- Interpret too hastily.
- Impose your deduction.
- Interfere when having insufficient information and unclear causes of behaviours.

The areas a trainer should observe during training

The trainer should pay attention to the interest level of each participant and the whole class for each session and for the whole training course.

When participants are very interested in the session, they usually display some of the following behaviour:

- Sit facing forward, are concentrated, and nod out of satisfaction.
- Speak out in class and give their opinions.
- Stand up very fast to find their group after being assigned group work.
- Discuss actively in group.
- Do all the homework.
- Come to class on time and are present the whole time.
- Ask questions.

When participants are less interested in the session, they usually display some of the following behaviour:

- Slouch in the chair and have wandering eyes.
- Being "on pins and needles".
- Change sitting position constantly.
- Glance at watch often.
- Look at their notebook when others are talking.
- Come to class late and leave early.
- Did not do homework or do it just because they have to.
- Nod off.
- Small talk.

The trainer should be aware of the participants' awareness and level of understanding of the session.

When participants have good awareness and deeply understand the session, they usually display some of the following behaviour:

- The opinions they provide are very useful and show that they have understood.
- They apply well the exercises and specific situations learned.
- Their facial features are radiant and cheerful.

When participant do not understand the session, they usually display some of the following behaviour:

- Sit quietly when they are given assignments.
- Do not know how to begin an exercise.
- Meet difficulties when analysing sessions.
- Their opinions are not focused on the topic.

The trainer should pay attention to the participation level of each participant during studying activities and other activities in class

Manifestation of high participation:

- Often speak out opinions.

- Ask questions to facilitators or groups.
- Play a certain role in group activities.

Manifestation of low participation:

- Quiet for long time.
- Always agree with other people's opinions even when the opinions are not completely reasonable.
- Like being alone, dislike sitting together with others.

Relationship, sense of support and cooperation among participants in a class

If the relationships are good, it can be seen in the following behaviour:

- Participants often talk and exchange information with each other during break.
- Participants help each other to finish an exercise or complete a task.
- Participants explain to each other the contents if they some do not find them clear.

Relation and trust of participants to facilitators

Some of the signs of the type of the participant-facilitator relationship:

- Level of readiness in answering facilitator's questions in class.
- Level of readiness in implementing assigned tasks.
- Bravely/freely raising questions related to the session.

Pay attention to the different characters of participants:

- Like being recognized/praised.
- Like showing himself/herself off in front of the crowd.
- Timid/shy in front of crowd.
- Like being a leader.
- Like observing others before doing himself/herself.

Consider the physical environment of a classroom:

- Space
- Light
- Temperature
- Noise
- Arrangement of desks and chairs

Facilitators should react in a timely fashion if they observe any negative signals for the training, such as: low interest, uneven presentation of participants, participants do not use their full capacity, relationship among participants is not good, no cooperation, classroom is too hot or too cold, participants are less confident, participants do not understand the lesson well, etc.

Deal with observed situations during training

If the facilitator observes undesired situations going on in the class, he/she can do various ways to adjust the session. The important thing is to make use of a combination of skills covering observation, listening and question making to identify the most exact reasons, and from there to implement suitable solutions and an intervention in each case.

Some common solutions that could be applied:

- Adjust speed (speaking, doing) to faster or slower in accordance with the average speed of participants; add or reduce time doing exercises with participants; add or reduce amount of workload and exercises for participants.

- Adjust the content: quickly identify what participants want to learn and adjust training program accordingly; maybe it is necessary to move fast to the next part of the session, the training course; maybe it is necessary to add or reduce the contents of the training course in comparison to the original plan; maybe change the focus of one session.
- Adjust the training methodology in order to: ensure that everyone has an opportunity to be involved; match the way of learning and awareness ability of the participants; promote strong points of participants; create a new development of participants skills; warm up the class atmosphere, capture the interest of participants.
- Make exercises more clear and easier to understand, answer to the concerns of the participants: request participants to speak out their concerns/questions and help them to understand better and eliminate their worries; repeat exercises and encourage them to work in groups.
- Improve the relationships by carrying out team building activities (give each other positive feedback, negotiate on what they want to add/deduct, give compliments in public for good team building behaviours, for organizing group activities).
- Increase confidence; create opportunities for participants who are not so confident to speak out in front of the class; praise their first successes; assign tasks (as group leader) for them; express your interest in those who seem to lack confidence but are trying their best.
- Clear away other inhibitions. Sometimes participants are inhibited by facilitators or other participants' comments or by the training environment. Facilitators should have suitable solutions to help ease inhibitions.

SESSION 4. LISTENING SKILLS

Objective

After the session, participants will be able to:

- Present the advantages of listening.
- Define different levels of listening (information, emotion, motivation).
- List out things needed to listen carefully.
- Analyse what to do and what not to do during listening.
- Practice listening skill.

Duration

4 hours

Training Materials and Equipment:

- Story causing forest fire.
- A4 paper, A0 paper, adhesive tape, felt pen, hand-outs.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Name Introduction and Objective of the session	Presentation	5

Advantages of listening	<p>Divide class into 5 groups and broadcast a short news clip.</p> <p>Check which group can deliver the information most accurately.</p> <p>Master trainers ask participants how the group could get a lot of information? Why their group could only get very little information?</p> <p>Analyse:</p> <p>How will good listening help training process?</p> <p>Is it necessary to practice listening skills?</p> <p>Ask the participants to give any examples on good listening and bad listening which result in which consequences?</p> <p>Master trainers draw lesson learnt of good listening benefits.</p>	60
<p>Listening levels</p> <p>Listen to information</p> <p>Listen to emotion</p> <p>Listen to motivation</p>	<p>Master trainers request participants to recall a memorable situation from their working life. Request one participant to tell to the class his/her story. If none of the participants want to tell the story, the master trainers will tell the story of a forest fire and request all participants to listen and retell that story.</p> <p>Analyse and identify different levels of listening.</p>	60
What should be done and what should not be done in order to listen well	<p>Discuss in small groups. Divide class into 5 groups:</p> <p>Group 1, 2 discuss things that should be done while listening</p> <p>Group 3, 4, 5 discuss things that should not be done while listening</p> <p>After discussion, groups present their group discussion results and sum up into lesson learnt. If there is not enough time, the master trainers can divide the white board into 2 parts and ask groups to write down what should and what should not be done while listening.</p>	30
Things one should do to help other people listen well	<p>Discuss in the whole class:</p> <p>Master trainers and participants together analyse some things one should do to help other people listen well.</p>	20

Practice listening skill	Master trainers divide class into small groups, each group has 3 members out of which one will tell a story, one will listen for information and emotion and one listen for motivation. After a certain time, the master trainers invite one or two groups to perform this exercise in front of the class in order to test their listening ability.	60
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Master Trainers' Notes

Why you need to listen?

In order to one's job well, the facilitators need to have good listening skills. By being a good listener, the facilitator can penetrate the community's mind, discover arising issues in the community, and find out farmers' needs and expectations in their life and production. Through this, it is possible to find suitable and effective ways to help and influence them. Good listening also helps facilitators to get the necessary information for dealing with technical problems and extension quality.

Good listening also helps facilitators to conduct farmer field schools at a high level. Listening helps them to get to know what the participants want to say, at which level they understand the session, what difficulties they meet and what supports they need. By listening, they can adjust their facilitation session in due time and make them relevant to reality. Good listening ability does not come naturally and easily. To be a good facilitator, it's necessary to learn to "active listening".

What do you listen to?

In their work, facilitators not only listen to the contents and opinions of the farmers but also to the emotion, motivation and expectations of the people in order to meet their demands in the best way. As such, a good listening facilitator, he/she can listen to a farmer and hear more than just words. Listening can be divided into three levels:

1. Listen to information and opinions

This is the most common listening level, which everybody implements. Information/opinion listening is when we listen to words (phrases/sentences) of other people speaking to get the information and opinions from them.

However, it is not always that we can listen well at this level. Normally, when we listen to other people speaking, we not only concentrate on what they are saying but at the same time our brain may start analysing the information we got by using our own understanding and language. Sometimes, the speakers have not yet finished their talking but we are in a hurry to guess and thinking of how we want to respond. In that case, the received information may not be complete and may lead to inappropriate decisions.

2. Listen to emotion and sentiment

This is a deeper listening level to understand the internal life of speakers. The speaker's emotion may be angry, embarrassed, tense, shy, bored, happy, proud, admiring, or dissatisfied. To understand the speaker's emotion, we often pay attention to their voice volume and speed, facial expression, posture, and also their silence. Therefore, it is very important to "listen to the speaker's emotion".

Feelings are sometimes more meaningful than what was said. For example, a farmer tells you that the trial of the new rice variety in the community is greatly supported by the

People Committee, but he looks embarrassed and avoids looking into your eyes; in this case, it would be wise to take the information with a grain of salt.

3. Listen to motivation

Understanding the motivation of a speaker is the most difficult level in the listening art. Sometimes, speakers are also not fully conscious about their own motivation. Good listening will help facilitators to discover the reason why one person has said or done something in a certain way. The speaker's motivation is the implicit sense under their words and behaviours. They are unspoken words and may never be possible to speak out straight forward.

How to listen well?

- **Keep quiet**
You cannot listen well if you are talking while others are speaking. You need to pay full attention to understand well the speaker's opinion, emotion and motivation.
- **Show that you want to listen**
Speakers will feel encouraged if you are keen on listening to what they are saying. Express to the speaker that you pay attention to their talking through the following gestures: nod your head, smile, maintain eye contact, have a cheerful and open expression, or express encouraging words such as "ah ha", "enjoyable", "interesting", etc.
- **Avoid being distracted**
Facilitators should not clip-clop on the table, make noise with a pen, look in another direction, clear up papers, or clean the table while listening. The above gestures show that you do not really listen to the speaker.
- **Express your respect and sympathy**
You should put yourself in the speaker's position/context and look into the situation from the speaker's point of view. You should let the speaker know that you always respect what he/she is saying.
- **Patience**
When a speaker is confused or has difficulties in expressing his/her thinking, facilitators should ask a few questions to make it more clear or help the speaker focus on what he wants to say, but should not put words in the speaker's mouth or show you are uncomfortable.
- **Keep calm**
If anything makes you lose concentration or become angry, you should take your time to calm down before continuing listening. An angry or distracted listener will have difficulties in listening well and understanding deeply what the speaker is saying.
- **Making questions**
Facilitators should ask open questions if needed. Good and rightly timed questions will encourage speakers to come up with new ideas. Asking questions is the best way to stimulate speakers to develop their own ability of problem solving.
- **Keep a certain moment of silence**
Whenever needed, facilitators can create a few moments of silence, which makes the speaker feel easier to talk about his/her true thinking, emotion and motivation. These

silent moments imply that the listener is still listening and waiting for the speaker to continue.

Things you should not do

- Approach the speaker or disregarding speaker's story.
- Cutting the speaker off or hurrying him/her to finish the story.
- Looking at the watch.
- Giving advice when not requested.
- Providing comments, retorting and arguing before listening to the whole story.
- Accusing and imposing personal opinions on what you hear.
- Small talk on the side while speaker is trying to present.
- Listening roughly and ignoring details and only remembering the main contents.

Things you should do to help others listen well

- Speaking at the right time, attracting listeners while speaking.
- Do not talk for too long and use, use easy understandable words.
- Maintain eye contact and display emotion while speaking.
- Ask questions to lure listeners' attention.
- Make use of available equipment to better illustrate what you want to say.
- Select contents that listeners are interested in.
- Do not talk about too many topics at the same time.
- Create a comfortable, easy-going and open atmosphere and a comfortable leaning environment.
- Check again what listeners have been listening to and make adjustment if needed.

SESSION 5. GIVING AND RECEIVING FEEDBACK SKILLS

Objective

After the session, the participants will be able to:

- Present the concept and importance of feedback.
- List out what should be done and what should not be done when giving and receiving feedback.
- Analyse different ways of giving feedback.
- Practice giving and receiving feedback.

Duration

3 hours

Training Materials and Equipment:

- Acacia or eucalyptus seedlings, which are ready for transplanting.
- A4 paper, A0 paper, adhesive tape, felt pen, hand-outs.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up by a game or song	MTs guide and participants do	15
Name Introduction and	Presentation	5

Objectives of the session		
Concept of feedback Importance of feedback	<p>Master trainers request the class to observe acacia or eucalyptus seedlings, which are ready for transplanting and ask participants to comment on the form and criteria of a good seedling.</p> <p>Master trainers ask after providing comments on the seedlings, who can give feedback on the information received? And what is the importance of feedback?</p> <p>Master trainers give a seedling bag or pot and request participants to practice observation and feedback. Draw up lesson learnt.</p>	20
What you should do and what you should not do while giving feedback	<p>Divide class into 5 small groups for group discussion:</p> <p>Group 1,2 will discuss things that should be done while receiving feedback.</p> <p>Group 3,4,5 discuss things you should not do while giving feedback.</p> <p>After discussion, groups present their group discussion results and draw up a lesson learnt.</p> <p>If there is not enough time, master trainers can divide white board into 2 parts and request groups to write down things they should and should not do while giving and receiving feedback.</p>	60
Different ways of giving feedback	<p>Discussion in big group</p> <p>Master trainers and participants together analyse some effective ways of giving feedback.</p>	20
Practice skills of giving and receiving feedback	Master trainers provide some real situations from the forestry sector and request participants to give their feedback.	60

Master Trainers' Notes

What is feedback?

Giving and receiving feedback is a learning process through which the facilitators help the participants realise what they have done correctly and successfully as well as what they should change to make it better. The result of the feedback process is that the participants are aware of what they should continue to do and how to do it.

The importance of feedback

If the facilitator is using participatory training and supporting methods, it should be realised that without feedback the learning cannot be successful. Thus, there is a need for improving the abilities of effectively giving and receiving feedback because feedback encourages development and improvement.

Trainers are usually working with farmers as their facilitator or a guide. Honest feedback will help farmers learn faster and do things better according to what they have learned. Feedback information is not fault finding or criticism. It aims to support the participant in improving.

Facilitators should also know how to receive feedback in order to improve their own capacities. It helps facilitators improve their personal behaviours which lead to better implementation of their tasks as well as meeting farmers' demands.

Things you should do while giving and receiving feedback

When giving feedback, facilitators should:

- Be clear about what you intend to say.
- Start by giving positive points (as we all want to be praised and encouraged).
- Provide specific and clear information.
- Describe actions/events (describe what you have seen, not your comments on things bad or good).
- Express your sympathy.
- Suggest changes, which are within the ability of the participants to carry out. Do not suggest too many changes.
- Start by saying "I" or "according to me"
- Provide feedback information right away when possible.

When giving feedback, facilitators should not:

- Criticize the speaker.
- Be sarcastic.
- Do not tease or exaggerate your answer.
- Do not be judgmental.
- Do not show annoyance.
- Provide general and vague information.
- Give feedback on things that can't change.
- Give too many opinions.
- Give Feedback too late (the changes no longer have meaning anymore).

When receiving feedback, facilitators should:

Listen

Farmers/participants that give you feedback help you understand your tasks better and adjust your work accordingly. Therefore, you should at first listen to the feedback and understand what they are saying. After that, you can talk about your viewpoint and decide if you want to implement changes.

Give clear feedback if needed

When receiving feedback, facilitators can raise questions if something is not clear. Ask open questions and not leading or close questions.

Respect feedback

Feedback is rarely exactly correct and also rarely completely wrong. You should thank the participants for the feedback, analyse it, and adjust if you find it reasonable.

Get feedback on a specific issue

Ask farmers/participants about a certain specific issue on which you expect to get their opinions. For example: "Thank you for your participation in the training. Now, I really would like to know if the contents of today's session are useful for farmers and what I should do better for the next training."

Acceptance

When receiving feedback, the receiver does not need to explain away or correct opinions. All comments are either direct or indirect lessons learnt towards better understanding ourselves as well as our jobs.

When receiving feedback, facilitators should not:

- Deny or judge the feedback.
- Become angry.
- Argue with the person giving feedback.
- Show that you do not accept the feedback.

You should receive feedback from other people as a gift. Accept it and express your respect by saying thanks and use that gift wisely!!!

Different ways of feedback

There are many different ways to give feedback such as:

- Give feedback directly to a group: This is a direct way to give and receive feedback in front of many people. This way is often applied in training courses when feedback of one person is also useful for other participants in the training to help them learn better.
- Give feedback directly to individuals: This is a private exchange of information between feedback giver and receiver. This method should be applied if feedback is sensitive or only correct for a specific individual.
- Give feedback by writing a "letter": The person giving feedback can write down his/her opinions on a paper and give it to receiver instead of talking directly to them. This method is suitable for groups, which have a low participation, or hesitate in providing feedback. However, this method has a limitation since it is impossible to clarify further if the feedback is not clear and specific.

SESSION 6. ASKING QUESTIONS SKILLS

Objective

After the session, participants will be able to:

- Present the importance of asking questions.
- List the features of a good question.
- Analyse different types of questions and questioning levels.
- Present what should be done during a question-answer process.
- Practice asking questions skills.

Duration

4 hours

Training Materials and Equipment:

- A tool set for pruning, bag for seedlings and seedlings.
- A4 paper, A0 paper, adhesive tape, felt pen, handouts.

Content and Methodology

Content	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
The importance of asking questions	<p>Master trainers request class to observe an acacia or eucalyptus seedling which is ready for transplanting and raise questions to get information about that seedling.</p> <p>Master trainers ask participants after asking the questions about the seedling, who can tell the class why certain questions were raised for what information? The importance of asking questions? Draw up the lesson learnt.</p>	20
Features of a good question	<p>Master trainers invite a participant to be on stage and request other participants to raise questions to get information related to the participant. Master trainers take notes on the white board from around 15-20 questions.</p> <p>After that the whole class discusses and analyses what a good question is.</p> <p>Draw up the lesson learnt.</p>	60
Different ways of asking questions	<p>Discussion in big a big group</p> <p>Master trainers and participants together analyse some effective ways of asking questions.</p>	20
Practice skills of asking questions	Master trainers provide some real situations in forestry sector and request participants to ask different types of questions.	60

Master Trainers' Notes

The importance of asking questions

Questions are part of our daily life. In daily communication, we ask a question and receive answers, which lead to new questions and answers, forming a conversation.

More than 80% of information in a training session is based on question and answer sessions. Those questions that are carefully selected and well prepared will help participants to become better involved in the session, thus enabling the learning process. Through questions, participants will understand the topics more deeply and more comprehensively. The participants will also be more active in answering in comparison to being provided with answers by the facilitators.

Whenever you know how to ask questions means that you start being skilled at facilitating.

Using questions in extension training and in working with farmers, facilitators aim to:

- Survey farmers' needs in production, preservation, processing and selling products.
- Conduct a poll of farmers' attitude and awareness.
- Encourage farmers to think and reflect on the new methods they have learned.
- Guide farmers to analyse, assess issues and exchange experience during the training and application of techniques.
- Consolidate knowledge and technical procedures.
- Check level of understanding of participants.
- Maintain the attention during the training or meeting.

Features of a good question

A good question is short and clear and enables the one asked to think effectively.

Be exact. When asking, it is necessary to know exactly what you want to inquire into or what information you want to obtain.

For example: How do you find Chinese hybrid rice? – This is an unspecific question. In fact, there is a need to ask specifically about: economic effect/cultivation techniques/rice quality/yield/adaptive ability to the local soil conditions, etc. of that hybrid rice.

Ask short questions. For example: to increase income for farmers in the next autumn season, our village will have to change some crop structure. This task requires an agreement from all of you. Moreover, we also need to study carefully on characteristics of some common crops in other localities. So, which crops do you think will be the best to grow next autumn season?

In this case, the facilitators should ask only: Which crop will have highest economic effect in our soil conditions in the next autumn season?

A good question has only one asking issue. Avoid raising many issues at the same time in one question like: Growing Chinese hybrid rice, what difficulties do you meet? What do you do to solve those difficulties? What are the effects?

A good question is a question suitable to the one's being asked. (Question's language and concept are appropriate in regards to vocabulary, educational level, psychology and experience of the person being asked).

For example, facilitators ask farmers: What challenges do you have in establishing a safe vegetable producers group?

In this case, facilitators should replace word "challenges" by "difficulties" which is easier for farmers to understand.

A good question is suitable to the context.

Types of question

There are two commonly used types of question:

- Closed questions: Closed questions are very limited – only require a “yes” or “no” answer or a very short answer.

For example: Do you want to grow this crop? How many seasons does this area have?

- Open question: Open questions usually require stimulation, ordeal and always begin by “asking words” such as: “What? Why? When? How? Where? Reason? At which level?

For example: Why do you want to grow this variety? What do you intend to do to prevent pests and diseases spreading into the rest of the fields?

Levels of question (Question system)

A good system of questions is a system that has a range of questions from easy to difficult, reaches asking objectives and can help those answering to think effectively. Questions can be divided into three main levels:

1. Question "recall"

At this level, the question aims to check whether certain data has been internalised. It helps those asked to describe details, words, actions, things and phenomena that have happened. For example:

- To complete the session, what activities did we do?
- Could you tell what is an appropriate irrigation methodology?
- Could you list the names of plum varieties in Vietnam?
- Could you tell what do you see through...?
- Could you tell about the first meeting of a group?
- When harvesting fruits the first time, how do you preserve them?

2. Question “analyse, assess, handle”

This type of question helps those answering to compare, explain, organise information, arrange steps of a process, analyse to find good and bad points, assess things and phenomena, make decisions, give their opinion on a certain issue. For example:

- Which part of this process is the most decisive?
- This skill and the ones we learned yesterday do they have any common features?
- Why do we have to treat soil with powdered lime when growing ground nuts?
- How can you set up a reasonable cultivation schedule?
- In which order should these steps be done?

3. Question “apply – put in to practice”

This type of question requires those answering to search for new information based on what they have learned and practised. For example:

- What will happen if we use bio-fertilizer instead of nitrogen?
- Could you give some examples where this skill can be applied usefully?
- On the basis of last year’s outputs, how much will profits be this year?
- After this session, how do you apply these new skills?
- How should we implement this procedure?

What facilitators should do during question and answer sessions

1. Prepare questions

Good questions need thorough preparation. Facilitators should:

- Use simple language.
- Write down all questions.
- Ask yourself these questions first to make adjustment if needed.

2. Question order

Start with a close question or a very specific and easy to answer one. Then continue with open questions and broader ones. In order to correspond to the thinking process of those answering, facilitators should ask a 'recall' question first, then 'analyse, handle' questions and 'apply' questions at the end.

3. Handle questions

After asking questions, the most important thing facilitators should do is to listen to the response. Facilitators should consider these possibilities:

- If participant's answer is correct: Give compliments, and say that their answer is correct.
- If participant's answer is partly correct: Firstly, affirm that one part of the answer is correct and offer that other participants to give their answers to the incorrect part of the question.
- If participant's answer is wrong: Firstly, acknowledge their contribution and offer other participants to provide their answers. If there is a need to make it more clear, inform the participants that you will come back to these topics later. Attention should be paid to "correcting the answers while avoiding criticizing answerers".
- If participant has no answer: Keep calm and do not stress. Some things that could be done in this situation:
 - Ask another learner – as questions in a different way, using other words.
 - Use visual training tools to make the question more specific and clearer and ask again
 - Make the concept clearer or require participants to find their answers in reference documents.

Use language, gestures and facial expression that encourage answerers.

4. Handle farmers' questions

Sometimes farmers also raise various questions where facilitators should:

- Give opportunities for those raising the questions to find the answers themselves by ask them back: According to you, how should you solve this issue?
- Give chances for other participants to be involved.
- Ask them to find solutions in manuals.
- Give them information where they can find the answers.
- Help those raising the questions by suggesting questions at more narrow level.
- Consider it as a case study and request other participants to get involved in handling this exercise.
- Provide answers if necessary.

- If the answer is not available, promise to have answers later and make sure that you have the answers next time.

SESSION 7. TASK ASSIGNING SKILLS

Objective

After the session, participants will be able to:

- Present the importance of task assigning.
- Analyse the structure of task assigning formulation.
- Present ways of task assigning.
- Practice task assigning skills.

Duration

2 hours

Training Materials and Equipment:

- Nursery.
- A4 paper, A0 paper, adhesive tape, felt pen, crayons.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm game or song	MTs guide and participants do	15
Introduction to objectives and contents of the session	Presentation	5
The importance of task assigning	Master trainers divide the class into 5 groups. Each group assigns a group member to receive the task. That person will communicate that task to his/her group to be implemented. The whole class provides comments and draws up a lesson learnt on the importance of task assigning.	20
Structure of task assigning formulations	Discussion in a big group Master trainers and participants together analyse some examples and get into an agreement on the structure of task assigning formulation.	40
Ways of task assigning	Active presentation.	10
Practice task assigning skills	Groups practice assigning tasks on putting the soil into poly bags, putting the cuttings into pots, pruning, fertilizer application, soil preparation, etc.	60

Master Trainers' Notes

The importance of task assigning

Task assigning is a necessary skill for facilitators to use in participatory training courses and in their jobs.

Good task assigning will help facilitators carry out work processes and save time. It also can be used as a basis for the individual/group performance's assessment.

For farmers, if they receive good task assigning instructions, they will be able to define what things they should do and what the task requirements are. It will be easier for them to implement the task.

Structure of a task assigning formulation

The good task assigning formulation needs to be clear in terms of the contents below:

Objective of the task

Farmers need to know why they have to do the task. How will they benefit if they do the task well? The explanation is very necessary but it needs to be very simple and short. The best thing is to explain in only one sentence.

Content of the task

Farmers need to know what they will have to do. What are the task requirements? What are the outcomes of the task?

How to do it

During training, when assigning the task to the participants, the facilitators should tell the participants, how to do the task. For example, drawing individually, writing down on a paper or working in groups, etc.

However, when assigning a task for farmers it is not initially necessary to explain how to do it, because they can make use of their existing experience, the task can stimulate their creativity. After they have performed the task using their own knowledge and experience, the facilitator can see where there is room for improvement.

When you should finish

Farmers should know how much time they have to do the task. Having a timeframe influences how fast the work is done and it can be used as a basis for checking, evaluating task quality, the effect and performance process as well.

What to do after finish

If it is a task in a training course, participants should know when to finish the task and what they will do next with the result.

Resources and support (if needed)

Farmers should know how they will be supported during the implementation of the task.

For example, during a training course, the exercise/task assigning formulation can be:

To identify common diseases of Acacia, we will do an exercise together. You will observe some available samples of diseases and then sort them out according to different types of diseases and explain why you sorted in the way you did.

This exercise will be carried out in groups. The time to complete the task is 15 minutes. During the group discussions, I will be available to explain anything that is not clear.

After finishing, groups will stick the group results on the wall and assign a group representative to present your results in front of the class.

After assigning the task, facilitators will divide the class into small groups and point out where groups will work. About group dividing methods, please refer to session 8: (Small Group Approach).

Another example on task assigning formulation by the facilitator in relation to organizing a study tour to a new variety seedling model:

In order to get the most out of the study tour, we will work together to make a preparation plan and an implementation plan. First, you will work in small groups to provide your ideas on what we should do before and during the study tour. Time for group work is 15 minutes. You will write down all your ideas on a big paper and stick it on the wall.

Ways to assign tasks

- Assign a task verbally in front of the whole class. This way will usually be applied if assigning is simple and has the same requirements for all groups.
- Write down the tasks on the board or big papers in advance before assigning it in front of the class. This way will help participants to hear and read the task. They can then read it again if necessary. This is done in the case when the task has a lot of information, which is difficult to remember, long questions or many questions at the same time. This is very useful for facilitators who are not very familiar with participatory training methods. It avoids people feeling perplexed by providing discussion questions/ exercises.
- Write down separate tasks for each group or each participant on paper and distribute them in class. This is usually done in the case where each group/individual has to do a different exercise.

All three ways to assign tasks can be applied in training for job allocation, or facilitating farmers directly in technical monitoring process. Facilitators should consider and select the most suitable way to do the task assignment and should aim to help participants to understand quickly what they should do so they can do the task quickly and effectively.

SESSION 8. SMALL GROUP APPROACH

Objective

After the session, participants will be able to:

- Identify steps in the small group approach.
- Present remarks which they need to pay attention to during the facilitation of a small group.
- List out the application scope of the small group approach.
- Practice the small group approach.

Duration

4 hours

Training Materials and Equipment:

- Tree nursery, tree cuttings and materials for putting the seedlings in pots.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Process of modelling approach Step 1: Demonstration at a standard speed Step 2: Demonstration at a slow speed in combination of explanation Step 3: Participants review and remember how to do it Step 4: Participants practice with supports from Master trainers Step 5: Participants practice and support each other Step 6: Evaluation of practicing results	Modelling: Master trainers model how to do a cutting propagation or soil potting for forest seedlings. Divide the class into small groups for group discussion: Group 1,2,3: How many steps does the modelling approach have? Name the steps. Group 4,5: How many steps does the modelling approach have? List out various notes at each step. Groups discuss above questions. Groups get feedback and draw up lessons learnt.	80
Application scope of the modelling approach	Discussion in a big group	20
Practice the modelling approach	Groups practice the modelling approach on soil potting, cutting propagation, pruning, fertilizer application, etc.	120

The small group approach is based on dividing participants of a training course into several different smaller groups and assigning them specific tasks. Normally, a group consisting of 3-5 people. However, sometimes there is a larger group of 10-20 people, which is also considered as a “small” group if the total number of participants in a training course is very big.

The small group approach is rarely used to carry out a training exercise from the beginning to the end, but is usually used to do an “analysis” and to “draw up lessons learnt” in the training exercises following the cycle of the structured learning experience, where other methods such as role-play, modelling, and case studies are applied. Therefore, sometime this approach is called “small group technique”.

Working process in a small group

The working process of a small group normally follows these steps: 1) assign tasks and divide the class into groups; 2) facilitate group work; 3) facilitate the group reporting; and 4) analyse, sum up and draw up lessons learnt.

Step 1: Assign tasks and divide the class into groups

Master trainers give tasks for the class (Refer to Session 7 Task Assigning Skills). The task normally relates to analysis of a part of the session contents, discussion of a real situation to draw up a lessons-learnt or completion of a specific duty.

After assigning the tasks, the master trainers divide the class into small groups. The following are some ways to divide a big group into smaller ones:

- Counting numbers: Participants count from 1 to n (n is the number of groups which facilitators prepared in advance). Then, those of the participants who have the same number will be in one group and do the assigned tasks. For example: if you want to divide the class into 4 groups, you will ask participants count from 1 to 4, those who count 1 will be in group 1 and the same for numbers 2,3,4.
- Divided by seating location: The master trainers can arrange those sitting next to each other to form a group.
- Divided by age: The Master trainers can arrange those who have the same age to be in one group, for example: a group of farmers who are under 30 years-old, a group of farmers who are from 30-45 years-old, etc.
- Divided by geography: Those participants who are from the same village or the same production group form a group.
- Divided by job position: Those people who are at the same level in their job will join in one group, for example: youth union group, women union group, war veteran group.
- Divided by hobby: those people who have the same hobby will be in a group like fruit tree group, goat-raising group, etc.
- Divided by number of children: Those who have the same number of children will form a group, for example: those who have 1-2 children will form group 1, who have 3-4 children will form group 2, etc.
- Divided by selecting group members: The master trainer can select group heads and request them to select their group members with a fixed number of group members for each group.

Depending on the contents of the training exercises and practical conditions, facilitators select a suitable way of dividing a group, for example:

- In case of tasks and exercises that do not have special requirements for group members, the class can be divided randomly like counting numbers.
- In case of tasks and exercises that relate to customs and culture, the class then should be divided by geography, age, gender, etc.
- In case of tasks and exercises that need to have points of view on professional issues, the class then should be divided by job position, specialty, etc.

Step 2: Facilitate group works

The master trainers need to observe how the group work is going and to provide time adjustments by for example: explaining what the outputs of the tasks should be, responding to different opinions during group work, adjusting the time of group work according to working ability of groups, encouraging participants that are not actively working, assigning more exercises for groups that have finalised their tasks early, informing about the remaining time for group work, etc.

To do this step well, master trainers should ensure that:

- All group members participate actively.
- He/She respond to questions and concerns in due time.
- All groups are following the requirements of the exercise.
- Do not intervene deeply into the process of the group work, by for example becoming involved in group discussions as a member of the small group.

Step 3: Facilitate presentation of the group discussion results

When groups have finalized their tasks, the master trainers will guide them to present their group discussion results. There are different ways of presenting results:

1. One group presents, other groups supplement: Master trainers ask one group to present all results, which the group has reached, and then other groups will add their different/additional points.
2. All groups present in turn: All groups present their group discussion results one after another.
3. Open up a market: Master trainers request all groups to stick their group results on the wall and send a representative to stand next to the displayed results and be ready to answer questions from other groups. Other group members will go around and read the results of each group, ask questions to understand better, or provide comments on what they should change.
4. Snowball: The groups exchange their results and discuss adding further comments at the bottom of that group's answers. For example, divide the class into 3 groups to discuss 3 topics.
 - Results of group 1 to be given to group 2
 - Results of group 2 to be given to group 3
 - Results of group 3 to be given to group 1
 - Continue like that until each group has read all three topics' results.

Demonstrate results: Master trainers request groups to use creative ways to demonstrate their group results by for example drawing a picture, performing a comedy, producing a symbol, etc.

Debate: The groups participate in a debate contest to defend their group opinions and to question other groups.

Step 4: Wrap up - draw up lesson learnt

Master trainers sum up common opinions from all groups or facilitate them to wrap up and draw up lessons learnt.

In this part, master trainers should pay attention to:

- Clarify the meaning of opinions, which are too general or unclear by asking questions.
- Affirm good and appropriate opinions and clarify any unclear opinions.
- Add comments for missing points.
- The application scope of the small group approach.

As mentioned above, the small group approach is a technique which is usually applied in the analysis and drawing up lessons learnt steps of other participatory training methods.

The small group approach is very useful in encouraging the participation of all participants of the class, creating a space for those who are very shy in front of the crowd. There are more chances to speak and actively participate in a smaller group.

The small group approach also used to raise issues, which need to be discussed carefully and profoundly. It is used when a lot of knowledge and experience is needed in order to evaluate and conclude an issue or to create a new idea. The small group approach has less effect when applying it in the exercises which only require to list available information.

SESSION 9. PRESENTATION APPROACH

Objective

After the session, participants will be able to:

- Identify the process of an effective presentation.
- Make speakers notes for doing a presentation.
- Analyse notes during presentation.
- List out the application scope of the presentation approach.
- Practice the presentation approach.

Duration

4 hours

Training Materials and Equipment:

- Tree nursery, cutting seedlings, materials for pot filling.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Process of presentation approach Step 1: Define objective and expected results Step 2: Collect, select and arrange information Step 3: Prepare questions to test or to clarify Step 4: Divide time Step 5: Prepare illustration, visual training tools	Demonstration: Master trainers demonstrate the whole process of cutting seedlings or pot filling for forest trees. Divide the class for group discussion Group 1,2,3. How many steps did the demonstration have? List out all the steps. Group 4,5. Can you tell how many steps the demonstration has? What should be paid attention to at each step? Groups discuss, get comments and draw up	80

Step 6: Prepare notes Step 7: Present	lesson learned.	
Application scope of presentation approach	Discussion in a big group.	20
Practice presentation approach	Based on the lessons learned, selected participants will repeat the initial presentations/demonstrations/instructions and have their performance evaluated.	120

SESSION 10. LEARNING BY DOING APPROACH

Objective

After the session, participants will be able to:

- Present the objectives of the learning by doing approach.
- Present steps of implementation.
- List out the scope of application.
- Practice the learning by doing approach.

Duration

4 hours

Training Materials and Equipment:

- Ecosystem picture.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Why do we need the learning by doing approach	Active presentation	10
Process of the learning by doing approach Step 1: Create a friendly atmosphere and define knowledge and skills that need improvement. Step 2: Observe farmers to perform a skill or a process. Step 3: Master trainers	Master trainers ask participants which skills they want to improve. Request participants to demonstrate a skill, which the master trainers can observe and get ideas on what is not going so well in order to give them feedback on how to improve. Master trainers provide feedback on what they have done well and what they should change. Master trainers demonstrate the process of	90

provide feedback on what they have done well and what they should change. Step 4: Observe farmers redoing the same process after receiving feedback. Step 5: Wrap up the practicing part and plan for a follow-up support session.	cutting propagation, grafting or filling up pots for forestry seedlings or any other skill requested by the participants. The participants practice it under supervision of the master trainers.	
Application scope of the learning by doing approach	Discussion in a big group.	10
Practice the learning by doing approach	Groups list out issues they want to improve on. Practice the learning by doing approach to guide them.	110

SESSION 11. WORKSHOP APPROACH

Objective

After the session, participants will be able to:

- Define the process of the workshop approach.
- Present the application scope of the workshop approach.
- Practice the workshop approach.

Duration

4 hours

Training Materials and Equipment:

- Photos/pictures of new afforestation and ready for harvesting forests.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MT's guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Process of the workshop approach Step 1: Introduction to discussed topics/issues Step 2: Getting comments Step 3: Grouping comments Step 4: Giving names for comment groups	Master trainers ask the participants what kind of realities they face when planting forests: Seedlings, fertilizers, policies, fires, etc. Mapping and selecting a hot topic/issue to conduct the workshop. Conduct the workshop using the fishbowl tool ¹ .	90

¹ The Fishbowl is a tool for facilitating dialogue between those who have experience in a

Step 5: Evaluating comment groups and making next decision.	Groups present their group discussion results. Drawing up lessons learnt.	
Application scope of the workshop approach	Discussion in a big group	20
Practice the workshop approach	Groups demonstrate methods of pot filling, cutting propagation, pruning, fertilizer application and soil preparation.	110

Master Trainers' Notes

To ensure the farmers' participation in the training of transferring science and technology, facilitators should introduce methods to help farmers in thinking, raising their voices, analysing, synthesizing and making decisions themselves. The workshop is a very useful approach to encourage participants to brainstorm about many new ideas in a short time. Creative ideas can come from actual life experience and from science reasoning. On that basis, facilitators can support participants to analyse and make a decision on a certain issue.

Process of the workshop approach

The workshop approach has 5 steps: 1) Introduction to topics/issues for discussion. 2) Getting comments/opinions. 3) Mapping comments/opinions. 4) Giving names for comments/opinion groups. and 5) Evaluating comment/opinion groups and making decision for next steps.

How to implement each step:

Step 1: Introduction to topics/issues for discussion

Master trainers/facilitators introduce issues they need to discuss, explain the objectives and outputs for the participants. For example:

After the workshop, you will be aware of advantages and disadvantages of the improvement of the extensive garden at your village.

The purpose of this meeting is to bring out solutions to help you overcome difficulties in investing in white China-tree seedlings.

Step 2: Collecting comments/opinions

1. Master trainers ask questions to stimulate participants thinking on the discussion issues. For example: Currently, do you face any difficulties in afforesting?

2. Let participants think for 5 minutes. Master trainers can also request participants to write down their answers in the notebooks.

3. Request participants to provide comments/opinions by:

- Giving card papers to participants that are prepared by facilitators in advance to write down their comments/opinions, write with big letters and each card is used to write one comment/opinion.
- Alternatively, participants can speak out their comments/opinions and facilitators write them on card papers.

way that exposes others to their knowledge while expanding the collective understanding of a subject. For details instructions click here: <http://slitoolkit.ohchr.org/data/downloads/fishbowl.pdf>.

Note: At this step, facilitators should respect all the comments/opinions given by participants, should not criticize, assess or argue on those opinions.

Step 3: Mapping opinions

If facilitators choose to let the participants write their opinions on the paper themselves in step 2, they can now invite each participant to bring their cards to the front. Facilitators can invite one or two people to stick their cards on the board/wall. Then, the next persons will continue to stick their cards below or next to the two first ones if they have similar opinions.

Facilitators can demonstrate how to stick cards on the board by taking one card up and asking, “Is this opinion similar to any opinions on the board?”; if yes then stick it below or next to that opinion. This demonstration can be repeated for two or three opinions until the participants know how to do it.

If in step 2, facilitators wrote down participants’ opinions on cards, they will guide them to map opinions by:

- Selecting one opinion card to stick it on the board.
- Selecting the next opinion card and asking: “Is this opinion similar/the same as the first one?” If yes, stick it below the first one; if no, stick it in another spot.
- Continue to do this until all opinions are put up on the board.

There will be opinion groups on the board when this step is finished.

Note: During the process of mapping opinions, facilitators should encourage participants to continue thinking and providing further opinions.

Step 4: Giving names for opinion groups

Facilitators ask participants to come up with a title for each group of opinions. The title of opinion groups must show the most common meaning of that particular opinion group. After that, facilitators will together with participants check again if all opinions are in the correct group.

Step 5: Evaluating opinion groups and making next decision

After giving titles to all opinion groups, facilitators will base the objectives and outputs of the workshop on the opinion groups:

- Assess strengths and weaknesses of each opinion group with the aim to select or find solutions suitable to local conditions.
- Make implementation plans for each opinion group (in case of opinion groups all contribute to reach outputs).

Application scope of the workshop approach

The workshop approach has proven to be the most effective in the meetings and workshops to solve a problem, to make a decision and to make plans. In the training, facilitators can use all or each step of this approach, which is appropriate to the training contents and participants.

The workshop approach is suitable for trainings related to experience of farmers or changing attitudes and behaviours of farmers.

When using the workshop approach, facilitators should estimate the appropriate time of the workshop. This approach requires that the facilitators ensure that all opinions are heard and that there is an opportunity for participations for all participants. It is a challenging approach that requires facilitators to be well-prepared and have good facilitation skills, especially when participants are over excited with new creative ideas, or when having different opinions.

SESSION 12. DEMONSTRATION MODEL APPROACH

Objective

After the session, participants will be able to:

- Present objectives and principles of the demonstration model approach.
- Identify the establishment process of a demonstration model.
- Present notes in the establishment process of a demonstration model.
- List out the application scope of the demonstration model approach.
- Practice establishing a demonstration model.

Duration

4 hours

Training Materials and Equipment:

- Tree nursery, cutting seedlings, materials for filling pots.
- A4 paper, A0 paper, adhesive tape, felt pen.

Contents and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Objectives of establishing a demonstration model	Presentation: Master trainers ask participants, what are the objectives of establishing a demonstration model?	10
Principles of establishing a demonstration model	Group discussion Principles of establishing a demonstration model	30
Process of establishing a demonstration model Step 1: Define objectives Step 2: Preparation (select farmer households and places, make plans, design and evaluate plans, train on procedures and deliver manuals) Step 3: Establish model Step 4: Summarise, evaluate and scale up	Master trainers invite participants to visit a demonstration model (a nursery or vegetable field in the experimental farm). After visiting, master trainers request the class to discuss: To build up a demonstration model, what activities should you do? What should you pay attention to for each activity? Group discussion. Present discussion results and draw up lessons. Name a number of successful demonstration models at your locality.	90
Practice to establish a	Groups practice to establish a tree nursery	90

demonstration model	demonstration or a new afforestation demonstration.	
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SESSION 13. DESIGN A TRAINING SESSION

Objective

After the session, participants will be able to:

- Present the steps and notes of the training session design.
- Practice to design a training session.

Duration

3 hours

Training Materials and Equipment:

- Tree nursery, cut seedlings, materials for filling pots.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	Master trainers facilitate and participants implement	15
Introduction to objective and contents of the session	Presentation	5
Design a training session by using experience learning cycle	Request participants to recall a training session and analyse it in according to the experience learning cycle.	20
Define objectives of the training session	Discuss which verbs can be used to write objectives of the session.	20
Design learning activities	Groups practice designing activities following the experience learning cycle.	30
Design dynamic exercises	Individual participant practices and presents in front of the class.	30
Practice designing a training session	Individual participant practices and presents in front of the class.	60

Master Trainers' Notes

Use the experience learning cycle to design a training session

Learning activities will be designed following the experience learning cycle, which includes four steps: experience – analysis – drawing up lessons - application. When applying any training approaches mentioned in this manual, you will be able to design learning activities following the experience learning cycle.

Designing/preparing a training session using the experience learning cycle consists of the following steps: 1) Define objectives of the session. 2) Design learning activities: experience – analysis – drawing up lesson – application. 3) Design dynamic exercises for warming up in the beginning of the session.

1. Define objectives of the session

When designing a training session, facilitators need to define objectives of that session. The objectives of the session are things participants will do, will be able to do and will obtain after that session. When writing the objective of the session, you will use the following sentence structure: After the session, participants will be able to do (what), or/and did (what) or/and will (how).

Words using to express objectives are verbs denoting outputs as:

Do	Tell	Distinguish	Prove
Speak	Describe	Define	Admit
Write	List out	Compare	Implement
Demonstrate	Explain	Measure	Repair
Draw	Adjust	Rank	Bring out
Organize	Depict	Build	Find solutions
Select	Answer	Narrate	Agree

Should not use verbs denoting process as:

Know	Understand	Remember	Think
Discuss	Consult with	Share	Have knowledge

2. Design learning activities

After defining the objectives of the session, facilitators will design learning activities to obtain that objective. Learning activities will be designed so that they cover the four steps of the experience learning cycle: experience – analysis – drawing up lesson – application. The activities will be well-balanced between the four steps.

Step 1: Experience

Output	Participants hear, see and feel an experience, which has a problem that needs to be solved. Thus, solving the problem presented by the experience is the objective of the session.
Activities	The whole group participates in an activity where a problem situations is presented to encourage thinking and feeling.
Roles of facilitators	Design experience activities based on the objectives of the session. For example, with the objective: after the session, participants have analysed benefits of “raising pigs by a new method”, experience activities have to ensure participants are listening, to see and to feel the advantages of the new method of raising pigs and disadvantages of pig raising that did not follow the new methods. Facilitators facilitate this activity.
Methodology	Play roles Imitate a real situation Sample exercise/Case study/ tell story

	Study visit to get information and experiences Group discussion Play games
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Step 2: Analysis/reflection

Output	Participants are fully aware of the issues presented in the experience part. They can explain the feelings resulting from the experience, define problems, and analyse its causes and effects.
Activities	Analyse experience activities through answering master trainer's questions. The participants also ask the master trainer to explain and analyse in more detail if it is not clear. The participants talk about their thinking gained from the experience.
Roles of facilitators	Design questions to assist the participants to analyse their experience deeply, easily and quickly. Guide the participants to analyse by facilitating the class and the groups to answer questions. Encourage the participants to think and speak out their ideas.
Methodology	Individual participants analyse and speak out in their group Discuss in small groups and then present to the class Discuss in class

Step 3: Generalize and draw up lesson

Output	The participants point out things that need to change in behaviour, attitude, ways of doing; conclusion, principles, process; lesson learnt.
Activities	Groups draw up lessons learned from activities of experience and analysis/reflection.
Roles of facilitators	Facilitators facilitate the process of drawing lessons learnt by asking good questions such as: <ul style="list-style-type: none"> • What should we do differently in this context? • What can we do better? • What do all those things mean? • What lessons we can draw up from the above mentioned opinions? • What principles can we draw up? • What did we learn? Facilitators add more information to improve those conclusions made by the participants.
Methodology	<ul style="list-style-type: none"> • Presentation • Demonstration • Discussion in a big group • Tables, formats, listed tables • Read

Step 4: Apply

Activities	The participants apply new lesson learnt in their life or their jobs
Roles of facilitators	Facilitators assist participants to recognize chances to change their old behaviours and apply new ways of doing things. Facilitators can use <u>applied</u> questions such as: In the future, how will you deal with the situations in a different way? Can you imagine how you will apply things you have learned from the session? Facilitators can ask applied questions in the class, but they can also change those questions into various exercises with more activities and can use the methods below.
Methodology	Practice and do it immediately. Play act with open topics (don't have a script in advance, participants take initiatives and create rhythm during the performance themselves). Make action plans. Organise fact finding tours. Handle new situations.

3. Design dynamic activities

Warming up activities usually are conducted in the beginning of the session, but are designed at the end of the preparation process. Warming up activities aim to help participants to concentrate all their heart and brain on learning and on the session. During this part, the detailed content of the session is not mentioned, but it directs participants thinking towards the topic of the session. Warming up is different from rousing activities which only focus on creating an exciting atmosphere or energising participants.

You can attract the participants' attention to the lesson by:

- Bring real samples, pictures, specimens and other visual training tools relating to the lesson for the participants to see.
- Tell a short story, read a poem or provide a piece of information that relates to the lesson.
- Raise a provocative question related to the topic of the lesson; you can write that question on the black board.
- Make a powerful statement related to the topic of the lesson.
- Ask the participants to tell their own story or experience related to the topic of the lesson.
- Let the participants see a beautiful product and ask them if they want to make a similar product.
- Write the name of the lesson on the black board.
- Facilitate a game related to the lesson.
- Arrange tables and chairs in a different way.

SESSION 14. TRANSECT WALKS AND TRANSECT MAPPING

Objective

After the session, participants will be able to:

- Present the objective and meaning of transect mapping.
- Define contents, time and methodology.
- Present the ways of implementing and establishing future transect routes/lines.

- Practice transect walks and transect mapping.

Duration

4 hours

Training Materials and Equipment:

- A location that needs to be investigated.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Objective and meaning of the transect map	Presentation: Master trainers ask participants what the objective and meaning of transect mapping is.	10
Contents	Presentation	10
Time and methodology	Presentation	10
Process of transect walks	Guide the transect walk. Groups practice to do it at different locations.	100
Draw a current outline and a future plane figure	Groups practice to draw a current outline and a future plane figure.	60

SESSION 15. VILLAGE MAPPING

Objective

After the session, participants will be able to:

- Present the objective and meaning of drawing a village map.
- Define contents, time and how to do draw a village map.
- Practice drawing a village map.

Duration

4 hours

Training materials and Equipment:

- Village, experimental farm.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	Master trainers facilitate and participants implement.	15
Introduction to objective and contents of the session	Presentation	5
Objective and meaning of drawing a village map	Presentation: Master trainers ask participants what the objective and meaning of drawing a village map is.	10
Contents	Presentation	10
Time and methodology	Presentation	10
Drawing a current map	Groups draw a current village map and discuss general difficulties, opportunities and solutions for the whole village.	90
Practice to draw a village map	Work in groups.	70

SESSION 16. PRIORITY RANKING AND MARKING

Objective

After the session, participants will be able to:

- Present the objective and meaning of classification, priority ranking and marking.
- Define contents, time and methodology.
- Present the ways to do classification, priority ranking and marking.
- Practice classifying, ranking and marking.

Duration

4 hours

Training Materials and Equipment:

- A location for investigation, stone, seeds of china-trees.
- A4 paper, A0 paper, adhesive tape, felt pen.

Content and Methodology

Contents	Methodology	Time (minutes)
Warm up game or song	MTs guide and participants do	15
Introduction to objective and contents of the session	Presentation	5
Objective and meaning of	Presentation: Master trainers ask the participants	10

classification, priority ranking and marking	what the objective and meaning of classification, priority ranking and marking is.	
Principles to classify, rank and mark points	Presentation	10
Objects to be classified, ranked and marked	Presentation	10
Methodology (square method)	Use squares to classify, rank and mark points for selecting forest trees species in the locality.	60
Time and implement	Guide participants on methods and implementation.	60
Practice to classify, rank and mark points	Groups practice to classify, rank and mark points.	70

PART B. AGROFORESTRY

SESSION 1. OVERVIEW OF AGROFORESTRY

Objective

To provide participants an overview/basic understanding and knowledge of agroforestry (AF)
After the session, participants will be able to:

- Be able to explain what agroforestry is, and what are the benefits of agroforestry production are.
- Participants will have analysed the advantages and disadvantages of some typical agroforestry models and the conditions to apply them.
- Participants have defined basic principles to select soils, crops/trees and animals for an agroforestry model.
- Groups of participants have presented their ideas for designing an agroforestry model for their local area.

Duration

4 hours

Training Materials and Equipment:

- White board, 1 white board marker, 5 A0 paper markers, A0 paper, ruler, adhesive tape, pencils, crayons and illustrated pictures.

Contents and Methodology

Contents	Methodology	Time (minutes)
Introduction to agroforestry and objectives of the session	Master Trainers present contents of the agroforestry program.	15

Concept and benefits of agroforestry	<p>Master Trainers raise a question in front of the class for discussion:</p> <ul style="list-style-type: none"> What is agroforestry? <p>Participants synthesize and generalize the concept of agroforestry.</p> <p>Master Trainers raise a question in front of the class for discussion:</p> <ul style="list-style-type: none"> What are the benefits of agroforestry? <p>Participants synthesize and show the benefits of agroforestry.</p>	30
Typical agroforestry models	<p>Master Trainers introduce two conventional agroforestry models.</p> <p>Master Trainers introduce two improved agroforestry models.</p> <p>Master Trainers discuss with participants and suggest conditions needed to apply each models.</p>	45
	<i>Tea Break</i>	
Principles to select soil types, crops and animals for an agroforestry model	<p>Master Trainers raise questions in front of the class for discussion about:</p> <ul style="list-style-type: none"> Principles to select soil types Principles to select crops and animals <p>Master Trainers synthesize and show the principles and analyse the reason why it is like that.</p>	30
Design an agroforestry model	<p>Divide the class into 3-5 groups to discuss 2 questions:</p> <ol style="list-style-type: none"> Describe and analyse advantages/disadvantages of improved agroforestry systems, which you know from your areas? Can you design the agroforestry system, which suits your locality the most? <p>Groups present their group design.</p> <p>Master Trainers guide the class to evaluate the design.</p>	60
Evaluate the session	<p>Evaluate the results of the session.</p> <p>Request groups to assign tasks for preparation of the second session.</p>	5

Master Trainers' Notes

When introducing agroforestry models, you should use pictures to make the concept easier to understand.

You should present a model that is suitable to the local conditions.

Before ending the session, you should request participants to prepare the tools for the next session.

SESSION 2. EROSION AND FUNDAMENTAL PRINCIPLES OF AN AGROFORESTRY SYSTEM

Objective

To teach participants the technical knowledge to preserve soil and water on a sloping farming system.

After the session, participants will be able to:

- Assess the severity of the soil erosion and the importance of prevention methods.
- Highlight the concept and the effects of hedgerow systems.
- Make the A-frame and use the A-frame to measure contour lines.
- Identify the land slope and select a suitable distance between two hedgerows.

Duration

4 hours

Training Materials and Equipment:

- For the classroom: white board, 1 white board marker, 5 A0 paper markers, A0 paper, ruler, adhesive tape, pencils, crayons.
- Cultivated field on sloping land divided into 5 plots and each group carries out their group trials in one plot.
- For the field: knife, ruler, bamboo, rope, thin steel wires or small pins to make A-frame, measuring tape, hoes, shovels and 50 small sticks.

Contents and Methodology

Content	Methodology	Time (minutes)
Introduction to the contents and objectives of the session	Master trainers present the contents of the three session. Master trainers introduce the objectives of the session.	5
Soil erosion at the locality	Master trainers divide the class into small groups and request them to discuss the questions below: <ul style="list-style-type: none">• Is there any phenomenon of soil erosion at the locality?• How does soil erosion affect plants and soil on sloping land?• What are the causes of soil erosion?• Do you know any solutions to reduce soil erosion?• At your locality, which methods have been applied?	45
Agroforestry and hedgerow farming system	Master trainers raise questions in front of the class to discuss: <ul style="list-style-type: none">• What kind of hedgerows does agroforestry farming have? Introduction of hedgerow systems and its effects on agroforestry	10
Introduction to determining slope, making A-frame and measuring contour lines	Master trainers ask participants to go to the selected experimental field to observe: <ul style="list-style-type: none">• Signs of soil erosion in the field, the slope of the field, soil conditions, stones, grass, vegetation, etc.	30

	<p>Master trainers gather the class into a convenient place in the field and raise questions for discussion:</p> <ul style="list-style-type: none"> • What is the distance between the hedgerows (the width of the belt)? How do you determine the width? <p>Master trainers introduce the formula to calculate the width of the belt, the slope and then together with the whole class agree on the distance between hedgerows and start to measure the contour lines.</p> <p>Master trainers introduce the A-Frame to the class and demonstrate how to make it.</p> <p>Master trainers introduce the concept of measuring contour lines and demonstrate how to do it.</p>	
	<i>Tea Break</i>	
Practicing measuring contour lines	<p>Master trainers divide the class into small groups to make sure that each group has a chance to measure at least one contour line.</p> <p>Ask 2-4 participants to measure the boundary of the field, mark where they should start to measure the contour lines according to the hedgerow distance that have been agreed upon.</p> <p>Master trainers ask the first group to make an A-Frame as instructed, and then use that A-frame to measure the contour lines. Other groups observe, and in turn start measuring contour lines under the guidance of master trainers.</p>	45
Discussion and agreement on the establishment of hedgerow systems	<p>Master trainers gather participants to one place in the field and raise questions like:</p> <ul style="list-style-type: none"> • How many seeds/seedlings should be planted/transplanted in a hedgerow? Why? • Considering the real situation in the field, should we combine establishment of the hedgerow with ditches or with stone fences? Why? • If digging the ditches or making the stone fences, how deep should we dig? • Where should we dig the ditches or make the stone fences? <p>Master trainers request groups to discuss and draw their group design in the field or in the classroom.</p> <p>Master trainers ask one group to present their</p>	50

	group discussion results on the establishment of the hedgerow systems and ask other groups to give their comments. Master trainers together with groups analyse and select a suitable design and reach an agreement.	
Evaluation of the session and requirements for the three sessions	Evaluate the results of the session based on the participation of each group and the results of the measured contour lines. Request groups to prepare materials for the three sessions.	10

Master Trainers' Notes

This session is to guide participants on how to recognise soil erosion and the establishment of a hedgerow system as a method to prevent soil erosion.

The theoretical part can be arranged first and the practical part can be organized later or vice versa, let experience by doing come first and then synthesize into the theory (because this topic is also very close to reality).

Before the session ends, master trainers should explain the following session and what materials participants should prepare.

SESSION 3. ESTABLISHMENT AND MAINTENANCE OF HEDGEROW SYSTEMS

Objective

To provide participants with the technical knowledge of making ditches and stone fences, soil preparation for sowing, treatment of seeds, sowing/planting and maintenance of hedgerows

After the session, participants will be able to:

- Specify techniques of making ditches and stone fences, sowing/planting and maintenance of hedgerows in a farming system on sloping land.
- Practise to make ditches and stone fences (if there are any), prepare the soil for sowing and sow hedgerows.
- Recommend suitable solutions to maintain and use the hedgerows effectively in a farming system.

Duration

4 hours

Training Materials and Equipment:

- For the class room: white board, white board marker, A0 paper markers, A0 papers, rulers, adhesive tape and crayons.
- Field on sloping land divided into 5 plots and each group carries out their group trials in one plot.
- For the training field: seeds/seedlings, knife, scissors, measure tape, hoes and shovels.

Contents and Methodology

Content	Methodology	Time (minutes)
Introduction to the	Master trainers present the objective and contents of	5

session	the session.	
Techniques for ditches, stone fences	Master trainers introduce the standards and sizes of ditches and stone fences and techniques for ditches and stone fences.	5
Function of different types of hedgerow species	<p>Master trainers introduce species used for hedgerows (tephrosia candida, leucaena).</p> <p>Master trainers request the class to discuss:</p> <ul style="list-style-type: none"> • Where should we grow tephrosia candida and where should we grow leucaena for hedgerows? • Should we keep the natural plant/tree belts in the field? Why? How should we keep them? <p>Master trainers and the whole class agree on the establishment of hedgerows and natural hedgerows.</p>	40
Techniques for soil preparation and sowing hedgerows	<p>Master trainers introduce soil preparation methods for sowing/planting hedgerows: size of furrow for sowing seeds, size of hole for planting seedlings (if they have any), furrow by furrow distance (the best distance is 30cm).</p> <p>Master trainers raise questions in front of the class and request participants to answer:</p> <ul style="list-style-type: none"> • Is the quality of the seeds/seedlings important? Why? • What is a good seed/seedling? <p>Master trainers synthesize opinions and agree in front of the class.</p> <p>Master trainers demonstrate how to treat seeds (both species) and guide class in doing it.</p> <p>Master trainers introduce techniques for sowing seeds and for planting seedlings.</p>	15
Practice make ditches/stone fences	<p>Master trainers ask all groups to go to the field and to gather at the first belt at the top of the field.</p> <p>Master trainers demonstrate how to make ditches and stone fences (if there are any).</p> <p>Master trainers divide the class into small groups (according to the design, there are a certain number of ditches/stone fences, and there will be the same number of small groups) and ask groups to make it. Master trainers observe and support groups while they are working.</p>	30
Prepare soil and sow hedgerows	<p>Master trainers demonstrate how to weed, make furrows and dig holes.</p> <p>Master trainers demonstrate how to sow seeds, cover them with soil and mulch seeds after sowing.</p> <p>Participants observe.</p> <p>Master trainers ask groups to sow seeds following the design (sowing tephrosia candida, leucaena).</p> <p>Master trainers observe and support groups in sowing/planting.</p>	30
	<i>Tea Break</i>	
Maintain hedgerows	Master trainers divide the class into small groups and ask	75

	<p>them to discuss the questions below:</p> <p><u>Group 1:</u></p> <ul style="list-style-type: none"> • What is a good hedgerow? • What should we do to make a hedgerow grow and develop well? • What is the best height for hedgerows, which will not interfere negatively with the maize? • When is the best time to prune the hedgerows? How will you prune them? <p><u>Group 2</u></p> <ul style="list-style-type: none"> • What is the suitable shape of hedgerows after pruning? Draw and describe the shape of hedgerow after pruning? • What are the reasons you decided to prune hedgerows at that time? • When pruning the hedgerows, what should you pay attention to if you want to produce the seeds for later? • What should we continue to do to make the hedgerows develop well? <p><u>Group 3</u></p> <ul style="list-style-type: none"> • If there are any big trees in the field, what should we do? What are the techniques for pruning branches and cutting trees? • Where should we keep the pruned branches and leaves? Why should we do that? <p>Master trainers ask each group to report and other groups to comment. Master trainers synthesize the information and reach a decision with the whole class.</p>	
Wrap up	<ul style="list-style-type: none"> • Evaluate the session. • Ask the whole class to continue to keep track and maintain the experimental field. 	5

Master trainers' notes:

Use drawings to introduce the techniques of an agroforestry system so it will be easier to understand.

The theoretical part can be arranged before the practical part or vice versa to let participants experience first and then synthesize that into theory (because this content is also practical and easy to implement).

Manuals are in the Agroforestry part.

PART C. FORESTRY

SESSION 1: CRITERIA FOR SELECTING TREE SPECIES

Objective

To help participants identify criteria for afforestation.

After the session, participants will be able to:

- Analyse five criteria for effective afforestation.

Duration

4 hours

Training Materials and Equipment:

- A0 paper, adhesive tape and markers.
- The participants should go into the field and visit a forest. After visiting the field, they should relate what they have seen to the criteria for selecting a suitable species.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the contents of the session	Introduction to the session schedule and main contents for criteria for selecting tree species.	15
Criteria for selecting tree species	Questions for group discussion: <ul style="list-style-type: none">• List out criteria for selecting tree species.• Main contents of each criterion for selecting tree species. Present group discussion's results Add/supplement to the group discussion's results.	90
	<i>Tea Break</i>	
Visit an afforestation	Divide and assign tasks for each group: observe, analyse, and draw up lessons learned. Question: Does the afforestation comply with the 5 criteria for selecting tree species? Why?	60
Feedback and summary	Feedback and provide comments: <ul style="list-style-type: none">• What have we done?• What have we done well and what not so well?• What are some solutions to overcome those things not done well?	30

Master Trainers' Notes

Master trainers should relate the teaching to the real situation of the participants' villages in order to have appropriate guidance for each specific case.

Master trainers should focus on analysing the five criteria:

- Species that can provide various benefits.
- Species that can be produced and can be produced at a large scale.
- Species that can be produced as a commodity.
- Species that have markets to sell to.
- Species that have a good seed source and good seeds.

Almost all participants who have been involved in afforestation will discuss and bring out the criteria. However, they may combine several criteria in one. Therefore, master trainers should pay attention to raising open questions to draw up lessons learnt.

SESSION 2. TECHNIQUES TO PRODUCE SEEDLINGS FROM SEEDS

Objective

To equip participants steps in the process of producing seedlings by sowing method.

After the session, participants will be able to:

- Present technical contents of the sowing method, which are appropriate for producing seedlings.
- Perform techniques on soil preparation, seed treatment, seed sowing and transplanting.
- Identify activities to maintain and control pests and diseases from time of sowing until seedlings become good enough according to the technical standards and are ready for transplanting.

Duration

3.5 hours

Training Materials and Equipment:

- For the classroom: white board, white board markers, A0 paper markers, A0 paper, rulers, adhesive tape and crayons.
- For the training field: A piece of land having area around of 36 – 54 m² (it depends on practical plan of seedling production), relatively flat, near water source and convenient for management, measuring tape, hoes, shovels, seeds, poly bags, soil, fertilizers, sprayers, watering-can, germinated seeds, seedlings, poly bags with potting soil.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the session	Master trainers present the objectives and contents of the session (raise questions to list out contents); What activities will be included in the seedling production from seeds? Are there any other activities?	5

Group discussion	<p>Master trainers divide the class into 5 small groups and ask them to discuss the following questions:</p> <ul style="list-style-type: none"> • Can you explain the techniques of soil preparation for a nursery and the techniques of filling soil into the bag for saplings? • Can you explain the techniques of seed treatment, soaking, sowing and transplanting? • Can you explain the techniques of sapling management (watering, weeding, applying fertilizers)? • Do you know what kind of pests and diseases can damage saplings? What are some of the preventive methods? • Can you explain the techniques of inhibiting seedling growth, for the seedlings which are ready to be transplanted? <p>Each group will discuss one question and rotate it to the next group for their comments.</p>	30
Participants present group discussion results and master trainers sum up	<p>Representatives of each group present discussion results.</p> <p>Master trainers sum up and wrap up the knowledge into steps: how to do it – why – and common mistakes in each step.</p> <p>(carry out each step following the discussion questions)</p>	60
	<i>Tea Break</i>	
(continued...) Participants present group discussion results and master trainers sum up	<p>Representatives of each group present discussion resultsæ</p> <p>Master trainers sum up and wrap up the knowledge into steps: how to do it – why – and common mistakes in each step</p> <p>(carry out each step following the discussion questions)</p>	45
Practical guidance	<p>Master trainers give guidance on technical issues: Soil filling in the pot/bag, seed treatment, seed soaking, seed sowing, seed and seedling transplanting.</p> <p>At each step, master trainers should invite one participant to implement it and correct him/her if he/she did it wrong and talk about the harmful effects if they do not do the steps correctly.</p>	45

Summary	<p>Sum up and evaluate the session.</p> <p>If the class practices to produce seedlings: assign groups to prepare materials and tools for the practical exercise.</p> <p>If the class does not practice to produce seedlings: give it as a homework exercise for each participant to do it according to the seedling production needs of their family.</p>	5
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Master Trainers' Notes

This is a theoretical session followed by illustration. It has a lot of content, thus master trainers should prepare some materials in advance to illustrate the theoretical part.

For additional practice, the participants will do it at home if they want to produce seedlings.

Master trainers should take advantage of the participants' knowledge on seedling production.

Master trainers should not be hasty to conclude and criticize on the steps that are either wrong or correct. On the contrary, MTs should give open questions to encourage participants to make conclusion themselves on how to make seedlings using the right techniques.

SESSION 3. INTRODUCTION TO THE FOREST SECTOR

Objective

Participants gain understanding about the basic concepts of forestry.

After the session, participants will be able to:

- Present characteristics of the forest sector in comparison with agricultural production.
- Know how to distinguish between different types of forests in Vietnam.
- Present the forest sector milestones focusing on major changes.
- Know the development orientation of the forest sector period 2011 – 2020.

Duration

4 hours

Training Materials and Equipment:

- Classification table of the natural forest by forest conditions.
- A0 paper, projector, felt pen.
- Criteria for classifying afforestation by forest age and quality.
- TOT manuals in relation to forest policies and strategies.

Contents and Methodology

Content	Methodology	Time (Minutes)
Introduction to the session	Master trainers present the objectives and contents of the session.	15
Concept of	Master trainers ask:	45

forestry	<ul style="list-style-type: none"> Who has been participating in forestry training courses? Who has been involved in forestry activities? <p>Group discussion:</p> <ul style="list-style-type: none"> What is the difference between the forestry sector now and 10 years, 20 years, 30 years and 50 years ago? <p>Focus discussion on the characteristics of forest ownership and forestland over various periods, major milestones of forestry policy changes, and the differences of the forest now and before.</p> <p>Representative groups (invite 1 – 2 groups) to present group discussion results.</p> <p>Other groups add on/supplement to comments/opinions</p> <p>Master trainers synthesize and add further comments if needed.</p> <p>Group discussion:</p> <ul style="list-style-type: none"> Who has been listening or reading about the development strategies of Vietnam's forest sector from the period of period 2011 – 2020? Can you talk about the basic contents of the development strategies of Vietnam's forest sector at that period? What are the main national orientations of the forest development strategies in this period? <p>Master trainers wrap up and write on the white board and add further comments (if necessary).</p> <p>Master trainers introduce the definition of the forestry term and select the best answers.</p>	
Characteristics of the forest sector	<p>Pass around a marker and ask participants to share their knowledge.</p> <p>Whenever receiving the marker, that particular participant is requested to mention a feature of the forest sector, which is different from other sectors such as agriculture, industry, etc.'</p> <ul style="list-style-type: none"> Master trainers wrap up all opinions from the participants. <p>Ask participants to sort out the opinions into groups.</p> <p>Master trainers and participants discuss each opinion group.</p> <p>Ask participants if they want to add further comments</p> <p>Master trainers wrap up and add more comments if necessary.</p>	60
	<i>Tea Break</i>	
Forest classification	<p>Class discussion on the classification of natural forests and afforestation.</p> <p>Group discussion on the forest classification done in the traditional way and by the national classification system.</p> <p>Present group discussion results.</p> <p>Master trainers wrap up and add on.</p>	25

	Master trainers introduce few common forest classification methods in Vietnam for natural forests and afforestation.	
Development history of Vietnam's forest sector	<p>Class discussion on:</p> <ul style="list-style-type: none"> • What are the major changes in the forest sector? Time and period that changes took place. • What were the policies on land and support for forest development in the past? 	60
Summary	<p>Ask four participants to summarize the main points of:</p> <ul style="list-style-type: none"> • The concept of the forest sector. • Characteristics of the forest sector. • Forest classification. • Development history of Vietnam's forest sector. <p>Other participants can add on.</p> <p>Master trainers sum up and emphasize the main contents of the session. Evaluate the session.</p>	20

Master Trainers' Notes

Master trainers should help participants to:

- Understand the main characteristics of the forestry sector.
- Understand a number of forest classification methods, which are applicable now.
- Get an overview of the history of forest development at different periods.
- Recognize the trends of forest development in the world and the forest development strategies of Vietnam for period 2011 – 2020.

SESSION 4. SOME COMMON MODELS OF AFFORESTATION

Objective

Participants gain basic knowledge of some afforestation models.

After the session, participants will be able to:

- Present features of each common afforestation model in Vietnam today.
- Identify products generated from each model.
- Present which conditions will be suitable for which model.
- Analyse strengths and weaknesses of each model.

Duration:

4 hours

Training Materials and Equipment:

- Classification table of various afforestation models.
- A0 paper, projector, felt-pen.

Contents and Methodology

Contents	Methods	Time (minutes)
Introduction to the contents of the session	Master trainers present the objectives and contents of the session	5
Classification of afforestation models	<p>Master trainers start by asking the following questions:</p> <p>Is all afforestation the same? If we have to classify our class, how will you do it? Why do you classify it as that => the classification depends on the purpose to use later.</p> <p>Group discussion on the classification of afforestation models:</p> <ul style="list-style-type: none"> • To distinguish this afforestation with other afforestation, which characteristics will we rely on? Assign a name for each model that the groups came up with. • What are the products of each model that the groups came up? • Select randomly a group to present group discussion results. • Ask other groups to add on. • Sum up and conclude on the models that the class has discussed. 	60
Factors that need to be considered when selecting models	<p>When selecting a wife or a husband, what features should you consider, for example, features of the form: height, weight, the length of feet, etc.</p> <p>Group discussion:</p> <ul style="list-style-type: none"> • When selecting an afforestation model, which factors should we consider? With agreed afforestation models, how are the conditions for application and are they compatible with each of the above-mentioned factors? • List the factors which were mentioned by all groups. • Select randomly a group to present the application conditions for each model. • Add on more comments and bring forward the meaning of the group exercise. 	60
	<i>Tea Break</i>	
Analyse strengths and weaknesses of each model	<p>Group discussion:</p> <ul style="list-style-type: none"> • Each group will select a model and analyse its strengths, weaknesses, opportunities and challenges in specific conditions of their locality (divide the class into small 	45

	<p>groups by localities of the participants).</p> <ul style="list-style-type: none"> • Invite 2 groups (one group presents their discussion results and one group is opponent and vice versa). • Sum up and reach a mutual agreement. 	
Case study	A case study of a household: bring up a detailed case to discuss and with the outcome of selecting an appropriate model.	45
Summary	Invite representative participants to sum up each part of the session. Two participants at a time will sum up specific parts from the training (one person will sum up and the other will add on).	15

Master Trainers' Notes

Master trainers should conduct this session using a participatory approach.

The objectives of the session should emphasize:

- Teaching participants to know how to analyse related factors when making decision on how to select afforestation models.
- The classification of different afforestation models based on forest features.
- The selection of factors to make considerations.

SESSION 5. FOREST POLICIES

Objective

Participants gain basic information about current forest policies.

After the session, participants will be able to:

- Present basic contents of forest land policies.
- Remember major points of the law on forest protection and development.
- Distinguish between main characteristics in managing special use forests, protected forests and production forests.
- Orient themselves about the future forest policies.

Duration

4 hours

Materials and Equipment:

- A0 paper, projector, legal documents.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents and program	Master trainers introduce the topic and raise questions and ask participants what they would like to learn during the training session	15
Rights and obligations of local people in the allocated and unallocated forests and forest land	<p>Question and answer game:</p> <ul style="list-style-type: none"> Organize the class into two teams. One team has the right to ask and the other team has the obligation to answer. After each answer, the answering team will have the right to ask a question. The questions in the game should focus on the rights and obligations of the local population and organizations involved in forest management. 	45
The main contents of the law on forest protection and development	<p>Problem cap game:</p> <ul style="list-style-type: none"> Request each participant to write down on a piece of paper an issue that they are not clear about and/or concerned with, which relates to forest policies. After gathering all papers into a cap, participants in turn will draw out a paper and will have to answer the question they have picked. If the person cannot answer the question he/she picked, he/she can ask someone to provide the answer. Sum up the questions that have been raised and answered. Master trainers support participants in providing answers if there are any unanswered questions. <p>Group discussion:</p> <ul style="list-style-type: none"> Master trainers ask additional questions not raised and ask groups to answer. Present group discussion results. Comments from other groups. Conclusion of master trainers on the questions of groups: which questions have been answered completely, which ones have been answered but still not completely and which ones have not been answered at all. For those unanswered questions, master trainers will assist groups to come up with answers by giving suggestions. 	60
	<i>Tea Break</i>	
The differences in management of natural forest and afforestation which	<p>Class discussion on the following questions:</p> <ul style="list-style-type: none"> What is the difference between protecting the special use forest, the protected forest and the production 	60

are classified as special use forest and protected forest	<p>forest?</p> <ul style="list-style-type: none"> • What is different when conducting logging operations in the special use forest, the protected forest and the production forest? • What is different in developing the special use forest, the protested forest and the production forest? 	
Summary and wrap up the session	Invite random participants to provide a summary of the contents from the session with the others supplementing.	15

Master Trainers' Notes

Master trainers need to prepare hand-outs of some important regulations which relate to farmers' interests.

Master trainers should focus on articles in the law which relate to the obligations and rights of the farmers.

Master trainers should get a list of questions ready for the training session.

Master trainers should use the forest policy chapter in the TOT manual as the basic contents for this training session.

Discuss who can be involved in forest management, things that local people are allowed to do in forest management, and administrative procedures that farmers need to follow when implementing their rights and obligations.

SESSION 6. AFFORESTATION ESTABLISHMENT

Objective

Participants gain basic knowledge about afforestation establishment and the factors that they need to consider before beginning afforestation

After the session, participants will be able to:

- Know how to calculate needed materials and labour force.
- Know how to determine the area suitable for afforestation and the area to be left out of the afforestation.
- Estimate harvested products.
- Estimate income of a business cycle.

Duration

3.5 hours

Materials and Equipment:

- A0 paper, felt-pen, adhesive tape, projector, pictures and drawings for illustration.
- Area from a farmer household intended to be afforested.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction and concept of the afforestation establishment	Master trainers introduce the concept of afforestation. What will you establish?	10
Determine the area and activities that will be implemented during the establishment and management of the forest	<p>Group discussion on the questions below:</p> <ul style="list-style-type: none"> • What questions should be answered in the afforestation establishment? • What information do you need to collect during the afforestation establishment? • What are the fundamental activities during planting forests? 	60
Calculate needed materials, labour force and tools	<p>Group discussion:</p> <ul style="list-style-type: none"> • Cost basis • Methods to calculate various kinds of costs • Calculate depreciation (even depreciation, gradually slow depreciation). • What factors does the cost per unit depends on? <p>Present group discussion results. Explanation and agreement on group discussion plans.</p>	30
	<i>Tea Break</i>	
Estimate harvest amounts and time for harvesting	<p>Group discussion:</p> <ul style="list-style-type: none"> • Basis for the quantity estimation • What factors does product quantity depends on? <p>Present group discussion results. Explanation and agreement on a group discussion plan.</p>	45
Forecast risks	<p>Class discussion:</p> <ul style="list-style-type: none"> • What are the risks? • Types of forest business risk: natural disaster, pandemics, market price, and forest fire. • Methods to reduce risks. 	30
Summary	Draw random participants to present each mentioned topic in the discussion question list (you should make a process for random selection of participants).	10

Master Trainers' Notes

Master trainers should study how the local people normally establish an afforestation area.

Note that a full design consists of: area, density, size of the hole, management plan, logging, thinning, projected products and tree growing methods, etc.

SESSION 7. MODELS OF SUSTAINABLE FOREST MANAGEMENT

Objective

Participants will improve their knowledge of sustainable forest management-

After the session, participants will be able to:

- Present the concept of what is sustainable forest management.
- Present the characteristics of a natural forest.
- Remember and explain some model parameters of sustainable forest management.
- Know how to calculate and measure few basic parameters of the natural forest.

Duration

6.5 hours

Materials and Equipment:

- A0 paper, projector, mat paper, colour ruler and calculated tables.

Contents and Methodology

Contents	Methods	Time (Minutes)
Introduction to the training contents	Master trainers introduce the contents and objectives of the session.	15
Concepts of sustainable forest management	Ask participants what sustainable forest management is, and what factors need to be considered. Ask participants, what factors will determine the characteristics of a forest plot? What factors will determine characteristics of forest trees? If participants talk about horizontal sections, master trainers ask them what formula they use to calculate the horizontal sections.	45
Characteristics of natural forests	Small group discussion (3 – 5 people): <ul style="list-style-type: none">• What characteristics of natural forests are different from other natural resources?• What characteristics of natural forest are different from afforestation? Select 1 – 2 groups to present group discussion results and ask other groups to supplement.	30

	<i>Tea Break</i>	
Models of sustainable forest management	<p>Introduction to different models of sustainable forest management: Studying process, application scale, parameters of a sustainable forest management model.</p> <p>Divide class into three groups and discuss:</p> <ul style="list-style-type: none"> • The application of sustainable forest management for natural forests: When is it needed to rear plants, grow additional trees, log? • Explain the different characteristics of management of natural forests and afforestation? • What are the difficulties with natural forest management? <p>Groups present their group discussion results and other groups and master trainers supplement.</p>	45
Prepare for field work	<p>Make sure to clarify:</p> <ul style="list-style-type: none"> • Each group member's tasks • Tools needed to bring • Indicators and information needed to collect 	20
	<i>Lunch Break</i>	
Field Work Practice	<p>Set up sample plots for regeneration survey. Calculate and measure indicators in the sample plots.</p> <ul style="list-style-type: none"> • General information: Canopy, vegetation, slope, exposure direction. • Information of each tree in a standard lot: Species, height, diameter. 	60
Processing data and making recommendations	<p>Indicators that need to be calculated:</p> <ul style="list-style-type: none"> • Average number of trees per ha. • Average number of trees divided per diameter level per ha. • Average reserve per ha. • Total horizontal section per ha. <p>Recommend management methods for the forest plots.</p>	30
	<i>Tea Break</i>	
Present results	<p>In turn, groups present their results of collecting and processing data.</p> <p>Other groups supplement with opinions and make sure the following questions are answered:</p> <ul style="list-style-type: none"> • Did that group establish a standard lot correctly? • Are their calculations correct and sufficient? • Do they need to have any changes to make it better? 	60
Summary	Master trainers summarize the session and clarify any	25

	information that participants want to go through again.	
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Master Trainers' Notes

Master trainers have to prepare handouts and facilitate each step slowly because these are rather difficult concepts for participants; particularly those who have farming background.

This session should emphasize:

- Characteristics of the natural forest in comparison to an afforested area and other resources.
- The meaning of establishing a sustainable forest management model and the methods for making a sustainable forest management model.

SESSION 8. ENRICHMENT TECHNIQUES FOR NATURAL FORESTS

Objective

Participants will improve their technical knowledge for natural forest management.

After the session, participants will be able to:

- Present techniques for fostering natural regeneration.
- Present technical methods to maintain the forest.
- Know how to analyse the conditions in which to apply stimulating methods for the natural regeneration with or without additional planting.
- Know how to analyse the conditions in which to apply forest enrichment through different methods: on a patch, a band, or scattered planting.

Duration

4.5 hours

Training Materials and Equipment:

- A0 paper, projector and illustrated pictures.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the contents of the session and some basic concepts	<p>Introduction to the training contents and objectives and the expected outputs</p> <p>Divide class into pairs and discuss for 15 minutes:</p> <ul style="list-style-type: none"> • forest maintenance, forest regeneration stimulation, and additional planting. <p>Invite a few pairs to talk about how they understand the concepts of forest maintenance, forest regeneration stimulation, and additional planting.</p> <p>Master trainers and other groups supplement.</p>	45
Quick measurement	Introduction to a simple measurement method:	45

to determine suitable silvicultural methods	<p>A measuring tape with various marked colours that indicate different diameter spans.</p> <p>Measurement:</p> <ul style="list-style-type: none"> • Techniques for setting up a standard/sampling plot • Systematic: Parallel equidistant bands, parallel equidistant lines and square network. • Random lot drawing method. • Shape of a standard/sampling plot: Round, square or rectangle (the most common standard/sampling plot is a rectangle). For the community forest, the standard/sampling plot is usually 10m* 20m. • Principles of minimum area: Total area of a standard/sampling plot should reach 5% of the total measurement area. <p>Calculation:</p> <ul style="list-style-type: none"> • Define number of trees per diameter level in 1 ha. • Compare average number of one ha existing trees with the required number of a standard model. 	
Technical methods for natural regeneration stimulation	<p>Start up by asking: What should we do to enable trees to regenerate naturally? What are the steps to carry this out? What are the needed tools? When should one start? What are the principles to implement technical methods for the natural regeneration stimulation?</p> <p>Required techniques:</p> <ul style="list-style-type: none"> • Thinning • Maintained cutting • Natural regeneration stimulation: buds and seeds • Additional planting: on patches, bands and scattered 	45
Conditions to apply the technical methods	<p>Group discussion:</p> <ul style="list-style-type: none"> • Define factors that silvicultural methods in the natural forest management rely on. • What information from the forest measurement results will be considered during the decision making of silvicultural methods? <p>Present group discussion results.</p> <p>Supplement the group discussion results.</p>	120
Show some pictures of the natural forest management	<p>Use the projector to show some pictures of natural forest management. Master trainers should explain what people are doing in the pictures. Participants should note how to do things correctly and what could go wrong.</p>	45
Summary	<p>Request participants to sum up the contents of the training.</p>	30

Master Trainers' Notes

Master trainers need to prepare hand-outs.

Master trainers need to remember by heart some concepts of:

- Forest maintenance: Activities aimed to create favourable conditions for the forests to recover and develop including forest protection, clearing in order to stimulate new growth, forest regeneration stimulation and forest enrichment.
- Forest regeneration stimulation consists of regeneration stimulation methods of seeds and buds.
- Forest enrichment: Additional planting on a patch, on a band, and scattered.

The conditions when each method should be applied:

- Forest regeneration stimulation (regenerated trees are existing already and people only stimulate to make it happens faster). It applies to the poor forests and harvested forests under the condition that the regenerated trees meet the target for sustainable forest management (for timber production and environmental protection, etc.).
- Forest enrichment applies to the poor forests and the low quality forests, which do not have sufficient trees to meet the regeneration target.

Some technical notes for forest enrichment:

- Seedlings for enrichment should be bigger and taller compared to the seedlings used for afforestation establishment.
- Be aware of the minimum distance between a new seedling and the closest existing trees.
- Minimum area is from 1000m² or more.

SESSION 9. LOGGING OF NATURAL FORESTS

Objective

Participants will improve technical knowledge of logging in natural forests.

After the session, participants will be able to:

- Present the forest logging methods.
- Know about logging techniques for natural forests.
- Perform felling techniques.
- Design a suitable logging methods for a specific forest plot.

Duration

6.5 hours

Training Materials and Equipment:

- A0 paper, projector, training field.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to training contents and some basic	Introduction to the training contents. Master trainers ask the participants if they have	60

concepts	<p>experience with logged in natural forests. They ask them to tell about their experiences.</p> <p>The master trainers then analyse and point out the differences in logging techniques that the participants mentioned.</p> <p>Point out which mode is clear cutting, selective logging, and gradual logging.</p> <p>Together with the participants formulate the concepts of clear cutting, selective logging and gradual logging.</p>	
Conditions that apply for each logging method	<p>Group discussion:</p> <p>In which conditions should we apply the modes of clear-cut, selective and gradual logging? Explain why.</p> <p>Present group discussion results and analyse the conditions that apply.</p> <p>Clear-cutting:</p> <ul style="list-style-type: none"> • Forests are the same age, the same dimension and pure species. • Minimal slope and low risk for soil erosion. • Sufficient capacity to log. • Market price is at an acceptable level. <p>Selective logging:</p> <ul style="list-style-type: none"> • Remove younger stands as a thinning measure. • To improve quality of even-aged stands. • To place increment on the better trees. <p>Gradual logging:</p> <ul style="list-style-type: none"> • In uneven aged stands. • To promote natural regeneration. • To secure permanent forest cover. • On steep slopes. 	40
	<i>Tea Break</i>	
Principles for logging in natural forests	<p>Class discussion:</p> <ul style="list-style-type: none"> • Give participants five minutes to think and discuss the principles for logging and management of natural forests. Before doing that, master trainers should explain more about the logging principles through examples. • Invite some participants to explain the principles for logging in natural forests. <p>Principles:</p> <ul style="list-style-type: none"> • Do not disturb the main functions of the forest. • Make sure the logging does not seriously affect other forest user's needs. 	45

	Apply logging principles to each type of forest: <ul style="list-style-type: none"> • Evergreen forest • Evergreen deciduous forest • Mixed forest between bamboo and neohouzeaua (type of bamboo) 	
	<i>Lunch Break</i>	60
Practice logging in a natural forest	Master trainers should guide the participants on the practical aspects before they begin logging: <ul style="list-style-type: none"> • Define which trees will be felled. • How to use a chain-saw. • How to use portable sawmills. • Determine the felling direction. • The face cut (notch). • The back cut. • Work safety. Practice <ul style="list-style-type: none"> • Every participant must practice at least one time Review the practical activities. Provide answers for any queries from the participants.	90
	<i>Tea Break</i>	
Analyse strengths and weaknesses of each logging mode	Group discussion: Analyse strengths and weaknesses of each logging mode. Notes: Master trainers need to assist participants during the discussion session with the purpose of showing advantages and disadvantages of clear cutting, selective and gradual logging in terms of economics, society and environment.	60
Evaluate the session	Evaluate the session by topics: Delivery of the contents by the master trainers, communication approach and the usefulness of the topic.	30

Master Trainers' Notes

Master trainers should focus on:

- Practicing logging skills to reduce loss in the field and ensure safety during logging.
- Analysing strengths and weaknesses of each logging mode to enable participants to understand the suitable time for applying a certain mode.

Definitions that need to be remembered:

- Clear cut: The clear-cut is characterized by felling down the whole population of a forest plot at one harvesting time (after a harvesting season).
- Selective logging: The selective logging is the felling of single trees, usually the best

and largest ones or groups of trees, which have typical features of age, dimension, quality, status or other parameters.

- Gradual logging is conducted in the same plot with many felling times over some years.

SESSION 10. FIELD PREPARATION FOR PLANTING TREES

Objective

Participants will gain knowledge for field preparation for planting trees.

After the session, participants will have sufficient knowledge and techniques of:

- Vegetation clearance (time, by bands, totally, manually, mechanically).
- Handling vegetation after clearance (burn, chop up and scatter evenly).
- Techniques to dig and cover holes (size, distance between holes, hole-layout for planting).
- Techniques for applying basic fertilizers (time, types of fertilizers, doses).

Duration

5.5 hours

Training Materials and Equipment:

- A0 paper, felt-pen, adhesive tape, hoes, A-frame, big knife and leaflets.
- Free land, grassland, shrubs (practice in the area doing experiments).

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents	Introduction to the training contents and expected outputs.	15
Techniques for clearing vegetation	Class discussion on: <ul style="list-style-type: none"> • Are there any modes or methods? • How? • Why? • What can be applied to which cases? • Required techniques? 	60
Handling vegetation after clearance (burn, chop and scatter evenly)	Group discussion on handling vegetation. Present group discussion results. Comments and additional opinions.	60
	<i>Tea Break</i>	
Techniques for digging and covering the planting holes (size of the holes,	Class presentation on: <ul style="list-style-type: none"> • Tools to be used. • Distribution of planting holes on the planting site. • Digging techniques. 	60

distance between the holes and layout of the holes)	<ul style="list-style-type: none"> • Design of planting hole for different types of seedlings. • Mulching. 	
	<i>Lunch Break</i>	
Techniques for applying basic fertilizers (time to apply, types of fertilizers and doses to apply)	<p>Divide the class into 5 small groups for discussion on the topic of techniques for applying basic fertilizers:</p> <p>After the presentation of group discussion results, master trainers will raise various questions in relation to each technical element, for example:</p> <ul style="list-style-type: none"> • Why should we cover the tree holes from 15 – 30 days before planting? • What are the effects of doing this? • Why should we dig a hole with the size of 40cm x 40cm x 40cm and why not 30cm x 30cm x 30cm? • If the fertility of the soil is low, should the size of the holes be bigger or smaller. Why? • If the purpose of planting trees is for timber or as a raw material for processing papers and the soil fertility is higher, should the planting density be higher or lower? • What advantages and disadvantages does vegetation handling by burning have? • Why should we use the topsoil to cover the holes? • What are the effects of setting plants by the quincunx² form? • When is the most suitable time to clear the vegetation? 	30
Practice in the field	<p>Divide the field into various parts according to the number of groups.</p> <p>Master trainers observe how the participants practice and take photos of their performance.</p> <p>Evaluate the practice.</p>	60
	<i>Tea Break</i>	
Reflection and wrap up	Sum up the training contents and make comparison to the expected outputs to see what has not been covered.	20

Master Trainers' Notes

Master trainers should promote the participants' knowledge and find the gaps in their knowledge and assist them to realize themselves the areas that they need to improve in the area of soil preparation for planting trees.

² An arrangement of five objects, as trees, in a square or rectangle, one at each corner and one in the middle.

Technical notes:

Things to do 2-3 months before planting:

- Ensure that no stumps are higher than 10cm.
- Protect suitable and vivid natural regeneration of preferred species.
- Chop up wood residuals (branches, etc.).
- Distribute residues along contour lines.

If burning residues is necessary, gather it into heaps and burn them in the morning.

SESSION 11. PLANTING TREES

Objective

Participants will learn the techniques for planting trees.

After the session, participants will have sufficient knowledge and techniques of:

- Assessment of seedling quality.
- Transport and preservation of the seedlings.
- Planting trees.

Duration

6 hours

Training Materials and Equipment:

- A0 paper, felt-pen, adhesive tape, small knife, trowel, seedlings and tools for transporting seedlings.
- The field for practicing should be the land where groups have cleared and handled the vegetation (Session 10).

Contents and Methods

Contents	Methodology	Time (Minutes)
Introduction to the training contents	Introduction to the training schedule and main contents of soil preparation for planting trees.	15
Assessment of seedling quality	Questions for group discussion: <ul style="list-style-type: none">• How does a seedling meet the requirements?• What is a good seedling?• What is a bad seedling?• How does one buy good seedlings? Present group discussion results and add comments.	60
Transport and preservation of seedlings	Questions for group discussion: <ul style="list-style-type: none">• How to transport seedlings from a nursery to the field?• Which means of transportation should we use? How do we arrange the seedlings?• How do we preserve the seedlings?	60

	<i>Tea Break</i>	
Planting trees	How to plant trees: Taking soil out of the hole, taking off the plastic bag, putting seedlings into the holes and covering it.	60
Prepare for practicing	Assign specific tasks to each person.	15
	<i>Lunch Break</i>	
Practice in the field	Practice in the field. Ensure that people who have the observation tasks take pictures.	90
Reflection and wrap up	Reflect and provide comments: <ul style="list-style-type: none"> • What have we done? • What have we not yet done or not done well? • Solutions to improve things not done well. 	40

Master Trainers' Notes

Master trainers should relate the training contents to the real situation of the participants' locality to provide appropriate guidance for their specific cases.

Master trainers should focus on the mistakes that local people and the participants often make such as: Breaking the pot before planting, not taking off the plastic bag when planting, putting the seedlings into the hole and not covering correctly with soil etc.

Almost all the participants have been involved in planting trees. They have traditional knowledge and experience, thus master trainers should be familiar with it and help them to find out and supplement their knowledge gaps.

SESSION 12. MAINTENANCE OF AFFORESTATION

Objective

Participants will learn techniques for maintaining a forest plantation.

After the session, participants will have sufficient knowledge and techniques of:

- Replanting.
- Covering the foot of trees.
- Fertilizer application.
- Weeding.

Duration

4.5 hours

Training Materials and Equipment:

- A0 paper, felt-pen, adhesive tape, trowel, seedlings, fertilizers, hoes (for weeding).
- A young forest under 3 years-old.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents	Introduction to the training schedule and main contents of afforestation maintenance.	15
Replanting	A game of question and answer: Divide the class into 2 teams. One team is to raise questions in relation to replanting and the other team is to answer. Master trainers: Add more questions and give support to make the answers more clear.	60
Top dressing	Divide the class into 3 groups to discuss on how many times to apply fertilizers, when it should be applied, what type of fertilizer, how to apply and explain why. All 3 groups present their group discussion results. Reflect and add further comments.	60
	<i>Tea Break</i>	
Weeding	Divide the class into 3 groups to discuss how many times, when and how to weed and explain why . All 3 groups present their group discussion results. Reflect and add further comments.	60
Cover the foot of trees	Divide the class into 3 groups to discuss on how many times, when and how we should cover the foot of trees and explain why . All 3 groups present their group discussion results. Reflect and add further comments.	30
Practice	Practice in the training field of the class.	90
Wrap up and evaluate	Wrap up lessons that were covered, evaluate the training methodology, and ask for recommendations for improvement.	20

SESSION 13. PRUNING

Objective

Participants gain an understanding of the purpose of pruning and the skills to implement the proper pruning techniques.

After the session, participants will be able to:

- Have a clear understanding of pruning, its purpose and implementation.
- Explain the purpose of pruning and demonstrate the right way to prune.

Duration

8 hours

Training Materials and Equipment:

- In classroom: Laptop, projector for computer, whiteboard with pens, A0 paper for flip chart, five A0 paper prepared (five trees with different branches), 5 big pens, adhesive tape for fastening the five A0 paper, 5 rulers with a centimetre scale.
- At the training plots: Five pruning scissors, five pruning saws on shafts (2-2½ m), coloured tapes or string (five different colours) for marking trees, spray paint for marking trees and 40 photo copies of part of pruning manual (pruning plan and selection of trees for pruning).
- Field Area: Two plantation areas which have not been pruned previously.
- Best if the two areas are close to each other (preferable walking distance). The areas should preferably not be on a steep slope.
- One area (plot 1) with an approximate tree height of 4 m on average. At least 0.2 ha (but better if bigger). The area is divided into five plots – one for each group.
- Another area (plot 2) with an approximate tree height of 8 m on average. At least 0.4 ha (but better if larger). The area is divided into five plots – one for each group.

Contents and Methodology

Contents	Methodology	Time (minutes)
Introduction	Presentation: What is pruning? The aim of pruning, products of pruning, the knot.	30
Group work	Group work: The tasks of the groups are to draw 20 years of a tree growing of a tree with a branch. The drawings are different for the five groups (thickness of the branch, cut or not, and cut at stem or leaving a stump of the branch). The groups make an exhibition of the drawings. The knots are marked on the drawings. Best practise for pruning is discussed based on the drawings.	30
Presentation	Presentation: When to start pruning? Tools, techniques, results.	30
Presentation in plot 1	Present the use of the pruning scissors and the right time for starting the pruning is discussed again.	15

Exercises in plot 1	The five groups exercise with the pruning scissors in the group plots. One master trainer is attached to each group. Each participant must practise using the scissors. After the exercise, experiences are discussed: Damage by pruning, thickness of branches cut by scissors, costs of pruning.	60
	<i>Lunch Break</i>	60
Presentation in plot 2	The concept of selecting and marking trees for pruning is presented and demonstrated by the guest teacher. The right time for stating the pruning is discussed again. Use of the pruning saws is demonstrated by the guest teacher. One master trainer is attached to each group.	30
Exercises in plot 2	The five groups mark trees for pruning with strings. After approval by master trainer or guest teacher, the pruning saw is used for pruning the marked trees. Each participants must exercise with the pruning saw.	90
Discussion on results	Presentation of results and discussions in plot 2. Subjects for discussions: Damages by pruning, right time to start pruning, plan for pruning, selection of trees for pruning, costs of pruning.	30

Master Trainers' Notes

The purpose of this session is:

- To repeat that one very important feature of growing trees is producing knot free timber.
- To make it clear how knots develop and how trees heal when branches are cut.
- To introduce tools and techniques for proper and efficient pruning.
- To train in practical implementation of pruning.

SESSION 14. THINNING

Objective

Participants learn about thinning techniques and under which conditions thinning is applicable.

Duration

6 hours

Training Materials and Equipment:

- Strings in different colours, a sheet with pre-made formula for number and reserves of selective thinning trees, A0 papers, felt-pens and adhesive tapes.
- A forest with trees that start closing their crowns.

Contents and Methods

Contents	Methodology	Time (Minutes)
Introduction	Introduction to the topics and the main contents of the session.	15
Thinning objectives and techniques	Master trainers present: <ul style="list-style-type: none"> • Concept of thinning • Objectives of thinning • Types of forests where thinning methods can be applied • Conditions under which thinning methods should be applied and under which these should not be applied • Measures to calculate the volume of thinning • Thinning techniques • Tools for thinning 	60
Group discussion	Divide the class into two groups and show them a picture of a recently closed forest, then give questions to the groups: How will your forest look like in the coming time and what should we do?	30
Thinning calculation exercise	Divide the class into three groups. Provide each group one A0 paper to do an exercise of calculating of number of trees that should be cut down, with a respective thinning volume of 30%, 40% and 50%. The primary volume of the forest is 2.000 trees/ha. After the presentation of group results, master trainers should raise various related questions to each technical factor, such as: <ul style="list-style-type: none"> • When should we do the thinning? • What kinds of trees should we cut down? 	60
	<i>Lunch Break</i>	
Fieldwork exercise	Practice selecting trees that should be cut down. Divide the class into three groups and give each group strings in red and yellow colour to mark those trees they are planning to cut down. The yellow colour string will be used to mark those trees having unclear decisions of either keeping or cutting.	60
Feedback and Analysis	Feedback on and analysis of practicing process: Master trainers can use the pictures taken during the practicing session to help participants with the analysis and to draw lessons learnt.	30
Designing a training session for	Design a training session for farmers: Divide the class into 2 groups to do group work on designing the “selective thinning and lopping techniques” training session for	90

FFS	farmers in farmer field schools. Practice how to facilitate the session.	
Summary	Master trainers wrap up on the thinning techniques, explain the reasons why we should follow the regulations of thinning techniques correctly. (Master trainers should in advance prepare the main points of thinning techniques' regulations on a big paper). Ask participants if they have any questions or unclear points for further explanation.	30

Master Trainers' Notes

Participants and farmers quite often do not thin their trees. Therefore, master trainers should provide convincing evidences to persuade them to do thinning as the most profitable activity if one's goal is doing business with big hard wood.

SESSION 15. PEST AND DISEASE MANAGEMENT

Objective

Participants gain basic knowledge of pests and diseases.

After this session, participants will have sufficient knowledge and techniques for:

- Diagnosing some common diseases.
- Identifying some common pests.
- Knowing how to prevent some common pests and diseases.
- Knowing how to handle a disease outbreak.

Duration

6 hours

Training Materials and Equipment:

- Samples of pests and diseases, A0 paper, felt-pen, adhesive tape, projector.

Contents and Methodology

Contents	Methodology	Time (minutes)
Introduction to the training objectives and expected outputs	Ask participants about their expectations of the session by requesting each group to write maximum 5 expectations. Sum up the participants' expectations and answer them in terms of which ones the master trainer team can respond to and which ones cannot be answered immediately during the session.	15
Pest and disease situation in the regions	Use a projector to present: The statistics on pests and diseases for afforestation in Vietnam in general and for the northern and central regions in particular; the economic and environmental loss	60

	<p>caused by pests and diseases for forest trees.</p> <p>The situation of pests and diseases for forest trees in recent years.</p> <p>List of research institutes and agencies in Vietnam for disease prevention.</p>	
Some common pests in afforestation	<p>Use samples (or images) of pests and divide the class into 5 groups to discuss the questions below:</p> <ul style="list-style-type: none"> • Have you seen these types of pests in your area? • What is the pests' name? • Which trees do they damage? • How do they damage? • Which methods have been used to prevent them in your areas? • In addition to these pests, do you know any other kinds of pests? <p>Groups present their group discussion results.</p> <p>Master trainers and the other groups provide further comments to complete the answers.</p>	60
	<i>Tea Break</i>	
Some common diseases for saplings and preventive methods	<p>Use samples (or pictures) of diseases and divide the class into 5 groups to discuss the questions below:</p> <ul style="list-style-type: none"> • Do these types of diseases exist in your area? • What are their causes? • Which trees do they damage? • How do they damage the trees? • Which methods have been used to prevent them in your areas? • In addition to these diseases, do you know any other types of diseases? <p>Groups present their group discussion results.</p> <p>Master trainers and the other groups provide further comments to complete the answers.</p>	60
	<i>Lunch Break</i>	
Useful and harmful insects	<p>Use samples (or pictures) of insects and pass a pen around. Where the pen stops that participant should provide the answer:</p> <ul style="list-style-type: none"> • What is the name of this insect? • Is this insect a useful or a harmful one? Why? • Where do we normally see these kinds of insects? • What is the control methods (increase or decrease its numbers) that have been applied in your area? 	60
	<i>Tea Break</i>	
Integrated Pest Management (IPM)	<p>Divide the class into 3 groups to discuss the questions below:</p> <ul style="list-style-type: none"> • What is IPM? • What is a natural enemy? • What are the advantages of IPM in comparison to other methods? • What are disadvantages of IMP in comparison to other methods? <p>List up to at least 3 IPM methods that you know.</p>	60

	Present group discussion results.	
Summary	Request each group to sum up one topic of the session and present again what they have been trained on during the day.	30

Master Trainers' Notes

This is a difficult topic which has lots of technical terms, thus master trainers should:

- Visualize the lectures by using lots of images and samples of pests and diseases.
- Be knowledgeable about common pests and diseases in the local areas.

SESSION 16. FIRE PREVENTION AND SUPPRESSION

Objective

Participants gain basic knowledge on forest fires, fire prevention, and suppression.

After the session, the participants should have sufficient technical knowledge of:

- Causes of forest fires.
- Measures for fire prevention.
- Measures for fire control.

Duration

6.5 hours

Materials and Equipment:

- A0 paper, felt-pen, lighter, a glass.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training session objectives and establishing participants' expectations	Ask participants about their expectations for this training session by requesting each group to list maximum 5 expectations. Summarize participants' expectations and explain to them those expectations that can be met by master trainers during this session and those that cannot.	15
Situation of forest fires in Vietnam and in the northern and central region of Vietnam	Use a projector to present: Statistical data of forest fire cases in Vietnam in general. Economic and environmental damages caused by forest fires.	60
Classification of forest fires	Use video clips to introduce: • Fire above the crown.	60

	<ul style="list-style-type: none"> • Fire under the crown. • Latent fire. 	
	<i>Tea Break</i>	
Elements that make up a fire: oxygen, materials and ignition sources	<p>Request a participant to burn a piece of paper and put it into a glass and close the glass. Ask participants, what elements do we need to create a fire?</p> <p>Master trainers summarize participants' answers and elaborate on the topic.</p>	60
	<i>Lunch Break</i>	
Practice designing measures for forest fire prevention	<p>Give the participants a case study of a forest with provided data of area, species and forest fire situation in the surroundings.</p> <p>Divide the class into three groups to do the group work to identify fire prevention measures for that specific forest.</p>	60
Presentation of group discussion results	<p>Groups present the results of their group discussion.</p> <p>Other groups and master trainers elaborate on the presentations.</p>	60
	<i>Tea Break</i>	
Forest fire control	<p>Master trainers provide various cases of:</p> <ul style="list-style-type: none"> • Small fires • Big fires • Fires above the crown • Fires under the crown • Latent fires <p>Discuss in plenum on: Measures to control the fires and tools to be used.</p>	45
Summary	Request each group to sum up one topic of the session and present again what they have been trained on during the day.	30

Master Trainers' Notes

Master trainers should:

- Have specific proof data on the facts of forest fires.
- Have solid knowledge of fire prevention and suppression.

SESSION 17. FOREST GROWTH AND DEVELOPMENT

Objective

Participants gain basic knowledge about forest growth.

After the session, participants will be able to:

- Distinguish between growth and development.

- Draw a development and growth chart of the height of some common trees over the years at their various development stages.
- Draw a development and growth chart of the diameter of some common trees over the years of their various development stages.
- Draw a development and growth chart of the volume of some common trees over the years of their various development stages.
- Present the definition of some basic concepts.
- Know how to design and calculate the growth rate of a forest plot.

Duration

4 hours

Training Materials and Equipment:

- A0 paper, projector, hand-outs of research results on the development of some species.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents and schedule	Introduction to the topics of the session and learning about participants' expectations of the session.	15
Growth and development	<p>Class discussion on:</p> <ul style="list-style-type: none"> • What is physical growth? • What is development? • What is complex growth? <p>Calculate the growth amount of a quantity. Request the participants to think for 20 minutes and then choose random participants to answer the questions. Each of them answers one question. If the first participant's answer is not satisfactory then ask the next participant to supplement.</p> <p>Present an example of GDP rate, which is calculated by relative number (%) and by absolute number (USD/year). Plenary discussion on:</p> <ul style="list-style-type: none"> • What will the chart of biomass growth of a single tree look like? • What will the chart of biomass growth of a forest stand look like? 	45
Development and growth chart of height, diameter and volume	<p>A group exercise of drawing a development and growth chart Master trainers give participants growth data, e.g. diameter and height for 8 first years of acacia hybrid and:</p> <ul style="list-style-type: none"> • Request groups to draw a growth chart and curve of height, diameter and volume. • Groups present their charts. • Other groups supplement. 	60
	<i>Tea Break</i>	
Additional	Discussion in the classroom on some concepts:	45

concepts and definitions relating to physical and complex growth of forest trees	<ul style="list-style-type: none"> • Regular annual growth. • Regular period growth. • Average period growth. • Growth ratio. • Volume growth of a single tree. • Volume growth of a forest stand. <p>For each definition, master trainers need to give the participants sample data to make a calculation. Give the participants 15 minutes to think and then select participants randomly who will provide answers and make calculation for specific given data.</p>	
Measure and calculate the growth and anticipate the right time for harvesting	<p>Questions for discussion:</p> <ul style="list-style-type: none"> • How can we get the data for physical growth and complex growth? • With the given data for growth, when is the right time to harvest (skip the fluctuation of market price)? <p>The participants are arranged in pairs for discussion and select random pairs to provide answers.</p>	45
Summary	Invite participants to sum up the contents of the training, while the rest add on.	15

Master Trainers' Notes

Master trainers should in advance study the development stages of some common species such as acacia, eucalyptus, china-trees, snowbells, pine, etc.

Master trainers should focus on analysing the purpose of studying the development of species.

Master trainers should guide participants how to calculate the right time to harvest some common species for timber and paper processing materials.

SESSION 18. CRITERIA FOR FOREST TREE SPECIES SELECTION

Objective

Participants gain knowledge about forest tree species selection.

After the session, participants will be able to:

- List the regional factors which need to be considered.
- List the geological factors which need to consider in selecting forest tree species.
- Develop steps for forest tree species selection.

Duration

8 hours

Training Materials and Equipment:

- A0 paper, projector, hand-outs, hoes and field site.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction	<p>Introduction to the training contents and schedule.</p> <p>To get to know the participants' experience in tree species selection, master trainers ask them how they decide to plant which species in their areas.</p> <ul style="list-style-type: none"> • Which factors did they base their decisions on? • How did those decisions lead to success or failure? 	15
Natural factors to be considered in the tree species selection	<p>Request each participant to write on a card one factor to be considered in tree species selection.</p> <ul style="list-style-type: none"> • Copy these factors on the board. • Classify these factors. • Rank them in priority. • Suggest more factors if necessary. <p>Practice to describe some micro factors of a forest plot: the depth of soil layer, position, mixed stones, slope, moisture, soil composition and distance from the plot to the main road.</p>	90
	<i>Tea Break</i>	
Ecological characteristics of tree species	<p>Group discussion:</p> <p>Select a specific tree species to study its ecological conditions and compare with the local natural, socio-economic and environmental conditions to see if they match.</p> <p>Present the results of the discussion.</p> <p>Provide comments and feedback.</p>	30
Socio-economic and environmental factors which influence tree species selection	<p>Discuss:</p> <ul style="list-style-type: none"> • Which factors belong to socio-economic and environmental sectors? • Which markets should you consider in tree species selection? <p>Governmental policies to protect the properties of its citizens (case study of a long term tree plantation, the rich in China, attractive investment ranking, etc.).</p>	90
	<i>Lunch Break</i>	
Develop steps to for making a decision on selecting the right	Participants describe their sites according to the criteria listed below and see which tree species are	45

tree species to cultivate	<p>suitable for planting.</p> <p>Needs and wants of land owner:</p> <ul style="list-style-type: none"> • Fire wood, cash, poles, protection against erosion, and soil degradation, building materials, etc. <p>Market demands:</p> <ul style="list-style-type: none"> • Fire wood, pulp wood, hard wood saw logs, timber, etc. <p>Soil conditions and terrain:</p> <ul style="list-style-type: none"> • Deep fertile soil, poor soil (sandy), risk of flooding, steep slopes, rocky condition, etc. <p>Climatic conditions:</p> <ul style="list-style-type: none"> • Minimum and maximum temperature, elevation, total precipitation and distribution over the year, length of growing season. <p>Other:</p> <ul style="list-style-type: none"> • What was the natural vegetation on site? • Local experience with different species? • What are the neighbours planting? • Distance to the customers? • What kind of equipment do I have at my disposal for forest operations? • Time perspective, cash available for the planting investment. • Seedlings available, etc. 	
Summary	The person who is in charges of the group will do the summary and evaluate which part of the content they have clearly understood and which part of the content they would like to have further clarification on.	30

Master Trainers' Notes

This topic is an integrated knowledge of nature, forest techniques and economics. The majority of ToT participants have not graduated from the university, thus they are not familiar with specialized terms and concepts. Master trainers should explain carefully and should have very specific examples and should combine them with the practical part in the field.

SESSION 19. MEASUREMENT AND ESTIMATION OF VOLUME

Objective

Participants obtain knowledge about measuring and estimating logs, single tree volume, and forest inventory.

After the training session, participants should have sufficient technical knowledge of:

- Methods for measurement and counting.

- Calculation.

Duration

7 hours

Training Materials and Equipment:

- Strings with different colours, a calculation sheet for number and reserves of trees that need thinning, A0 papers, felt-pens and adhesive tape.
- A random forest that has relatively big standing volume.
- Measuring tape, bitterlich tool (available as app).
- Logs.

Contents and Methodology

Contents	Methodology	Time (minutes)
Introduction to the training contents	Introduction to the training contents of the day and the purpose of measuring and estimating volume/inventory.	15
Discussion on the ways farmers normally calculate the volume of a log, a tree and a forest.	Divide the class into three groups and provide questions for group discussion: <ul style="list-style-type: none"> • How do you measure and estimate the volume of a round log, a boxful log, a standing tree and the reserves of a forest? 	60
	<i>Tea Break</i>	
Summarize and present their formula to calculate the volume of a log, a tree and a forest Method to establish a standard lot in the measurement and the estimation of forest reserves	Master trainers summarize group work's results and present the formula for calculating the volume of a log, a tree and a forest. Methods to establish a standard lot in the measurement and the estimation of forest reserves. Provide participants with exercises on how to calculate volume/inventory.	90
Introduction to the tools used for the measurement and the estimation of forest reserves Instructions in using the bitterlich tool	Instructions in reading using the parameters in the bitterlich tool. Instructions in how to measure heights.	15
	<i>Lunch Break</i>	

Practice measuring volume of a log and a tree	Divide the class into three groups to practice measuring and estimating the volume of a log and a tree.	60
	<i>Tea Break</i>	
Practice measuring volume / inventory of a forest	Select three different forests for three groups and have them practice measuring and estimating volume/inventory.	90
Representative groups present their results	Each group presents their group results.	60
Summary	Invite participants to sum up the contents of the training, while the rest add on.	30

SESSION 20. FORESTRY INFRASTRUCTURE

Objective

Participants learn about the calculation and design of forestry infrastructure.

After the session, participants will be able to understand the functions, structures and establishment methods of:

- Forest works.
- Dam.
- Drainage ditches.
- Hedgerows.
- Anti-fire belts.
- Fire watch tower.

Duration

7 hours

Training Equipment and Materials:

- A0 paper, felt-pen, adhesive tape, projector, pictures and drawings.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training objectives and contents	Introduction to the training objectives and expectations for the session. Master trainers ask the participants if they have certain topics they want to have covered.	15

Concepts of forest works and functions of each kind of forest works	Divide the class into 5 groups to discuss on the questions below: <ul style="list-style-type: none"> • What is forest work? • What is a forest road? What are the regulations and the functions of forest road? • Dam. • Drainage ditches. • Hedgerows. • Anti-fire belts. • Fire watch tower. 	60
Construction situation of the local forest works	Group discussion: <ul style="list-style-type: none"> • Construction situation of the local forest works. • Difficulties and solutions. 	120
Prepare questions and plan a study visit	Information of the study site where forest work is being undertaken. Prepare questions for the study visit.	30
Visit forest works	Go to the visiting place. Observe and interview.	120
Report on lessons learnt from the study visit	Each group writes a report and presents the report to the class. Synthesize lessons learnt from the study visit.	45
Summary	Invite participants to sum up the contents of the training, while the rest add on.	15

Master Trainers' Notes

Master trainers should focus on discussion with the participants on the difficulties and feasible solutions when constructing silvicultural works for forest trade by the farm forestry households.

SESSION 21. INTRODUCTION TO MARKETING

Objective

To give participants a broad overview of marketing as a tool to improve commercial forestry besides its provision of the household with basic products for subsistence needs.

To familiarize the participants with the terms of stakeholders in a marketing context, product mix, value chain, sales chain and price setting.

Duration

7 hours

Training Materials and Equipment:

- Paper (A0 and A4) pens, whiteboard marker, adhesive tape and a cloth ball.

- Refer to the technical manual under the Marketing Section (p. 70).

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction	<p>Introduction to the objective and schedule of the session.</p> <p>Introduce the cell phone case.</p> <p>Does everybody have one? Do your children and parents know what a cell phone is? Does anybody remember times before the cell phone? Where were we when we got it? How did we learn about it? What were we willing to pay?</p> <p>How was the cell phone introduced to the market, what effect did the introduction have on development, how has the product been developed. What value has been added?</p> <p>Let the participants describe the cell phone as a product. Introduce the concept of the extended product.</p>	45
Forest products Discussion	<p>Play the forest is full of:</p> <p>Toss a ball between participants and let them name a forest based product and pass on the ball.</p> <p>Master trainers will list the proposed products on the flipchart.</p> <p>The final list is taped on to the wall in the classroom.</p>	60
Trade of forest products	<p>The participants will in their groups work out a list of stakeholders engaged in marketing and trade of forest based products. The list must distinguish between NTFP's and wood based products.</p> <p>The groups present their lists. Simultaneously, the master trainers elaborate the final list and put it on the wall in the classroom.</p> <p>Small exercise. Clapping hands with your neighbour ending with doing it with closed eyes. Learn to read other peoples signals – gather useful information.</p>	60
	<i>Tea Break</i>	

Trade of forest products	Present the environmental model in dialogue with the participants. It is drawn up on the white board.	90
The sales chain	<p>Present a case about wood based products. Tree growing (cutting, selling and transport license)</p> <p>Middleman - Sawmill. From 30 – 100% = 70% to the middleman for bribe, profit etc.</p> <p>The participants discuss and draw up the sales chain in Vietnam together with their neighbour.</p> <p>Random selected presentation. Comprehensive chains are drawn up for selected forest products simultaneously by the master trainers and put on the wall.</p>	
	<i>Lunch Break</i>	
The value chain	Draw up a value chain for an apple.	
Tooth pick case	<ul style="list-style-type: none"> Pick it yourself from the tree, buy it at the doorstep of the producer, buy it at the market lose weight, sell it to a whole seller, have it nicely packed (six-packs), sell it to super markets, have it processed cut in pieces, as sauce or juice – small or big cartons. The groups pick a product each from the list on the wall and elaborate a value chain for presentation. The participants figure out where they will maximise profit in each value chain. <p>Tooth pick case</p> <ul style="list-style-type: none"> Group calculation of: How many toothpicks do you get out of one bamboo stick? How long will it take you? What can you get from your toothpicks and what can you get for your bamboo stick? Does it pay off? Presentation of results. Next sit in pairs and each person presents his/her strength and an actual problem and ask for a solution. Switch, doing five shifts, using. 2 minutes for each shift. The importance of trusting people and creating a network to strengthen your information base. Energizer: Stand in a circle and go round counting from 1 to 3. The next round, instead of saying 1, do a jump, and instead of saying 2, do a turn. 	

Price setting	<p>Back to the cell phone.</p> <p>What were we willing to pay and why?</p> <ul style="list-style-type: none"> • The master trainer explains about the demand and supply curve. Willingness / ability to pay based on wants and needs. • The groups work out what parameters influence the price. Groups present them and the master trainers elaborate the comprehensive description simultaneously. <p>Discussion about bargaining power, with focus on knowledge about the products' comparative advantages.</p> <ul style="list-style-type: none"> • Quality assessment of saw logs – supplement with the drawings from the Technical manual. 	60
Summary	Invite participants to sum up the contents of the training, while the rest add on.	15

Master Trainers' Notes

The purpose of this session is:

- To make sure all participants know how forest products are traded in Vietnam.
- To make the participants able to choose the optimal placement in the sales chain for the tree growing farmers.
- To make participants able to state farmers bargaining position and power and to be able to improve both.
- To provide the participants with skills to help the tree growing farmers place themselves in the correct (most economic) spot in the value chain for their forest based products.

Encourage activate participation in group discussions, discussions with their neighbours, use role play and practical exercises.

SESSION 22. HOW TO DO MARKETING

Objective

To give participants a broad overview of marketing as a tool to improve commercial forestry beyond the mere provision of the household with basic products for subsistence needs.

To familiarize the participants with the techniques behind the choices of marketing strategies and the use of analytic tools including SWOT analysis and the McKinsey model. Special focus on the marketing mix.

After the session, participants will be able to:

- Participants will have a clear understanding of how the market operates and can be influenced and how to use the marketing mix.
- The participants will have a clearer understanding of how to organize marketing activities on behalf of the farmers growing trees.

Duration

7 hours

Training Materials and Equipment:

- Paper (A₀ and A₄), pens (big and smaller), whiteboard marker and adhesive tape. A big drawing of triangles for the flip chart, product sheet and the Moon Case (Annex 1).
- Refer to the technical manual under the Marketing Section (p. 70).

Contents and Methods

Contents	Methodology	Time (minutes)
Market assessment	<p>Wrap up from the day before (Session 21) and answer questions that have popped up since then.</p> <p>Phases of a market assessment focusing on size, competitors, possible partners, customers and narrowing things down to the actual potential market.</p> <ul style="list-style-type: none">• Importance of knowing about the quality of your product.• Practical Exercise: The triangle. First alone – then with your neighbour, then in groups. How many triangles do you see (Annex 2)?• Groups describe the market for the following products: Saw logs, tooth picks, pulp, fire wood and bamboo sprouts according to the above mentioned criteria. It is to be filled into the upper part of the product sheet. The master trainers facilitate the groups.• Group presentations.	105
SWOT	<p>Introduce the principles of a SWOT analysis.</p> <ul style="list-style-type: none">• The groups perform a SWOT analysis based on the products they have worked out their market assessment for and fill it into the product sheet. They end up by describing the chain of trade. The master trainers facilitate the groups.• Group presentations	60
Boston and McKinsey	<p>Draw up the McKinsey model on the white board and explain it.</p>	60
	<i>Lunch Break</i>	

Marketing mix	<p>The moon case: Two astronauts are stranded on the dark side of the moon. They are three days away from their spaceship placed on the edge of the bright side. Prioritize from the list what they need to bring. First individually then in groups. Solutions are discussed in plenum.</p> <p>Present the 5 P's of marketing: Product, Price, Place, Promotion and People.</p> <p>Marketplace exercise: Questions are written on flipcharts placed in three different locations. All groups rotate between the rooms. Last group in each room presents based on all the input gathered. A master trainer is at location and facilitates 10 min. modules.</p> <ul style="list-style-type: none"> • How would you use the price in your marketing of saw logs from farms? • How would you use promotion in your marketing of saw logs from farms? • How could you imagine trade with saw logs grown on farms organized in order to maximize farmers' earnings? • Group presentations 	105
	<i>Tea Break</i>	
AIDA	<p>Introduce the Attention, Interest, Desire, and Action (AIDA) model as a frame for marketing communication.</p> <p>As homework for the following day, the groups are asked to design an ad for tooth picks that creates Attention, Interest in the product, Desire to purchase and Action to do so.</p>	60
Summary	Wrap up the session and run a final question and answering session.	15

During the following week each group will be given a 0.5m long bamboo stick of which they are supposed to produce toothpicks. Groups should calculate the theoretical numbers for the time spent on the production of tooth picks. Then the sticks should be sold on the local market to check the market price and the calculation of earnings from this production.

Product sheet

Product group: Wood products **Name of product:**

Suppliers:	Production: Local use / Potential	Potential customers:	Demand:

Producers price:	Price at the market:	Comments:

Product SWOT

Strengths:

Weaknesses:

Opportunities:

Threats:

Chain of trade: Producer ⇒

End user

Master Trainers' Notes

The purpose of the *How to do marketing* session is:

- To teach participants to make simple market analysis / assessments.
- To teach participants how to choose / advise on the choice of appropriate marketing strategies.
- To make sure all participants know how to use the marketing mix when they initiate marketing activities.
- To provide the participants with skills to help place the tree growing farmers in the correct (economic) part of the value chain for their forest based products.

Activate participants in group discussions, discussions with their neighbours, the master trainers and through role plays and practical exercises in general.

SESSION 23: TECHNIQUES FOR PLANTING RATTAN (CALAMUS TETRADACTYLUS)

Objective

Participants learn techniques for planting rattan.

After the session, participants will have sufficient knowledge and techniques of:

- Ecological features.
- Biological features.
- Techniques for producing rattan seedlings (variety source, seed treatment, maintenance after sowing).
- Techniques for planting rattan (conditions for planting, seedling norms, planting season, planting density, size of planting holes, fertilizers, maintenance after transplanting).

Duration

5.5 hours

Training Materials and Equipment:

- A0 paper, felt-pen, adhesive tape, small knife, trowel, seedlings and tools for transporting the seedlings.
- The field for practicing can be an area in the nursery of the Experimental Farm of the College.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents	Introduction to the training session and the main contents.	15
Assessment of seedling quality	Group discussion on: <ul style="list-style-type: none">• How does a seedling meet the requirements?• What is a good seedling?• What is a bad seedling?• How to buy good seedlings Present results of the group discussion.	60
Transport and preservation of seedlings	Questions for group discussion: <ul style="list-style-type: none">• How do you transport seedlings from a nursery to the field without damaging the seedling?• Which means of transportation should we use?• How do we arrange the seedlings?• How do we preserve the seedlings?	60
Planting trees	Go through the steps on how to plant trees: take soil out of	30

	the hole, take off plastic bag, put seedlings into the hole, and cover it.	
	<i>Tea Break</i>	
Prepare for practicing in the field	Assign which task each person will perform when planting seedlings in the field.	30
Field work	Practice in the field: Assign one person to take photos and observe while the other people are performing the tasks and vice versa.	90
Reflection and wrap up	Reflection and comments: <ul style="list-style-type: none"> • What have we done? • What have we not yet done or not done well? • Solutions to improve things not done well? 	45

Master Trainers' Notes

Master trainers should relate this session to the real situation at the participants' locality and give them suitable guidance for their specific cases.

Master trainers should focus on the mistakes that local people and the participants often make such as: break the pot before planting, do not take off the plastic bag during planting, put the seedlings into the hole and not cover correctly with soil, do not apply fertilizer, etc.

Almost all the participants have been involved in planting trees. They have traditional knowledge and experience, thus master trainers should know their knowledge and experience and help them identify and supplement their gaps.

SESSION 24. ESTABLISHMENT OF COPPICE PLANTATIONS

Objective

Participants gain knowledge to establish eucalyptus coppice plantations.

After the session, the participants will:

- Gain the techniques for the efficient exploitation of a coppice plantation.
- Gain the techniques for the maintenance of a coppice plantation.
- Gain the techniques for managing a coppice plantation.
- Know in which conditions they can apply the establishment of a coppice plantation.

Duration

4 hours

Training Materials and Equipment:

- A0 paper, an eucalyptus forest plot after harvesting, packets of some stimulus fertilizers, fungicides, etc.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to the training contents	Introduction to the training session and the main contents.	15
Techniques for harvesting eucalyptus in order to promote coppicing for the next rotation	<p>Small group discussion:</p> <p>Master trainers raise questions in relation to the business in a young offshoot forest and the ways of exploiting and preparing for the possible trading in the next business cycles such as:</p> <ul style="list-style-type: none"> • What tools will you use to fell trees? • How long should the stumps be? • How is the declination of the cutting faces? • What kind of pesticide will you use to avoid fungus? <p>Groups of three discuss the above questions.</p> <p>For each question, master trainers will select randomly a group to answer and other groups to be the opponent who will comment on the answers.</p> <p>Master trainers make the final conclusions and explain which answers are correct and why they are correct.</p>	60
Techniques for maintenance of a young offshoot forest	<p>Master trainers raise questions in front of the class:</p> <ul style="list-style-type: none"> • How many offshoots should be retained? • What are the criteria for selecting offshoots to be retained? • In places that have strong winds, what types of offshoots should we retain? • What types of fertilizer should we apply? • What doses of fertilizers should we apply? <p>For each question, master trainers should ask a participant to answer and explain the reason for their answer.</p>	30
	<i>Tea Break</i>	
Methods for handling eucalyptus stumps	<p>Master trainers ask the participants about their experience in handling eucalyptus stumps.</p> <ul style="list-style-type: none"> • What methods did they use? • What are the advantages and disadvantages of each method? • What are the suitable conditions for applying each method? <p>Master trainers can suggest more methods to eliminate eucalyptus offshoots such as lime, use plastic bags to cover offshoots tightly, using bulldozers or excavators.</p>	30

Conditions to apply the trading of a young offshoot forest	Group discussion: Which conditions apply when trading a young offshoot forest? Business purpose, market forecast of forest products, conditions of capital and labour forces of households, etc.	60
Summary	Summary the session. Question and answer if any.	30

Master Trainers' Notes

Master trainers should focus on the conditions for managing the coppice plantations and the methods to end the coppice plantation of eucalyptus when changing land use.

SESSION 25. COST AND REVENUES IN FORESTRY

Objectives

Participants will gain a clear understanding about how to assess costs and revenues in farm forestry, including how to collect economic information

After the session, participants will be able to:

- Make some simple calculations of costs and revenues in farm forestry.
- Explain how to assess costs and revenues in farm forestry.

Duration

7.5 hours

Training Materials and Equipment:

- In classroom: Projector for computer, whiteboard with pens, A0 paper for flip chart, 5 big pens, adhesive tape for fastening the A0 paper.

Contents and Methodology

Contents	Methodology	Time (Minutes)
Introduction to costs and revenues	Present the outline of the day's programme. The concepts of different models are presented and the types of needed information for assessing the cash flow in a rotation of a plantation are discussed.	120
Introduction to cultivation costs	The teacher presents an example of a model for cultivation costs. Focus in the discussion will be on sources of needed information.	
Group work on cultivation costs	Each group will work one specific model for cultivation costs.	

	<p>Group 1: Costs of production of seedlings of A. Mangium in a small local nursery.</p> <p>Group 2: Costs of establishment of a plantation of A. Mangium with a density of 3.000 seedlings per hectare (only the costs in the establishment year).</p> <p>Group 3: Costs of the establishment of a plantation of A. Mangium with a density of 1.600 seedlings per hectare (only the costs in the establishment year).</p> <p>Group 4: Costs for tending a plantation of A. Mangium with a density of 3.000 seedlings per hectare (only the costs after the establishment year).</p> <p>Group 5: Costs for tending a plantation of A. Mangium with a density of 1.600 seedlings per hectare (only the costs after the establishment year). Remember pruning is necessary.</p> <p>The results are discussed and corrections made so the models are comparable.</p>	
Costs and revenues of assortments	<p>Master trainer presentation: Costs and revenues of assortments.</p> <p>Vietnamese assortments for A. Mangium plantations are identified in dialogue with the students.</p> <p>The assortments are divided between the groups, which assess costs and revenues for the identified assortments. The results are discussed and costs/revenues adjusted so they are comparable.</p>	120
	<i>Lunch Break</i>	
Assortment distributions and net revenues	<p>The master trainer presents different sizes of trees and the distribution of assortments for A. Mangium is discussed.</p> <p>The groups calculate the distribution of assortment for five specific tree sizes (given by the teacher) – one size for each group.</p> <p>The results are discussed and consolidated into a table for distribution of assortments.</p> <p>The teacher presents the calculation of net revenues.</p> <p>The groups do the calculation for the different tree sizes. The results are consolidated together with the assortment distribution table. A price curve is constructed.</p>	90
	<i>Tea Break</i>	
Yield tables and cash flow	<p>The master trainer presents the three basic volume factors in the yield table: Height, number of stems, and diameter. And other factors which can be calculated: Standing volume and growth.</p> <p>The master trainer presents what happens, if the number</p>	90

	<p>of seedlings are lower (height no influence, diameter bigger, number of stems lower, volume a bit lower, corresponding to growth loss before the crowns are closing).</p> <p>The teacher presents what happens if thinning is done (height almost no effect, diameter is growing bigger, volume is lower, corresponding to the thinning).</p> <p>The teacher presents an example for calculating cash flow.</p> <p>Five different yield tables for A. Mangium are delivered to the five groups:</p> <ol style="list-style-type: none"> 1: Narrow spacing, no thinning, rotation age 20. 2: Narrow spacing, thinning, rotation age 10. 3: Narrow spacing, thinning, rotation age 20. 4: Wide spacing, thinning, rotation age 10. 5: Wide spacing, thinning, rotation age 20. <p>The groups calculate the cash flow and present the results.</p>	
Summary	<p>The results of the above group work are evaluated.</p> <p>Will all farmers choose the same solution?</p> <p>Objectives of different farmer are discussed.</p>	30

Master Trainers' Notes

The purpose of this session is to:

- Give a basic understanding on what types of costs and revenues occur in forestry.
- Give a basic understanding on how to collect data for assessment and costs and revenues.
- Introduce tools for basic calculations.

This session will not deal with investments, depreciation and interest.

For keeping it simple, most of the session will be based on group work.

Annex 1

The Moon Case

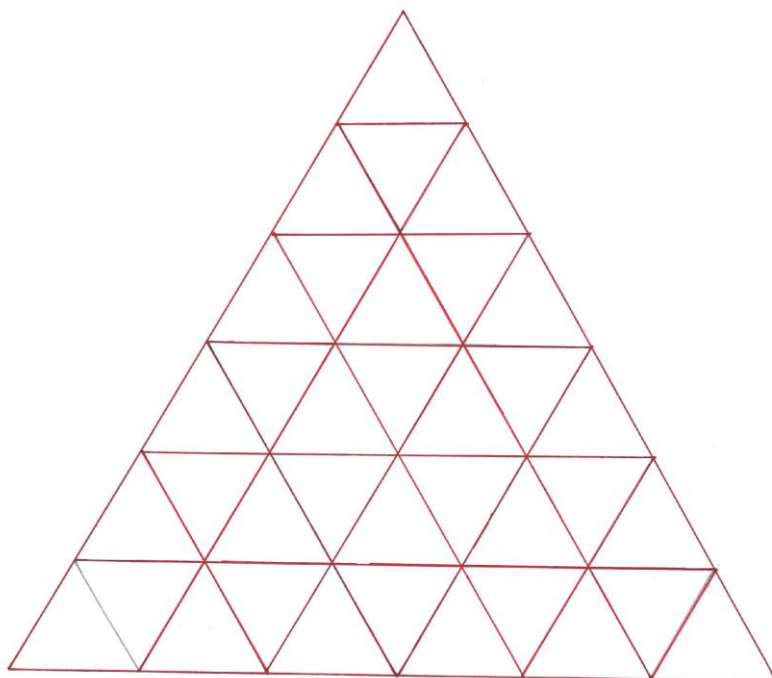
Three astronauts are stranded on the dark side of the moon. They are three days walk away from their spaceship. They have only limited capacity to carry equipment.

Prioritise among the following items what they need in order to return safe and fast.

- **A box of matches**
- **Food concentrate**
- **Nylon robe**
- **Parachute silk**
- **Source of heat**
- **Pistols**
- **Milk powder**
- **Oxygen containers**
- **Map of the moon**
- **Compass**
- **Water**
- **Signal lights**
- **First aid kit**
- **Radio transmitter**

Annex 2

How many triangles do you see?





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Amalievej 20

1875 Frederiksberg C

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